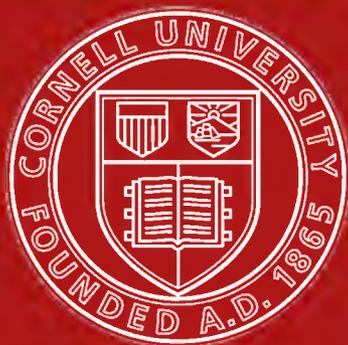


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MEMOIRS  
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UNIVERSITY OF CALIFORNIA

Volume 3

BUSINESS CYCLES

BY  
WESLEY CLAIR MITCHELL

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# **BUSINESS CYCLES**





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BY

WESLEY CLAIR MITCHELL

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to

L. S. M.



## PREFACE

This book offers an analytic description of the complicated processes by which seasons of business prosperity, crisis, depression, and revival come about in the modern world. The materials used consist chiefly of market reports and statistics concerning the business cycles which have run their course since 1890 in the United States, England, Germany, and France.

I am the sorrier for the bulkiness of the volume because I have written for the man of business as well as for the professional economist. Doubtless a skillful expositor might have presented the same results in fewer pages; but most of the bulk is due to my conviction that the quickest way to attain reliable results is to take great care in measuring the phenomena exhibited by business cycles. Readers who look over the first chapter will find that many diverse theories about the causes of crises seem plausible when considered in the light of common knowledge. To determine which of these explanations are really valid, it is necessary to find out the regularity with which each alleged stress recurs, the scope which each attains, the elements which enter into each, and the consequences with which each is associated. To make progress toward the solution of these problems requires the collection and analysis of elaborate records of business experience in quantitative form. Men seriously interested in the workings of the money economy will share my regret that the statistical materials are not more complete, rather than complain that too many tables are offered. And if any who lack time or patience for study take up the book, the "Suggestions to Readers" will show them where to find the gist of the conclusions.

One of the chief difficulties in the investigation has been to get quantitative data for the four countries dealt with which can fairly be compared. Official documents and business journals present many tables with such scanty explanations that one cannot make out precisely what the statistics include. I have ventured rather boldly in setting such figures side by side, and have doubtless made some blunders which those with better opportunities of knowing the work of statistical bureaus may point out. In almost all cases, however, the comparisons are made, not between actual amounts in different countries, but between the relative fluctuations which actual amounts undergo in the course of business cycles. For such comparisons it is indeed desirable, but it is not indispensable, to have statistics of precisely the same scope.

Pains have been taken to put the data derived from different countries and different branches of business into comparable form by reduction to common units and by computing relative figures upon a common basis—averages for the decade 1890–99. In order to facilitate comparison still further, numbers of not more than three or four digits have been used in most of the tables. Many small discrepancies occur between totals and the items which enter into them, because I have not indulged in the common statistical practice of forcing figures in order to secure formal consistency even at the cost of accuracy.

The quarto format was chosen in order that the charts might be printed directly on the page without the use of folding "inserts." All charts showing relative quantities were originally

drawn to the same scale. But in reproducing the drawings for publication it was found necessary to reduce the size of some much more than of others. Of course the constant relation between the horizontal units of time and the vertical units of relative quantity was not disturbed by this process. Inequalities of outside measurement matter little, because the slope of the curves is the important thing, and the eye notes similarities or differences of slope about equally well in charts of the same and of different sizes.

Several friends have assisted me by reading and criticizing parts of the manuscript—Mrs. Warren Gregory, Mr. John Graham Brooks, Professor Walter Morris Hart, Professor Jessica B. Peixotto, and Professor Henry Rand Hatfield. The editors of the *Journal of Political Economy* have courteously permitted the use of certain statistical materials first published in their columns. My thanks are also due to Mr. J. C. Rowell of the University of California Library, to Dr. C. C. Williamson of the New York Public Library, and to the authorities of the Royal Statistical Society's Library, London. But, more than all others, my wife has shared in making this book.

WESLEY CLAIR MITCHELL.

37 West Tenth Street,  
New York City.



## SUGGESTIONS TO READERS

Those who desire to get quickly the gist of the conclusions reached concerning the causes of business cycles are advised to begin with the last chapter. Points which they find obscure in the summary there presented, or points in which they have especial interest, may be looked up in Chapters X–XIII by aid of the table of contents.

Economic theorists will find the viewpoint from which the investigation has been made set forth in Chapter II, in the “Framework” of Parts II and III, and in the final section of Chapter XIV

Readers concerned with recent business history, may find whatever materials the book presents for their purposes by using the table of contents under Chapters III–IX, and XII.

Those looking for statistical materials and those interested in statistical methods should consult the table of contents under Part II.

Discussions of monetary and banking problems occur not only in Chapters VI and VII, but also in Chapters XI, iii; XII, ii and v; XIII, i, 2, D, and XIV, iii, 3.

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**PART I**

**THE PROBLEM AND ITS SETTING**



## CHAPTER I

# A PRELIMINARY REVIEW OF CURRENT THEORIES CONCERNING BUSINESS CYCLES

### I. TYPES OF THE EARLY THEORIES OF CRISES

Serious efforts to frame a theory of business cycles began with the contemporary discussions of the economic crisis of 1825.<sup>1</sup> Differences of opinion promptly appeared regarding the cause of this widespread dislocation of trade—differences which multiplied as the crises of later years brought new materials and new men into the discussion. Presently crises became one of the accredited topics of economic theory, and systematic writers began to develop explanations based upon their doctrines of production, distribution, and exchange. Before the end of the nineteenth century there had accumulated a body of observations and speculations sufficient to justify the compilation of histories of the theories of crises.<sup>2</sup>

Inevitably, the early efforts to account for the exceedingly complex phenomena of crises were crude and superficial. But the problem commanded so much attention that the character of the treatment rapidly improved. Each recurring crisis, indeed, produced a fresh crop of ill-considered explanations; but meanwhile other writers were steadily using and bettering the work of their predecessors. In this process of elaboration, however, the early differences of opinion did not disappear. Instead, they became standardized into several distinct types of theory, each represented in the growing literature by a number of variants.

First may be put the view that crises are “abnormal” phenomena, produced by some disturbing event such as the introduction of revolutionary inventions, the development of new means of transportation which alter old trade-routes, wars, the revision of tariffs, fluctuating monetary standards, crop failures, the unexpected bankruptcy of some conspicuous business enterprise, changes in fashion, and the like. Such explanations proceed upon the assumption that

<sup>1</sup> E. von Bergmann, *Geschichte der nationalökonomischen Krisentheorien* (Stuttgart, 1895). As usual, research has discovered a number of fragmentary discussions by earlier writers. See the opening pages of von Bergmann's successive chapters.

<sup>2</sup> Von Bergmann's book, cited in the preceding note, is the most elaborate. The best histories in English and French are E. D. Jones's *Economic Crises* (New York, 1900), and J. Lescure's *Des crises générales et périodiques de surproduction* (Paris, 1907), pp. 433-522.

the equilibrium of economic activities has become so delicate that it may be disturbed by untoward conjunctures of the most dissimilar kinds, and point to the conclusion that each crisis has its own special cause which must be sought among the events of the immediately preceding years.<sup>3</sup>

Next in formal simplicity is the type of theory which ascribes crises to "inflation." An increase in coin, in irredeemable paper money issued by the government, in bank-notes, or in deposit currency produces an advance of prices. The latter stimulates business to great activity, which runs to extremes in reckless investments and feverish speculation, and ends in a crash of credit and widespread bankruptcy.

The "over-production" and "under-consumption" theories contend that, owing to the efficiency of modern machinery, the power of society to produce has outstripped its power to consume. Hence the periodical occurrence of "general gluts"—paradoxical situations in which superabundance causes want. Unable to sell their increasing output of goods at remunerative prices, employers are forced to close their factories and turn away their hands—a remedy which aggravates the disease by reducing yet more the community's power to purchase for consumption.

To the classical economists the theory of general over-production was a heresy, which they perseveringly sought to extirpate by demonstrating that the supply of goods of one sort necessarily constitutes demand for goods of other sorts. But maladjusted production they allowed to be possible, and their theories of crises usually sought to show how maladjustment comes about through the sinking of capital in unremunerative investments. Such locking-up of capital was often held to be one result of "the tendency of profits to a minimum." When this tendency has reduced the current rate of profits to an unaccustomed level, the less sagacious capitalists become dissatisfied and embark in ill-considered schemes. There results the production of goods for which no market can be found, business failures, and the loss of confidence—in short, a crisis which extends over all lines of trade.

Another group of economists, among whom Schäffle was prominent, accepted ill-adjusted production as the cause of crises; but accounted for it by the complexity of modern economic organization. Not only are manufacturers compelled to produce goods months in advance for a market whose changes they cannot forecast, but investors are compelled years in advance to put their funds into enterprises the need of which is uncertain. A close coördination between supply and demand is not possible. The mistakes which are made should be ascribed less to avoidable errors of judgment than to the planlessness of capitalistic production.

---

<sup>3</sup> Jones gives a good analysis of this type of theories in his second chapter. Roscher is perhaps the best known representative.



But the most vigorous attempt to prove that crises are a chronic disease of capitalism is that made by Rodbertus, Marx, and their followers. The gist of the socialist contention is usually that the laborer receives as wages much less than the real value of his product. Hence the demand for consumers' goods, which must depend largely upon the great mass of wage-earners, fails to keep pace with the increase of the output. Meanwhile, the capitalist-employers are investing their current savings in new productive enterprises, which presently begin to add their quotas to the market supply. This process runs cumulatively until the time comes when the patent impossibility of selling goods at a profit brings on a crisis.

So bald a statement as the preceding falls far short of doing justice to the nineteenth century writers upon crises; but it suffices to indicate the foundations upon which our contemporaries have built their more elaborate explanations. The latter conserve all of permanent value which the earlier economists achieved, and contain in addition certain fresh contributions to the subject. Accordingly, a review of the leading discussions which have been published since 1900 will afford an adequate introduction to the problem as it stands today.

## II. CURRENT THEORIES OF BUSINESS CYCLES

### 1. *Two Points of Agreement*

Wide divergences of opinion continue to exist among competent writers upon crises; but in recent years substantial agreement has been reached upon two points of fundamental importance.

Crises are no longer treated as sudden catastrophes which interrupt the "normal" course of business, as episodes which can be understood without investigation of the intervening years. On the contrary, the crisis is regarded as but the most dramatic and the briefest of the three phases of a business cycle—prosperity, crisis, and depression.<sup>4</sup> Modern discussions endeavor to show why a crisis is followed by depression, and depression by prosperity, quite as much as to show why prosperity is followed by a crisis. In a word, the theory of crises has grown into the theory of business cycles.<sup>5</sup>

This wider grasp of the problem has discredited the view that crises are due to abnormal conditions which tempt industry and trade to forsake their beaten paths and temporarily befog the judgment of business men and investors,

<sup>4</sup> The not infrequent statement that prosperity sometimes merges into depression without the intervention of a crisis means simply that the writers understand by crisis a violent disturbance of business conditions. It is in closer accord with every-day usage to call such occurrences "panics," and to apply the term "crisis" to the transition from prosperity to depression even when accomplished quietly. On closer inspection, a business cycle is often found to be complicated by minor changes, such as the interruption of depression by a premature resumption of activity, the occurrence of a pause or even a slight crisis in the midst of prosperity, and the like. But for the present it is wise to confine attention to the broadest features of the cycle.

<sup>5</sup> Compare W. Sombart, "Versuch einer Systematik der Wirtschaftskrisen," *Archiv für Sozialwissenschaft*, 1904, pp. 1-21.

or to misguided legislation, unsound business practices, imperfect banking organization, and the like.<sup>6</sup> As business cycles have continued to run their round decade after decade in all nations of highly developed business organization, the idea that each crisis may be accounted for by some special cause has become less tenable. On the contrary, the explanations in favor today ascribe the recurrence of crises after periods of prosperity to some inherent characteristic of economic organization or activity. The complex processes which make up business life are analyzed to discover why they inevitably work out a change from good times to bad and from bad times to good. The influence of special conditions is admitted, of course, but rather as a factor which complicates the process than as the leading cause of crises.

## 2. Beveridge's "*Competition Theory*"

Among these theories which seek to account not for crises but for the cyclical fluctuations of economic activity, the "competition theory" tentatively advanced by Beveridge is one of the simplest.

In most instances, he begins, production is carried on by several or many establishments, each acting independently, and each seeking to do as large a share of the business as possible. Whenever the demand for their wares increases, each competitor tries to engross a larger portion of the market. "Inevitably, therefore, all the producers together tend to overshoot the demand and to glut the market for a time. This is a result not of wild speculation nor of miscalculation of the total demand; it must be a normal incident wherever competition has a place at all." Such activity among producers constitutes the period of prosperity. But sooner or later the glutting of the market becomes apparent, and then the crisis comes, because the goods cannot all be sold at a profit. Prices fall, production is checked, and a period of depression ensues. Gradually, however, the slackened rate of production allows the accumulated stocks to be cleared, perhaps below cost price, perhaps by waiting until demand grows up to supply. When this excess of demand over supply has once again become patent business recovers. Depression yields to prosperity, competitors again vie with each other to increase their shares in the output, after a few years the market is glutted again, and a new crisis comes, to be followed once more by depression. Thus business cycles are due in the last resort to "the simple and well nigh universal fact of industrial competition."<sup>7</sup>

<sup>6</sup> The first type of theories mentioned in the preceding section.

<sup>7</sup> W. H. Beveridge, *Unemployment*, ed. 3 (London, 1912), chapter iv.

### 3. *May's Theory of the Discrepancy between Wages and Productivity*

Like Beveridge, May conceives crises to result immediately from the glutting of markets for industrial products. But May offers a quite different analysis of the cause of gluts. The continually growing productivity of industry makes necessary a corresponding growth of the market, if disaster is to be avoided. But to enable producers to sell their growing output promptly prices must be reduced and wages must be raised in proportion as the supply of goods increases. For it is only by combining an increase in the money income of the mass of the population with a decrease in the cost of commodities that a country's home markets can be kept expanding with the progress of industrial methods. Periods of prosperity attended by rising prices necessarily violate this condition of business hygiene and inevitably end by glutting markets. Then come crises, which restore the body politic to health by forcing down prices to the point where consumers can purchase the supplies which are offered. The germ of the trouble, then, is the tendency of prices to rise during periods of increasing productivity. Accordingly, May urges as remedy a legal limitation of the rate of profits, in order that producers may be forced to reduce prices as they increase output.<sup>8</sup>

### 4. *Hobson's Theory of Over-saving*

A third explanation of how markets come to be glutted periodically is offered by Hobson's theory of over-saving. Hobson holds that at any given time "there is an exact proportion of the current income which, in accordance with existing arts of production and existing foresight, is required to set up new capital so as to make provision for the maximum consumption throughout the near future." Now, if in a period of prosperity the rate of consumption should rise *pari passu* with the rate of production, there is no inherent reason why the prosperity might not continue indefinitely. But in modern societies, a considerable portion of the wealth produced belongs to a small class. In active times their incomes rise more rapidly than their consumption and the surplus income is perforce saved. There results for the community as a whole a slight deficiency of spending and a corresponding excess of saving. The wealthy class seeks to invest its new savings in productive enterprises—thereby increasing the supply of goods and also increasing the incomes from which further savings will be made. This process runs cumulatively during the years of prosperity until finally the markets become congested with goods which cannot be sold at a profit. Then prices fall, liquidation ensues, capital is written down, and the incomes of the wealthy class are so reduced that savings fall below the proper proportion to spending. During this period of depression the glut of

<sup>8</sup> R. E. May, *Das Grundgesetz der Wirtschaftskrisen* (Berlin, 1902).

goods weighing upon the market is gradually worked off, and the prospect of profitable investment slowly returns. Saving rises again to the right proportion to spending and good times prevail for a season. But after a while the chronic impulse towards over-saving becomes fully operative once more, and soon or late begets another congestion of the markets and this congestion begets another depression. Proximately, then, the cause of alternating prosperity and depression is the tendency toward over-saving; ultimately it is the existence of the surplus incomes which lead to over-saving.<sup>9</sup>

### 5. *Aftalion's Theory of Diminishing Utilities*

The possibility of a general over-production of goods has often been denied on the ground that human desire is insatiable. Recently Aftalion has sought to show that this objection may be set aside by the laws of marginal utility. He ascribes the fall of prices which characterizes a crisis to the effect of general over-production in diminishing the social use-values of the whole mass of commodities offered for sale. While admitting that there can be no general fall of values in exchange, he contends that there can be such a fall of values in use. Human wants are not all met; but the wants for the concrete goods in the market are gratified to such a degree that their marginal utilities decline. There follows a general fall of prices—often to points below the costs of production. Similarly, the rise of prices in prosperity results from a rise of marginal utilities caused by a relative scarcity of goods in proportion to the community's needs—that is, from under-production.

But whence come these alternations of over-production and under-production? Aftalion sees them as consequences of the "round about" method of production characteristic of capitalism. When there is a promising market for consumers' goods we set about building new factories and ordering new machines. A considerable time is required to provide such new equipment. During this interval prices rise because goods are scarce, and prosperity reigns. But when at last the new factories are completed and the new machines installed, they begin to turn out consumers' goods in great masses. Presently the market is overstocked, values in use decline, prices fall, and a crisis comes. After the crisis, depression rules for a season because the excessive equipment provided during the period of prosperity is itself durable, and goes on flooding the market with its products. Therefore values in use and prices continue to fall, despite the redundant supply of money. Under such discouraging circumstances, producers do not increase the size of their plants; they do not even replace all the equipment which is worn out. Consequently, productive capacity slowly diminishes. Since wants do not shrink, but rather expand,

<sup>9</sup> I have followed Mr. Hobson's latest exposition, *The Industrial System* (London, 1909), chapters iii and xviii.

the day finally dawns when the current supply of consumers' goods and the stocks of materials are found to be inadequate. Then the social value of goods of all kinds rises, prices advance, prosperity returns, and the whole cycle begins anew.<sup>10</sup>

#### 6. *Bouniatian's Theory of Over-capitalization*

Bouniatian's theory of over-capitalization is much like Hobson's theory of over-saving. Any one among many causes may so affect supply and demand as to cause the prices of some important group of commodities to rise. This advance tends to propagate itself by raising the prices of all related commodities. At the same time it concentrates purchasing power in the hands of those who own the goods which have advanced in price. This concentration of purchasing power enhances the accumulation of capital; for (1) the desire for increased consumption does not expand so quickly as income has risen, and (2) the spirit of enterprise is excited by increased profits received. The larger supply of capital leads to a greater demand for the means of production, and raises their price—now concentrating purchasing power in the hands of those who own or produce the means of production. This new concentration enhances once more the accumulation of capital. Thus the process, initiated by a casual rise of prices in any part of the industrial field, soon reaches the industries which turn out industrial equipment and runs cumulatively for a time.

But ultimately the process works its own reversal. For the centralization of purchasing power in the hands of a small class is at the expense of the purchasing power of the masses. Absolutely consumption grows, but its growth is slower than that of the supply of goods turned out by the increasing industrial equipment. In the last resort the prices of these means of production are dependent on the prices of the consumers' goods which they help directly or indirectly to produce. In the end, therefore, the failure of consumption to expand at the same pace as the accumulation of capital and the means of production in which the capital is invested inevitably causes consumers' and producers' goods to fall in price.

Then the process is reversed. Purchasing power, instead of being concentrated in the hands of the owners of goods, is dispersed. The fall of prices propagates itself and goes on cumulatively as the rise had done. Much of the industrial equipment stands idle and deteriorates, not only from lack of repair but also from the invention of improved processes and machinery. Thus an approximate equality between the community's power of consumption and its equipment for production is brought about. Meanwhile the large supply of idle capital in the form of loanable funds drives down the rate of interest. Ultimately the time comes when the supply of goods is no longer superabund-

<sup>10</sup> A. Aftalion, *Essai d'une théorie des crises générales et périodiques* (Paris, 1909). See also his replies to criticisms by Gide and Lescure in *Revue d'économie politique*, April, 1910.

ant, and fresh ventures may be undertaken at a low rate of interest with good hope of success. Then in some line prices receive a fillip, and the whole process begins once more with concentration of purchasing power, increased savings and lively demand for goods.

Thus prosperity and depression are two unlike results of the same cause—over-capitalization. That is, the ceaseless striving of productive energy to keep profitably employed causes production to expand more rapidly than consumption, and infallibly produces a maladjustment with alternating periods of expansion and contraction. The roots of the difficulty lie deep in the capitalistic organization of society, which separates the individual's activity in production from his activity in consumption, and so favors inequality in the distribution of wealth—a condition which is both cause and consequence of over-capitalization.<sup>11</sup>

#### 7. *Spiethoff's Theory of the Ill-balanced Production of Industrial Equipment and Complementary Goods*

While Hobson ascribes crises to over-saving and Bouniatian to over-capitalization, Spiethoff ascribes them primarily to ill-balanced production of industrial equipment and complementary goods. A revival of prosperity leads first to the full utilization of the existing industrial equipment, and then to a rush to produce new equipment. The latter movement results from a heavy investment of capital by men who hope to share in the high profits which prosperity promises. After a time the new equipment begins turning out goods which seek a market—partly goods to satisfy personal wants, partly goods to be used in producing other goods. Over-production inevitably results after a time in those industries which make industrial equipment. For the demand for this type of goods is capable of being substantially satisfied by a few years of activity. That is, the community finds itself provided with enough industrial equipment to produce all the goods which can find a profitable market and then the demand for further machinery, etc., drops off, leaving short of orders the foundries, machine shops, etc., which have been rapidly extended. Meantime the capital which had accumulated in superabundant volume during the preceding depression has been absorbed, and further business expansion is checked by the inadequacy of current savings to supply the needs of business borrowers. This slackening demand for new industrial equipment, combined with the scantiness of loan-capital, brings the period of prosperity to a close. Unemployment among workmen and losses among capitalists, beginning in the industries which make industrial equipment, cause a decline in consumers' demand and react upon all industries which make goods for personal needs.

<sup>11</sup> M. Bouniatian, *Studien zur Theorie und Geschichte der Wirtschaftskrisen* (Munich, 1908), vol. I.

Then an over-production of consumers' goods becomes apparent and the circle of the unemployed and of the losing capitalists widens. So matters go from bad to worse in a vicious circle and the depression deepens for a time.

But, like prosperity, depression works its own end. The weakest producers are forced out of business, new needs develop, the fall of prices, wages, and interest cuts down the cost of production, and the capital value of plants is reduced by foreclosure sales, agreements with bondholders and the like. At last the time comes when production at a profit seems possible again. For a while business conditions are relatively stable; but presently activity becomes more marked, demand for industrial equipment grows animated, and the cycle of prosperity, crisis, and depression is repeated.

Over-production of goods for producing other goods and the increasing scarcity of loan-capital, then, are the results of prosperity which cause crises and depressions. But, Spiethoff asks, exactly what do these phrases mean? Over-production means that there are more machines, etc., than can be sold at a profitable price, for the reason that possible purchasers cannot get enough capital to pay for and to operate them. This scarcity of capital means proximately that the loan funds in the investment markets have been depleted by the heavy borrowings of prosperous years. But this lack of capital in the shape of money for lending conceals the real difficulty—a lack of the capital goods which the would-be borrowers need for carrying on the process of extending their enterprises. To increase the supply of money would work no real cure; for the money transferred from lender to borrower is useless unless it can be converted by purchase into those goods which are required for operating the industrial equipment that threatens to fall idle. These goods are primarily labor and the goods which laborers consume. The root of the evil is, therefore, ill-proportioned production—over-production of industrial equipment and such durable consumption goods as dwellings, and a concomitant under-production of the goods necessary to employ the equipment.<sup>12</sup>

#### 8. *Hull's Theory of the Changing Costs of Construction*

An American business man, George H. Hull, has recently drawn from his experience of practical affairs conclusions which resemble those drawn by Professor Spiethoff from his theoretical analysis of economic records. High prices of construction, runs his thesis, is the hitherto "unknown cause of the mysterious depressions" from which the industrial nations suffer.

In demonstrating this thesis, Hull contends that agriculture, commerce, and finance fluctuate within relatively narrow limits. Agriculture provides the necessities of life, commerce distributes them, and finance adjusts the bills.

<sup>12</sup> Spiethoff has published his analysis in a series of articles in Schmoller's *Jahrbuch für Gesetzgebung*, 1902, pp. 721-759; 1903, pp. 679-708; 1909, pp. 445-467, 927-951, 1417-1437.

The volume of all this business is fairly constant, because the demand for necessities is incapable of sudden expansion or contraction. Industry, on the contrary, may expand or contract indefinitely—especially that part of industry devoted to construction work. For the sources of “booms” and depressions, therefore, we must look to the enterprises which build and equip houses, stores, factories, railways, docks, and the like.

Of the huge total of construction, which Hull believes to make over three-quarters of all industrial operations, at least two-thirds, even in the busiest of years, consists of repairs, replacements, and such extensions as are required by the growth of population. This portion of construction is necessary and must be executed every year. But the remaining portion is “optional construction,” and is undertaken or not according as investors see a liberal or a meager profit in providing new equipment.

Now, when the costs of construction fall low enough to arouse “the bargain-counter instinct,” many of “the far-seeing ones who hold the purse-strings of the country” let heavy contracts, and their example is followed by the less shrewd. The addition of the resulting new business to the regular volume of “necessity construction” plus the provision of ordinary consumers’ goods creates a “boom.” But, after a year or two, contractors discover that their order books call for more work than they can get labor and materials to finish on contract time. When this oversold condition of the contracting trades is realized, the prices of labor and of raw materials rise rapidly. The estimated cost of construction on new contracts then becomes excessive. Shrewd investors therefore begin to defer the execution of their plans for extending permanent equipment, and the letting of fresh contracts declines apace. As they gradually complete work on their old contracts, all the enterprises making iron, steel, lumber, cement, brick, stone, etc., then face a serious shrinkage of business. Just as the execution of the large contracts for “optional construction,” let in the low-price period, brought on prosperity, so the smallness of such contracts, let in the high-price period, now brings on depression. Then the prices of construction fall until they arouse “the bargain-counter instinct” of investors once more, and the cycle begins afresh.

While Hull grants that panics are often caused by strictly financial disorders, he holds that all industrial depressions are caused by high prices of construction, and foreshadowed by high prices of iron. Consequently he believes that depressions could be prevented from occurring if the government would collect and publish monthly “all pertinent information in relation to the existing volume of construction under contract for future months, and all pertinent information in relation to the capacity of the country to produce construction materials to meet the demand thus indicated.”<sup>13</sup>

<sup>13</sup> George H. Hull, *Industrial Depressions* (New York, 1911), p. 218.

### 9. *Lescure's Theory of Variations in Prospective Profits*

Lescure agrees with Spiethoff that business cycles arise from irregular activity in producing producers' goods, and that the latter in turn is connected with the alternating ebb and flow of the capital invested in industry and trade. But he explains the periodical expansion and contraction of these investments in a fashion different from Spiethoff. To him changes in the prospective rate of profits are the important factor. By profits he means the margin between selling prices and cost of production.

A period of prosperity inevitably comes to an end because cost ultimately creeps up on selling prices so far as to reduce the margin of profits and hence to discourage further investments. This increase in cost is due to high prices for raw material, high rates of interest, high wages, and heavy expenses in establishing new enterprises and extending old ones. Selling prices cannot be indefinitely raised to preserve the margin of profit from these encroachments by costs, because there comes a time when the ever-increasing supplies offered on the market have satisfied the more pressing wants, and people will not buy the yet larger quantities of goods at yet higher prices. When the prospective profits of fresh enterprises have been thus rendered doubtful, investors hesitate to make business loans on the grand scale which is necessary to sustain the movement of expansion. Instead they begin to prefer the lesser risks of government bonds and similar conservative securities. The inability of business enterprises to borrow freely checks the execution of their plans for extensions, and hence reduces the demand for producers' goods. Then the enterprises turning out these goods find themselves in difficulties, and the weakest are presently forced to the wall. One disaster leads to another, owing to the close interrelationship which exists between different establishments and different trades. A wave of depression sweeps over the business world, and for a time the prospects of profits become darker and darker.

But depression, like prosperity, has its own limits. Demand cannot shrink indefinitely, for consumers must be fed, clothed, and housed. All the elements in cost decline—raw materials, wages, interest, expenses of getting established. Further, the depression stimulates efforts to improve methods of production. Thus ultimately costs are readjusted on a lower level, the prospective margin of profit first ceases to shrink, and later begins to expand. The spirit of business enterprise is once more aroused, investors turn back to business loans, and prosperity returns for its brief day.<sup>14</sup>

<sup>14</sup> Jean Lescure, *Des crises générales et périodiques de surproduction* (Paris, 1907), pp. 496-522.

10. *Veblen's Theory of the Discrepancy between Prospective Profits and Current Capitalization*

The chief merit of Lescure's discussion is its realistic air, its effort to look at business cycles from the standpoint of the man of business. In this effort, however, the French economist has been anticipated by an American. Veblen begins his discussion of "the theory of modern welfare" by pointing out that prosperity, crisis, and depression "are primarily phenomena of business; they are, in their origin and primary incidence, phenomena of price disturbance, either of decline or of advance. . . . They affect industry [only] because industry is managed on a business footing, in terms of price and for the sake of profits."

A period of prosperity is ushered in by a rise of prices, caused, for example, by an increased supply of gold, or by heavy government purchases. This rise affects first some one industry or line of industries, which responds with a burst of activity and increased investments by business men anxious to exploit the profitable field. Partly by actual increase of demand, partly by lively anticipation of future increases, aggressive business enterprise extends its ventures and pushes up prices in remoter branches of trade. Thus the rise of prices is carried over into one branch of business after another.

Now the growing demand and enhanced prices increase the prospective profits of the business enterprises in each trade as they reach it. Larger prospective profits lead to higher market capitalization of the business enterprises, and, of course, higher market capitalization means an increased value of the properties as collateral security. Thus the way is paved for the marked extension of credit on which the active trade is largely dependent.

This sequence of growing demand, rising prices, increasing expectations of profit, swelling capitalization of business enterprises, and expanding credit runs on cumulatively so long as its basis continues—an anticipated increase in demand or selling prices greater than the anticipated increase in costs. But eventually the process undermines its own basis. For costs rise with the increasing cost of labor, and with the gradual extension of the advance in prices to all the commodities which business enterprises buy. In the end these costs gain so much upon prospective selling prices as to cut down the anticipated margin of profit. Then the enhanced market capitalization of the business enterprises begins to seem excessive. Consequently, the collateral security for loans shrinks in the estimation of the business community and ceases to be regarded as an adequate guarantee of the credits which have been granted. The confident tone of business expectations which characterized the period of prosperity yields to nervousness. To bring on a general crisis it needs but that some considerable creditor should conclude that the present earning capacity of his debtor no longer warrants the capitalization upon which

his collateral is appraised. When this happens liquidation begins, extending from one industry to another and converting prosperity into depression.

Veblen differs from most writers in holding that, once begun, business depression tends to maintain and perpetuate itself, instead of tending to produce a resumption of activity. Business men commonly ascribe their troubles to over-production; but what they mean is that not enough of their products can be sold for satisfactory prices to warrant the running of mills at full capacity, or near enough capacity to yield a fair profit. "Fair" profit means to the business men a satisfactory return on what they regard as the capital value of their enterprises. Reductions in this capital value are assented to with extreme reluctance, and usually lag behind the decline which has taken place in earning capacity. But such reductions are gradually forced during depression by the bankruptcy of the weakest enterprises and their reorganization with reduced fixed charges. This process of reorganization turns the weakest competitors into the most dangerous. Yet more important is the unceasing advance in technical perfection which characterizes modern machine industry, and which enables the new plants which are built from time to time to start with a marked initial advantage in equipment over their partially antiquated predecessors. The difficulty of earning a fair profit without submitting to a reduction of capitalization is made chronic by these conditions. "Hence depression is normal to the industrial situation under the consummate regime of the machine, so long as competition is unchecked and no *deus ex machina* interposes." The only abiding refuge from such chronic depression is thoroughgoing coalition in all those lines of business in which coalition is feasible. It is, to be sure, only in the last generation that the march of technical progress has become steady and rapid enough to establish this condition of chronic depression; but it promises to become more and more pronounced in the future. Periods of prosperity are taking on the character of episodes, initiated by some extraordinary increase in the demand for goods, and running out presently into the normal state of depression through the sequence of events which has been recited.

To Veblen, then, the important factor in determining the character of a business period is the discrepancy between current capitalization and anticipated earning capacity. When the latter rises, business has a season of prosperity, during which capitalization expands rapidly. But rising costs always undermine the basis for anticipating high profits and then capitalization is left higher than anticipated profits warrant. The latter situation characterizes depression.<sup>15</sup>

<sup>15</sup> T. B. Veblen, *Theory of Business Enterprise* (New York, 1904), ch. vii. Professor E. R. A. Seligman has worked out a theory of crises which resembles Veblen's in the run of ideas and in phraseology. See his introduction to *The Currency Problem and the Present Financial Situation*. A series of addresses delivered at Columbia University, 1907-08.

### 11. *Sombart's Theory of the Uneven Expansion in the Production of Organic and Inorganic Goods*

Sombart, like many of the recent German writers, finds ill-proportioned production the chief cause of crises; but he thinks it inaccurate to say that the over-production is in industrial equipment. For during the German "boom" which collapsed in 1900-01, over-production was quite as marked in industries making equipment for electric lighting systems, telephone plants, street railways, dwellings, bicycles, etc., as in industries making machines. The real lack of proportion he sees in the unlike degree of expansion in industries using organic and inorganic materials. The inorganic industries, typified by steel, can expand to an enormous extent within a brief period without being seriously hampered by scarcity of raw materials. The organic industries, typified by cotton-spinning, on the contrary, are always in precarious dependence upon the year's harvests. In the organic industries, one may say, the condition of business is determined by the harvests; in the inorganic industries the condition of business determines the production of raw materials. The modern crisis, then, following upon a period of prosperity, is substantially the result of the different rhythm of production in the organic and inorganic realms. The organic industries dependent upon harvests cannot keep pace with the inorganic when the latter are being rapidly extended by heavy investments of capital.<sup>16</sup>

### 12. *Carver's Theory of the Dissimilar Price Fluctuations of Producers' and Consumers' Goods*

Carver has suggested a way of accounting for business cycles by applying the laws of value which govern producers' goods. He points out that a comparatively small change in a factory's selling prices will cause a much greater change in its profits, if volume of output and expenses remain the same. Since the value of the factory as a going concern is the capitalized value of its prospective profits, a large increase of profits will cause a large increase of the factory's value, provided the high profits are expected to continue long. Hence the law that "the value of producers' goods tends to fluctuate more violently than the value of consumers' goods." It follows that:

"A slight rise in the price of consumers' goods will so increase the value of the producers' goods which enter into their production as to lead to larger investments in producers' goods. The resulting larger market for producers' goods again stimulates the production of such goods, and withdraws productive energy from the creation of consumers' goods. This for the time tends

<sup>16</sup> W. Sombart, "Die Störungen im deutschen Wirtschaftsleben," *Schriften des Vereins für Socialpolitik*, vol. 113, pp. 130-133.

to raise the price of consumers' goods still higher, and this again to stimulate still further the creation of producers' goods. There is no check to this tendency until the new stock of producers' goods begin to pour upon the market an increased flow of consumers' goods. This tends to produce a fall in their value, which in turn produces a still greater fall in the value of producers' goods, and so the process goes."

Thus, once more, prosperity breeds crisis and depression; but this time the reason is found in the dissimilar fluctuations which the laws of value establish for the goods which people use and the equipment with which they are made.<sup>17</sup>

### 13. *Fisher's Theory of the Lagging Adjustment of Interest*

Another interesting suggestion comes from Irving Fisher. By statistics he has shown that when for any reason prices begin to rise, interest rates advance, but not fast enough to offset the decline in the purchasing power of the principal caused by the rise of prices. During such periods, accordingly, borrowers on the whole get the better of lenders and make high profits. Since the borrowers consist largely of active business men, precisely the class of greatest foresight, they grasp the situation more quickly than lenders. As a result of their desire to profit by their opportunity, loans are rapidly extended. This extension is effected largely by the lending of bank credits, that is, by the increasing of deposit currency. The greater volume of the currency combines with more rapid circulation of money and checks to increase prices again, and so to start the whole process anew on a higher level. "There is thus set up a vicious circle, which will continue just as long as the rate of interest fails to make a proper adjustment to put on the brakes and prevent over-borrowing."

"But the rise in interest, though belated, is progressive, and, as soon as it overtakes the rate of rise in prices, the whole situation is changed." Borrowers can no longer hope to make great profits, and the demand for loans ceases to expand. Further, the higher rate of interest reduces the price of many of the securities used as collateral for loans. Business men "who have counted on renewing their loans at the former rates and for the former amounts are unable to do so. It follows that some of them are destined to fail." There follow suspicions regarding the solvency of the banks, runs for cash, forced curtailment of loans, and exceedingly high rates of interest—in short, the phenomena of crisis.

The contraction of loans is accompanied by a reduction of deposit currency and a slower circulation both of money and of checks. Hence prices decline. Again the rate of interest follows; but just as it was slow to rise so now it is slow to fall. Then the business men who borrow find that the sluggish adjust-

<sup>17</sup> T. N. Carver, "A Suggestion for a Theory of Industrial Depressions," *Quarterly Journal of Economics*, May, 1903, pp. 497-500.

ment of interest reduces their profits. Therefore loans, and the deposits based on loans, contract again. But the shrinking volume of deposit currency causes a further fall of prices, and once more interest lags behind and renews the process. Thus the phase of depressions runs cumulatively until at last the progressive reduction of interest has overtaken the fall of prices. At this point business men find their profits rising to the normal level. Borrowing becomes freer, the volume of deposit currency swells, prices start upward, and the cycle begins afresh.<sup>18</sup>

#### 14. *Johannsen's Theory of "Impair Savings"*

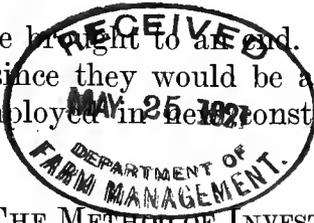
The *Neglected Point in Connection with Crises*<sup>19</sup> which N. Johannsen has developed is really a point in connection with depressions. Saving, he reminds us, always threatens to produce "a minus of demand." In periods of prosperity this minus is cancelled by a plus, because the savings are promptly invested in new construction. But, when a crisis comes, the volume of construction work shrinks. The business men engaged in all branches of "contracting" begin to run behind, and their employees are thrown out of work. The industries which supply brick, lumber, structural steel, rails, cement, etc., promptly suffer a decline in the demand for their products and so also do the industries which cater to the personal needs of the men dependent upon the stagnant industries.

What, then, becomes of the current savings which, if times were good, would be invested in construction? Johannsen answers that they are spent largely in lending upon or in buying property which the men in the stagnant industries are compelled to mortgage or to sell. Now, when savings are invested in this fashion, they do not give rise to any plus of demand for fresh products to cancel the minus of demand which the act of saving creates. In other words, the savings made in times of depression are largely "impair savings." They increase the wealth of the savers, but diminish the wealth of the community. For the act of saving, when unaccompanied by investments which create demand for goods currently produced, disturbs the equilibrium of production and consumption and throws the whole business system out of gear. ". . . if people could be compelled to expend for luxuries such part of their surplus income as could not find investment [of the demand-producing kind], the

<sup>18</sup> Irving Fisher, *The Purchasing Power of Money* (New York, 1911), chapter iv, and chapter xi, §§ 15, 16, 17. Compare the same writer's summary statement of his theory in *Moody's Magazine*, February, 1909, pp. 110-114, and H. G. Brown's paper "Typical Commercial Crises versus A Money Panic," *Yale Review*, August, 1910.

<sup>19</sup> New York, 1908.

depression would at once be brought to an end. There would not then be an excess of working forces, since they would be absorbed in the production of luxuries, so far as not employed in new constructions, or for purposes of replacement.<sup>20</sup>



### III. THE METHOD OF INVESTIGATION

Beveridge ascribes crises to industrial competition, May to the disproportion between the increase in wages and in productivity, Hobson to over-saving, Aftalion to the diminishing marginal utility of an increasing supply of commodities, Bouniatian to over-capitalization, Spiethoff to over-production of industrial equipment and under-production of complementary goods, Hull to high costs of construction, Lescure to declining prospects of profits, Veblen to a discrepancy between anticipated profits and current capitalization, Sombart to the unlike rhythm of production in the organic and inorganic realms, Carver to the dissimilar price fluctuations of producers' and consumers' goods, Fisher to the slowness with which interest rates are adjusted to changes in the price level.

One seeking to understand the recurrent ebb and flow of economic activity characteristic of the present day finds these numerous explanations both suggestive and perplexing. All are plausible, but which is valid? None necessarily excludes all the others, but which is the most important? Each may account for certain phenomena; does any one account for all the phenomena? Or can these rival explanations be combined in such a fashion as to make a consistent theory which is wholly adequate?

There is slight hope of getting answers to these questions by a logical process of proving and criticizing the theories. For whatever merits of ingenuity and consistency they may possess, these theories have slight value except as they give keener insight into the phenomena of business cycles. It is by study of the facts which they purport to interpret that the theories must be tested.

<sup>20</sup> P. 82.

NOTE.—In order to bring out the salient points which differentiate the several theories reviewed above, I have been obliged to omit much effective detail and all corroborating evidence. In particular most writers show how the operation of the factors upon which they lay stress is reinforced and quickened by speculation. Two contributions to this important aspect of the subject deserve especial mention—Petrazycki's book on speculation and joint-stock companies, and Edward D. Jones's chapter upon the psychology of crises. L. von Petrazycki, *Aktienwesen und Spekulation*, Berlin, 1906; E. D. Jones, *Economic Crises* (New York, 1900), ch. ix.

I have omitted Pohle's interesting attempt to base a theory of crises upon the steady growth of population on the one hand, and the unsteady growth of investment on the other hand, because he has recently shifted his emphasis. In 1902 he held that in order to have proper equipment ready for the regular number of new recruits who are ever joining the industrial army, it is necessary to produce machines, raw material, etc. in larger quantities than the force of old soldiers can use. But the irregularity with which savings are invested prevents this desideratum from being realized every year. In 1910 he agrees substantially with Spiethoff, holding that the chief cause of crises is the inequality in the formation of fixed and circulating capital, adding simply that the economic and social consequences of crises are aggravated by the regularity with which population increases even in times of depression. Ludwig Pohle, *Bevölkerungsbewegung, Kapitalbildung, und periodische Wirtschaftskrisen* (Göttingen, 1902); "Konjunkturschwankungen und Konjunkturberichterstattung," *Zeitschrift für Socialwissenschaft*, Jan., 1910. Neither have I thought it necessary to include the superficial form of the under-consumption theory elaborated by Pierre Vialles in *La consommation et les crises économiques* (Paris, 1903). Finally, Mr. H. S. Jevons's ingenious attempt to revivify his father's "sun-spot theory" scarcely affords a convincing explanation of the business cycles with which this book is chiefly concerned. ("Trade Fluctuations and Solar Activity," *Contemporary Review*, August, 1909.)

But the perspective of the investigation would be distorted if we set out to test each theory in turn by collecting evidence to confirm or to refute it. For the point of interest is not the validity of any writer's views, but clear comprehension of the facts. To observe, analyze, and systematize the phenomena of prosperity, crisis, and depression is the chief task. And there is better prospect of rendering service if we attack this task directly, than if we take the round about way of considering the phenomena with reference to the theories.

This plan of attacking the facts directly by no means precludes free use of the results achieved by others. On the contrary, their conclusions suggest certain facts to be looked for, certain analyses to be made, certain arrangements to be tried. Indeed, the whole investigation would be crude and superficial if we did not seek help from all quarters. But the help wanted is help in making a fresh examination into the facts.

It is not feasible to make a study of all the crises listed in the monographs. Not only is the field too extensive to cover thoroughly, but the recorded information is also too vague, too much confined to the dramatic events of the crises, and too scanty concerning the intervening phases of depression and prosperity. Whatever chance there may be of bettering the work already done lies in securing data more full and more precise than the data heretofore employed. The minute examination of a few business cycles therefore promises better results than a general survey of many. Hence attention will be concentrated upon those cycles concerning which the fullest and most exact knowledge is available—the cycles of the last two decades. By including England, Germany, and France, as well as the United States, a sufficient number of cases can be had to warrant generalizations.

The materials most important for such an investigation are the current reports of business periodicals and the statistical records of business activities. Most stress must be laid upon the latter; for the problems to be dealt with are largely problems of the relative importance of different factors, or of the general trend of diverse fluctuations. Quantitative analysis of the phenomena is needed quite as much as qualitative analysis. Since in his efforts to make accurate measurements the economic investigator cannot devise experiments, he must do the best he can with the cruder gauges afforded by statistics.

At best, the study of statistical tables is a tedious task. In the present case the task is also long, because there are so many phases of economic activity to be looked into. But the figures may possess some measure of interest and meaning from the outset, if they appear as details of a larger system. Accordingly, the statistical chapters are prefaced by a sketch of the modern form of economic organization and of the rhythmical alternations of expansion and contraction which have run their course in the world of business since 1890.

## CHAPTER II

### THE ECONOMIC ORGANIZATION OF TODAY

#### I. MONEY ECONOMY

Money economy is one of the ancient institutions which after a checkered history has attained its fullest development in our own day under the influence of machine production and railway transportation. The essential feature of this institution is not the use of money as a medium of exchange; but the fact that economic activity takes the form of making and spending money incomes. Instead of producing the goods their families require, men "make money," and with their money incomes buy for their own use goods made by unknown hands. The exceptions to this rule presented by the domestic labors of housewives, by the raising of vegetables in kitchen gardens, by agricultural leases for shares in the crops, etc., are the last survivals of an earlier economic order in which villagers relied chiefly upon goods produced by their own efforts, and themselves consumed most of what they made.

The economic comfort or misery of a modern family, accordingly, depends not upon its efficiency in making useful goods and its skill in husbanding supplies, but upon its ability to command an adequate money income and upon its pecuniary thrift. Even in years when crops are short and mills are idle, the family with money need not go cold or hungry. But the family without money leads a wretched life even in years of abundance. To the single family, then, prosperity and depression appear not as problems of the adequacy of the goods produced, but as problems of the adequacy of money income.

To the nation the making of money is important in a fashion quite different. Comfort and misery do not depend upon the aggregate of money incomes received by its citizens; they do depend upon the abundance of useful goods. Efficiency in producing useful goods is important to an individual chiefly because it enhances his ability to make money; money-making is important to a nation chiefly because it enhances the efficiency of production. Natural resources, mechanical equipment, and industrial skill are factors of fundamental importance under any form of economic organization. But where money economy dominates, natural resources are not developed, mechanical equipment is not provided, industrial skill is not exercised, unless conditions

are such as to promise a money profit to those who direct production. The elaborate coöperative process by which a nation's myriad workers provide for the meeting of each other's needs is thus brought into precarious dependence upon factors which have but a remote connection with the material conditions of well-being—factors which determine the prospects of making money.

## II. THE BUSINESS ENTERPRISE

For purposes of making money men have gradually developed the modern business enterprise—an organization which seeks to realize pecuniary profits upon an investment of capital, by a series of contracts for the purchase and sale of goods in terms of money.<sup>1</sup> These goods usually belong to one of three classes: commodities; services, such as labor and transportation; or rights, such as bank credits, securities, and insurance.

### 1. *Uneven Development of Business Enterprise in Various Fields*

Business enterprises of the full-fledged type have come to occupy almost the whole field in finance, wholesale trade, railway and marine transportation. They dominate mining, lumbering and manufacturing. In retail trade they play an important role, and in agriculture they have secured a foothold—for example, in sugar, coffee, and rubber plantations, in market gardens, nurseries, dairies, and the like. One may even regard the independent craftsman in his repair shop, the small retailer, and the farmer as conducting business enterprises; for all these classes are learning to apply business methods, and to think of themselves as making a profit rather than as earning a livelihood. The professions also are being invaded by the spirit of business enterprise. Many newspapers seem to be managed with an eye single to profit; not a few legal, dental, and medical offices rest under a like suspicion. But, despite this wide extension of business aims and methods, there still remain broad differences of degree between the enterprises typical of the several fields of effort. In size, in complexity of organization, in dependence on the money market, in singleness of business aim, the typical farm, small retail store, handicraft shop, and professional office are not equal to the typical corporate enterprises of wholesale trade, transportation, manufacturing, lumbering, mining, and finance. The highly organized enterprises of the latter fields constitute the world of business *par excellence*.

In the study of business cycles this uneven development of business organization in different fields is highly important. For it is within the circles of full-fledged business enterprise that the alternations of prosperity and depression appear most clearly, and produce their most striking effects. Practically

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<sup>1</sup> Compare W. Sombart, *Der moderne Kapitalismus*, vol. I, p. 195.

all of the writers whose theories of crises have been reviewed agree tacitly or explicitly upon this point. They deal primarily with what goes on in the centers of commerce, industry, and finance. Branches of production and trade which are not organized in elaborate business enterprises are much less susceptible both to the stimulus of prosperity and the inhibition of depression. In country districts, for example, the pace of activity is subject to seasonal but not to cyclical changes such as occur in factory towns. The farmers are never thrown out of work, except by bad weather, and they are never over-rushed except by seed-time and harvest. In other words, the scope and the intensity of prosperity and depression appear to depend upon the extent and the perfection of business organization. The condition of the inner world of business, indeed, affects powerfully, and is powerfully affected by, what goes on among the outside masses of producers and distributors; but the inner world always remains the focus of interest.

## 2. *The Interdependence of Business Enterprises*

Not less important for the study of business cycles is the thoroughgoing interdependence of business enterprises. For the accountant's purpose each enterprise may be treated as a separate unit; but for the economist's purpose all enterprises are so bound to each other by industrial, commercial, and financial ties that none can prosper and none can suffer without affecting others.

As a plant concerned with the handling of commodities, the typical enterprise is one cog in a great machine. Our industries are carried on by sets of nominally independent plants which pass on goods to each other in serial succession. For example, one series embraces wheat-growers, grain-carrying railways, elevators, flour mills, wholesale dealers in provisions, bakeries, and retail distributing agencies. Each set of members in such a series is dependent upon the preceding set for its chief supplies and upon the succeeding set for its chief vent. The wheat, the flour, and the loaves flow through the successive sets of enterprises in a ceaseless river, though the volume of the flow is not steady. Further, no industrial series is self-sufficing, even as a whole. Each set of enterprises in our example, from the farms to the retail agencies, is industrially dependent on other industrial series which equip it with buildings, machines, fuel, office supplies, etc. A peculiar degree of mutual dependence exists between the whole mass of industries on the one hand, and the railways on the other hand. Coal mining and the steel trade also touch practically every industrial establishment in one way or another. So far has the process of industrial differentiation and integration been carried that "the whole concert of industrial operations is to be taken as a machine process, made up of interlocking detailed processes, rather than as a multiplicity of mechanical appliances each doing its particular work in severalty."<sup>2</sup>

<sup>2</sup> Veblen, *Theory of Business Enterprise*, p. 7.

Since the continuous flow of goods through the successive sets of enterprises which form interlocking series, and the transfers of goods between enterprises belonging to different industries, are maintained by contracts of purchase and sale, there is no need to enlarge upon the commercial aspect of the inter-relations. Each enterprise is affected by the fortunes of its customers, its competitors, and the purveyors of its supplies.

Financial interdependence is also in part but another aspect of the industrial and commercial bonds. Complicated relationships of debtor and creditor arise from the purchase and sale of goods upon credit, and make the disaster of one enterprise a menace to many. On this financial side the banks bear a relation to all other enterprises like that which the railways bear on the industrial side; for all enterprises buy bank credit much as they buy transportation. As a serious congestion of traffic applies the brake to industrial operations, so the inability of banks to lend applies the brake to business dealings. But there is a less obvious type of financial relationship which is rapidly assuming importance. The corporate form of organization makes easy the acquisition of a common ownership in enterprises nominally independent of each other. The same capitalist or coterie of capitalists often owns a large or even a controlling interest in companies doing different kinds of business, or the same kind in different places. Thus the selling agent may acquire an interest in the factory whose output he handles; the manufacturer may manage his own retail stores or check competition by buying stock in a rival company, or secure his own raw materials by taking over a mine; the great capitalist may invest in steel and real estate, in railways and banks, in newspapers and hotels. Thus also we have our "chain" shops, "chain" banks, "chain" newspapers, "chain" theatres, "chain" lumber-yards, and the like. Often the alliance is made closer yet by one corporation buying stock in rival or tributary companies. The scale which such relations have assumed is shown by the Interstate Commerce Commission's report upon the intercorporate relationships of American railways. On June 30, 1906, the par value of railway stocks outstanding was 8,884 million dollars, of which the railways themselves held 4,115 millions. In addition, they held 323 millions of stock in other than railway enterprises.<sup>3</sup>

### *3. Pecuniary versus Industrial Factors in Business Prosperity*

A business enterprise may participate directly or indirectly in the work of providing the nation with useful goods, or it may not. For there are divers ways of making money which contribute nothing toward the nation's welfare, and divers ways which are positively detrimental to future welfare. But, for the understanding of prosperity and depression, it is more important to observe that even the enterprises which are most indubitably making useful

<sup>3</sup> *Intercorporate Relationships of Railways in the United States as of June 30, 1906.* Special Report no. 1, pp. 9 and 48.

goods do so only so far as the operation is expected to serve the primary business end of making profits. Any other attitude, indeed, is impracticable under the system of money economy. Only government and philanthropy can afford to make public welfare their first consideration. For the man who allowed his humanitarian interests to control his business policy would soon be forced out of business. From the business standpoint the useful goods produced or helpful services rendered are merely by-products of the process of earning dividends. It follows that a theory of modern prosperity must deal primarily with business conditions—with the pecuniary aspect of economic activity.

The practice has long prevailed among economists of neglecting this aspect on the ground that money is merely a symbol, the use of which makes no difference, save one of convenience, so long as the monetary system is not out of order. The economists have looked beneath "the money surface of things" to the labor and goods, or the sacrifices and utilities, which they assumed to be the matters of real concern.<sup>4</sup> When applied to the theory of crises, this practice has diverted attention from the difficulties of business to the difficulties of industry, as if the latter were the fundamental source of economic ills. Thus "over-production" has sometimes been represented as if it were a chronic disorder of the factory system as such, which periodically infects the business world and causes an epidemic of bankruptcies.

Such a view confuses the investigation of crises because it obscures the relations between industry, commerce, and business. The industrial process of providing and transporting goods, the commercial process of collecting and redistributing them, and the business process of making money are measurably distinct, although they run side by side and are largely concerned with the same commodities. For the well-being of the community, efficient industry and commerce are vastly more important than successful money-making. A business panic which did not interrupt the making and distributing of wares desired by the community would be no great disaster. But the whip-hand among these three processes belongs none the less to business, since the very men who as manufacturers and merchants provide for the common welfare base their operations on the prospect of money profits. In practice, industry and commerce are thoroughly subordinated to business.

To be sure, business prospects are constantly influenced by changes in industry and commerce. A new invention may have important economic consequences; but not unless it reduces costs, alters selling prices, or in some other way affects the pecuniary calculations of business men. Likewise a change of commercial centers or methods may stimulate or depress business in a given district. Such technical changes, indeed, are among the important factors which business men take into consideration in laying plans. In so far forth they become important factors for the student of crises. It is not the disturb-

<sup>4</sup> Compare Wesley C. Mitchell, "The Rationality of Economic Activity," *Journal of Political Economy*, March, 1910, pp. 205-215.

ances which they produce directly in the production and distribution of goods, however, which gives them weight as causes of prosperity or depression, but the indirect influence which they exercise upon business.

In fine, business cycles get their economic interest from the changes which they produce in the material well-being of the community. This well-being depends upon the production and distribution of useful goods. But the industrial and commercial processes by which goods are furnished are conducted by business men in quest of profits. Thus the changes which affect the community's well-being come, not from the processes which directly minister to it, but from the process of making money. So thoroughly is this the case that changes in the technique of industry and commerce affect the community primarily by stimulating or retarding business activity and then working back to alter the volume of goods provided for social consumption. Accordingly, the conclusion holds that an investigation into the ebb and flow of contemporary economic activity must concern itself primarily with the phenomena of business traffic—that is, of money-making.<sup>5</sup>

#### 4. *Factors Affecting Pecuniary Profits*

Business prosperity, in its turn, depends upon the factors which control present and prospective profits, together with present and prospective ability to meet financial obligations. Profits are made by connected series of purchases and sales—whether in commerce or manufacture, farming or mining. Accordingly the margins between the prices at which goods can be bought and sold are the fundamental condition of business prosperity. Closely connected with, and in large measure dependent upon, price-margins is the other great factor—the volume of transactions effected.

Just as the ever recurring changes within the system of prices affect business prosperity and through it national welfare, so do changes in national welfare and business prosperity react upon prices. A period of business expansion causes an interminable series of readjustments in the prices of various goods. These readjustments in their turn alter the pecuniary prospects of the business enterprises which buy or sell the commodities affected, and thereby start new changes in business prosperity. With the latter changes the process begins anew. Prices once more undergo an uneven readjustment, prospects of profit become brighter or darker, business prosperity waxes or wanes, prices feel the reflex influence of the new business situation,—and so on without end.

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<sup>5</sup> Practically all the recent theories rest tacitly upon this basis. Veblen is explicit upon the point: *Theory of Business Enterprise*, pp. 177-182.

### III. THE SYSTEM OF PRICES

The prices ruling at any given time for the infinite variety of commodities, services, and rights which are being bought and sold constitute a system. That is, these prices are so related to each other as to make a regular and connected whole.

#### 1. *The Prices of Consumers' Commodities*

The prices which retail merchants charge for consumers' commodities afford the best starting-point for a survey of this system. These prices are loosely connected with each other; for an advance in the price of any commodity usually creates an increased demand for other commodities which can be bought as substitutes in certain if not all of its uses, and thus creates business conditions which favor an advance in the prices of these substitutes.

But retail prices are more closely related to the prices for the same goods which shop-keepers pay to wholesale merchants, and the latter to manufacturers. Of course, this series of prices for consumers' commodities often has more or less than three members, because of the intervention of more than one wholesale or jobbing house or of an importer in the regular traffic, or because of direct selling by manufacturers to retail merchants or even to consumers. There is wide diversity also in the margins between the successive prices in the series. These margins are usually wider in retail than in wholesale trade; wider on goods limited in sale, perishable, requiring a large assortment for selection, subject to changes in fashion or in season, than on durable staples; wider when the manufacturer sells directly to the consumer than when wholesale and retail merchants intervene; wider when a monopolist can fix prices in his own favor than under conditions of keen competition, etc. But these diversities are themselves measurably regular, so that the margins between the successive prices in the series for each kind of commodities forms a tolerable business basis for making profits out of the process of supplying the community with the goods it habitually uses.

#### 2. *The Prices of Producers' Goods in Relation to the Prices of Consumers' Commodities*

The business men engaged in squeezing money profits out of these price-margins are seldom able to keep the whole difference between selling and buying prices. From retailers back to manufacturers they require various commodities, services, and rights for the efficient conduct of their operations. For such producers' goods they have to pay out prices which eat into the profit-

margins on the consumers' goods in which they deal. The most important classes of these producers' goods are commodities such as raw materials and current supplies, buildings with proper machinery or other equipment, manual and mental labor, loans, leases, transportation, insurance, and advertising.

To merchants, the prices paid for all these producers' goods are important factors in fixing the margins between the buying and selling prices of the consumers' goods in which they deal. But, save in the case of transportation and certain kinds of labor, it is difficult to connect directly the prices which figure as costs with the margins upon which particular commodities change hands. For the cost prices of the other producers' goods are usually paid for the pecuniary advantage of the enterprise as a whole, and the accruing benefits extend to many transactions and often cover a long time. The like is true of manufacturers, with this modification, that they often regard the margins between the prices of their chief raw materials and their leading products much as merchants regard the margins between the buying and selling prices of their staple wares. That is, manufacturers often think of the difference between these particular prices as *the* margin on which they deal, and from which the costs of their other producers' goods must be deducted in figuring net profits.

### 3. *The Prices of Producers' Goods in Relation to Antecedent Prices*

With the exception of labor, producers' goods are provided, like consumers' goods, chiefly by business enterprises operating on the basis of margins between buying and selling prices. Hence the price for any given producers' good is related not only to the prices of the consumers' goods in the manufacture or distribution of which it is used, but also to the prices of the various other producers' goods employed in its own manufacture and distribution. Thus the prices of producers' goods do not form the ends of the series of price relationships, but the beginnings of new series of relationships which run backward with countless ramifications and never reach definite stopping points. Even the prices of raw materials in the hands of the ultimate producers are related intimately to the prices of the labor, current supplies, machinery, buildings, land, loans, leases, etc., which the farmers, miners, lumbermen, etc., employ.

Concerning the prices of such producers' goods as consist of material commodities no more need be said. And most of the less tangible services—loans, transportation, insurance—require but a word. They are the subjects of an organized business traffic in which price margins are computed on the same general principles as prevail in the buying and selling of commodities. Therefore, the prices charged by the bank, the railway, and the insurance company

are systematically related both to the prices which these enterprises must pay for their own producers' goods and to the prices of the wares dealt in by the enterprises which borrow money, ship goods, and carry insurance.

The price of labor may seem to bring the series to a definite stop at least at one point. For, in most cases, the laborer or his union deals directly with the employer or his association, and the laborer does not have a business attitude toward the production of his own energy. But the price which the laborer can command is indubitably connected with the prices of the consumers' goods which established habit has made into a standard of living. At this point, therefore, analysis of the interrelations between prices brings us not to a full stop, but back to our starting-point,—the prices of consumers' commodities.

#### 4. *The Prices of Business Enterprises*

Besides the prices of consumers' commodities, of raw materials, and of other producers' goods, we must take account of the prices of business enterprises themselves. Occasionally established business enterprises are sold outright as running concerns. Promoters are also constantly offering new business schemes, or reorganizations of old enterprises for sale. But the most important transactions of this class are stock-exchange dealings in the shares of joint-stock companies. That the prices of whole business enterprises or of shares in them are intimately related to the prices which have been discussed is clear; for these prices depend primarily upon present and prospective profits, and profits depend primarily upon price-margins and the volume of business transacted.

#### 5. *The Prices of Services to Persons*

There remains one other division of the system of prices—a division which has much in common with the prices of consumers' goods on the one hand and with the prices of labor as a business adjunct on the other hand. It consists of the prices of the heterogeneous services rendered to persons as such—not to business enterprises. Here belong the prices of domestic service, medical attendance, much instruction, many forms of amusement, etc. The furnishing of such services presents a certain contrast to the business traffic in consumers' goods, materials, machinery, loans, transportation, etc. For systematic organization has not been developed to so high a point, business motives do not have such unrestricted scope, and the wares are not standardized in equal measure.

Moreover, the prices which people are willing to pay for such services are based on personal needs and personal income, rather than on closely calculated chances of profit. The prices of these services therefore form the most loosely organized and irregular division of the system of prices.<sup>8</sup>

### 6. *The Interrelations between Prices* ✓

The value of this classification of prices is that it assists in seeing the relations which bind all prices together and make of them a system. The close relations between the prices of consumers' commodities, materials, business adjuncts of all kinds, and of business enterprises are sufficiently clear, and enough has been said about the looser bonds which unite the prices of services to persons with the larger field of business traffic. But several other lines of relationship should be indicated more definitely.

(1) On the side of demand almost every producers' or consumers' good has its possible substitutes in certain or in all uses. Through the continual shifting of demand, changes in the price of one commodity are often communicated to the prices of its substitutes, from the latter to the prices of their substitutes, and so on. An initial change, however, usually becomes smaller as it spreads out in these widening circles.

(2) Similarly, on the side of supply, almost every good has genetic relationships with other goods, made of the same materials, or supplied by the same set of enterprises. Along these lines also price-changes may spread over a wide field. Particularly important because particularly wide are the genetic relationships based upon the use of the same producers' goods in many lines of trade. Floating capital most of all, in somewhat less degree transportation and certain general forms of labor, current supplies, machinery and plant, not to mention the less important insurance and advertising, enter into the cost of

<sup>8</sup> A tabular survey may assist in getting a general view of the system of prices:

Prices of consumers' commodities charged by:	Retail dealers
	Wholesale dealers
	Manufacturers
Prices of producers' goods:	Raw materials
	Current supplies
	Machinery
	Buildings, etc.
	Leases
	Labor
	Bank loans
	Investment loans
	Transportation
	Insurance
	Advertising
Prices of business enterprises.	
Prices of services to persons.	

Behind the prices of each group entered in this classification stands an equally complex array of antecedent prices, and between the several groups exist interrelations too intricate to be set forth in tabular form.

most commodities. Accordingly, a changed price established for one of these common producers' goods in any important use may extend to a great diversity of other uses, and produce further price disturbances without assignable limits.

(3) Closely connected with this genetic relationship through common producers' goods is the relationship through business competition, both actual and potential. Insofar as effective competition exists, a state of price-margins which makes any one trade decidedly more or less profitable than other trades in the same market area cannot long maintain itself. For sooner or later the influx or efflux of capital so changes the supply of the commodities concerned as to restore a balance on the basis of cost prices.

(4) Present prices are affected by prices of the recent past and the anticipated prices of the near future. Indeed, present prices are largely determined by past bargains, which established time contracts. Thus the price system has no definable limits in time. No analysis can get back to the ultimate term in the endless series of bargains which helped to make the prices of the present.

(5) Nor has the system of prices any logical beginning or end. At whatever point analysis may start to follow the interlocking links, to that point will analysis come again if it proceeds far enough. The above analysis, for example, began with the prices of consumers' goods at retail. These prices are paid out of personal incomes. But these incomes are themselves aggregates of prices received for labor, for the use of loan funds, or for the use of rented property; or they are aggregates of the net price-margins which yield profits. Thus the system of prices is an endless chain.

### *7. The Role of Prices in Economic Life*

Prices, then, form a system—a highly complex system of many parts connected with each other in diverse ways, a system infinitely flexible in detail yet stable in the essential balance of its interrelations, a system like a living organism in its ability to recover from the serious disorders into which it periodically falls.

The most significant fact about the system of prices, however, is the function it performs in the economic life of nations. It serves as a social mechanism for carrying on the process of providing goods. For prices are the means which make possible the elaborate exchanges, and the consequent specialization, which characterize the modern world. They are the source from which family income is derived, and the means by which goods are obtained for family consumption; for both income and cost of living—the two jaws of the vice in which the modern family is squeezed—are aggregates of prices. Prices also render possible the rational direction of economic activity by accounting, for accounting is based upon the principle of representing all the heterogeneous

commodities, services, and rights with which a business enterprise is concerned in terms of money price. Most important of all, the margins between different prices within the system hold out that hope of pecuniary profit, which is the motive power that drives our business world.

#### IV. THE GUIDANCE OF ECONOMIC ACTIVITY

##### 1. *The Role Played by Technical Experts*

The making and distributing of goods by the elaborate modern methods requires highly skilled direction. On the technical side the work is planned by and executed under the supervision of civil, mechanical, mining, and electrical engineers, designers, industrial chemists, "efficiency experts," etc. These are the men who know how to extract raw materials, refine and manufacture them, devise and operate machinery, organize working forces,—in short, the men who know how to secure the physical efficiency of economic effort. By applying the results and the methods of science to the every day work of the world, they have led the rapid advance in the technique of production of which we feel so proud.

##### 2. *The Role Played by Enterprisers<sup>9</sup>*

But in no country in the world are these technical experts allowed free scope in directing the work of providing material goods. Higher authority is assigned by the money economy to another class of experts, business men who are skilled not in making goods, but in making money. As an employee of the business man, the engineer must subordinate his interest in mechanical efficiency to his superior's interest in profitable investment. The chief role in directing what use shall be made of the country's natural resources, machinery, and labor is therefore played by its enterprisers.

But who and what are these enterprisers? The classical economists assumed that there stood at the head of the typical business enterprise a capitalist-employer, who provided a large part of the capital invested, assumed the pecuniary risk, performed the "work of superintendence," and pocketed the profits. Many enterprisers of this versatile type remain today; but the extraordinary growth in size and influence of the joint-stock company has given greater prominence to another form of business management.

The large corporation, dominant in the business of today, is owned by a miscellaneous and shifting body of stockholders. The funds required for fixed investment are usually provided in some measure by these owners, but in larger

<sup>9</sup> Among the various aliases under which the old "capitalist-employer" and his successors pass today, "enterpriser" seems the least objectionable. It is an old English word, recently brought back into use at almost the same time by F. A. Fetter, *Principles of Economics* (New York, 1904), and by H. Stanley Jevons, *Essays on Economics* (London, 1905).

part by bondholders, who may or may not own shares as well as bonds. The chief pecuniary risks are borne by the shareholders, but ordinarily under provisions which limit their liability to the sums which they have put into their shares. The work of management is largely dissociated from ownership and risk. The stockholders delegate the supervision of the corporation's affairs to a committee—the directors—and the directors turn over the task of administration to a set of general officers. The latter are commonly paid fixed salaries, though they may receive in addition a percentage of the profits, or hold stock in their own right.

In such an organization it is difficult to find anyone who corresponds closely to the capitalist-employer. Certainly the typical stockholder, who takes no part in managing the corporation beyond sending in his proxies to be voted at the annual meeting, does not fill the bill. Neither does the typical director, who confines such attention as he may give the corporation's affairs to passing on questions of general policy, selecting officers, criticizing or approving their reports, and the like. Finally, the general officers, dependent on the directors, remunerated largely if not wholly by salaries, and practicing among themselves an elaborate division of labor, have no such discretion and carry no such risk as the capitalist-employer. The latter, in fine, has been replaced by a "management," which includes several active directors and high officials, and often certain financial advisers, legal counsel, and large stockholders who are neither directors nor officials. It is this group which decides what shall be done with the corporation's property.

In other cases, however, a single enterpriser dominates the corporation, and wields full authority. The stockholders elect his candidates to office, the directors defer to his judgment, the officials act as his agents. His position may be firmly entrenched by outright ownership of a majority of the voting shares, or may rest upon personal influence over the owners of voting shares sufficient to carry elections. In these "one-man" corporations the theoretical division of authority and function becomes a legal fiction. Practically, the dominating head of affairs, who may not be an officer or even a director, corresponds to the old capitalist-employer, except for the fact that he furnishes a far smaller proportion of the capital, carries a far smaller proportion of the pecuniary risk, and performs a far smaller proportion of the detailed labor of superintendence. These limitations do not restrict, but on the contrary enhance his power, because they mean that the individual who "owns the control," or dominates those who own it, can determine the use of a mass of property and labor vastly greater than his own means would permit.

Thus, while the corporate form of organization has made a theoretical division of the leadership of business enterprises among several parties at interest, it has also made possible in practice a centralization of power. The great captains of finance and industry wield an authority swollen by the capital

which their prestige attracts from thousands of investors, and often augmented still further by working alliances among themselves. Among the enterprisers of the whole country, this small coterie exercises an influence out of proportion not only to their numbers but also to their wealth. The men at the head of smaller enterprises, while legally free to do as they will with their own, find their field of initiative limited by the operations of these magnates.

Another result of the rise of large corporations controlled by one or by a few individuals is that the latter have an opportunity to make money for themselves at the expense of the enterprise itself, or at the expense of the other parties at interest. By giving lucrative contracts to construction or repair companies in which they are interested, by utilizing their advance information of the corporation's affairs for speculation in the prices of its shares, by rigging its accounts for the same purpose, by making loans or granting secret rebates to other enterprises in which they are interested, and by other shifts, it is often possible for an inner ring to make profits out of wrecking the corporation or defrauding the outside holders of stock and bonds. Of course such temptations are resisted in the great majority of cases, but scandals of this kind occur with sufficient frequency to invalidate the easy assumption that every business enterprise is managed to make money for the whole body of its owners.

Within the class of enterprisers there has gradually been differentiated a special set, which plays an exceptionally active role in guiding economic activity—promoters. The promoter's special province is to find and bring to the attention of investors new opportunities for making money: new natural resources to be exploited, new processes to be developed, new products to be manufactured, new organizations of existing business enterprises to be arranged, etc. But the promoter is seldom more than an explorer who points out the way for fresh advances of the army of industry. When an enterprise of his imagination has been organized and begun operations, the promoter does not often retain the leadership for long. As permanent officers men of more cautious temper and more systematic habits commonly take command.

### 3. *The Role Played by Lenders*

The enterprisers, indeed, do not have unlimited discretion in deciding what use shall be made of the available resources, equipment, and labor. In matters of importance their decisions are subject to review by a higher court. For most business projects require the use of funds borrowed from banks, large capitalists, or from the investing public, and this fact gives the lenders an effective veto power over proposals which do not meet their approbation.

Whenever an enterpriser applies to an individual capitalist to take an interest in some project, to a bank to discount his notes, or to the investing public to buy bonds, he must satisfy the lenders of his ability to keep up the

interest and to repay the principal. Even when the applicant can provide collateral security for the loan, and obviously when he cannot, the lender's decision depends largely upon his own judgment regarding the business prospects of the intended venture. To aid their officers in forming intelligent decisions, banks are coming to require applicants for loans to make on standard forms systematic statements of their financial standing and projects. In addition, the banks and the houses which grant mercantile credits subscribe to commercial agencies and maintain credit departments of their own for the purpose of collecting and classifying information about the business standing and prospects of their customers. Similarly, corporations which offer bonds or stocks for sale find it advisable to publish advertisements and circulars setting forth their financial condition, the purposes for which money is being raised, and the anticipated profitableness of the extensions in view. Affidavits from certified public accountants, legal counsel, and consulting engineers are often appended to lend these statements greater force.

The review of the projects of enterprisers by lenders, then, is no perfunctory affair. Nor is its practical influence upon the guidance of economic activity negligible. There are always being launched more schemes than can be financed with the available funds. In rejecting some and accepting others of these schemes, the men of money are taking a very influential though not a very conspicuous part in determining how labor shall be employed, what products shall be made, and what localities built up.

Not all lenders, however, are able to make intelligent decisions. The great mass of small investors and not a few of the large lack the experience or the ability to discriminate wisely between profitable and unprofitable schemes. Many such folk put their money into savings banks, rely upon the advice of friends who are better equipped, consult with their bankers, take counsel from the financial press, or follow what they suppose to be the lead of some conspicuous figure in high finance. Not being able to obtain from impartial sources or personal examination the data necessary for forming an independent judgment, they cannot work out their problems along strictly rational lines. Hence they are peculiarly subject to the influence of feeling in matters where feeling is a dangerous guide. The alternating waves of overconfidence and unreasoning timidity which sweep over the investment market are among the most characteristic phenomena of business cycles. Even those who are looked to for advice are not wholly immune from the contagion of emotional aberration. It follows that the guidance of economic activity by the investing class is not strictly comparable with the intelligent review of plans by competent experts.

A more vigorous and more intelligent leadership is exercised by the larger capitalists. They excel the investing public not only in means of securing information and in business sagacity, but also in ability to control conditions. The greatest lenders become perforce much more than lenders. Over the

enterprises in which they embark large sums they must keep watchful eyes. They support the prices of their securities on the stock market, seek to maintain profitable connections with customers and financial institutions, keep informed concerning the business of competitors, arrange consolidations, plan dividend disbursements, and the like—in short, care for all the varied financial interests of the enterprises in which their fortunes and their prestige are at stake. On the highest levels of business success, indeed, the functions of the investor and the enterpriser merge into each other. The great capitalist becomes a great promoter. He not only vetoes schemes, but forms them and sees that they are carried out.

#### 4. *The Role Played by Government*

A fundamental difference of principle sets off the role played by government in guiding economic activity from that played by business enterprises. While business enterprises aim at making money, government aims at securing public welfare.

Notoriously, this broad difference of principle is sadly blurred in practice. Even in the most democratic countries, public welfare is not always the ruling passion of the men elected to office. Besides, public welfare remains so vague a concept as to leave wide room for differences of opinion about the relative value of rival policies proposed for its promotion. Moreover, among the citizens of a money economy the habit of applying pecuniary tests and accepting pecuniary standards gives a strong commercial flavor to their very statesmanship. Finally, government is forced to pursue its social ends largely by business methods. It must count the cost even when it cannot count the gains of what it does in dollars, and by some shift it must raise a money revenue to defray its money outgo. But, after all the necessary qualifications have been made, it still holds true that in dealing with economic problems government keeps closer to fundamental issues than is feasible for business men. Government can consider what needs it is important to satisfy, while business men must consider what market demand it is profitable to supply or profitable to create.

Were this difference of aim the sole difference between the public and private guiding of economic activity, society would probably be organized on the basis of state socialism instead of on the basis of money economy. But there is this further difference, that government is far less efficient in pursuing its aim of social welfare than business enterprise in pursuing its aim of making money. The scope actually accorded to government in managing industry has been affected no less by apprehension of this shortcoming than by appreciation of government's function as the guardian of common interests.

The few services which are almost everywhere performed by government are services in which management for profit is deemed quite incompatible with public welfare. Schools run for profit would not teach the children of the very poor; sanitary bureaus run for profit could not force their services upon communities which need attention, etc. The longer list of services which in some places are assumed by government and in others left to business enterprise fall mainly into four classes: undertakings like water supply, street cars, and railways which are most economically managed as monopolies and therefore open to the suspicion of practicing extortion; undertakings like the management of forests in which the community is interested in conserving sources of supply over a longer period than competing business enterprises think it profitable to regard; undertakings like the improvements of rivers and harbors, the reclamation of waste lands, and the building of canals in which the prospects of profit are not sufficiently bright to attract the requisite amount of private capital; and undertakings like the salt, tobacco, mining, and lottery monopolies of Europe which are frankly exploited by government for the sake of raising revenue.

Over a far wider field, government affects the guidance of economic activity by trying to prevent the pursuit of private profit from clashing with public welfare. Factories are required to adopt expensive safeguards for the benefit of their employees or patrons; they are forbidden to employ the cheap labor of young children, to keep women at work more than eight hours a day, etc. Most of these regulations are negative in character; but government also attempts to direct business enterprise into undertakings which are claimed to be socially advantageous though unprofitable without assistance from the state. Protective tariffs upon imports, bounties upon the production of sugar, and ship subsidies are examples in point.

Still more in general, the whole plan of raising public revenues and deciding public expenditures, the methods of providing for the public defense and maintaining domestic order, the monetary system and even the form of political institutions, in short, everything government is and does, influences the direction of economic activity. For the money economy is so flexible a form of organization that the prospects of profits and therefore the direction of economic activity by private initiative are affected by a thousand acts of government done for other than economic ends.

##### 5. *The Alleged "Planlessness" of Production*

With technical experts to guide the making of goods, business experts to guide the making of money, lenders to review all plans requiring large investments, and government to care for the public welfare, it may seem as if the money economy provides a staff and a procedure adequate to the task of directing economic activity, vast and difficult as that task may be. This

impression is strengthened by observing that each class of business leaders is spurred to efficiency and deterred from recklessness by danger of pecuniary loss. The engineer who blunders is discharged, the enterpriser who blunders goes into bankruptcy, the lender who blunders loses his money. Thus the guides who misdirect the industrial army are always being eliminated from the number of those who lead. On the other hand, those who succeed are always being promoted to posts of wider power. The successful engineer is trusted with larger commissions, the successful enterpriser uses his profits to extend his business, the successful investor has more money to lend.

With this powerful stimulation of individual efficiency, the money economy unites an opportunity for coöperation on a grand scale. By paying money prices, the leaders can enlist the aid of laborers who contribute work of all kinds, of expert advisers who contribute special knowledge, of landlords who contribute the uses of their property, and of investors who contribute the uses of their funds. And all these classes can be made to work in disciplined order toward the execution of a single plan.

This union between encouragement of individual efficiency and opportunity for wide coöperation is the great merit of the money economy. It provides a basis for what is unquestionably the best system of directing economic activity which men have yet practiced. Nevertheless, the system has serious limitations.

1. The money economy provides for effective coördination of effort within each business enterprise, but not for effective coördination of effort among independent enterprises.

The two schemes of coördination differ in almost all respects. Coördination within an enterprise is the result of careful planning by experts; coördination among independent enterprises cannot be said to be planned at all; rather is it the unplanned result of natural selection in a struggle for business survival. Coördination within an enterprise has a definite aim—the making of profits; coördination among independent enterprises has no definite aim, aside from the conflicting aims of the several units. Coördination within an enterprise is maintained by a single authority possessed of power to carry its plans into effect; coördination among independent enterprises depends on many different authorities contending with each other, and without power to enforce a common programme except so far as one can persuade or coerce others. As a result of these conditions, coördination within an enterprise is characterized by economy of effort; coördination among independent enterprises by waste.

In detail, then, economic activity is planned and directed with skill; but in the large there is neither general plan nor central direction. The charge that "capitalistic production is planless" therefore contains both an important element of truth and a large element of error. Civilized nations have not yet developed sufficient intelligence to make systematic plans for the sustenance of their populations; they continue to rely on the badly coördinated efforts of

private initiative. Marked progress has been made, however, in the skill with which the latter efforts are directed, and also in the scale on which they are organized. The growth in the size of business enterprises controlled by a single management is a gain, because it increases the portion of the field in which close coördination of effort is feasible.

2. But, as pointed out above, the managerial skill of business enterprises is devoted to making money. If the test of efficiency in the direction of economic activity be that of determining what needs are most important for the common welfare and then satisfying them in the most economical manner, the present system is subject to a further criticism. For, in nations where a few have incomes sufficient to gratify trifling whims and where many cannot buy things required to maintain their own efficiency or to give proper training to their children, it can hardly be argued that the goods which pay best are the goods most needed. It is no fault of the individual business leaders that they take prospective profits as their own guide. On the contrary, they are compelled to do so; for the men who mix too much philanthropy with business soon cease to be leaders. But a system of economic organization which forces men to accept so artificial an aim as pecuniary profit cannot guide their efforts with certainty toward their own ideals of public welfare. The business management of single enterprises may be admirably systematic in detail; but it is controlled by no large human purpose.

3. Even from the point of view of business, prospective profit is an uncertain, flickering light. For it has already been shown that profits depend upon two variables—on margins between selling and buying prices and on the volume of trade,—related to each other in unstable fashion, and each subject to perturbations from a multitude of unpredictable causes. That the system of prices has its own order is clear; but it is not less clear that this order fails to afford certainty of business success. Men of long experience and proved sagacity often find their calculations of profit upset by conjunctures which they could not anticipate. Thus the money economy confuses the guidance of economic activity by interjecting a large element of chance into every business venture.

4. The hazards to be assumed grow greater with the extent of the market and with the time which elapses between the initiation and the fruition of an enterprise. But the progress of industrial technic is steadily widening markets, and requiring heavier investments of capital for future production. Hence the share in economic leadership which falls to lenders, that of reviewing the various chances offered them for investment, presents increasing difficulties. And, as has been shown, a large proportion of these lenders, particularly of the lenders on long time, lack the capacity and the training for the successful performance of such work.

These defects in the system of guiding economic activity and the bewildering complexity of the task itself allow the processes of economic life to fall into

those recurrent disorders which constitute crises and depressions. Much patient analysis, however, is required to discover just how these disorders arise, and why, instead of becoming chronic, they lead after a time to the return of prosperity.

## V. INTERNATIONAL DIFFERENCES IN ECONOMIC ORGANIZATION

### 1. *The Fundamental Similarity of Organization*

In its broader features, the economic organization of the United States, England, France, and Germany is substantially the same. Money economy prevails in all four countries. In each the business enterprise is the dominant form of organization for making money, and in each the business enterprises engaged in wholesale trade, manufactures, mining, lumbering, transportation, and finance show a higher degree of development than the business enterprises engaged in handicraft, petty trade, farming, and the professions. Everywhere the business enterprises, though nominally independent, are so bound together by industrial, commercial, and financial bonds that "the injury of one is the concern of all." Everywhere the making of goods is subordinated to the making of money, so that economic welfare depends on the prosperity of business. Everywhere economic activity is directed by technical experts, enterprisers, investors, and governments, and everywhere there exists the same combination of careful planning within each business enterprise and lack of a general plan for the guidance of all enterprises. Finally, the organization of the system of prices and its role in the business world, the influence on profits exercised by the volume of trade and the factors which condition it, the character of the means of payment in use, and the dependence of business upon savings and investment are much the same in Western Europe as in North America. The framework of economic culture, in short, belongs to no one country.

But this substantial uniformity of general scheme does not preclude a myriad of differences in detail. Those of chief moment for the theory of business cycles appear to be the following.

### 2. *The Relative Importance of Different Industries*

A larger proportion of the English population is engaged in manufacturing industries than in any of the other countries, and conversely a smaller proportion is engaged in agriculture. Hence the business prosperity of England depends less on the prosperity of her farmers than is the case in France,

Germany, or the United States.<sup>10</sup> On the other hand, foreign commerce is greater both relatively and absolutely in England than in our other countries, and consequently English business cycles are affected in exceptional degree by the state of foreign markets.

### 3. Thrift and Enterprise

The French have decidedly less of the spirit of business enterprise than the Americans, English, or Germans. Their railways could not be built without a state guarantee of dividends; their merchant marine relies on bounties; their great credit companies, founded largely for the establishment of new enterprises, have gone over to the less hazardous business of accepting deposits and handling investments for customers; their private banks are concerned mainly with transactions in foreign exchange and short-time credits. The Frenchman has less liking than the men of the other countries for the game of business. He aims to secure a competency by thrifty conduct of business along familiar lines, and then to retire and invest his accumulations in *rentes*. Hence French business does not exhibit striking alternations of prosperity and depression, and French crises are not severe.<sup>11</sup>

On the other hand, the French surpass the people of the three other nations in thrift. In recent years France has displaced England as the world's great lender. For the relative lack of business enterprise, combined with the enormous aggregate of small savings, provides each year hundreds of millions of francs which seek investment in foreign securities. And the French exhibit their characteristic business conservatism in the selection of investments. Occasionally they may buy freely of speculative stocks, like "Kaffirs"; but the bulk of their savings goes into public securities, high grade railway and industrial bonds, or into the stocks which are most firmly established as dividend payers.<sup>12</sup>

<sup>10</sup> The *Statistisches Jahrbuch für das Deutsche Reich*, 1909, p. 14,\* gives a classification of breadwinners in different countries from which the following figures are taken:

	United States 1900	England and Wales 1901	France 1901	German Empire 1907
Agriculture, forestry and fishing .....	35.9%	8.8%	41.8%	35.2%
Manufactures and mining .....	24.1	48.0	35.5	40.0
Trade and transportation .....	16.3	23.0	9.5	12.4
Other occupations .....	23.7	20.2	13.2	12.4
	100.0	100.0	100.0	100.0

Differences in the methods of classifying occupations adopted in the several censuses make this comparison trustworthy only for the most general conclusions. The American figures for "other occupations," for example, are unduly large because of the great number of "laborers, not specified"; the French figures for "Manufactures and mining" are swollen and the figures for "Trade and transportation" diminished by putting persons engaged in transportation under the former caption, etc.

<sup>11</sup> Compare K. Wiedenfeld, "Das Persönliche im modernen Unternehmertum," Schmöller's *Jahrbuch für Gesetzgebung*, 1910, pp. 229-233.

<sup>12</sup> Compare, for example, A. Neymarek, "French Savings and their Influence," *Publications of the National Monetary Commission* (Senate Document, no. 494 61st Congress, 2d Session), pp. 163-181.

#### 4. *Banking Systems and Monetary Habits*

Again, the United States has a banking system unlike that of the other countries. England, France, and Germany each has a great central bank, sustaining peculiar relations to the public treasury on the one hand and to the money market on the other hand. Among the other banks a network of branches has been rapidly developed, partly by amalgamation of independent institutions, partly by the establishment of new offices. The branches as a rule depend for their reserves upon the head offices—which are mainly in London, Paris, and Berlin—and the head offices in their turn carry a large part of their reserves in the central bank. The latter institution, therefore, bears a heavy load of responsibility and exercises a corresponding influence upon the policy of the other banks with reference to discount rates, extension or contraction of loans, and the like. In this country, on the contrary, there are about 29,000 banks, legally independent of each other, of small average size, and carrying a much larger percentage of reserves in ready money in their own vaults than is customary elsewhere. The banks in a country district redeposit a part of their reserve funds with the larger institutions of their local metropolis, and the banks of the latter towns in turn make similar redeposits in Chicago, St. Louis, and particularly in New York. But the business bonds thus established between the country banks and those of our foremost financial centers still leave the organization of the banking system as a whole far looser than that of the three other countries. Moreover, there is no central bank in New York or elsewhere to play the role of the Bank of England, the Bank of France, or the Reichsbank.

With respect to the issue of notes, also, our banking system is peculiar. The central bank has a monopoly of issue in France, and a position of unquestioned primacy among all the banks of issue in England and Germany. Here the national banks are secured monopoly by a prohibitive federal tax on the notes of other banks. But there are several thousands of these national banks, each deciding its own policy with reference to issue.

The legal requirement of depositing United States bonds as security with the federal treasurer interposes a most effective check upon elasticity of circulation. It is still uncertain whether the attempt to provide "emergency circulation" by means of the Aldrich-Vreeland act would afford adequate relief in a crisis, but that act certainly gives no help in ordinary times. France and Germany, on the contrary, have bank-note systems which make it easy to increase or diminish the issues in accordance with the changing activity of business. The Bank of England, however, is confined within limits even more rigid than those imposed upon the national banks of America. Save in the case of the most severe panics, increase of circulation in England requires an increase in the gold holdings of the bank.

But both in England and the United States, the relative inelasticity of the bank-note circulation makes less trouble than it would make in France or Germany. For the people of the two Anglo-Saxon nations are accustomed to make much freer use of bank checks in their business dealings. In corresponding measure, they make less use of bank-notes than do the French and Germans.

##### 5. *The Government's Share in Directing Economic Activity*

Finally, there are considerable differences among our four countries in the extent to which both central and local governments participate in the direction of economic activity.

Partly because of the limitations placed by constitutional law upon the powers of government, partly because of a temperamental restiveness under control, Americans have not made such bold or successful experiments in municipal ownership of public utilities or in state ownership of railways, telegraphs, telephones, mines, and the like as have the Germans, French, or British. At the present moment, however, this difference promises to grow narrower, because of the efforts to regulate business enterprise by public commission, and even to extend public undertakings into fields hitherto sacred to private enterprise.

While the sequel shows that these differences of economic organization and habit possess some significance, still they are far less important than the more fundamental points of agreement. For present purposes the chief result of this similarity of organization is that business cycles run a similar course in all four countries. The next task is to sketch these cycles in the period since 1890.

## CHAPTER III

### THE ANNALS OF BUSINESS, 1890-1911

Annals are of necessity dull; for in a year by year record of events it is impossible to develop clearly the interrelations which by binding events into coherent clusters make them significant and interesting. Nevertheless, in order to interpret the elaborate tables of statistics which follow, it is necessary to know the business conditions prevailing in each of our four countries in each year since 1890. Readers willing to accept conclusions without a scrutiny of the evidence, however, may content themselves with the chronological summary of events given in the final section of this chapter. And readers familiar with recent business history may skip the whole chapter; for it offers little more than a digest of what leading financial journals have reported every year concerning the state of trade in America, England, France, and Germany.

#### I. THE BUSINESS CYCLES OF 1873 TO 1889

The crisis of 1890, the first event of the period selected for detailed examination, is best explained by a brief preface concerning the business cycles of the two preceding decades.

##### 1. *The Crisis of 1873*

The crisis of 1873 began in May with a panic in Vienna, where the great Austrian "boom" had been increasing its headway since the later sixties. Germany had entered enthusiastically upon a similar course of business expansion almost before its victorious war with France was over. Accordingly, the crash in Vienna caused a serious strain in Leipzig, Frankfurt, Hamburg, and Berlin. But the summer passed without disaster and confidence was returning when news came in September that panic had broken out in New York. In America rapid railway building had been the chief feature of the preceding years of activity, and the receiverships of railways and embarrassments of their financial backers were conspicuous features of the panic. The business fabric of Germany, weakened by domestic speculation, and strained by losses in Austria, was unable to withstand this new shock. A crisis followed, though it was less severe than the panics in Austria and America.

England, like Germany, was involved in the disasters of American railways, and London suffered a severe strain in the autumn. But the domestic business of England was in more solid condition than that of Germany—largely because the acute crisis of 1866, when the great banking house of Overend-Gurney failed, had prevented the English from joining heartily in the “boom” of 1870-72. But though England had no panic in 1873, her best customers were crippled, and in 1875 a severe depression began.

Of all the great nations, France was least affected by the crisis of 1873. She bought her immunity from business disaster, however, at a great price—the military reverses and civil disorders of 1870-71, which prevented her people from cultivating a “boom” of their own, and from participating heavily in foreign speculation.<sup>1</sup>

## 2. *The Later Seventies and Early Eighties*

The period of business depression which followed the crisis lasted in the United States until the summer of 1879. Then harvest failures in Europe and a favorable season at home enabled our farmers to export unprecedented quantities of breadstuffs at high prices. Prosperity among the farmers and the grain-carrying railways promptly increased the demand for commodities of many kinds, and made business brisk for merchants, manufacturers, and producers of raw materials. This tide of prosperity rose through 1880 and 1881 to its culmination in 1882, when a recession in business activity began. 1883 was a year of declining volume of business; but it was not until May, 1884, that the crisis became acute. While severe in the financial circles of New York, and accompanied by heavy bankruptcies, this crisis was less general in its scope and less disastrous in its after effects than that of 1873.<sup>2</sup>

The harvests of 1879, which brought back prosperity to the United States, intensified the business depression in Europe. But presently American prosperity increased the demand for many European exports. England seems to have felt the effects of this stimulating factor most sensibly; but even there the expansion of business was confined chiefly to the iron, steel, and shipping trades. Before activity had become general, the turn of the tide in the United States checked the movement, and business relapsed again into dullness.<sup>3</sup>

In Germany, the depression which followed 1873 continued in a mild form until the end of the eighties.<sup>4</sup> But France, where the check had come in 1870, began to show signs of business activity as early as 1876. The recovery was attended by active company promotion and widespreading speculation on the

<sup>1</sup> Max Wirth, *Geschichte der Handelskrisen* (ed. 3, 1883), pp. 450-614.

<sup>2</sup> A. D. Noyes, *Forty Years of American Finance*, pp. 53-61, 96-101.

<sup>3</sup> Final Report of the Royal Commission to inquire into the Depression of Trade and Industry. December, 1886.

<sup>4</sup> Sombart, *Die deutsche Volkswirtschaft im Neunzehnten Jahrhundert* (ed. 2, 1909), p. 91.

stock exchanges, and ended in the crisis of January, 1882. Paris, Lyons, and Vienna were the centers most affected; but the reaction in France doubtless helped to check the forward movement in England and the United States.<sup>5</sup>

### 3. *Business Expansion in the Later Eighties and the French Crisis of 1889*

The period of depression in America after the crisis of 1884 was remarkably brief, probably because the crisis had been preceded by more than a year of moderate liquidation. Statistical indices of the volume of business make 1885 the duller year of the decade; but the recovery was so prompt that the *Commercial and Financial Chronicle* declared 1886 to be the best business year since 1880. Rapid railway building was the chief feature of the revival. According to Poor, the annual increase in railway mileage rose from 2,975 miles in 1885 to 12,876 in 1887. Thereafter it declined to an average of 5,830 miles in 1888-90. But business continued to prosper during these closing years of the decade, despite troubles in the speculative markets, rate wars among the railways, and extensive strikes.

General prosperity and the negotiation of large blocks of railway securities abroad produced enormous importations of merchandise. In their turn, the large imports yielded the federal government a surplus revenue exceeding 100 millions in each of the fiscal years 1887 to 1890. The independent-treasury system made an artificial problem out of this excess of receipts over expenditures; for, in spite of purchases of government bonds at high premiums, prepayment of interest on the public debt, and large deposits in national banks, the money market suffered from the locking-up of funds in the government vaults. As a solution, the Democrats proposed a reduction of the tariff, the Republicans a further substitution of protectionist for revenue principles, and an increase of pensions. In the presidential election of 1888 Harrison defeated Cleveland, and the victorious Republicans in 1890 passed the McKinley tariff and the Sherman silver-purchase act. The first measure raised the average rates of duty to the highest pitch yet attained, put sugar on the free list, and provided a bounty to American sugar interests. The second measure was expected nearly to double the quantity of silver bought by the treasury. Combined with lavish expenditures upon pensions, etc., these two laws made a great reduction in the surplus revenue.<sup>6</sup> They also produced effects upon business which their authors did not foresee.

Meanwhile the long depression in England had ended in 1886 or 1887. Again, American prosperity gave a strong impetus to revival, particularly in the coal, iron, and shipping trades which were stimulated by the enormous railway building of 1886 and 1887. But this time prosperity spread to other

<sup>5</sup> Juglar, *Des crises commerciales* (ed. 2, 1889), pp. 435-443.

<sup>6</sup> Noyes, *op. cit.*, chs. v and vi.

trades and England entered upon a period of active business expansion. Accumulations of capital, which according to the Royal Commission upon the Depression of Trade and Industry had continued to be made even during the hard times, came forward freely for investment. Promoters took advantage of the increasing confidence and the moderate rates of interest to launch a long series of new companies. Beginning with the conversion of private British enterprises—particularly breweries—into joint-stock companies, they presently undertook similar operations in Germany, Austria, and the United States. Mines of all sorts in all quarters of the world, Chilean nitrate deposits, and railways in North and South America came into favor. Presently “trust and investment companies” were floated to promote, underwrite, and speculate in the stocks of other companies. But most important of all were the speculative investments in Argentina, where a land “boom” and a mania for internal improvements, financed by foreign capital, were in full swing.

German business experienced a similar but more moderate uplift at the close of the eighties. For a while the Germans bought “Argentines” freely, but presently they became uneasy, resold most of their holdings, and turned to speculation in the shares of domestic enterprises. As a consequence of the eager demand for such securities, the capital of the joint-stock companies organized in Germany rose from \$13,000,000 in 1885 to \$101,000,000 in 1889.

After her crisis in 1882, France did not enter upon a new period of business expansion until about 1887. The most spectacular episode of the next three years was the rise and fall of the “copper ring.” The Société des Metaux made contracts with the chief copper producers in various countries to take their output for three years at £70 per ton, planning to hold the selling price at £80. It estimated the annual output at about 150,000 tons per annum, so that the cost price would reach about £10,500,000. One of the great French banks, the Comptoir d’Escompte, undertook to make the necessary advances upon the security of the metal bought. But experience showed that the selling price of £80 caused a large decline in the consumption of copper. Meanwhile, the high buying price stimulated production. In order to retain control of the market, the ring was compelled to buy the output of mines which had not entered into contracts with it, and was further embarrassed by the unexpectedly large quantity of scrap copper which was offered. By March, 1889, the Société des Metaux found itself with an unsold stock of 160,000 tons of copper, which at £70 per ton had cost £11,200,000. The Comptoir d’Escompte was involved by its enormous advances in the ill fate of the Société. The end came when the Russian government in March, 1889, tried to withdraw its deposits from the Comptoir. To prevent a disastrous panic, the Bank of France undertook the liquidation of the Comptoir, and the Société des Metaux went into bankruptcy. Meanwhile the Panama Canal Company, which had absorbed many millions

of French capital, suspended operations. These two disasters checked French speculation early in 1889. Business returned to a highly conservative basis, and the Bank of France began the accumulation of the immense reserves which enabled it to assist the Bank of England so effectually in 1890.<sup>7</sup>

## II. THE CRISIS OF 1890 AND THE EUROPEAN DEPRESSION OF 1891-94<sup>8</sup>

### 1. *The Crisis of 1890*

The financial crisis of 1890 brought this period of business expansion to a close in England, Germany, and the United States. Indeed, before 1889 was out the English and German money markets had become stringent. In both countries the central banks raised their discount rates to 5 per cent in the autumn, and on December 30th the Bank of England made a further advance to 6 per cent. These high rates were recognized as danger signals; men began to wonder whether a crisis was at hand, and in a measure checked speculation. But the winter and spring passed without disaster; the bank rates fell again to 4 per cent in Berlin and 3 per cent in London, and the speculative spirit was reviving, when news came of political unrest in Argentina. British investors became uneasy about their "Argentines," and the financial houses which had unsold issues on their hands, or had committed themselves to new flotations, found increasing difficulty in marketing their holdings. These complications led to fresh advances in the discount rates, to the unloading of high class securities by houses which lacked funds, to sharp declines in stock prices, and to growing distrust. The climax came in England when on the 15th of November the failure was announced of Baring Brothers and Company, one of the greatest private banking houses of London, which had become involved through over-heavy commitments in Argentina. A serious panic might have followed had not the announcement of the failure been coupled with the announcement that the Bank of England, supported by a huge fund subscribed by other financial enterprises, would guarantee the payment of Baring's liabilities. As a further precaution, the bank borrowed £3,000,000 from the Bank of France and £1,500,000 from the Russian treasury. These preparations proved ample to control the situation: a panic was averted, but business liquidation began.

The collapse in Argentina had little direct importance for Germany; but the German money and stock markets sympathized with the summer troubles of the English. When the Barings failed the situation became more tense. In Berlin as in London a panic was averted; but the incipient business depression spread and became deeper.

<sup>7</sup> One of the best accounts of these developments in England, France, and Germany is that published by Max Wirth in the *Journal of Political Economy*, March, 1893.

<sup>8</sup> This and the following sections are based mainly upon the *Financial Review* (New York), the *Economist* (London), and Raffalovich's annual *Le Marché Financier* (Paris). When other sources are drawn upon references are given.

Much the same was true of New York. Americans were not heavy investors in Argentina, but they were heavy borrowers of European funds. It is probable that some hint of the embarrassment of the Barings was received by certain New York houses as early as August,<sup>9</sup> and that foreign investors sold large blocks of American stocks to protect their other holdings. It is certain that gold exports were heavy, that the New York banks held less than the legal 25 per cent reserves in eleven out of the twenty weeks from the middle of August to the end of the year, that call loan rates rose frequently to 6 per cent per annum plus one-half per cent a day, that commercial loans became exceedingly difficult to negotiate, and that clearing-house loan certificates were issued. But New York succeeded, like London and Berlin, in avoiding a panic.

France came off better from the financial troubles of 1890 than the other three countries. The great Parisian failures of March, 1889, had effectually checked speculation, and business had been conducted upon a basis so conservative that it could withstand even the strain of the Baring failure.

Despite the financial crisis, general business prospered in 1890. The *Financial Review* said concerning the United States: "The year . . . was one of great activity in the various departments of trade and transportation, with a volume of transactions never before equalled."<sup>10</sup>

The London *Economist* was a little less emphatic about English business: "A year of great financial disturbance, but nevertheless, so far as this country is concerned, of moderate commercial prosperity—such, in brief, is the record of 1890."<sup>11</sup>

Study of the various statistical indices of volume of business shows that the situation in Germany and France was like that in England.

## 2. *The Depression of 1891-94 in Europe*

But in the years which followed business of all kinds was overtaken by depression. The year 1891 was a year of financial prostration in England. In Germany there was much complaint at the small demand for goods of all kinds. Though France was less affected by the crisis, she suffered with the others from the wretched harvests, which intensified the depression in Europe.

In 1892 both foreign and domestic trade fell off in England, the farmers had poor crops and low prices, and wage-earners suffered from reductions in pay and from unemployment. Germany was perhaps worse off than England, and while France continued to be least affected, even her commerce and industry were reported as stagnant and the year as ending in gloom and lassitude.

<sup>9</sup> "The Crisis of 1890," *Economic Journal*, March, 1891, pp. 192-196.

<sup>10</sup> P. 1.

<sup>11</sup> "Commercial History and Review," February 21, 1891.

The *Economist* pronounced 1893 to be a bad year all around. Great strikes in the cotton and coal trades, heavy losses in the Australian and American panics, the financial embarrassments of several governments whose securities were widely held in Britain, another season of short crops and low prices for the farmers, severe suffering among wage-earners, and a marked increase in pauperism made a black record. Germany fared better than England this year because her crops were larger; but, save for the first quarter when false hopes were built upon monetary reforms in Austria, the business public was in a mood of deep discouragement. The French, too, complained of mediocre business and languid security markets; but their harvests were fair, and French investors were less involved than British and German in the extra-European panics.

The year 1894 opened in hope, but closed in fresh disappointment. The poor English farmers had another wretched season; yields were abundant, but a rainy harvest left the cereals in bad condition, and prices were almost unprecedentedly low. The physical volume of trade increased, but prices continued to fall, and business was done on such a narrow margin of profit that the feeling of depression was not relieved. Fuller employment, however, lessened the distress among wage-earners in a measure. The one hopeful spot in the business world was the stock market, where a "boom" in South African gold mines developed in the closing months, and a general increase of investment demand began to appear. German reports upon 1894 show less hesitation in recognizing improvement over 1893. Large subscriptions to government loans were followed by a demand for industrial stocks, particularly shares in electrical and chemical enterprises. But commerce and manufactures could be called better only in comparison with 1893; they were not good. France presents a similar picture. The capital which found no employment in ordinary business channels because of the depression flowed toward the bourse. Meanwhile the refunding of billions of public securities at lower rates of interest tempted investors to dally with more lucrative stocks. The African gold mines became the mania of the day; though Spanish, Italian, and Portuguese securities also enjoyed high favor. But while the bourse was highly prosperous, commerce recuperated slowly. The volume of trade was held to be greater than in 1893, but smaller than in 1892.

This period of liquidation, which began in France in March, 1889, in Germany and England toward the end of that year and more definitely in 1890, came to a close in 1895. The lowest point seems to have been touched in 1893. The incipient and partial improvement of 1894, decided only in the investment markets, developed next year into a general business revival, strong enough to resist several serious shocks. But before dealing with the new period of business prosperity which began in 1895, it is necessary to describe the business events of 1891-97 in the United States.

## III. THE PANIC OF 1893 AND THE DEPRESSION OF 1894-96 IN THE UNITED STATES

1. *The Business Years 1891 and 1892*

The first seven months of 1891 in America was a period of liquidation after the crisis of 1890, similar in character to the same period in England. But midsummer brought a dramatic change in the business situation. As in 1879, the country was suddenly lifted from depression to prosperity by the concurrence of bad harvests in Europe and abundant harvests in America. The first beneficiaries of this stroke of fortune, the farmers and railways, bought goods with freedom, stimulating trade, manufacturing, mining, etc., in almost all lines. The impetus thus given to business activity by the harvest situation of 1891 distorted the parallelism of business history in this country and in Europe. While liquidation was proceeding unchecked in England, France, and Germany, the *Financial Review* reported that in the United States the volume of business transactions in 1892 was greater than ever before.<sup>12</sup>

But this contrast did not last long. The crops were smaller and agricultural prices were lower in 1892, and much concern was caused by the enormous outflow of gold in the second half-year. Uneasiness increased in the early months of 1893. The net gold exports were 11 millions in December, 12 in January, 13 in February, 2 in March, 18 in April, and 15 in May—a total of 71 million dollars in six months. Meanwhile heavy failures occurred, particularly the Philadelphia and Reading Railway on February 20, and the National Cordage Company on May 4. The collapse of practically all the banks in Australia intensified distrust and increased the difficulty of securing financial help from London. In May one of the most violent panics in the country's history broke out.

2. *Contemporary Explanations of the Panic of 1893*

Several explanations of this panic were given by contemporaries. Republicans, like Speaker Reed, assigned as cause the fear of tariff reductions aroused by the sweeping Democratic victories in the autumn of 1892.<sup>13</sup> Democrats, like Governor Russell of Massachusetts, retorted that Republican legislation and extravagance were responsible.<sup>14</sup> Others classified the panic of 1893 as an economic crisis of the common sort produced by speculation, over-production, or under-consumption.<sup>15</sup> But the prevalent view was that the panic had been brought about by doubt concerning the maintenance of the gold standard.<sup>16</sup>

<sup>12</sup> 1893, p. 1.

<sup>13</sup> *North American Review*, September, 1893.

<sup>14</sup> *Ibid.*, December, 1893.

<sup>15</sup> For example: Gibson, *Forum*, June, 1893; unsigned article in *Forum*, November, 1894; Irwell, *Chautauquan*, December, 1893.

<sup>16</sup> Taussig, *Economic Journal*, December, 1893; Carnegie, *North American Review*, September, 1893; Smith, Wilson, and Bloss, *ibid.*, October, 1893. On the contrary, free-silver advocates often charged the panic to a conspiracy on the part of the "gold ring": Stewart, *North American Review*, November, 1893; Knapp, *American Journal of Politics*, June, 1894; Schuckers, *The New York National Bank Presidents' Conspiracy*.

### 3. *The Influence of the Sherman Silver-purchase Act*

The Sherman Act of July 12, 1890, required the secretary of the treasury to purchase 4,500,000 ounces of silver each month, and to issue legal-tender treasury notes in payment. This act produced fresh issues of paper money, amounting to 24 millions in 1890, 53 in 1891, 47 in 1892, and 24 in the first half of 1893.

From the beginning the London *Economist* declared that the whole tendency of this measure was towards constituting silver the basis of our currency, and that the monthly additions of paper money to the circulation, irrespective of the changing business requirements, would result in the expulsion of gold whenever times should become dull.<sup>17</sup> Foreign capitalists, made timid by their recent losses in Argentina, were in a mood to listen to such warnings. Continued agitation of the silver question in Congress, where the Senate passed a free-coinage measure in July, 1892, intensified their fear of a relapse from the gold to a silver basis. Hence foreigners not only stopped buying American securities, but also endeavored to unload their old holdings upon the New York market. This process accelerated the expulsion of gold which the *Economist* had prophesied.

From February to July, 1891, the exports of gold exceeded imports by nearly 74 millions. The crop situation of the autumn, however, gave the United States so huge a balance on merchandise account as to reverse the flow of gold, and by January, 1892, the country had regained some 39 millions. But, once the extraordinary European purchases of breadstuffs declined, the outflow began again, and from February to September the net losses of gold were 52 millions. This year the autumnal exports of agricultural produce were less than usual, and sufficed to give the country an excess of gold imports for but two months, October and November, when the gain was only 4 millions. Meanwhile the imports of foreign merchandise had increased. In December, 1892, the outflow of gold began again, and by the end of June 73 millions more had been lost. Putting these figures together, we have net exports of gold from February, 1891, to June, 1893, aggregating about 155 million dollars. Meanwhile, however, American gold mines had been adding to the supply, so that the net decline in the monetary stock of gold was from 648 millions on January 1, 1891, to 532 millions on June 30, 1893—a loss of about 116 millions—over one-sixth of the whole.<sup>18</sup>

<sup>17</sup> December 20, 1890, p. 1596; December 26, 1891, p. 1648; July 9, 1892, p. 881.

<sup>18</sup> The figures embody the corrections in the estimates of the gold stock made by the Director of the Mint in his report for 1907, pp. 66-87. See the tables of the monetary stock of gold in chapter vi, below.

#### 4. *The Decline of the Gold Reserve*

This loss of gold was the more serious because it threatened a suspension of gold redemptions by the treasury, and hence a depreciation in the gold value of the dollar. Before the passage of the Gold Standard Act of 1900, the gold reserve consisted simply of the unexpended balance of gold in the treasury. No law had fixed the amount to be held, or provided specifically for obtaining more gold when the reserve ran low. But public sentiment, based upon treasury practice and certain incidental clauses of monetary statutes, had fixed upon the round sum of 100 millions as the minimum balance consistent with safety.

At the end of February, 1891, the treasury held almost 150 millions. Certain domestic conditions combined with the export of gold to reduce this fund. A decline in public revenues and a heavy increase in public expenditures cut down the surplus revenue from 94 millions in 1890 to a deficit of 39 millions in 1893.<sup>19</sup> Of course this change reduced the treasury's ability to carry a large balance of unexpended money. More serious was the spread of distrust in financial circles at home regarding the government's ability to maintain redemptions of the paper money. As early as January, 1891, the *Bankers' Magazine* noted that fear of free coinage of silver made people in possession of gold slow to part with it. In the following months banks and other lenders began inserting in notes and mortgages clauses requiring payment in gold coin or its equivalent.<sup>20</sup> Another result of the same distrust was that the banks began to supply depositors who withdrew funds for the payment of customs duties with paper money instead of with gold. This procedure cut off the most important source from which the treasury received gold for its reserve. In self-defense the treasury began to substitute legal-tender notes for gold in the payment of its debit balances at the New York clearing house. Then international bankers, able to obtain nothing but legal tenders through clearing-house settlements, began to get gold for export directly from the treasury by presenting notes for redemption.

The cumulative effect of these interrelated processes was to diminish the government's gold reserve. From the 150 millions of February 28, 1891, it sank to 118 millions on June 30. Then a respite was given by the great exports of wheat and the imports of gold. Moreover, the activity of internal business caused a lively demand for the small legal-tender notes and prevented them from accumulating in the banks, whence they could be sent back to the treasury through the customs houses. Hence the gold reserve rose to nearly 133 millions, and still stood at 131 millions on the last day of 1891. During 1892 the treasury had to face an increasing demand for redemptions. By the end of July it held

<sup>19</sup> "Calendar Year Statements," *Summary of Commerce and Finance*, December, 1898, p. 1458.

<sup>20</sup> *Bankers' Magazine*, N. Y., vol. 25, pp. 497, 636, 675, 798.

only 110 millions of gold. But the demand for money to move the crops in the autumn again carried the legal tenders westward into general circulation and relieved the strain, so that the treasury was able to report a reserve of 121 millions on December 31. The relief was but temporary. With the beginning of 1893 the demand for redemptions assumed the proportions of a "run" for gold. In five months the treasury paid out 67 millions. Nothing but the voluntary exchange of gold for notes by the New York banks in February, March, and April kept the reserve above the 100 million mark during the winter and spring. But such aid effected no more than a postponement of the result. On the 15th of April the secretary of the treasury gave public notice that the reserve had been reduced to what public opinion regarded as the danger-point, by announcing that the issue of gold certificates was suspended in accordance with the law which required such action whenever the gold in the treasury "reserved for the redemption of United States notes falls below \$100,000,000."<sup>21</sup>

By this act the distrust long felt by foreign investors and American financiers was converted into a general alarm among all classes. The grave doubt about the treasury's ability to maintain the parity between different kinds of money combined with distrust engendered by such business events as the failure of the Philadelphia and Reading and National Cordage to destroy business confidence.<sup>22</sup>

### 5. *Business Conditions and the Panic*

The panic of 1893, however, cannot be accounted for solely by the monetary situation. Certain unsound elements in business contributed to the smash.

The crisis of 1890 was primarily financial in its origin and effects. On this side of the Atlantic, it was most severe in New York, and the liquidation of the first half of 1891 was most pronounced there. The interior sections of the country were drawn into the movement; but before liquidation had progressed far it was checked by the sudden return of prosperity among the farmers. As a result, many weak enterprises, which must soon have retrenched radically or gone out of business, were tided over and allowed to continue their expansion. In short, the check given to the rising tide of prosperity was too brief to enforce a thorough revision of credits.

Superficially, the business situation in 1892 bore the impress of prosperity. The volume of business was greater than in 1891, or even in 1890. Such is the testimony of coal production, gross receipts of the railways, value of mer-

<sup>21</sup> So serious was the alarm that the administration issued an announcement on April 24 that "the President and his cabinet are absolutely harmonious in the determination to exercise every power conferred upon them . . . to preserve the parity between gold and silver and between all financial obligations of the Government."

<sup>22</sup> The various factors which coöperated to reduce the gold reserve can be followed month by month in the figures published by the Treasury. See, for example, *Finance Report*, 1902, pp. 241, 239, 247, 245, 185, 237, 99, 100, 235. For interpretations see Taussig, *Economic Journal*, June, 1892, pp. 362-369; Noyes, *Forty Years of American Finance*, chapters vii and viii; Lauck, *Causes of the Panic of 1893*, chapters vi-viii.

chandise imported, and volume of clearings outside of New York. Bank loans were expanded, but without a serious reduction in the ratio of reserves to deposits. In New York the money market was "easy," with average rates less than in the two preceding years. The prices of bonds and stocks recovered from the decline they had suffered during the crisis of 1890, and the volume of sales was large.

All this indicated an active but not a feverish state of trade. On the other hand, commodity prices were steadily declining—a most unusual accompaniment for business prosperity; and one which tended to restrain rather than to excite rash investment and wild speculation. Nevertheless, reports of speculation in farm lands and town lots came from many sections of the interior. New York's share in the movement was a lively interest in the stocks of new "industrials." The combination of independent manufacturing enterprises into enormous "trusts" had begun in the later eighties and continued on an increasing scale through 1892. Several of the most conspicuous among these combinations proved in the sequel to have been financed in a highly reckless manner. A few railway deals of like character were made. But the most dangerous element in the situation was probably the doubtful character of many bank loans. Had the liquidation begun late in 1890 been carried through, the banks would doubtless have written down or written off a considerable portion of the sums due them from embarrassed houses. The quick return of prosperity saved them from having to acknowledge these losses, but did not enable all the weak debtors to recuperate their strength. On the contrary, the banks seem to have thrown not a little good money after the bad. When the hour of need came they found it impossible to realize upon a considerable proportion of their nominal loans. On paper they were reasonably strong; in reality many banks were very weak.

The business situation was further undermined by the harvests of 1892. Except for cotton, the yields of the most important crops were fairly large—not so great as the "bumper" yields of 1891, but equal to or greater than the average. Low prices for agricultural products, however, made the year rather unprofitable for the farmers. Thus the stimulus which had turned depression into prosperity a year before was lacking in the autumn of 1892. The demand for goods from the agricultural sections began to decline; railways, merchants, and manufacturers bought with less freedom, and all the disquieting elements in the situation from the decline of the gold reserve to the financial difficulties of the new industrial combinations and the doubtful character of bank loans had an unobstructed chance to work out their results.<sup>23</sup>

<sup>23</sup> The comparisons in this section which imply the use of statistics are all based upon tables in the following chapters. On the condition of the banks in 1890-93 see O. M. W. Sprague, *History of Crises under the National Banking System*, pp. 153-162. (Publications of the National Monetary Commission. Senate Document no. 538, 61st Congress, 2d session.)

### 6. *The Events of the Panic*

The panic broke out early in May, 1893. The appointment of receivers for the National Cordage Company on the fourth may be called the beginning. There speedily followed a crash of prices on the stock exchange, the failure of several large brokerage houses, extremely high rates for loans, bank failures in the west, further exports of gold accompanied by a further decline of the treasury's reserve, and two railway receiverships.

President Cleveland was among the men who held the business panic to be an indirect result of the Silver-purchase Act of 1890. Even before his inauguration he had sounded the congressional leaders among the Democrats as to the possibility of securing a repeal. At the time he concluded that the majority of his own party stood against him. But sentiment changed after the panic began, and on June 30 he summoned Congress to meet in extra session on the seventh of August. The House of Representatives promptly acquiesced with Cleveland's wishes; but men from the silver-mining states obstructed action in the Senate for nearly three months, so that it was the first of November before the repealing act was signed.

Meanwhile the panic had been running its course. The banks, despite an unprecedentedly general issue of clearing-house loan certificates, generally limited or suspended payments. Money commanded a premium for many weeks, and illegal substitutes for cash were freely put into circulation.<sup>24</sup> Business failures were more numerous and liabilities larger even than in 1873. Over three hundred banks closed their doors, and 29,340 miles of railway went into the hands of receivers.<sup>25</sup> Stocks fell heavily in price; interest rates on commercial paper were quoted as high as 12 to 18 per cent, and for a time in June loans could hardly be procured at all. The lack of money for pay-rolls, difficulty of collections, and fear lest customers would be unable to meet their contracts caused widespread limitation or cessation of production. Unemployment assumed vast proportions, and reacted in a most depressing fashion upon the demand for goods at retail and wholesale.<sup>26</sup>

### 7. *The Struggle to Maintain the Gold Reserve after the Panic*

The business depression which followed upon the panic of 1893 was complicated by the continuing uncertainty about the monetary standard.

Though Congress had yielded to the intense pressure of public opinion while the panic was still on and repealed the silver-purchase law, it stubbornly refused to enact the measures which President Cleveland recommended to entrench the

<sup>24</sup> See Warner, "The Currency Famine of 1893," *Sound Currency, 1896, A Compendium*, pp. 337-356.

<sup>25</sup> Table from the *Railway Age*, reprinted in *Statistical Abstract*, 1904, p. 406.

<sup>26</sup> See A. C. Stevens, "Analysis of the Phenomena of the Panic . . ." *Quarterly Journal of Economics*, January, 1894; C. C. Closson, "The Unemployed in American Cities," *ibid.*, January and July, 1894.

gold reserve after the panic was over. Consequently the treasury's stock of gold remained subject to the influences which had depleted it between 1890 and 1893, save that the automatic injection of legal-tender notes into the currency each month by buying silver was stopped. On the other hand, the deficit in the government's revenues became chronic—39 millions in 1893, 59 in 1894, 30 in 1895, and 49 in 1896—and of course a deficit made it impossible to maintain a working balance in any kind of funds without borrowing. Moreover, the depression of business which prevailed most of the time prevented the legal-tender notes already outstanding from being absorbed into active circulation. Meanwhile, the losses of gold by excess of exports continued—81 millions in 1894, 71 in 1895, and 28 in the first seven months of 1896. The sums of legal-tender notes which the treasury was forced to redeem in gold were even larger—142 millions in 1894, 131 in 1895, and 100 in the first seven months of 1896.<sup>27</sup> In all this time practically no gold was received through the customs house, and practically none was paid out through the clearing house. Against these adverse conditions the administration had to contend in its efforts to prevent the gold reserve from complete exhaustion.

December 31, 1893, the reserve was but 81 millions. Unable to secure new legislation from Congress, the administration resorted to the issue of bonds redeemable in coin, not necessarily gold, under a provision of the law passed in 1875 to provide for the resumption of specie payments. In January, 1894, Secretary Carlisle sold \$50,000,000 of 5 per cent ten-year bonds for \$58,700,000. Despite the fact that much of the gold paid for these bonds was obtained from the treasury itself, through the presentation of legal-tender notes for redemption, the proceeds temporarily raised the reserve above 100 millions.

But the processes of depletion ran on unchecked, and by July 31 the reserve was lower than ever—55 millions. The usual autumnal importations of gold allowed the reserve to gain 6 millions net between July and the end of October; but in November a second 50-million bond issue became necessary. Again the proceeds—\$58,500,000—carried the reserve above 100 millions for a little time; but again the outflow rapidly exhausted the new supplies, so that by January 31, 1895, the balance stood at 45 millions.

In February President Cleveland contracted with a syndicate of bankers to take about \$62,400,000 of 4 per cent thirty-year bonds in return for \$65,100,000 of gold. The syndicate undertook to obtain at least half of the gold in Europe, and to protect the treasury so far as possible from withdrawals of gold for export. Monthly deliveries upon this contract brought the reserve up to 108 millions by the end of June. But at this point the efforts of the syndicate to check the outflow of gold by satisfying the export demand with drafts upon London broke down, and once more the treasury began to lose ground. In December President Cleveland's belligerent message regarding

<sup>27</sup> All of these figures are for calendar years.

British intervention in Venezuela intensified the difficulty by causing an extraordinary return of American securities from London. By the end of January, 1896, the reserve was reduced to 50 millions once more.

But President Cleveland had already acted, by calling early in the month for popular subscriptions to a loan of \$100,000,000 on 4 per cent bonds. The proceeds were 111 millions of gold. While about 40 millions of this sum had been obtained by subscribers from the treasury itself, the reserve was raised to the highest point since December, 1891—129 millions on March 31. Moreover, the large subscriptions to this loan did much to restore confidence and the possession of the enormous sum which the proceeds brought in enabled the treasury to impound over 100 millions of legal-tender notes.

For a time all was well; but Mr. Bryan's success in persuading the Democratic convention to adopt a free-silver plank, combined with the vigorous campaign which he conducted, caused fresh uneasiness. On July 23 the reserve was below 90 millions. This time the banks came promptly to the aid of the treasury, agreeing to turn over some \$25,000,000 of gold in return for legal-tenders, and coöperating to supply the export demand with bills.<sup>28</sup> By the end of July the reserve had been restored to 111 millions. Again at the end of August it was perilously close to the 100-million mark, but that was the last moment of anxiety. In the end, Mr. Bryan contributed more than any Democrat save Mr. Cleveland to the restoration of full confidence in the country's monetary standard. For by forcing the free-coinage issue and getting himself decisively beaten, he brought out the people's verdict in favor of the gold standard. With the harassing doubt about this question set at rest, all difficulty in maintaining the reserve vanished. By the end of 1896 the treasury held 137 millions of gold, and the sum mounted steadily to more than 250 millions in the autumn of 1899.

#### 8. *Business Depression in 1894*

The importance of this struggle to maintain the gold reserve appears when we follow the varying fortunes of business from 1894 to 1896.

Depression in the year following the panic was extreme; for other factors coöperated with business liquidation and the doubtful outlook regarding the standard to nip in the bud every incipient revival of activity. The so-called Wilson tariff act was pending in Congress and kept business men in uncertainty until August, when President Cleveland in disgust allowed it to become law without his signature. Coxey's "army" made its march to Washington in April and May, a sign of hard times both ludicrous and pathetic. From April to June over 150,000 bituminous coal miners were on strike, causing a serious shortage of fuel. Another strike tied up the Great Northern railway

<sup>28</sup> *The Financial Review*, 1897, p. 8.

for nearly three weeks in April and May. Finally the American Railway Union strike in July caused such disorder that federal troops were ordered to Chicago. Worst of all in its effect upon business was the failure of the corn crop, particularly in Nebraska, Iowa, and Kansas. The wheat crop was fair, but brought low prices, and the cotton crop, while very large, sold at even lower rates.

### 9. *The Brief Revival of 1895*

The February contract with the Morgan-Belmont syndicate was followed by a lively revival of business in the spring of 1895. Confidence in the state of the gold reserve enabled financial houses to place several large security issues abroad, and foreigners bought stocks and bonds freely in Wall Street. For a time the stock market was buoyant, commodity prices rose, the iron and steel trade had a surprising "boom," and imports became heavy. But the revival did not last through November; for the syndicate's plan of preventing the exportation of gold broke down, the gold reserve grew gradually less, and European anxiety over the Ottoman problem and over the collapse of the speculation in South African gold mines caused foreign selling of American securities. In December President Cleveland's message about the boundary dispute between England and Venezuela brought on an extraordinarily violent stock-market panic attended by heavy failures.

### 10. *The Stringency of 1896*

The English war cloud vanished early in 1896, but congressional resolutions threatened hostilities with Spain over Cuba. Such dangers were presently overshadowed by the success of the free-silver party in capturing Democratic state conventions, followed in July by Mr. Bryan's spectacular triumph in the national convention. Until after election day the presidential campaign kept the financial centers in a condition of intense strain. Interest rates were high, loans were hard to negotiate, stocks declined, money was locked up in safe-deposit boxes, and failures for the year were almost as numerous as in 1893. But critical as the situation was, no panic occurred.

### 11. *The Return of Depression*

The day after election this strain suddenly relaxed. But the great industrial and business revival which the Republicans had promised and which their newspapers advertised failed to materialize. The situation improved greatly in contrast with that of July to October, but prosperity deferred its return in a most tantalizing fashion.

Uncertainty about the new tariff promised by the Republicans, now restored to power, contributed to the dullness of the first half of 1897. It was not until July 24 that the Dingley Bill became law. Meanwhile the South suffered first from floods in the Mississippi Valley, then from an epidemic of yellow fever, and finally from the low price of cotton. In March the decision of the Supreme Court that the Trans-Missouri Freight Association was illegal threatened to plunge the railways into rate wars. Next month the war between Greece and Turkey caused another fall of stocks. It was not, in fact, until July that business received a strong impetus. By that time it had become certain that the wheat supply from France, the Danubian provinces, Australia, India, and Argentina would run far below normal. Meanwhile the outlook for the American crops improved rapidly. In short, such another year as 1879 or 1891 was promised. Then the long deferred revival of business prosperity began in earnest.

#### IV. BUSINESS PROSPERITY OF 1895-99 AND THE CRISIS OF 1900 IN EUROPE

How European business passed through a crisis in 1890 and suffered depression in 1891-94 has been told. How it revived in 1895, prospered exceedingly in 1898-99, and developed another crisis in 1900 must now be sketched.

##### 1. *England*

It was in the second half of 1895 that the *Economist* marked the first strong revival of activity in English business after the crisis of 1890. This movement possessed sufficient vitality to withstand the depressing effects of bad harvests combined with low prices in the autumn, and of President Cleveland's message applying the Monroe Doctrine to the British in Venezuela. In 1896 progress continued, still in the face of discouraging events. Exports to the United States fell off, the Rand gold-mining industry was in a state of stagnation following the Jameson raid, and Europe was unsettled by prospects of entanglement over the eastern question. 1897 brought a more decided improvement in English industry and domestic trade; but exports declined, primarily because of diminished purchasing power among important customers. India suffered from famine and plague, Australia from drought, South Africa from rinderpest and depression in the mining districts, Central and South America from poor harvests and political unrest.

It was not until 1898 that the improvement in business which had been under way since 1895 gained sufficient impetus to constitute full prosperity. Next year the war with the Transvaal began; but the *Economist* was able to say in summary: "Seldom has this country enjoyed a year of such all-round industrial activity and prosperity as it did in 1899." The war was a depressing factor on the whole, but it stimulated powerfully certain trades, particularly

iron, coal, and shipping. Foreign trade increased, larger clearings and railway receipts testified to the activity of domestic business, unemployment diminished and wages rose, consumption of staple supplies was larger, and concentration of industrial enterprises was conspicuous.

Business activity and government war loans, however, carried rates of interest to so high a point in the autumn that even British municipalities had difficulty in securing loans save on onerous terms. This tide of prosperity reached its highest point in the earlier months of 1900 and then began quietly to recede. High taxation and dear coal—both due to the war—were held largely responsible. Exports declined heavily after June, unemployment increased again, the money market was unsettled, borrowings save by the government were small, the public stayed out of the stock market. But the crisis was accompanied by no spectacular failures and no breakdown of credit; it was no more than the fading of the bright prospects of 1899 into the dull outlook of 1901.

## 2. Germany

While English business improved slowly from 1895 to 1897, reached full prosperity in 1898, had a single year of marked buoyancy in 1899, and then gradually relapsed into dullness, German business enjoyed a far more intense phase of prosperity and met with a more dramatic check. Not since the first years of the empire, when Germans, intoxicated by their military triumph over France, plunged enthusiastically into a campaign for industrial supremacy, had their business hopes been so high and their business pace so fast.

The improvement in 1895 was decidedly greater in Germany than in England. By 1896 almost all branches of industry were reported to be very active, and the investing public was showing a marked predilection for shares in industrial enterprises and credit companies. The reports for 1897 speak of a "boom" of increasing intensity; 1898 was declared one of the most brilliant years Germany had ever known, and 1899 became known as the *annus mirabilis*. Perhaps the electro-technical industries made the greatest advances as a whole, but remarkable gains were scored also in mining and metallurgy, and in the chemical trades. Emigration fell to a low point, and immigration from bordering nations became large. The cities increased in population at a rate which would have been rapid even in America, and the Germans showed a marked aptitude in devising new methods of business organization as well as new industrial processes.<sup>29</sup>

But the second half of 1900 brought a check. High rates of interest and high prices for coal handicapped industrial enterprises. Threatened American competition in iron and steel became a formidable bogey, and prices fell. The

<sup>29</sup> The fullest account of this period of German prosperity is given in *Die Störungen im deutschen Wirtschaftsleben während der Jahre 1900 ff.*, published by the Verein für Socialpolitik, Leipzig, 1903, 8 volumes.

public began to grow suspicious of industrial stocks and turned again to the less lucrative but more conservative government securities, imperial, provincial, and municipal. The punitive expedition to Kiau-chow, a great coal strike, a check to building because of difficulties in borrowing, a sharp fall in stocks which became extreme in June and July, were all unfavorable.

Presently, the failure of four large mortgage banks, followed by the arrest and criminal prosecution of certain of their directors, in the closing months of 1900 caused great alarm. Banks of this class had placed over \$1,500,000,000 of securities among German investors, and the fear that criminal mismanagement like that revealed in the notorious cases overtaken by catastrophe had been common, precipitated a rush to unload. The liquidation was presently intensified by the collapse of two great credit banks in Saxony, the Dresdener Kreditanstalt (capital \$5,000,000) and the Leipziger Bank (capital \$12,000,000). The latter institution, which suspended payments July 25, 1901, had lent \$21,000,000 to a single corporation, which turned out to be a barefaced swindle. These disasters made the crisis in Germany far more acute in 1901 than in the preceding year.

### 3. *France*

French reports indicate that the business expansion from 1895 to 1899 was more moderate than even the English. The revival of activity in 1895 was marred by a speculative mania for gold-mine shares which ended in heavy losses, even before Dr. Jameson made his raid. But commerce and industry were not deeply affected by the troubles of the Paris bourse, and in 1896 continued to gain ground. Even the bad harvests of 1897 did not prevent the volume of business from expanding further, as shown by banking transactions, railway receipts, and foreign commerce. Public interest in industrial securities became marked in 1898, but business was disturbed by the Dreyfus affair, by anxiety over investments in Spain, then at war with the United States, by alternate abundance and scarcity of capital, and by a decline of exports. But 1899 was a year of relatively great activity in trade and industry, and of buoyancy in the security markets. Much importance was attached to the stimulating effect upon business of the preparations for the world's exposition to be opened the next year in Paris. And next year the losses of many of the joint-stock companies created to exploit the concessions connected with the exposition was one of the leading features in the reaction. But as the preceding expansion had been mild, so also was the crisis. France, like England, and unlike Germany, passed from business activity to business liquidation with no great wrench.

## V. BUSINESS PROSPERITY OF 1897-1902 AND THE CRISIS OF 1903-04 IN THE UNITED STATES

We have seen that American business was subjected to changes of fortune both remarkably quick and remarkably sharp in 1890-97;—crisis in 1890, depression in the first half of 1891, sudden revival in the autumn followed by prosperity in 1892; violent panic in 1893, deep depression in 1894, short-lived buoyancy in 1895, return of severe strain in 1896, another relapse into depression after the presidential election, and finally a vigorous revival in midsummer, 1897. To all this the years we have now to review present a marked contrast. For the period of prosperity which began in 1897 ran a long and even course, resisting both the pressure of the European crisis in 1900-01 and the excesses of domestic speculation. Indeed, it was not until after some six years of abounding prosperity that general business, as opposed to financial operations, received a serious setback.

### 1. *The Prosperous Years 1897-99*

The revival of business ushered in by the profitable harvests of 1897 made rapid progress in 1898. There were two brief pauses, one in the spring just before war broke out with Spain, and one in the autumn, just before the congressional elections. But the quick victory in war and the gains by the sound-money party at the polls promptly restored confidence. The last month of the year was also the best; even the cotton, woolen, and leather industries, which had been in unsatisfactory condition, showed decided improvement.

In 1899 there appeared a marked contrast between conditions in the financial markets proper and in general business, mercantile, industrial, railway, agricultural, etc. Increasing prosperity marked the latter in almost every branch; indeed general business had not been so buoyant since the great revival of 1879-81. But a reaction developed upon the stock exchange. One of the most conspicuous features of 1898 had been the resumption of that movement toward consolidation of industrial enterprises which the panic of 1893 had interrupted. The investing public showed a keen appetite for new securities, an appetite which promoters proceeded to gratify by taking options on independent mills and factories at the fancy prices asked by proprietors in flush times, combining them into single corporations capitalized at rates to cover buying prices plus large margins for promoters' profits, and offering the new crop of securities for sale. In 1898 twenty such consolidations were effected with a nominal capital of nearly 709 millions.<sup>30</sup> So profitable did these ventures prove to promoters and underwriters that a much larger number were under way or under consideration at the beginning of 1899. But in May the industrial shares

<sup>30</sup> L. Conant, Jr., "Industrial Consolidations in the United States," *Publications of the American Statistical Association*, March, 1901.

already listed on the stock exchange broke heavily on the sudden death of ex-Governor Flower, who had been a leading figure in the market. Prices recovered slowly from this shock until in September the whole loss had been regained. Thereafter the market was fairly steady for three months, but in December another crash came in "industrials," and on the eighteenth prices dropped far below the lowest point of May. A trust company failed in New York and several financial concerns collapsed in Boston because of the shrinkage in copper stocks. To relieve the panicky condition a money pool was formed to lend 10 millions on the stock exchange. Meanwhile stringency in the money market had become pronounced at several times, the outbreak of the Boer war had caused some uneasiness, and railway stocks had sympathized in a measure with the fluctuations of industrials. Under these circumstances, many intended consolidations were abandoned at the last moment; but nevertheless the record for the year went far beyond the high mark of 1898. Not less than 87 such companies were launched, with a capital of 2,244 millions.<sup>31</sup> The most striking feature of the year, however, was that the troubles of the stock market created hardly a ripple of disturbance in general trade.

## 2. *The Pause of Activity in 1900*

In Europe we have seen that 1900 brought a crisis—moderate in England and France, severe in Germany. In the United States this crisis was represented by nothing more than a brief pause in a period of exceptional prosperity. Industrial consolidations, to be sure, were far less numerous than in 1899—42 companies with a capitalization of 831 millions. Sales on the stock exchange, also, were a third less for the first nine months. Even commodity prices declined, new orders fell off, the iron and steel trade gave signs of overproduction, and from July to October clearings outside New York were less than the year before. But the volume of general business still remained immense; for the first time our bankers floated large loans for the central governments of England, Germany, Sweden, and for many foreign cities; and our foreign commerce established new high records.

This pause in business expansion during the summer was followed by a remarkable outburst of activity after the presidential election in November. Mr. McKinley defeated Mr. Bryan, who ran for a second time on a free-silver platform. So slight had been the reaction and so vigorous was the revival that most statistical indices of the volume of business make 1900 as a whole even a better year than 1899.

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<sup>31</sup> Conant, as above.

### 3. *The Stock-Market Mania of 1901 and the Northern Pacific "Corner"*

The most notable feature of the post-election period was the outburst of stock speculation. Supported by the prosperity of trade, the large popular majority for sound money, and the establishment of "community of interests" between competing railways, the promoters and underwriters ventured even more daringly than in 1898 and the early part of 1899. After Mr. Morgan had dazzled the public by launching the "billion-dollar steel trust" in February and March, 1901, there seemed for a time no limit to what the public would buy or the prices they would pay. But this frenzy of speculation came to a sudden end on the ninth of May, as the result of a corner in Northern Pacific stock. Two groups of great capitalists, one led by Morgan and Hill, the other by Harriman and the Standard Oil magnates, had been trying to buy a controlling interest in the stock of this railway for some time. Their bidding ran up the price to so high a point that brokers "sold short," expecting to profit when the price dropped. But on May 9 it was discovered that more shares had been sold than were in existence, so that the purchasers were in a position to extort any price they chose in settlement of the contracts. This discovery was followed both by wild bidding for Northern Pacific—bidding so wild that its cash price reached \$1000 per share—and by sacrifice sales of other securities. The collapse in prices which resulted from the latter was declared by the *Financial Review* to have been the worst ever known.<sup>32</sup> To save the situation, a syndicate of bankers was formed for making loans on the stock exchange, and the two groups of contestants for the control of Northern Pacific agreed to settle all contracts for the stock at \$150 per share. Despite the violence of the panic, no stock-exchange house failed. The market was irregular for some time, but toward the end of May a sustained advance began. For the rest of the year prices were fairly well maintained at a level between the high and the low points of the panic month. The important result was that the public had been badly scared, though not seriously hurt, and remained out of the market.

### 4. *The Prosperity of General Business in 1901-02*

This stock-market panic was by no means the only unfavorable feature of the year. Severe droughts cut down the yield of oats and made the corn crop smaller than in any year since the disastrous season of 1894. But the wheat crop was harvested too early to be seriously affected and proved exceptionally abundant. The steel trade suffered from a great strike by the Amalgamated Steel, Iron and Tin Workers against the new United States Steel Corporation. President McKinley was shot September 6 and died on the fourteenth. Stocks suffered a sharp break on the day following his assassination and again on the

<sup>32</sup> 1902, p. 13. I have followed the account of the "corner" given by A. D. Noyes, *Forty Years of American Finance*, chapter xii.

day before his death. The attempt of the Amalgamated Copper Company to keep their basic price at 17 cents per pound broke down in December, and was followed by a fall to 13 cents. The cotton-goods trade was not satisfactory and production was curtailed by agreement in the spring. Corn exports were reduced by the short crop, iron and steel exports by the depression in Europe, and copper exports by the depression and by high prices.

So strong was the business situation, however, that none of these depressing influences had more than momentary effect. Clearings outside of New York ran ahead of the record of 1900 every month in the year. The railroads proved unable to handle promptly the enormous traffic tendered them, so that an unparalleled car shortage developed in the autumn.

This contrast between abounding prosperity in general business and troubled financial markets continued through 1902. Again the volume of trade was declared to be greater than ever before, and again the railways were offered more freight than they could move in the autumn. Such lines as the Pennsylvania, New York Central, Baltimore and Ohio, and Illinois Central sold enormous security issues to provide larger traffic facilities. In June the Steel Corporation and in November the Pennsylvania Railroad made voluntary increases of 10 per cent in wages—an example which was widely copied before the close of 1902 or early in 1903. The farmers had most brilliant harvests. Even the high price of meat which followed from the deficient stock of corn and the great anthracite coal strike of May to October did not stem the rising tide. But financial reports betrayed signs of increasing strain. The public continued to stay out of the stock market, and the number of shares sold in New York was nearly a third less than in 1901, though greater than in 1900 or 1899. Heavy traffic, indeed, helped the prices of railway shares to rise in the summer and autumn when the large harvests became assured. But the more speculative industrials did not recover much of the ground lost in 1901, despite one or two periods of apparent activity under clever manipulation by pools. Meanwhile the money market in the autumn, when the demand for funds to move the crops was at its height, became more stringent than at any time since 1896. Mr. Shaw, the secretary of the treasury, adopted extraordinary measures of relief—increasing government deposits in the national banks, stimulating larger issues of banknotes by giving the deposits to institutions which agreed to increase their circulation, and finally by accepting other than federal bonds as security for deposits on condition that the bonds released be made the basis of new note issues. But these efforts did not prevent a return of stringency in November and December, a return accompanied by heavy liquidation in the stock market. Railway and industrial shares alike fell in price.

5. "*The Rich Man's Panic*" of 1903-04

The liquidation in stocks which began in November and December, 1902, continued with hardly a check until November and December, 1903. So pronounced and so long a decline of security prices had scarcely occurred before. The explanations offered made this liquidation in 1903 the aftermath of the speculation of November, 1900, to May, 1901. When the investing public was suddenly scared out of the market on the ninth of May by the gyrations of Northern Pacific and the crash of other shares, the great banks and capitalists interested in underwriting syndicates had to take over large blocks of industrial securities which they had hoped to unload promptly at a profit. The men concerned were strong enough to defend their holdings in the panic month, and to keep prices fairly level through 1901 and most of 1902. In this effort they were greatly aided by the prevalence of prosperity. But they could not work off the bulk of their holdings, for the investing public resolutely kept out of the market for industrials. This strained situation might have continued even longer had it not been for European intervention. The post-election speculation of 1900, with which the trouble began, had been financed largely with funds borrowed from foreign banks. Favored by the business dullness abroad, the borrowers were able to retain a large part of these loans until towards the end of 1902. Then the Europeans began to recall their funds. To meet such demands American banks had to insist upon repayment of loans by their own borrowers. There remained nothing for the latter but to dispose of their investments. Hence the great outpouring of securities which began in November, 1902, and ran for at least a year.

The public felicitously dubbed this liquidation "the rich man's panic." But no panic in our technical sense occurred. A few of the new industrial corporations failed outright, the United States Shipbuilding Company was stillborn, and a number of financial houses became bankrupt. Even the best railways and municipalities found it difficult to borrow on their accustomed terms, and had to raise the rate of interest on their bonds, or resort to the issue of short-time notes. Still, the number of disasters was small in view of the severity of the decline on the stock exchange, apparently because the losses fell largely upon men of great wealth.

In 1903 the reaction in the financial markets at last began to be felt outside. Difficulties in borrowing on the part of the railways reacted upon the demand for goods, particularly for iron and steel. In this industry the second half of 1903 accordingly brought a period of depression and restricted production. Manufacturers in many other branches complained of smaller orders, of increased expenses, of extortionate demands by trade-unions, etc. The railways very generally reported gains in net earnings which were small in comparison with the gains in gross earnings, and accounted for the difference by

pointing to the higher cost of everything they bought. The cotton trade suffered especially from the high price of the raw material, in which a gigantic speculation was carried on under the leadership of Daniel J. Sully. But the farmers had a satisfactory year; for, while crops were smaller than in 1902, they brought higher prices. And clearings outside of New York showed moderate gains in every month save May and July.

The slight and doubtful gains of general business in 1903 turned into moderate losses in the first seven or eight months of 1904. Clearings both in New York and outside ran behind the corresponding records of the year before from January to July—with negligible exceptions—and the gain of August was trifling. Substantially the same testimony is borne by railway receipts, by the accumulation of idle money in the banks, by very low rates of interest, by the arrest of the advance in wages, and the defeat of the men in most of the labor contests. Extremely severe weather from January to May, hampering traffic and threatening the early crops, the conflagration in Baltimore resulting in losses put at 100 millions, and the fears excited by the war in the Orient, were secondary factors, reinforcing the brake upon business activity. On the other hand, the investing public developed an insatiable appetite for high-class bonds, so that both corporations and municipalities were able to satisfy their capital requirements, and provide funds for new developments. In the stock market the lowest points were touched in March. Contrary to expectations, the success of the government in the Northern Securities case in that month was followed by a rise in prices, which ran on slowly until July and then quickened its pace. Judge Parker's action as candidate for the presidency in committing the Democratic party to an explicit acceptance of the gold standard prevented the autumn campaign from exercising the disturbing influence noted in 1896 and 1900. Finally, towards autumn the assurance of abundant harvests, save of wheat, encouraged the business public. Amid these favoring circumstances, the reaction was terminated in a remarkably brief time. The rate of progress in general business had not slackened notably until 1903, the actual losses were confined mainly to the months of January to July or August, 1904, and a vigorous revival began in September.

#### 6. "*The American Invasion of Europe*"

The points of similarity and contrast between the course of business conditions in America and Europe during the years 1897 to 1904 may be brought out in developing a topic concerning which little has been said—the growth of foreign commerce.

The official record, which made a deep impression on men's minds both here and abroad, is summarized in the following figures. Fiscal years are taken, because they happen to correspond more closely than calendar years with the changes in business conditions.

## MERCHANDISE EXPORTS AND IMPORTS OF THE UNITED STATES IN MILLIONS OF DOLLARS

	Exports	Imports	Excess of exports
July 1, 1896, to June 30, 1897 .....	1,051	765	286
July 1, 1897, to June 30, 1898 .....	1,231	616	615
July 1, 1898, to June 30, 1899 .....	1,227	697	530
July 1, 1899, to June 30, 1900 .....	1,394	850	544
July 1, 1900, to June 30, 1901 .....	1,488	823	665
July 1, 1901, to June 30, 1902 .....	1,332	903	478
July 1, 1902, to June 30, 1903 .....	1,420	1,026	394
July 1, 1903, to June 30, 1904 .....	1,461	991	470

To understand the pride which these figures aroused in America and the alarm they excited in Europe it is but necessary to note how far they surpassed all previous records. Never but once before had American exports exceeded a billion dollars, and that record (1,030 millions) had been made by the extraordinary harvest conditions of 1891. The previous high record for excess of exports over imports—265 millions—had been made as long ago as 1878-79. The average excess of exports for the decade July 1, 1886, to June 30, 1896, had been 70 millions.

Current opinion in the United States hailed the extraordinary gain of exports and the still more extraordinary balance in our favor as a sign that this country was conquering the markets of the world. It was prophesied that after paying off all its own debts the United States would presently become the leading "creditor nation" of the world, and that New York would displace London as the foremost center of finance. Abroad, Mr. Chamberlain's protectionist propaganda was supported by pointing to Britain's danger from American competition in neutral markets, and an Austrian minister of finance suggested a European tariff alliance against the United States. So lively was popular interest in the subject that the illustrated magazines took up the "romance" of commercial expansion. In 1900 *McClure's* published a series of articles by Mr. R. S. Baker entitled "Our New Prosperity," and in 1902 *Scribner's* brought out Mr. F. A. Vanderlint's "American Invasion of Europe."

But in 1901 it began to appear that the patriotic boasts had been premature. Competent critics demonstrated that the treasury's figures for the balance of trade did not show the balance of payments. Not only was there reason to believe that the customs-house values of many imports were too low, and of certain exports too high; but it was also necessary to take account of other items than the commerce in merchandise,—such as the expenditures of Americans traveling abroad, the freight paid to foreign shipping companies, the foreign remittances of immigrants, the interest and dividends on investments by foreigners, the foreign profits made by buying our securities in times of depression and selling them back at higher levels, etc.<sup>33</sup> Again, as prosperity

<sup>33</sup> See N. T. Bacon, "American International Indebtedness," *Yale Review*, November, 1900; *Final Report of the Industrial Commission*, 1902, pp. 34-41; H. Dietzel, "Die 'enorme Ueberbilanz' der Vereinigten Staaten," *Jahrbücher für Nationalökonomie*, August and November, 1905.

grew in the United States imports rose rapidly, and thus cut down the credit balance. On the other hand, when the European "boom" of 1897 to 1899 passed through the crisis of 1900 into the depression of 1901 to 1904, our exports fell off. For the relaxation of domestic demands for their products allowed foreign producers to compete more vigorously for the trade of neutral markets. Not only could they quote lower prices than at the height of their own "boom," but they could also promise quicker deliveries. In the world of finance, American subscriptions to European loans, of which so much was made in 1900, fell to much lower figures in later years, and the credit balance in favor of our bankers, put at \$200,000,000 at the close of 1900, was presently exhausted and replaced by a debit balance of similar dimensions. To finance the great industrial consolidations of 1901 and the heavy trade of 1902, American bankers had been obliged to negotiate finance bills on an enormous scale in London, Paris, and Berlin. Finally, the stock liquidation of November, 1902, to November, 1903, forced by the demand for repayment of foreign loans, proved that the American money market had not yet emancipated itself from European domination.

## VI. BUSINESS DEPRESSION IN EUROPE, 1901-04

The annals of European business were dropped on the outbreak of the crisis in 1900 in order to sketch the long period of American prosperity which led up to the "rich man's panic" of 1903-04. What is next to be recounted is the gradual ebbing of the business tide in England, Germany, and France after the crisis of 1900 had passed.

### 1. *England*

The ebb in English business which began after the middle of 1900 continued through 1901. Wholesale prices, wages, and stocks all fell; unemployment increased; railway earnings and provincial clearings both indicated a decline in trade; foreign commerce was slightly smaller in money value, though slightly greater in physical volume. The depression, however, was moderate, and the *Economist* thought the volume of business above the average, though less than in 1899.

The Boer War ended in 1902, but the hoped-for revival of business did not come. Foreign trade was a trifle larger both in volume and in value, stimulated by American prosperity and retarded by German depression. Domestic trade made some progress, but less than foreign trade. Prices and wages sagged a little further, and unemployment increased. The public was apathetic with reference to stock speculation and even investment; nevertheless stock prices advanced a trifle. The farmers fared better than in 1901. On the whole, the year was characterized as neither good nor bad.

Again in 1903 disappointment was felt. The year, though "not downright bad," was poorer than 1902. Disturbances in Macedonia and the prospect of war between Russia and Japan interfered with foreign commerce, which nevertheless registered slight gains. The great cotton industry was disturbed by the wild fluctuations in the price of the raw material—fluctuations for which American speculators were blamed. The farmers fared miserably from a wet harvest. Wage-earners suffered from less pay and less employment. Domestic trade also fell off, particularly in the last six months. The *Economist* believed Mr. Chamberlain's protectionist propaganda to be a disturbing factor. In financial centers there appeared to be very little capital for investment; the stock exchange was dull and prices fell.

This financial and industrial depression still weighed upon the country throughout the greater part of 1904. Foreign trade continued to gain slowly, and proved the mainstay of the manufacturing industries. Domestic trade, on the contrary, was further restricted. Wage-earners once more found their condition grow worse from a slight decline in wages and a larger decrease in employment. The farmers, however, had an average year—decidedly better than 1903. And the stock exchange, perhaps the most sensitive barometer of the business world, gave signs of revival, though in a hesitating fashion. By the close of the year there came no marked activity, but a more hopeful feeling, which 1905 abundantly justified.

## 2. Germany

During these years German business pursued a similar course, save that the depression was more severe, and that the revival began somewhat sooner. With its bank failures, disclosures of fraud, low wages, short hours, unemployment, mediocre harvests, internal dissensions within syndicates, struggles between producers of raw materials and manufacturers over prices, pessimism among investors, and crisis on the bourse, 1901 was a bad year indeed.

Although 1902 brought no fresh disasters, it brought little alleviation from hard times. The harvests were far from good. But the distrust caused by the great bank failures gradually lessened as the months passed, and investors began to buy government securities with freedom.

Next year the strain was held to have ended and a slight improvement to have begun. The coal, iron, electrical, and shipbuilding industries fared better; farmers had satisfactory crops, both imports and exports increased, unemployment diminished, and in general there seemed ground to hope for genuine prosperity in 1904.

How far this hope had been realized was a matter on which opinion still differed at the end of the next year. The bourse had a bad panic on February 8 and 9 when news of the war between Japan and Russia surprised the German



market. Semi-official reports had established the expectation in Berlin that no rupture would occur and the "bulls" were caught in the midst of a campaign for the rise. However, aid was lent by the great banks, and despite heavy failures general business was not seriously shaken. The year was marked by numerous combinations of capital, comparable in extent with those of 1898-1901 in America. In industry, electrical and textile establishments did better than in 1903; coal, iron and steel enterprises not so well. The farmers had excellent crops of cereals, but poor crops of fodder and potatoes. All in all, the statistical record indicated a gain over 1903, but one limited in extent.

### 3. *France*

As often before, so in 1900, France felt the depressing effects of the crisis less than her neighbors. The liquidation continued through 1901, which was marked by slack business and a fall in industrial shares. Moreover, the staple crops, excepting rye, were less than the year before. The one sign of lively business was a "boom" in gold mining shares in December, based upon reports that operations would be resumed shortly in South Africa.

No resumption of activity came in 1902; on the contrary, industrial and commercial operations were further restricted in many lines. The speculation in gold mines came to grief because everyone tried to sell at a profit when peace was signed. But the farmers, except those producing wine grapes and sugar beets, had a better season.

A slight improvement in conditions led the commentators to say that the depression had come to an end in 1903. And in 1904 they declared that the upward trend had continued, though buoyancy was far from being attained. The most striking feature of this year was the calmness with which the French investors, who held many millions of Russian bonds, viewed the Japanese victories. On February 8 news that war had begun caused a sharp break on the bourse, and on the twentieth there was a serious decline, in which other stocks suffered more than the "Russians." But the great banks in conference with the minister of finance came to the aid of the market, and a prompt recovery was effected. In later months there were several periods of advancing prices, and in the intervals between them what gains had been made were firmly held. Thus, as in England, the stock market of 1904 heralded the better times of 1905.

## VII. THE PROSPEROUS TIMES OF 1905-06 IN EUROPE AND AMERICA

The forward movement, which began upon the great stock exchanges in the latter part of 1904, developed into a world-wide march of prosperity in 1905 and 1906, and ended in the world-wide crisis of 1907. Between the four countries whose business history we have been following the differences to be noted in these years are differences only of degree.

### 1. *England*

In England the impetus to business prosperity seemed to come from abroad. In 1905 the export demand for British goods was nearly 10 per cent larger than in 1904, and the consequent activity of the export trades reacted upon domestic business. By the end of the year industrial prosperity had become general.

Similar conditions prevailed in 1906. Exports gained nearly 14 per cent over the large totals of 1905, and all departments of foreign trade made new high records. For the first time the trade totals ran beyond a billion pounds sterling. Good crops among the most important customers for British goods, and the heavy domestic demands upon American and German manufacturers which lessened their competition in neutral markets, were among the most important causes of the immense exports. Domestic trade expanded under these conditions, though in less measure.

On the stock exchange alone 1906 was disappointing. The aggregate prices of 325 representative securities actually fell in this year—"one of the most active and prosperous" that England "ever experienced."<sup>34</sup> In explanation of this anomaly, the *Economist* pointed out that the interest rates allowed by bankers on deposits had risen above the rates on the best securities, and that business men would continue to put their large profits back into their own enterprises so long as the "boom" lasted. The high interest rates became more marked as the year progressed, until finally in October the Bank of England raised its discount charge to 6 per cent, a rate seldom attained except when a crisis is feared. Such an extraordinary charge for discounts, in the midst of prosperity, was taken to be a measure of defense against the enormous withdrawals of gold by Americans. To support a great stock-market campaign in Wall Street during the season when the demand for money to move the crops was at its highest point, American capitalists had negotiated immense sums of finance bills in London and employed the proceeds for importing gold. Successive advances of the bank rate from 3½ to 5 per cent having failed to check this process, the Bank adopted the decisive measure of a 6 per cent rate. Within a week the withdrawals of gold for New York ceased; but the money market continued so stringent to the close of the year that a 7 per cent rate was feared. To prevent such a disturbing measure the Bank of France went to the aid of London, by discounting a large amount of English bills.

### 2. *Germany*

German business differed from English in 1905 and 1906 chiefly in that the impetus to prosperity came from domestic sources, and that the "boom" was more intense. The trade revival made such rapid progress in 1905 that the

<sup>34</sup> This index number of stocks is kept by the *Bankers' Magazine* of London. The aggregate values are given for December 18, 1905 and 1906, as £3,078,000,000 and £3,021,000,000—a fall of 1.95 per cent.

second semester suggested comparison with the wonderful times of 1898 and 1899. The enormous demands for capital caused a rapid rise of interest rates, so that the year ended with 6 per cent as the official minimum of the Reichsbank.

In 1906 the volume of business increased still further; prices rose; employers complained of a scarcity of labor, of coal, of raw materials, and of capital. But amidst this intense activity of trade and industry, the stock exchange was dull in Germany as in England. The highest level of security prices had been touched in 1905. The public deserted such conservative issues as the government 3 per cents, in favor of industrial stocks. But even in the case of the latter, prices sagged. "Dear money" was the current explanation. The volume of business had outgrown the capital resources of the country, so that loans, whether on short or long time, were difficult to secure at all, and impossible to secure except on onerous terms. High as the Bank of England rates were in 1906, the Reichsbank rates were higher still—6 per cent on January 1, presently reduced to 5 per cent, and in May to  $4\frac{1}{2}$ , but advanced again to 5 per cent in September, 6 per cent in October, and 7 per cent in December.

### 3. *France*

In France, also, 1905 and 1906 were years of expanding trade at home and abroad, and of widely diffused prosperity. But with their customary prudence in business matters, the French advanced less rapidly than the Germans or the English. Moreover, the internal difficulties which the Russian government had to face after its military defeat, and the Morocco affair, were more serious dangers to French than to other investors.

This prudence had its reward even in 1906. While London was facing a 6 per cent and Berlin a 7 per cent bank rate, Paris kept 3 per cent throughout the year, and the Bank of France was able to help the British market as well as to serve its own. Even the open-market rates in Paris advanced but slightly over the average for 1905, and remained far lower than the corresponding rates in London and Berlin. Hence the Paris bourse did not have to carry the incubus of "dear money." The reports speak of great activity even in the usually dull season of summer. A large number of new industrial securities, many foreign, were offered to French investors and bought with enthusiasm. Securities with fixed yield, however, declined in price.

### 4. *The United States*

Finally, the business history of America in 1905 and 1906 is much like that of Germany. The volume of both domestic and foreign trade and of industrial production expanded month after month, prices and wages rose rapidly, the railways were taxed beyond their capacity by the freight tendered, and the farmers were favored with abundant crops. On the whole, business prosperity

seemed even more general and more intense than in 1899 or 1901. Not even such a disaster as the San Francisco fire caused more than a momentary pause in the activity.

But, as in England and Germany, this expansion of business overtaxed the resources of the money market. Periods of increasingly severe stringency recurred at ever briefer intervals, particularly in the autumn when the crops were being harvested and sent to market. Resort was had to foreign borrowings upon finance bills on a grand scale; but, even so, interest rates kept rising, and both commercial paper and bonds grew harder and harder to sell.

For a time it seemed as if "dear money" could not repress the buoyancy of the stock market. The upward rush of stocks which began in 1904 went on unchecked until March, 1905. A slight decline in April was followed in May by a decided break in prices. But next month a new speculation for the rise began, which was carried on with few checks to a culmination in January, 1906—and that in the face of call-loan rates which averaged over 9 per cent from October to January.

The stock-exchange record of 1906 was far less brilliant—again as in England and Germany. The general course was downward from the culmination in January to a much lower level in May. In June and July the market seemed to hesitate; but in August announcements of increased dividends on the Hariman railways, and the resumption of dividends on the common stock of the United States Steel Corporation led to another great outburst of speculation and an upward rush of prices. For the rest of the year the market wavered around the high level established in August, never getting quite back to the January climax and gradually weakening toward the end of the year.

## VIII. THE CRISIS OF 1907

The international crisis which terminated this period of business expansion came in 1907. The American panic of October and November was but its most violent manifestation.

### 1. *England*

English statistical indices of the volume of business in 1907 almost all show increases above the high records of 1906. But in the former year the tide was rising; in 1907 it was receding. The upward movement of prices culminated as early as May, and after midsummer trade activity began to slacken. However, the large amount of orders already on hand kept production on a high level until the close of the year. The high rates of interest, which continued from 1906 both in England and elsewhere, handicapped business by discouraging the attempt to raise new capital. On the stock exchange both speculators and professional dealers suffered heavy losses. During the first semester the

activity of general business left but a small surplus of funds for investment and speculation; during the second semester discouragement was felt over the curtailed business expansion. The English crisis, however, bade fair to be as quiet and uneventful as the crisis of 1900. But the collapse of credit in America in October and November led to an enormous outflow of gold, threatened British investors with heavy losses, and compelled the Bank of England to advance its rate to 7 per cent. Elastic as the financial organization of England is, the strain of this foreign panic was severely felt, and business fell off at a more rapid rate.<sup>34</sup>

### 2. *Germany*

Germany, also, had clearly passed the climax of her "boom" some months before the American panic occurred. Prices had turned downward, the peculiarly sensitive iron and steel markets had begun to weaken, industries which depended upon current borrowings—like the building trades, and shipbuilding—were less active, the labor market showed an increase in the number of men seeking jobs as early as July, investors were apparently losing confidence in industrial shares, interest rates continued to rise, the course of quotations on the bourse was downward, and complaints multiplied about the high cost of living, the heavy expenses of doing business, and the decline of net profits. But the recession of activity which had begun was very gradual until October. Then the bad news from New York greatly intensified the stringency of money, and led the Reichsbank to raise its rate to 7½ per cent. At once the slow decline of activity became rapid. One bank failed, two conspicuous speculators went bankrupt, and credit received a severe shock. But coöperation among the great financial institutions tided over the difficult months, and Germany had no panic.

### 3. *France*

France once again came off with little loss. The Bank did not raise its discount rate above 4 per cent, and was able to render liberal assistance to the money market of London and hence indirectly to all money markets. Even on the bourse the American panic was but slightly felt; only a few of the securities fell in price, and these few were mainly American railways. General business was not seriously hampered by dear money, manufactures maintained the course of moderate prosperity which had characterized 1905 and 1906, and railways had a considerable increase of traffic. Never, in short, was the strong side of French conservatism more conspicuous by contrast with the weak side of American and German enterprise than in 1907.

<sup>34</sup> A fuller account of this crisis is given below in chapter xii.

#### 4. *The United States*

The course of events in the United States was in general like that in England and Germany, save that our credit and banking system broke down under the strain. The crisis—that is, the recession of business activity—antedated the panic by several months. It is true that the volume of general business and the rate of industrial production gave few signs of waning before the bank failures of November. But prices of raw materials had begun to recede in the spring or early summer, new orders were lighter in the iron and steel trades, the copper market was oppressed by the accumulation of unsold stocks, and three large industrial enterprises—Milliken Brothers, a steel firm, the Pope Manufacturing Company, makers of automobiles, etc., and several of the Westinghouse companies, manufacturers of electrical equipment—were forced into the hands of receivers in June, August and October. Meanwhile the investment market for loans was becoming more and more stringent. Even the strongest railways were giving up the effort to sell long-time bonds, and substituting two- or three-year notes to meet their most pressing capital requirements. New York City, after three unsuccessful attempts to float 4 per cent bonds, finally yielded to necessity and on August 26th offered \$40,000,000 at 4½ per cent.

On the stock exchange the difficulty of maintaining the level of quotations which characterized the later months of 1906 became an impossibility in 1907. A rapid fall in January and February developed in March into a crash of prices, in which all the gains of the post-election “boom” of 1904 and the “bull” campaigns of 1905 and 1906 were lost. April brought a partial recovery; but in May and June prices sagged again. Another upward turn in July was followed by a second crash in August, when the low prices of March were eclipsed. Early in September the market showed a little strength, but presently prices began to decline once more, and the bank embarrassments which started the panic in October came on a falling market.

Acute trouble began with the suspicion which fell upon certain New York banks, controlled by a group of financiers who were believed to have suffered heavy losses through the decline in the prices of copper stocks. To forestall a general loss of confidence, the clearing house examined the affairs of those among the threatened institutions which belonged to the association, and agreed to give them such assistance as they might need. The publication of this news in the morning papers of October 21 did much to allay distrust. A panic might have been averted had not the clearing agent of one of the largest trust companies in the city announced late on the same day that after October 22 it would refuse to be responsible for checks against this client. Next morning the trust company opened its doors to a run and after paying out \$8,000,000 to clamorous depositors suspended payments.

The panic which followed exhibited all the usual phenomena: runs upon banks and trust companies, hoarding of money, a premium upon currency, restriction of payments by the banks, call-loan rates above 100 per cent, unsalability of commercial paper, a severe decline of prices on the stock exchange, heavy bankruptcies, the interruption of general business from inability to get money for pay-rolls, difficulty in making collections, and demoralization of the domestic exchanges. From New York as a center these conditions spread rapidly over the whole country. By way of remedy, money pools for lending on the stock exchange were formed; clearing-house loan certificates were issued both for settlement of bank balances and for general circulation; legal holidays were declared by the governors of Nevada, Oregon, and California; national banks increased their note issues as rapidly as possible; the secretary of the treasury enlarged the government deposits in banks by some \$35,000,000 and offered new government securities for sale; and over \$100,000,000 of gold was imported from Europe in November and December. By the end of the year the panic was under control and business passed into the phase of depression.<sup>35</sup>

## IX. THE DEPRESSION OF 1908-09 AND THE REVIVAL OF 1909-11 IN ENGLAND AND GERMANY

The crises of 1890 and 1900 had both been followed by about four years of depression in all three of our European countries. But not more than a year or a year and a half of dullness followed the crisis of 1907. In reviving again business was repeating its history; in reviving so quickly it was repeating its history with a difference. A further difference presently appeared. In 1910, for the first time in twenty years, business cycles took opposite directions in different European countries. Conservative France went off with enterprising America upon the path of decline, leaving England and Germany together upon the highway of prosperity. The closing years of our period are therefore not without points of novelty.

### 1. *England*

We have seen that signs of an approaching crisis appeared in England early in the summer of 1907. The outbreak of panic in America aggravated the difficulties arising from local conditions by causing an extreme advance in discount rates. Although no panic occurred in England, business received a severe check. As the orders already booked by merchants and manufacturers were filled, the activity of trade began to slacken.

Soon after the beginning of 1908 this decline in the volume of business became rapid. Export trade suffered not only from depression in America, but also from a falling off of oriental demand. Heavy bankruptcies which

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<sup>35</sup> A fuller account of this panic is given in chapter xii, below.

had occurred among Chinese and Japanese merchants affected the market for cotton goods. Harvest failure and commercial depression in India crippled England's most important customer. Under these unfavorable conditions the aggregate value of exports fell over 11 per cent behind the record of 1907. That domestic business likewise suffered was shown by a decline in railway receipts and in the profits of joint-stock companies, by a decrease in employment, reductions of wages, and numerous bankruptcies. Probably the farmers fared best. While the crops did not quite equal those of 1907, still they were well above the ten-year averages.

As usual in times of depression, money became cheap and abundant. From the crisis figure of 7 per cent, the bank rate was gradually reduced to 2½ per cent by the twenty-eighth of May, at which figure it remained for the rest of the year. Corporations, both domestic and foreign, hastened to avail themselves of these low rates. Many loan applications which had been deferred because of the unfavorable market for bonds in 1906-07 were now brought forward, and other companies which had sold one- or two-year notes to meet their most pressing requirements now sought to fund these floating debts. Consequently, while general business was declining in volume, the volume of investment business broke all records.

Just how long this depression lasted it is difficult to say. Unemployment was greatest in October, 1908; wholesale prices were lowest in February, 1909;<sup>36</sup> the import trade did not begin to recover until April and the export trade not until June, 1909; wages did not show an increase until the last quarter of the year. But it is certain that a turn for the better occurred late in 1908 or early in 1909. While the first months of the latter year found industry still inactive, the later months brought a vigorous revival. In few departments of business were the high records of 1907 equalled, the Lancashire cotton trade was slow in recovering from the slump in Indian purchases, and the high cost of living caused bitter complaint; but by the close of the year prosperity was fairly re-established. Railway receipts, corporation profits, security prices, clearings, and interest rates were all higher. The farmers were troubled by wet weather in harvest, but had a fairly successful year. The number of business failures was the lowest for a decade. But, owing both to the higher rates of interest and to the satisfaction of deferred demands for capital, the volume of recorded investments was somewhat smaller than in 1908.

The revival of 1909 made rapid progress in 1910. Indeed, England was distinctly the most prosperous among the great nations of the world in this year. Her imports, exports, re-exports, bank clearings, and capital investments all surpassed the previous high records. Business failures were even fewer than in 1909, unemployment shrank again, wages increased, and wholesale prices continued to rise. The farmers did not share fully in the general pros-

<sup>36</sup> Sauerbeck.

perity; but despite another wet season did fairly well. A "boom" in rubber and oil stocks attested the buoyant optimism of investors. Even the occurrence of two general elections in a single year could not check the rising tide. And the year closed with bright prospects of a further increase in the volume of trade during 1911.

This promise was measurably fulfilled. The woolen, shipbuilding, iron, steel, shoe, and cotton trades were highly prosperous; exports increased 5.6 per cent; railway receipts were larger; the percentage of unemployed members among trade-unions was less than in any year since 1900; wages were materially increased; the farmers had a profitable season, for though yields were reduced by drought the quality of the crops was excellent and prices were high. But several untoward developments marred the record. Building was not active; the tin-plate trade suffered a decline of orders from America; all the trades using sugar as an important raw material were injured by its high cost; the coal trade was kept in uncertainty by the prospect of labor troubles; the railways had a great strike to contend with; the high cost of living augmented the unrest among wage-earners in many other trades; and financial affairs were disturbed by a fear of war with Germany. One savings institution assigned, and a second had to be taken over by a group of banks. The applications for fresh capital, while large, were less than in 1910. The stock exchange was dull in the second half-year, and the prices of securities sagged. As a consequence town clearings fell off, while country clearings, both in London and in the provinces, increased. The *Economist's* table of the profits of upwards of two hundred industrial companies showed an average gain of 8.6 per cent over 1909-10; but the gains were slight in the last three months, suggesting that the boom was passing.

## 2. *Germany*

The course of business in Germany from 1907 to 1911 differed only in degree from that in England.

A panic was avoided in 1907, but 1908 brought a severe depression. The cartels, which have recently come to play so large a role in Germany, endeavored to meet the situation by preventing the cutting of prices. In this policy they achieved measurable success, but at the expense of a severe restriction in production, and much friction with their customers. A few of the weaker cartels broke up under the strain, and the process of forming new organizations of this type was temporarily checked. Meanwhile foreign commerce fell off, unemployment increased, and the urban demand for consumers' goods shrank. The farmers, however, had good harvests, and their enlarged purchases made up in a measure for the slack demand from other quarters.

A revival of activity came in 1909, but it seems to have begun a few months later than in England. The stock market developed animation in the second

third of the year, but it was not until after midsummer that a change for the better was distinctly marked. Excellent harvests, combined with high prices for farm products, supported the movement. Heavy applications for long-time loans showed that the industrial companies anticipated an increase of orders and wished to extend their facilities. That the investing public had confidence was shown by the readiness with which it turned from investments in bonds bearing a fixed interest to investments in stocks bearing variable dividends.

The good promises of 1909 were amply fulfilled by 1910. Prosperity extended steadily in almost all branches of trade. Both the foreign and the domestic demand for German products increased, and unemployment diminished. Interest rates rose again, and the volume of new security issues declined somewhat. But, satisfactory as the year was for German business, it did not attain the pitch of activity prevailing in England.

Poor harvests caused by drought diminished the further expansion of trade in 1911. The prices of food rose to an extraordinary level, while the prices of raw mineral products were moderate. Nevertheless, the coal, iron and steel trades were extremely active. Railroad receipts, unemployment returns, and statistics of exports and imports all testified that the volume of business was greater than in 1910. As in England, however, the financial markets had a different story to tell. The threat of war with England and France caused the recall of French funds invested in German bills, also the withdrawal of large sums from the banks by local depositors. Prices fell heavily on the stock exchange, new security issues were checked, interest rates were uncertain and high. The banks were able to borrow heavily from New York, however, and the tension relaxed when the warcloud blew over. On the whole the year was one of marked prosperity; but not prosperity of such intensity as that of 1899 or 1906.<sup>37</sup>

## X. THE DEPRESSION OF 1908, THE REVIVAL OF 1909, AND THE REACTION OF 1910-11 IN FRANCE AND THE UNITED STATES

### 1. *France*

France did not remain immune from the depression of 1908, but she was affected less than England or Germany. Industrial activity declined somewhat in comparison with 1907, but was not much below what the French commentators considered normal. Business men set their affairs in order with little difficulty, and by the end of the year were ready for a revival of activity when the first favorable impetus should come.

<sup>37</sup> For business conditions in Germany in 1910 and 1911 I have relied upon L. Pohle's reviews published in the February numbers of the *Zeitschrift für Socialwissenschaft*, 1911 and 1912.

As in the case of her neighbors, so in that of France, a distinct revival began in 1909. Both in domestic industry and trade and in foreign commerce there was greater activity. The shares of industrial companies and of banks, as well as government securities, rose in price. Aside from wine-growers, the farmers fared well. The great coal, iron, and steel producers had a busy season, and the year ended with prospects of greater prosperity in 1910.

Unfortunately, these promises were not fulfilled in France, as they were in England and in Germany. Extraordinary floods interfered with spring planting and heavy rains interfered with harvests. Both the wine and the grain growers had a wretched season. In a country where agriculture is so important in comparison with manufacturing, serious loss to the farmers means a poor year for general business. Extensive strikes added to the trouble. Increase in foreign commerce and activity in financial circles were slight compensations for agricultural depression. Hence the parallelism between the course of business in England, Germany, and France was notably broken in 1910. While the former countries enjoyed heightened prosperity, France relapsed into depression.

In 1911 the harvests once more suffered, this time from drought; but the shortage was not so great as in 1910. Industry and commerce appear to have rallied from depression, but they did not attain high prosperity. The strained relations with Germany arising from the Moroccan situation caused heavy withdrawals from the banks, and compelled the latter to restrict their advances to merchants, manufacturers, and dealers in securities. At one time the strange spectacle was presented of New York lending money to Paris on a large scale. Importations were increased beyond all precedent; but the huge total resulted less from prosperity than from the short crops harvested in 1910. Riots ascribed to the high cost of living caused much sensation. On the whole, the year was one of unrest and uncertainty, but not one of serious depression.

## 2. *The United States*

In America the panic of 1907 was followed by what the *Financial Review* declared to be the worst industrial paralysis in the country's history.<sup>38</sup> During the first half of 1908 the production of pig-iron was barely more than 50 per cent of the production in the first half of 1907. Other trades making producers' goods suffered almost as severely. Of course, the total volume of trade did not shrink in so extreme a degree, because purchases of food, clothing, and the like cannot be stopped or postponed like the purchase of pig-iron. But from January to August railway gross earnings showed losses of from 12 to 20 per cent each month, and clearings outside New York losses of from 12 to 17 per cent in comparison with the corresponding months of the preceding year.

<sup>38</sup> The *Financial Review*, 1909, p. 11.

Unemployment assumed extraordinary proportions in the industrial centers, and emigration ran far beyond immigration.

In sharp contrast with this industrial and commercial depression was the buoyancy which presently developed in the financial markets. After February the prices of stocks began to rise and this movement continued without a serious check to the end of the year. By January, 1909, the railway shares had regained all the losses of the panic year, standing substantially where they had stood in January, 1907. No doubt this movement was greatly facilitated by the exceedingly low rates for money which came within two or three months after the close of the panic. With call loans to be had for less than 2 per cent, it was profitable to borrow money and buy securities which yielded interest or dividends of 4 per cent or over.<sup>39</sup> But the heavy purchases of stocks and bonds were also proof of reviving confidence; for men will not risk the purchase of securities with borrowed funds for the sake of a small margin of gain in interest, unless they think that the securities are more likely to rise than to fall on their hands.

In the autumn the hopeful tone began to extend from financial to commercial and industrial circles. Despite the slow rate of consumption, stocks of goods on the shelves of merchants and in the yards and warehouses of manufacturers had run so low that increased purchases became necessary. The second half of the year, accordingly, and still more the last quarter, brought a distinct increase in the volume of production and of general business. Good crops and high prices for agricultural products provided a firm foundation for the incipient revival.

During the winter and spring months of 1909 business was conducted in a rather cautious manner. The steel trade was disturbed in February by wild cutting of prices. Throughout 1908 the United States Steel Corporation had held stubbornly to the policy of maintaining the selling prices of its products. But, concluding that its competitors were secretly selling at reduced rates, the corporation finally changed its policy and announced that it would "protect its customers." The active canvass for orders which followed soon bore fruit and in the second half of 1909 the output of pig-iron broke all records. Meanwhile such indices of the volume of general business as railway gross receipts and clearings outside of New York showed steady gains and in the latter part of the year ran ahead not only of the figures for 1908 but also of the higher figures for 1907. Seemingly the improvement in business conditions began at least as early in America as in Europe and proceeded at a more rapid pace. It is certain at least that wholesale prices rose more rapidly during 1909 in the United States than in England, France, or Germany.<sup>40</sup> And once again

<sup>39</sup> See the monthly statistics of security prices and interest rates in chapter iv, section iv, below.

<sup>40</sup> See the table of relative prices of identical commodities in the United States and England, the United States and France, and the United States and Germany, in chapter iv, section i.

good crops (except of cotton), selling at high prices, added their powerful influence to the factors which made for prosperity.

We have seen that the revival of 1909 made rapid progress in both England and Germany during 1910, and that it was checked in France by an extremely bad season for the farmers. For once the course of affairs in the United States resembled that in France more closely than that in the other two countries. But the recession of activity in America was not due to agricultural disasters. On the contrary, the American crops were bounteous, with the exceptions of spring wheat and cotton, and, though prices were lower than in 1909, the farmers as a whole had a profitable season.

As is often the case, the first signs of the coming reaction were given by the stock exchange. The rise of transportation shares which had begun in March, 1908, ran on through 1909 with no serious check, and by December eclipsed even the highest record of 1906. Early in 1910 a reverse movement set in, which soon developed into a severe fall of prices. June brought the lowest quotations for a majority of the stocks, but there was no marked advance in the later months of the year. A decline of net earnings, caused by the necessity of paying higher wages, and the opposition of the Interstate Commerce Commission to an advance of freight rates, were the explanations commonly given of the pessimistic feeling of the market. Other matters of complaint were federal prosecutions of corporations, the prospect of further extension of federal control over railway charges, and the growing popularity of radical policies in politics—all tending, it was alleged, to shake the confidence of business men and investors. The money market gave no evidences of serious strain; but the railways and other large corporations had increasing difficulty in selling bonds. And since they could not raise money on favorable terms these enterprises reduced their purchases of rolling stock, rails, etc., thus passing on the depression to other industries.

As in 1908 the rise of railway stocks foreshadowed an expansion of business, so in 1910 the fall of railway stocks foreshadowed a contraction. The diminishing purchases of stocks and bonds, and the smaller issues of new securities brought with them in April a decline in the bank clearings of New York. The same month saw the beginning of a long decline in pig-iron production. From the centers of finance and industry the reaction spread slowly to other parts of the country. Outside of New York, clearings continued month by month to exceed those of the year before, but by ever narrower margins. Finally, in December the figures for 1910 fell below those for 1909. For the year as a whole, the volume of production in most lines was a trifle greater than that of the preceding year. But there was this significant difference—in 1909 the tide was rising; it was ebbing in 1910. Toward the end of the year, however, it was currently believed that the liquidation had nearly spent its force, and that another expansion of business might be expected in 1911.

The first month or two of the new year seemed to justify this belief; but the later months rudely dispelled it. On February 23, the Interstate Commerce Commission announced its refusal to sanction the increases in rates which both eastern and western railways declared were necessary. In consequence, the railways adopted a policy of retrenchment, reduced their orders for new equipment, and postponed when possible their plans for extensions. In many other industries the leading enterprises adopted a similar policy because of numerous "trust prosecutions." Apprehension was allayed in a measure by the decisions of the Supreme Court in the Standard Oil and American Tobacco cases. While the court ordered both combinations to be dissolved, it applied the "rule of reason" in construing the "Sherman anti-trust act," and approved plans by which the companies might be reorganized without heavy loss to the shareholders. Fresh alarm, however, was caused in October by the bringing of a federal suit against the United States Steel Corporation. Throughout the year, in fact, enterprise on the part of large capitalists was materially checked by uncertainty regarding the legal position of business combinations. Hence all the trades that depend upon the volume of new construction put under contract found 1911 a dull year.

Finance, of course, reflected this dullness in exaggerated fashion. Stock prices sagged downward to a low point in September, and the volume of transactions was smaller than in any year since 1898. Money was such a drug upon the market that New York banks found better rates for loans in Berlin and Paris than at home. New York clearings, affected by these conditions, fell 5 per cent below the moderate totals of 1910. Outside of New York, commerce and industry were depressed, indeed, but moderately. Clearings indicated a gain, but one less than the average—1.2 per cent. Poor crops probably had as large a share in this result as financial uncertainty. An unprecedented period of hot weather cut short the yields of grains. The hay crop was estimated to be the smallest since 1895, and the yield of potatoes was deficient. Alone among the great staples, cotton did well—indeed, better than well, for the crop was by far the largest on record. As a result of the short yield of breadstuffs here and abroad the cost of food advanced; but other prices were not well maintained.

Towards the end of the year depression relaxed somewhat. But in view of the coming presidential election, the business prophets generally refused to make optimistic forecasts for 1912.

## XI. SUMMARY

One who turns from reading economic theory to reading business history is forcibly impressed by the artificiality of all assumptions of a "static" or even a "normal" condition in economic affairs. For, despite all efforts to give technical meanings to these ambiguous terms, they suggest the idea of an unchanging order, or of an order which economic principles are always tending to re-establish after every aberration. But a review of business annals never discloses the existence of a "static" or a "normal" state in either of these senses. On the contrary, in the real world of business, affairs are always undergoing a cumulative change, always passing through some phase of a business cycle into some other phase. Prosperity is relapsing into depression, or becoming more intense, or breeding a crisis; a crisis is degenerating into a panic, or subsiding into depression; depression is becoming deeper, or merging into a revival of prosperity. In fact, if not in theory, a state of change in business conditions is the only "normal" state.

In recent years these changes have run a broadly similar course in different countries. But the similarity is less close and less regular than is often implied by writers who are celebrating the *Weltwirtschaft*. The business cycles of 1889-1911 synchronise better for England, France, and Germany than for any of these European countries and America. France had a crisis in 1889, some eighteen months before the Baring crisis occurred in England. German business revived in 1894, some time earlier than did French or English business. Again, in 1904 depression continued for several months in England after distinct signs of revival had appeared in Germany and France. Finally, in 1910, France suffered a recession of activity while England and Germany were enjoying an increase in prosperity. But, save the last, these are all minor differences, and there is no grave inaccuracy in assigning similar dates for the beginning and end of each phase of the successive business cycles: crisis in 1889-90, depression until 1894, revival in 1894-95 running up to a flood tide of prosperity in 1899, crisis in 1900, depression until 1903-04, revival followed by great prosperity culminating in 1906, crisis in 1907, depression in 1908, and revival once more in 1909.

These periods do not fit the United States. First the crop situation of 1891 destroyed the parallelism of events, making 1892 a good year in America while it was a bad year abroad. Then the panic of 1893 was not accompanied by a crisis in Europe. Again, revival after this panic was delayed in the United States until the summer of 1897, while European business had begun to improve at least as early as 1895. The European crisis of 1900 was scarcely felt in America and general business continued to expand in the face of European

depression until 1903-04. The latter years were years of crisis here and years of depression abroad. On the contrary, the revival in the autumn of 1904, the prosperity of 1905-06, the crisis of 1907, the depression of 1908, and the revival of 1909 were nearly contemporaneous with similar developments in European business. At the very end of the period, however, another discrepancy appeared. In 1910 business activity declined in America, while it rose in England and Germany.

With these differences in dates are joined differences in the intensity of prosperity, crisis, and depression. French business pursues by far the most even course. At the opposite extreme stands the United States, followed in order by Germany and England. The most striking evidence of the extremes to which American business runs is afforded by the peculiar violence of its transitions from prosperity to depression. Since 1889, England, Germany, and France have each had three crises; the United States alone has had panics.

The next step in the investigation is to examine in detail the various business phenomena which have characterized the periods of prosperity, crisis, and depression sketched in the present chapter. To appreciate the full significance of the statistical tables which form our chief reliance it is necessary to keep in mind the business character of each year in each of the four countries. Since this task imposes a considerable burden on the memory, a tabular summary of the business annals of 1889-1911 is appended in convenient form for reference.

TABLE 1

## SUMMARY OF BUSINESS CONDITIONS IN THE UNITED STATES, ENGLAND, GERMANY AND FRANCE, FROM 1889 TO 1911

Years	United States	England	Germany	France
1889	High tide of prosperity	High tide of prosperity; stringent money market in autumn	Prosperity; stringent money market in autumn	Crisis in March; moderate liquidation
1890	Money market stringent in summer; mild crisis in autumn	Severe crisis in autumn—failure of Barings	Crisis in autumn	Mild depression
1891	Liquidation 1st half-year; revival 2d half-year on crop situation	Financial prostration; no reduction of trade; poor harvests	Liquidation; bad harvests	Mild depression; bad harvests
1892	General business prosperous; heavy gold exports	Shrinkage of trade; poor crops and low prices	Depression deeper	Diminishing activity
1893	Panic; acute in May to October	Deep depression	Deep depression	Business languishing or stagnant
1894	Deep depression	Depression continued; price of consols rose	Improvement toward close	Revival on bourse; inertia elsewhere
1895	Revival in summer, followed by relapse	Strong revival 2d half-year	Revival continued	Revival of commerce and industry; minor crisis on bourse
1896	Return of depression; panicky conditions in financial markets	Trade revival maintained	Industrial prosperity increased	Moderate activity
1897	1st half dull; 2d half great improvement on crop situation	Domestic business expanded; foreign trade stationary	Prosperity of increased intensity	Greater activity; bad harvests
1898	Prosperity rising rapidly	Improvement more rapid; real prosperity	Brilliant year	Mediocre year
1899	High tide of prosperity in general business; difficulties on stock exchange	High tide of prosperity; money market stringent in autumn	“Annus mirabilis”; money market stringent in autumn	Marked activity of trade and industry
1900	Slight pause in activity, followed by outburst of speculation in autumn	Crisis; mild recession of activity	Crisis; bank failures in autumn	Crisis; activity checked
1901	Prosperity in general business; panic on stock exchange May 9	Ebbing of activity continued	Crisis more acute	Further slackening of business
1902	Prosperity continued	Slight improvement	Depression	Little change; mild depression
1903	Financial liquidation; “rich man’s panic”; general business still active	Disappointing year; business recovery very slow	Slight improvement in latter part of year	Distinct improvement
1904	Mild industrial depression; financial liquidation ended; great stock-market speculation in autumn	Depression continued till near end of year; more sanguine tone at close	Improvement continued, but conditions uneven	Revival continued
1905	Rapid gain in prosperity	Revival made rapid progress	Revival made rapid progress	Further progress
1906	High tide of prosperity; money market stringent	High tide of prosperity; money market stringent	High tide of prosperity; money market stringent	Full prosperity
1907	Crisis, and severe panic in October to December	Crisis, intensified by American panic	Crisis, intensified by American panic	Prosperity continued; crisis lightly felt
1908	Deep depression in trade and industry; revival in finance	Depression, especially in foreign trade; enormous offerings of new securities	Marked depression, deeper in 2d half of year	Check to activity
1909	Recuperation, marked in 2d half-year	Revival of activity	Revival of activity	Revival of activity
1910	Return of depression in 2d half-year	High tide of prosperity	Prosperity increasing	Reaction; disastrous year for farmers
1911	Mild depression	Continued prosperity	Continued prosperity	Partial recovery

**PART II**

**STATISTICAL DATA CONCERNING THE  
BUSINESS CYCLES OF 1890-1911 IN THE  
UNITED STATES, ENGLAND,  
FRANCE AND GERMANY**



## THE FRAMEWORK OF PART II

In their several ways the three chapters of Part I state the problem to be dealt with, and mark out the line of attack to be followed in Parts II and III. Chapter I shows how many different processes of current life are capable of being made into plausible explanations of business cycles. By tracing the broad outlines of the economic organization which has developed on the basis of money economy, Chapter II shows which among these processes is of controlling importance, and how the subordinate processes find their unity in it. Finally, Chapter III, looking at the problem from the historical viewpoint, sketches the rhythmical expansions and contractions which business activity has undergone in recent years. Thus the actual courses followed by business cycles, the controlling factors in business activity, and the latest theories about the causes of prosperity, crisis, and depression are all before us.

But to understand business cycles we need more definite and more systematic knowledge of the phenomena than has yet been provided. So much Chapter I makes clear. Are crises due to under-consumption?—or to high costs of construction?—or to the dissimilar price fluctuations of organic and inorganic materials?—or to the lagging adjustment of interest rates to changes in the price level? To test such theories adequately we must know the facts. Does the demand for consumers' goods actually grow more slowly than the supply in the years preceding a crisis?—do the costs of constructing new industrial equipment actually rise so fast as to discourage investment?—do the prices of farm products actually fluctuate in a different fashion from the prices of coal, iron, and copper?—do interest rates actually lag behind prices on the rise and fall? One and all, these crucial questions emphasize the need of comprehensive statistics. We are not, indeed, planning to center the investigation about the testing of the theories reviewed in Chapter I; but for an investigation upon any lines we must provide such statistical data as these theories show to be required.

To meet this requirement as well as may be is the task of Part II. Business statistics, however, are exceedingly voluminous, and some clear principle is needed as a guide no less in rejecting what is irrelevant than in selecting what is illuminating. Chapter I suggests the general rule that all data are pertinent which bear upon any of the causes assigned for business cycles by our numerous theorists. Chapter III shows what kinds of data are regarded as important by the empirical editors of business periodicals. Chapter II provides a definite

framework within which all the ideas suggested by Chapters I and III may find their proper places. For this chapter shows that the money economy subordinates the industrial process of making goods and the commercial process of distributing them to the business process of making money. Accordingly, the ebb and flow of economic activity is brought into dependence upon the profits of business enterprises. Upon this basic fact the whole investigation rests. Profits, in their turn, depend upon the margins between buying and selling prices, and upon the volume of transactions. First, then, we must seek for data to measure variations in prices and variations in the volume of trade. And Chapter II makes it clear that the prices of importance in gauging profits are not merely the prices of commodities, but also the prices of labor, of loans, and of business enterprises themselves.

But these statistics of prices and the volume of trade, presented in Chapters IV and V, are far from covering the field. Business cannot be carried on without the use of currency and of bank accommodation. Accordingly Chapters VI and VII are devoted to the mechanism of exchange and to those changes in the condition of the banks which relate especially to their powers of lending. Chapter II also shows that the business men in control of enterprises are not the ultimate authorities in guiding economic activity; for their larger plans at any rate require the support of investors. Hence an attempt must be made to measure the fluctuations in the sums saved and put into business enterprises—whether as stable investments or as speculative ventures. Chapter VIII has this aim. Finally, Chapter IX assembles the best of the materials which purport to show directly the changes in profits, and presents also the cognate statistics of bankruptcies.

While each of the chapters which follow begins abruptly, ends abruptly, and stands in a measure alone, still the reader will appreciate that this collection of statistical data has been made on a definite plan. Every chapter bears upon the crucial problem of business profits, either by dealing with factors which determine profits, like prices and the volume of trade; or by dealing with necessary conditions for the successful quest of profits, like the currency, banking, and investment; or by offering direct gauges of business success and failure, like the statistics of profits themselves and of bankruptcies.

## CHAPTER IV

### THE FLUCTUATIONS OF PRICES SINCE 1890

#### I. THE PRICES OF COMMODITIES

##### 1. *The Available Data and the Methods of Analysis*

For his original data concerning the prices of commodities a private investigator must depend upon the materials published by governmental bureaus and by business periodicals. The books of business enterprises are not open to his inspection, and if they were his resources would be unequal to the heavy task of sifting out from the masses of useless entries the data fitted for statistical elaboration.

Despite the growing interest felt in price movements, the published data still leave much to be desired. Out of the thousands of commodities bought and sold, the most extensive tables quote less than three hundred.<sup>1</sup> The selection depends less on the information which is desired than on the information which happens to be available. Goods which change substantially in quality from year to year must be rejected, and for goods which are usually the subject of private bargains it is difficult to secure quotations. For the most part, only those commodities are included which are dealt in on public exchanges and those for which dealers post their buying or selling prices. Hence it happens that the various parts of the system of prices are most unevenly covered. Relatively abundant quotations can be had for the staple raw materials, while the data concerning manufactured goods, whether used by producers or consumers, are relatively scanty. Moreover, the market reports and list prices given to the public cannot always be trusted, because many transactions are made on the basis of concessions from or additions to the standard rates. Particularly in times of crisis, when the markets become "demoralized," and in times of intense activity, when premiums are paid for quick deliveries, the published tables probably understate the real fall and rise of prices. Finally, a considerable part of the business transacted at any given time is done on the basis of prices fixed by earlier contracts, and these contract prices often differ notably from the current quotations.

<sup>1</sup> The compilers of Dun's index number professed to include some 350 commodities; but they did not publish the actual prices.

With all its defects, however, the available material can be made to yield much information under systematic examination. If some conclusions go awry because of errors or omissions in the data, the blunders may prove the most effective stimulus toward securing better data for the future. For the importance of full records of prices to communities where making and spending money is the road to welfare can be made most clear by boldly developing the full significance of the scanty present records.

On examination, the recorded prices of different commodities at successive dates show a bewildering diversity of fluctuations. Some remain unchanged, some rise, some fall; the rates of advance and decline vary widely. Under these circumstances the primary aim of analysis is to ascertain merely the general trend of the movements—the average variations. The first step in the method employed for this purpose is to turn the actual prices of each commodity into a series of relative prices, computed as percentages of the actual prices at some stated period. Wherever possible in the following tables, the average actual prices of the decade 1890-99 are taken as the basis; that is, they represent 100 in the scale of relative prices. The second step is to add together the relative prices of the different commodities in each year, and divide the total by the number of commodities. The resulting arithmetic means of the relative prices may not be the most perfect measurements of average variation in prices; but they are sufficiently accurate for present purposes, and in addition are easy to compute and easy to understand. To expend much labor in refined elaboration of data subject to a broad margin of error is pedantic.

Occasion will presently arise to discuss the representative character of these index numbers, and to show how wide a field is covered by deviations from the average.<sup>2</sup> Meanwhile the method just described is applied to measure the average fluctuations characteristic of different parts of the system of prices. The presentation corresponds as closely as may be to the analysis of that system made in Chapter II.

## · 2. *The Prices of Consumers' Goods at Retail*

The only systematic collection of American prices at retail since 1890 is a table compiled by the United States Bureau of Labor, showing the prices of thirty staple foods. The data are collected by agents of the bureau from upwards of a thousand retail dealers in towns dotted all over the country.<sup>3</sup> The results of this investigation in their most general form are given in Table 2.<sup>4</sup>

<sup>2</sup> See subdivisions 7 and 8 of the present section.

<sup>3</sup> For a full description of the character and scope of the data see *Eighteenth Annual Report of the Commissioner of Labor*, pp. 635-661, and *Bulletin of the Bureau of Labor*, July, 1908, pp. 181-214.

<sup>4</sup> Here, and in most of the subsequent tables, I have dropped the decimal places. Decimals make comparisons between different figures somewhat less easy, and the appearance of greater accuracy which they give to index numbers is delusive. The margin of error in the original data makes vain the pretension to accuracy within one-tenth of one per cent. For the original figures see *Bulletin of the Bureau of Labor*, July, 1908, p. 185.

TABLE 2

RELATIVE RETAIL PRICES OF THIRTY STAPLE FOODS IN THE UNITED STATES. BY YEARS, 1890-1907  
Arithmetic means. Average actual prices in 1890-99 = 100

1890.....	102	1899.....	100
1891.....	103	1900.....	102
1892.....	102	1901.....	105
1893.....	104	1902.....	111
1894.....	100	1903.....	111
1895.....	98	1904.....	112
1896.....	96	1905.....	113
1897.....	96	1906.....	116
1898.....	98	1907.....	121

These figures indicate a certain correspondence between retail prices and business conditions. In 1893, indeed, the thirty foods rose slightly instead of falling; but they declined during the dull years which followed the panic, and rose again when prosperity returned. This rise was slow until 1900-02; it became slow again in 1902-04; but rapid in 1905-07. The panic of 1907 came too late in the autumn to exercise much influence upon the average retail price level of that year. On the whole, this series reflects the course of business cycles more faithfully than might have been expected. For the supply of vegetable and animal foods varies in an arbitrary fashion determined by the weather, and the demand for staple foods is less affected by prosperity and depression than that for more dispensible commodities.<sup>5</sup>

<sup>5</sup> Since this chapter was written the Bureau of Labor has begun to publish a new index number of food prices at retail. Unfortunately, this new series is not fairly comparable with the old one, because (1) the number of commodities has been reduced from 30 to 15, (2) the description and presumably the quality of several of the commodities included by both series has been changed, and (3) the data for the new series are collected from a new and smaller list of towns.

The results of the two series agree closely in 1890-1900, but in 1901-07 the new series shows a distinctly higher level of fluctuations. As between the two, the older and more comprehensive series appears to be the more trustworthy. The sole advantage of the new series is that it covers the years since the last great crisis. In the bad year 1908 food prices rose; they rose further during the business revival of 1909, and further still during the reaction of 1910, but finally subsided a little in the dull times of 1911. The simple averages of the two series are as follows:

	Old series 30 commodities	New series 15 commodities		Old series 30 commodities	New series 15 commodities
1890.....	102.1	102.0	1901.....	105.5	109.5
1891.....	103.4	103.6	1902.....	110.9	116.8
1892.....	101.8	101.7	1903.....	110.9	116.9
1893.....	104.1	104.6	1904.....	111.6	118.3
1894.....	100.3	99.5	1905.....	112.5	118.3
1895.....	98.2	97.2	1906.....	116.2	122.4
1896.....	95.8	94.9	1907.....	120.7	128.0
1897.....	96.3	96.4	1908.....	.....	132.5
1898.....	98.5	99.4	1909.....	.....	140.3
1899.....	99.6	100.6	1910.....	.....	148.5
1900.....	101.5	102.9	1911.....	.....	146.9

See *Bulletin of the Bureau of Labor*, no. 105, Part I, "Retail Prices and Cost of Living Series." August 23, 1912.

### 3. *The Prices of Consumers' Goods at Wholesale*

Three index numbers of wholesale prices in the United States are currently published, one by the federal Bureau of Labor, one by *Bradstreets'*, and one by Thomas Gibson in continuation of the Dun series which was suspended in May, 1907.<sup>6</sup> None of these index numbers in its published form suffices for the purposes of the present investigation, because in none of them are prices grouped in such fashion as to correspond to the divisions of the system of prices outlined in Chapter II, or in such fashion as to admit of testing certain theories of business cycles summarized in Chapter I. It is therefore necessary to work out new results from the published materials. For this purpose, the Bureau of Labor tables afford the best source. The prices of single commodities included in Dun's series have never been published, while *Bradstreets'* data in their present form do not begin before 1892 and cover only 106 articles. The following tables have been made, accordingly, by regrouping and averaging the series of relative prices found in the *Bulletin of the Bureau of Labor*.<sup>7</sup>

Of the 145 series of relative prices derived from this source, 55 are for commodities bought almost exclusively for family consumption.<sup>8</sup> To gauge the correspondence between the fluctuations of consumers' goods at wholesale and retail, however, it is best to use data for substantially similar commodities. Twenty-five of the thirty foods included in Table 2 are also included in the wholesale price data. Accordingly it is possible to present a comparison between prices at wholesale and retail which is not vitiated by the presence of dissimilar commodities in the two lists.<sup>9</sup>

<sup>6</sup> See *Bulletin of the Bureau of Labor*, March issue of each year since 1902; *Bradstreets'*, *passim*; J. P. Norton, *Quarterly Journal of Economics*, August, 1910, pp. 750-759.

<sup>7</sup> A convenient summary of the American and foreign index numbers for varying periods of years is given in the *Report of the Massachusetts Commission on the Cost of Living*, Boston, 1910. See also subdivisions 8 and 9 of the present section.

<sup>8</sup> The bureau's tables include about 250-260 commodities; but many are nearly identical articles; for example, 10 varieties of cotton sheetings. In dealing with such groups I have preferred to use only the average relative prices of all the series included within them. The bureau's method obviously allows the commodities represented by several varieties to exercise undue weight upon the results. It is this process of grouping which reduces the number of series from over 250 to 145. The new results, however, differ little from the old—a fresh confirmation of the often noted fact that systems of weighting make comparatively slight differences in a large index number. See Table 9, below.

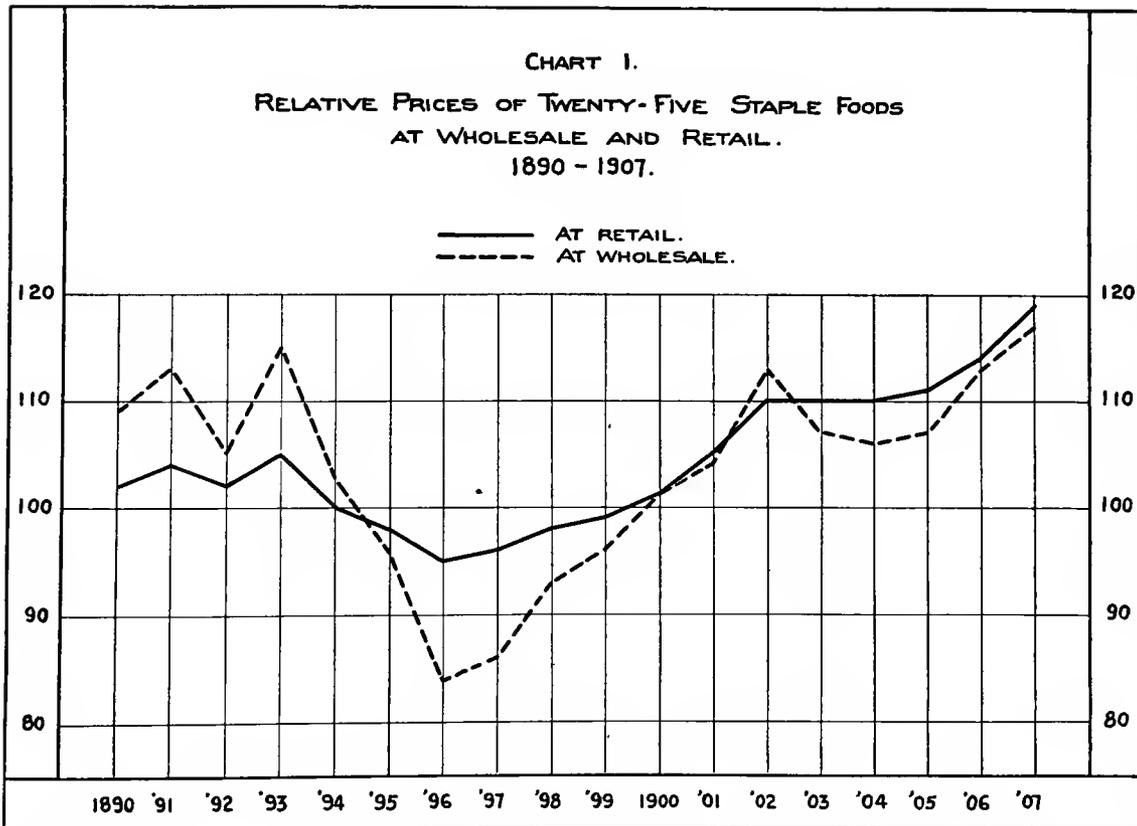
<sup>9</sup> Such is the case with the Bureau of Labor's comparison between the relative prices of 30 foods at retail and 54 foods at wholesale (*Bulletin*, July, 1908, pp. 195, 196). In order to make the comparison still closer, I have not used relative retail prices for the whole country, as in Table 2, but for the North Atlantic states when the wholesale prices are from New York, and for the North Central states when the wholesale prices are from Chicago. The list of foods included is as follows: Apples (evaporated), beans, beef (fresh), beef (salt), bread, butter, cheese, coffee, cornmeal, eggs, fish (salt), flour (wheat), lard, milk, molasses, mutton, bacon, pickled pork, hams, potatoes, prunes, rice, sugar, tea, vinegar.

TABLE 3

RELATIVE PRICES OF TWENTY-FIVE STAPLE FOODS AT RETAIL AND WHOLESALE IN THE UNITED STATES  
By YEARS, 1890-1907

Arithmetic means. Average actual prices in 1890-99 = 100

Year	At retail	At wholesale	Year	At retail	At wholesale
1890	102	109	1899	99	96
1891	104	113	1900	101	101
1892	102	105	1901	105	104
1893	105	115	1902	110	113
1894	100	103	1903	110	107
1895	98	96	1904	110	106
1896	95	84	1905	111	107
1897	96	86	1906	114	113
1898	98	93	1907	119	117



While these two series agree closely in the general trend of fluctuations, the retail prices are much more stable. They lag behind wholesale prices both on the rise and on the fall, but more on the fall than on the rise. It is primarily because retail prices yielded scarcely at all to the depression of 1903-04, while wholesale prices fell several points, that the retail level stood higher in 1907.<sup>9a</sup>

#### 4. *The Prices of Producers' Goods*

As consumers' goods at retail are more stable in price than the same goods at wholesale, so consumers' goods, even at wholesale, are more stable in price than producers' goods. The next table establishes this fact by comparing the relative prices of 55 commodities bought almost wholly for family use and of 73 commodities bought almost wholly for business use. The availability of data by months for recent years makes it possible to carry out this comparison in detail for the period including the latest crisis, depression, and revival of business activity.

TABLE 4

RELATIVE PRICES OF CONSUMERS' AND PRODUCERS' GOODS AT WHOLESALE IN THE UNITED STATES

Arithmetic means. Average actual prices in 1890-99 = 100

BY YEARS, 1890-1910

Year	Consumers' goods	Producers' goods	Year	Consumers' goods	Producers' goods
1890	115	115	1902	107	119
1891	111	113	1903	106	120
1892	105	106	1904	107	120
1893	108	102	1905	107	124
1894	99	92	1906	112	132
1895	94	92	1907	119	140
1896	89	89	1908	115	125
1897	90	88	1909	118	131
1898	94	94	1910	123	140
1899	97	109	Averages		
1900	107	117	1890-99	100	100
1901	107	113	1900-09	111	124

<sup>9a</sup>The new retail-price index number mentioned in note 5 makes it possible to extend this comparison through 1911, albeit with only 11 instead of 25 commodities, namely, bacon, beef, butter, corn meal, eggs, granulated sugar, hams, lard, milk, potatoes, and wheat flour.

	At retail	At wholesale
1907.....	127	124
1908.....	132	130
1909.....	139	144
1910.....	147	146
1911.....	145	133

The lagging adjustment of retail to wholesale price fluctuations is strongly marked in these figures.

TABLE 4—(Concluded)

By MONTHS, 1907-1910

Year	Consumers' goods	Producers' goods	Year	Consumers' goods	Producers' goods
1907 January	116	140	1909 January	116	127
February	117	142	February	116	127
March	117	143	March	116	127
April	115	143	April	117	128
May	116	144	May	117	130
June	116	144	June	116	130
July	117	142	July	117	129
August	120	141	August	116	130
September	122	141	September	118	132
October	125	138	October	120	135
November	125	134	November	123	137
December	123	130	December	124	139
1908 January	120	128	1910 January	125	141
February	118	128	February	124	141
March	118	127	March	124	142
April	117	127	April	122	141
May	115	123	May	121	140
June	114	123	June	120	138
July	115	124	July	120	139
August	114	124	August	122	140
September	113	123	September	124	139
October	113	124	October	124	138
November	113	125	November	124	138
December	115	126	December	125	138



The comparison by months shows that producers' goods reached their highest point earlier in 1907 than consumers' goods, and were on the down grade several months before the panic broke out. Their decline in 1908 was also greater in degree, their recovery began sooner, and proceeded at a faster pace. In brief, within short periods as within long, the prices of producers' goods appear to be decidedly more sensitive than the prices of consumers' goods to alterations in business conditions.

##### 5. *The Prices of Manufactured Goods and of Raw Materials*

It is next in order to examine the relation between the prices of finished products and the raw materials from which they are made, whether the products are bought chiefly by families or by business enterprises. The available material offers twenty pairs of materials and their products, and five triplets of materials, partially manufactured, and finished goods. Table 5 gives the averages of both sets of data by years for 1890-1910, and by months since 1907.<sup>10</sup>

<sup>10</sup> The twenty pairs are barley and malt, corn and cornmeal, flaxseed and linseed oil, rye and rye flour, wheat and wheat flour, cotton and cotton textiles, wool and woolen textiles, cattle and beef, hogs and pork, sheep and mutton, hides and leather, milk and cheese, coke and pig-iron, copper ingots and copper wire, lead pig and lead pipe, petroleum (crude and refined), spelter and zinc, steel billets and tools, pine boards and pine doors, window glass and glassware.

The five triplets are steel billets, steel rails, and tools; wheat, wheat flour, and bread; cotton, cotton yarns, and cotton textiles; wool, worsted yarns, and woolen textiles; hides, leather, and shoes.

The Bureau of Labor's comparison between the relative prices of raw materials and manufactured goods includes many more commodities than the present one; but many of the materials in one list are not represented by products in the other list, and *vice versa*. The method employed here seems more reliable. Compare *Bulletin of the Bureau of Labor*, March, 1910, pp. 392-394 and 398-399.

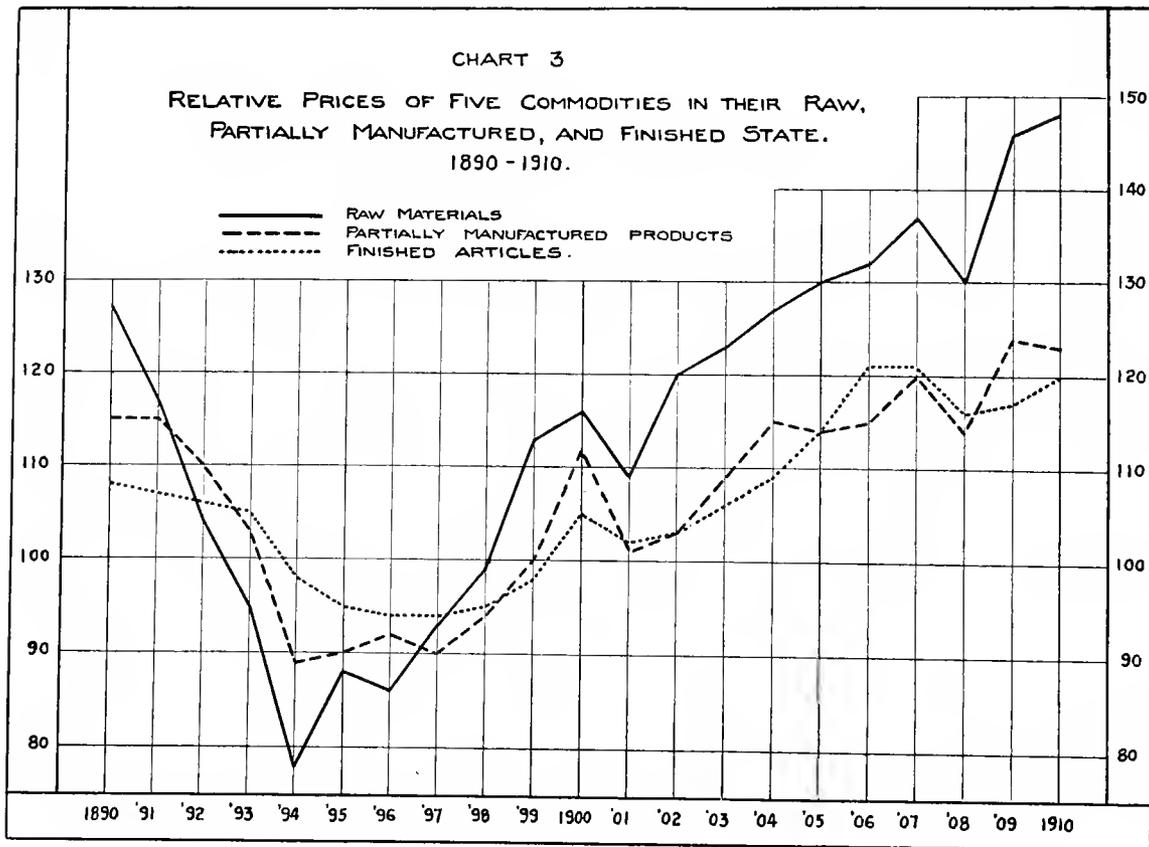
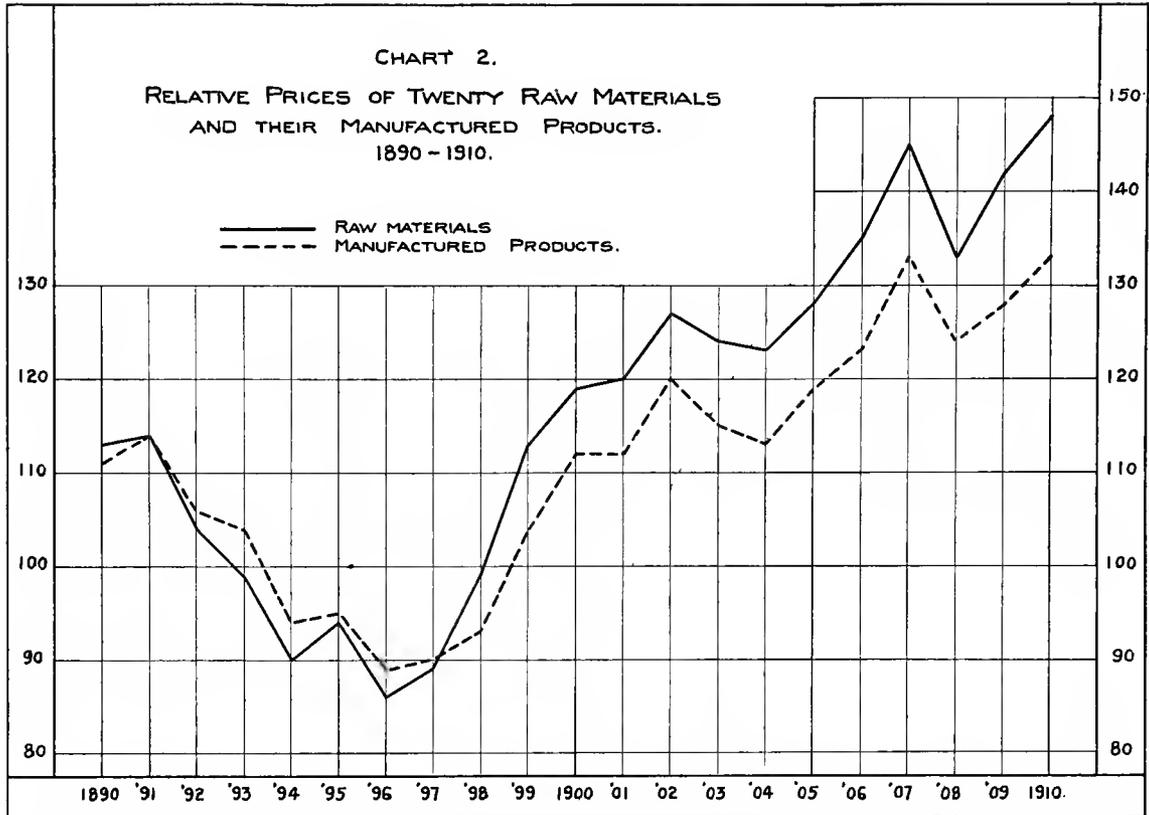


TABLE 5

RELATIVE WHOLESALE PRICES OF RAW MATERIALS AND THEIR PRODUCTS IN THE UNITED STATES  
Arithmetic means. Average actual prices in 1890-99 = 100

By YEARS, 1890-1910

Year	Twenty pairs		Five triplets		
	Raw	Mfd.	Raw	Partly mfd.	Finished
1890	113	111	127	115	108
1891	114	114	117	115	107
1892	104	106	104	110	106
1893	99	104	95	103	105
1894	90	94	78	89	98
1895	94	95	88	90	95
1896	86	89	86	92	94
1897	89	90	93	90	94
1898	99	93	99	94	95
1899	113	104	113	100	98
1900	119	112	116	112	105
1901	120	112	109	101	102
1902	127	120	120	103	103
1903	124	115	123	109	106
1904	123	113	127	115	109
1905	128	119	130	114	114
1906	135	123	132	115	121
1907	145	133	137	120	121
1908	133	124	130	114	116
1909	142	128	146	124	117
1910	148	133	148	123	120
Averages					
1890-99	100	100	100	100	100
1900-09	130	120	127	113	111

TWENTY PAIRS BY MONTHS, 1907-1910

Month	1907		1908		1909		1910	
	Raw	Mfd.	Raw	Mfd.	Raw	Mfd.	Raw	Mfd.
January	144	130	136	129	138	122	155	136
February	147	131	131	128	137	123	156	137
March	147	133	134	127	138	125	157	140
April	146	134	133	127	139	126	153	136
May	149	135	132	125	144	129	148	135
June	148	136	129	123	143	129	146	133
July	146	135	131	122	142	129	144	132
August	144	132	135	121	138	129	147	132
September	148	134	135	122	142	128	145	131
October	148	134	133	121	145	129	143	129
November	139	133	134	121	149	131	143	127
December	135	129	136	123	152	133	144	127

TABLE 5—(Concluded)

## FIVE TRIPLETS BY MONTHS, 1907-1910

Month	1907			1908			1909			1910		
	Raw	Partly mfd.	Finished									
January	134	117	119	130	120	119	135	116	116	159	129	120
February	136	117	119	126	117	118	137	118	115	156	128	120
March	133	117	120	123	117	117	135	120	115	151	126	120
April	133	117	120	123	113	116	139	122	115	150	125	121
May	139	120	120	130	113	116	147	125	118	151	123	120
June	143	122	121	131	111	114	150	129	117	148	121	120
July	143	123	122	132	111	114	150	128	118	147	122	120
August	141	123	122	133	113	114	146	126	119	150	122	119
September	142	123	122	131	113	114	147	124	119	142	120	119
October	139	124	122	131	115	115	154	127	119	143	120	119
November	133	121	121	133	114	116	158	129	119	140	119	119
December	132	121	121	134	116	116	160	128	120	139	120	119

The table shows that, whether the comparison be by months or years, the prices of raw materials respond more promptly and in larger measure to changes in business conditions than do the prices of their products. Since the five partly manufactured products pursue a course intermediate between their raw materials and finished goods, it seems that the more manufacturing costs have been bestowed upon materials the steadier do their prices become.

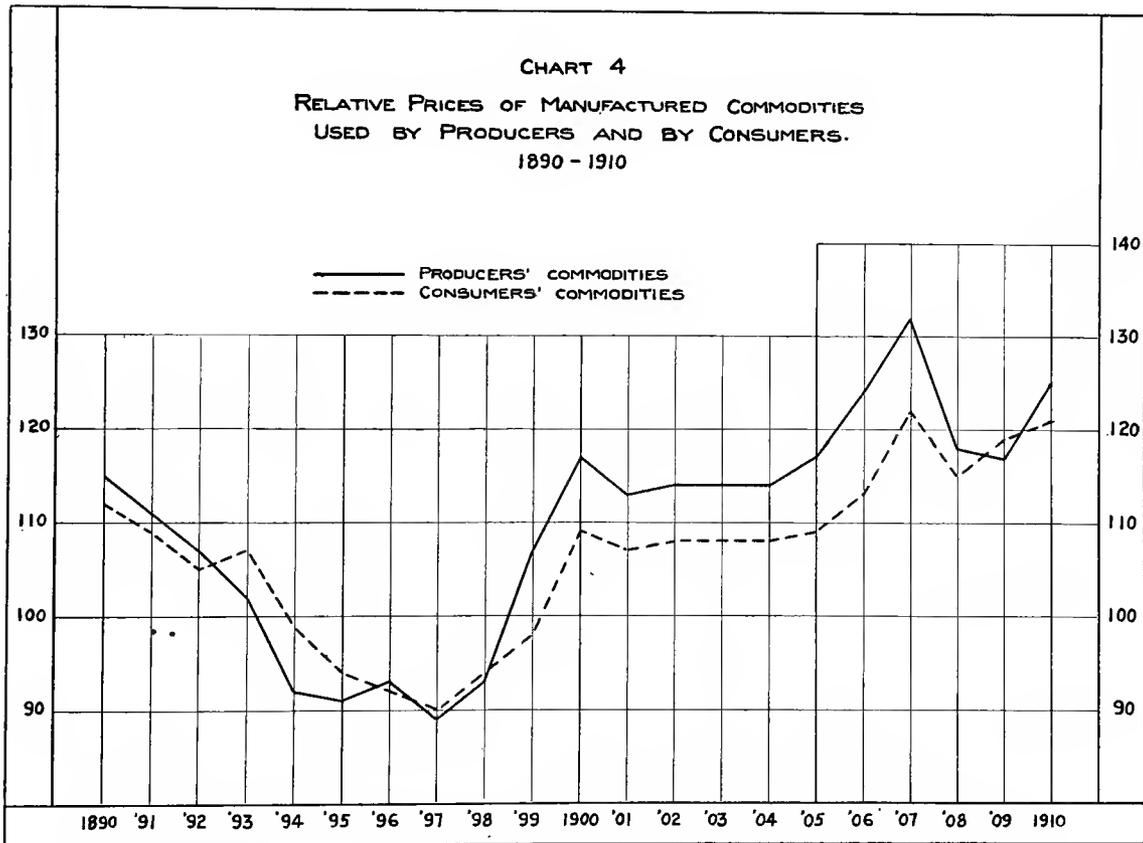
This result suggests that the greater stability in the prices of consumers' goods in comparison with producers' goods noted above may result simply from the fact that the consumers' goods are chiefly finished products, while the producers' goods are largely raw materials. This suggestion may be tested by excluding the raw materials from both classes and confining the comparison to manufactured articles bought for family and for business use. These exclusions reduce the numbers of commodities in the two lists to 47 and 28 respectively. A similar comparison between the relative prices of raw materials bought by families and business enterprises is hardly feasible; for there are few consumers' goods in the list which, like onions, can fairly be regarded as raw. But it is permissible to introduce the 45 raw producers' goods for the additional evidence they bear to the greater stability of manufactured articles.

TABLE 6

RELATIVE WHOLESALE PRICES OF MANUFACTURED CONSUMERS' GOODS AND OF RAW AND MANUFACTURED PRODUCERS' GOODS IN THE UNITED STATES. BY YEARS, 1890-1910

Arithmetic means. Average actual prices in 1890-99 = 100

Number of commodities	Manufactured articles		Raw materials	Number of commodities	Manufactured articles		Raw materials
	47 Consumers' goods	28 Producers' goods	45 Producers' goods		47 Consumers' goods	28 Producers' goods	45 Producers' goods
Year				Year			
1890	112	115	115	1902	108	114	123
1891	109	111	114	1903	108	114	123
1892	105	107	106	1904	108	114	123
1893	107	102	101	1905	109	117	128
1894	99	92	92	1906	113	124	138
1895	94	91	92	1907	122	132	145
1896	92	93	87	1908	115	118	130
1897	90	89	88	1909	119	117	139
1898	94	93	94	1910	121	125	149
1899	98	107	110	Averages			
1900	109	117	117	1890-99	100	100	100
1901	107	113	114	1900-09	112	118	128



On the whole, the manufactured goods used by producers show the wider oscillations. They stood higher in 1890, fell slightly lower in the depression following 1893, rose more rapidly from 1897 to 1900, and again from 1904 to 1907, and finally fell further from 1907 to 1908. The raw producers' goods, to be sure, exhibited still wider oscillations; but the evidence, so far as it extends, supports the contention that the relative demand for and supply of producers' goods is more sensitive to alterations of business conditions than the relative demand for and supply of consumers' goods. This table may therefore be regarded as affording a statistical foundation for the theory of business cycles which Carver has suggested.<sup>11</sup>

### 6. *The Prices of Organic and Inorganic Goods*

Sombart's theory that business cycles are caused by the different rhythms of production in the organic and inorganic realms suggests another arrangement of the price data. The inorganic goods in the list comprise 41 mineral products. The much larger number of organic goods may advantageously be subdivided into 19 forest, 41 animal, and 58 farm products. Both mineral and forest products are turned out in the United States under conditions which permit a quick adjustment of the supply to alterations in demand. Animal products, on the other hand, require a year or two for growth, while the supply of vegetable products raised on the farm depends quite as much on the weather as on the efforts of farmers to adapt their production to market conditions. Table 7 gives the relative prices of these four groups of commodities in three arrangements: manufactured goods and raw materials together, and then each separately. The basis of comparison in the separate tables is rather slender; but without such a division it might be suspected that the differences between the several groups are caused primarily by the unlike proportions of raw materials and manufactured goods constituting them.<sup>12</sup>

<sup>11</sup> See Chapter I, ii, 12.

<sup>12</sup> There is a slight discrepancy between the monthly and the annual figures for farm products, both raw and manufactured, in 1908. It is due to the omission by the Bureau of Labor of quotations for five months in making up the average of prices of onions and buckwheat flour for the year. See *Bulletin of the Bureau of Labor*, March, 1909, pp. 303, 306.

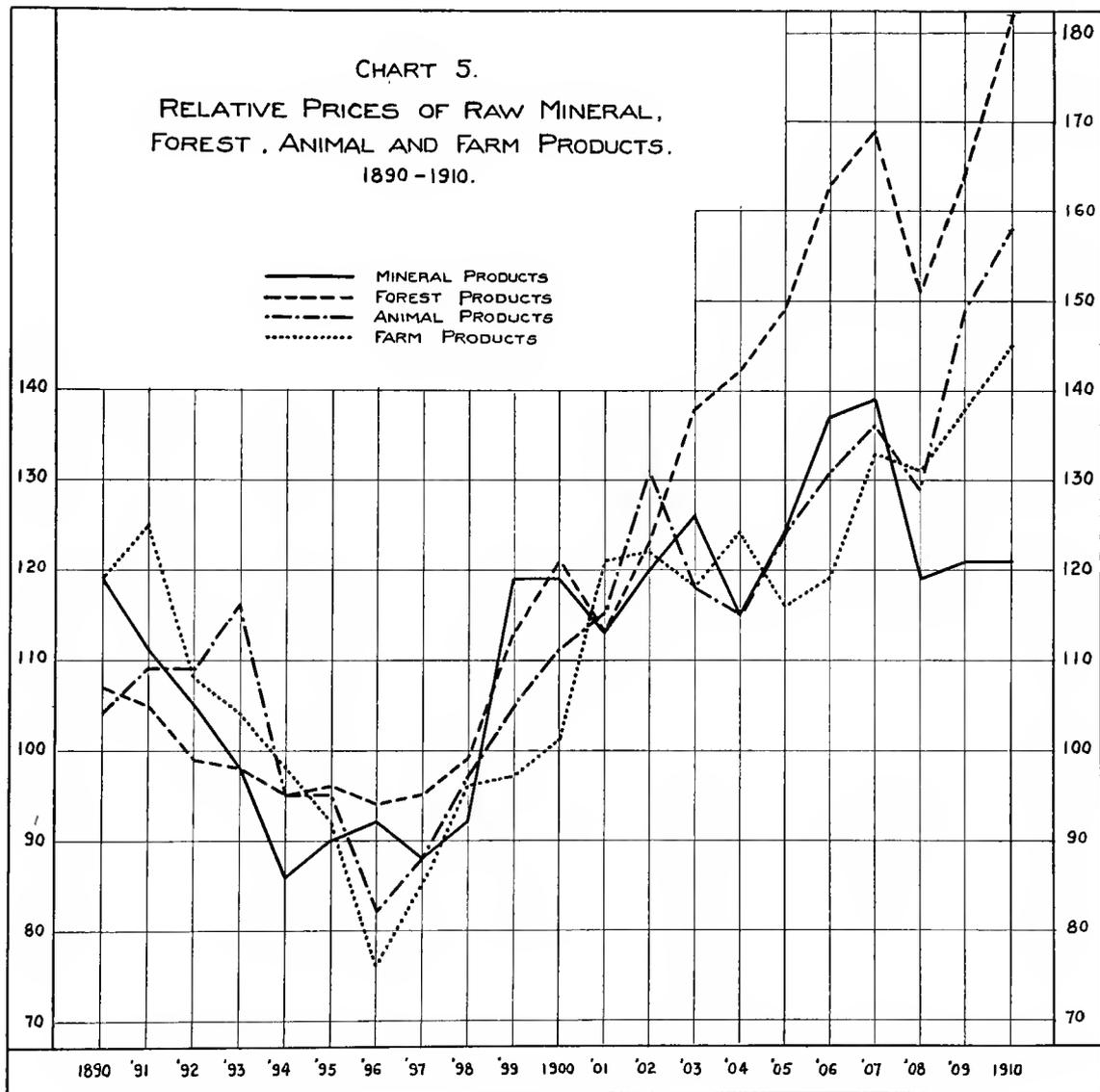


TABLE 7

RELATIVE WHOLESALE PRICES OF MINERAL, FOREST, ANIMAL, AND FARM PRODUCTS IN THE UNITED STATES

Arithmetic means. Average actual prices in 1890-99 = 100

BY YEARS, 1890-1910

Number of commodities	Both raw and manufactured goods				Raw materials				Manufactured goods			
	41	19	27	58	18	10	9	18	23	9	18	40
	Mineral products	Forest products	Animal products	Farm products	Mineral products	Forest products	Animal products	Farm products	Mineral products	Forest products	Animal products	Farm products
Year												
1890	117	111	106	117	119	107	104	119	116	116	107	116
1891	112	107	109	117	111	105	109	125	112	109	109	113
1892	105	103	108	107	105	99	109	108	105	107	108	106
1893	101	101	112	106	98	98	116	104	103	104	110	107
1894	91	95	97	98	86	95	95	98	94	96	98	98
1895	91	96	93	93	90	96	95	92	91	96	92	94
1896	93	95	87	85	92	94	82	76	94	96	89	89
1897	88	92	91	87	88	95	88	85	88	89	92	88
1898	92	94	96	93	92	99	97	96	92	89	95	92
1899	111	105	100	97	119	112	105	97	105	98	98	97
1900	116	117	110	107	119	121	111	111	114	111	109	105
1901	112	111	109	108	113	113	115	121	111	109	106	102
1902	113	117	119	111	120	123	131	122	108	110	112	106
1903	116	125	115	108	126	138	118	118	108	111	113	104
1904	110	129	112	113	115	142	115	124	106	115	111	108
1905	114	135	119	109	124	149	124	116	107	120	117	106
1906	122	145	125	114	137	163	131	119	110	125	122	112
1907	125	152	128	126	139	169	136	133	115	134	124	123
1908	111	137	124	121	119	151	129	131	105	121	121	116
1909	112	143	135	122	121	164	149	138	105	120	129	114
1910	114	159	142	128	121	182	158	145	109	134	133	120
Averages												
1890-99	100	100	100	100	100	100	100	100	100	100	100	100
1900-09	115	131	120	114	123	143	126	123	109	118	116	110

BY MONTHS, 1907-1910

Number of commodities	Both raw and manufactured goods				Raw materials				Manufactured goods			
	41	19	27	58	18	10	9	18	23	9	18	40
	Mineral products	Forest products	Animal products	Farm products	Mineral products	Forest products	Animal products	Farm products	Mineral products	Forest products	Animal products	Farm products
1907												
January	128	151	131	117	146	170	145	124	115	130	125	114
February	129	153	132	119	148	171	145	127	115	134	125	115
March	129	156	129	121	146	174	136	131	115	136	125	116
April	128	158	128	120	143	177	133	127	116	137	126	117
May	128	157	126	123	144	174	131	134	116	139	124	118
June	128	155	124	127	143	171	130	138	116	138	122	122
July	127	154	125	127	141	170	131	134	116	136	122	125
August	124	155	126	129	137	170	135	131	114	137	122	127
September	123	153	128	131	134	168	137	135	115	136	124	129
October	120	150	131	134	131	164	142	141	112	135	126	131
November	119	148	128	130	128	162	136	135	112	131	124	128
December	117	139	126	128	122	153	130	135	112	124	124	126

TABLE 7—(Concluded)

Number of commodities	Month	Both raw and manufactured goods				Raw materials				Manufactured goods			
		41 Mineral products	19 Forest products	27 Animal products	58 Farm products	18 Mineral products	10 Forest products	9 Animal products	18 Farm products	23 Mineral products	9 Forest products	18 Animal products	40 Farm products
1908	January	113	139	124	127	120	151	125	136	108	125	124	123
	February	112	143	122	125	119	153	120	134	107	131	123	121
	March	112	139	123	125	120	151	120	136	106	126	124	119
	April	111	141	123	123	119	154	122	134	106	126	124	118
	May	110	139	121	123	118	153	119	136	103	123	122	117
	June	109	134	120	121	116	148	121	136	103	118	120	115
	July	109	134	122	122	116	148	128	137	103	119	119	116
	August	110	133	123	121	118	146	131	135	104	117	119	115
	September	110	132	125	119	117	146	136	129	105	116	119	114
	October	111	134	127	118	118	151	140	130	105	116	120	116
	November	112	135	128	117	120	153	144	128	105	115	120	112
	December	113	139	130	117	121	157	147	129	106	119	122	112
1909	January	113	139	130	117	122	156	145	129	106	120	122	111
	February	112	138	129	119	120	155	144	134	106	119	122	112
	March	110	137	131	120	117	155	139	139	105	117	127	111
	April	110	138	131	122	108	156	137	143	103	118	128	112
	May	109	138	132	124	119	157	141	149	102	118	128	113
	June	109	139	132	124	118	159	141	148	103	118	128	114
	July	110	140	134	123	117	162	144	144	104	116	129	113
	August	110	145	135	119	118	169	146	131	104	119	130	114
	September	112	149	138	119	121	174	153	131	106	121	131	114
	October	114	152	141	122	126	175	158	134	106	125	132	116
	November	116	151	144	125	127	173	167	138	106	126	133	119
	December	116	150	146	127	129	173	168	142	107	126	135	121
1910	January	117	151	147	130	129	173	168	147	108	127	136	122
	February	117	154	146	129	127	176	165	147	109	129	136	121
	March	116	156	150	128	126	179	169	144	109	131	140	121
	April	115	160	149	124	123	187	165	137	110	130	141	119
	May	114	160	143	126	120	188	156	141	109	128	136	119
	June	113	159	140	123	119	186	152	137	109	128	135	116
	July	113	162	136	127	118	188	147	144	109	134	131	119
	August	114	164	137	129	117	187	150	149	108	139	130	120
	September	113	164	139	129	118	185	158	148	109	139	130	121
	October	113	162	139	130	118	181	159	145	109	141	129	123
	November	113	160	137	128	119	180	156	146	109	138	128	120
	December	114	160	136	129	119	181	154	146	110	138	127	121

The first section of Table 7, in which raw materials and finished products are lumped together, seems rather inconclusive. All the groups rise and fall in general conformity with business conditions, and all exhibit certain contrary movements. More significant results appear, however, as soon as the materials and finished goods are segregated. In each of the four groups of products the greater stability in price of manufactured goods, brought out by Table 5, is

shown once more. So far, indeed, have manufactured goods lagged behind raw materials on the rise that their prices in 1909 stood lower than in 1890 in the case of mineral and farm products, and but slightly higher in the case of forest products, despite an increase in the cost of materials. If the figures are representative, there has been a reduction in manufacturing costs which nearly offsets or more than offsets the increased cost of materials, save in the case of animal products. These fluctuations in the prices of finished goods, however, are but a pale reflection of the changes in the markets for raw produce. It is, then, in the sensitive prices of the latter that we must seek a statistical basis for Sombart's theory.

The prices of raw mineral and raw farm products present the most effective contrast. While both accord broadly with the course of business cycles, the farm products show more frequent and more striking movements of a contrary sort. In the dull year 1891 farm products rose in price while mineral products fell; farm products did not rise in price during the temporary revival of activity in 1895, as mineral products did; farm products rose in 1901 while mineral products fell; farm products rose in the face of business depression in 1904 while mineral products fell; finally, farm products declined but two points while mineral products declined twenty points in the depression of 1908. Such evidence goes to support Sombart's contention of a dissonance between the movements of prices in the organic and inorganic realms.

But a dissonance hardly less striking appears between the movements of prices in the two remaining groups—forest and animal products—both belonging to the organic realm. Animal products rose in the dull year 1891 and the crisis year 1893, while forest products fell; animal products did not rise when business revived in 1895, while forest products did, though slightly; animal products alternately rose and fell from 1901 to 1907, while forest products advanced each year. In brief, the prices of animal products corresponded less accurately than the prices of forest products to changing business conditions from 1890-99 and more accurately from 1900-09. In both decades the dissonance is marked.

Of the four series, the inorganic mineral products reflect the business cycles with least distortion for the whole period; but their superiority as a "trade barometer" over the organic forest products is due chiefly to the steady rise of the latter from 1901-07. This rise, unbroken even in 1904, is doubtless due to a gradual reduction in the supplies of lumber within easy reach of the great eastern markets from which the quotations come and to a closer organization among the lumber interests. In every year since 1902 the forest products have cost relatively more in comparison with their average prices in 1890-99 than any of the other groups. That is, a depletion of natural resources more rapid in the case of the forests than of the mines seems to have occurred in the last decade. But the opposite may well happen in some future decade, and prevent

the supply of mineral products from being adjusted to demand with greater facility than in the case of forest products. In the case of animal and farm products, however, where dependence is not upon natural deposits of minerals and forests which have grown through decades, but upon the fruits of human labor during one or two seasons, frequent contradictions between the movements of prices on the one hand and changes in business conditions on the other hand, seem likely to continue for an indefinite time to come. Sombart's theory, in other words, might be more accurately formulated in terms of contrast between goods the supply of which within short periods depends largely upon the weather, and goods the supply of which within short periods depends almost entirely upon the activity of enterprise. While at present the inorganic mineral products seem to excel the forest products as well as animal and farm products in this respect, it is but recently that they have come to do so in the United States, and the time may come again when they will lose this position.

The monthly figures for 1907 and 1910 confirm the conclusions suggested by the yearly figures. In each of the four groups the crisis of 1907, the depression of 1908, and the revival of 1909, affected the prices of raw materials earlier and more seriously than they affected the prices of manufactured goods. And as between the various classes of raw materials, mineral products record the changes in business conditions more faithfully than any of the other groups.

### 7. *The Dispersion of Price Fluctuations*

While the arithmetic means so far presented show that different parts of the system of prices have distinct types of variation, they fall far short of doing justice to the wide diversity of price fluctuations. This diversity deserves more attention than it has commonly received; for it is not only one of the most constant and most characteristic features of contemporary economic life, but it also has an important bearing upon business cycles.

For exhibiting the range covered by price fluctuations the best contrivance is the table of decils. Decils are points which divide a series of numbers, like the relative prices of different commodities on the same date, into ten equal groups. They correspond in character to the more familiar medians and quartils—indeed, the fifth decil is the median.

All of the 145 series of relative prices derived from the Bureau of Labor are included in Table 8. In 1909, for example, one commodity had a relative price as low as 48, and another had a relative price as high as 243. Thus the arithmetic mean for that year, 121 represents relative prices which are scattered over a range of almost 200 points. But three-fifths of the 145 commodities had relative prices falling within a much narrower range—44 points, the difference between the second and eighth decils—and one-fifth fell within limits of ten points—the difference between the fourth and sixth decils.

This range of dispersion differs greatly from year to year, shrinking when prices fall and expanding when they rise. For the whole period covered by the table it averages 142 points; but it drops to 72 points in 1897, and rises to 315 points in 1910. Conversely, concentration around the median becomes denser when prices fall and less dense when they rise. The average margins between the decils run as follows for the twenty years 1890-1909:

Between the lowest relative prices and the 1st decils	32.5
Between the 1st and 2d decils	7.6
Between the 2d and 3d decils	5.2
Between the 3d and 4th decils	4.2
Between the 4th decils and the medians	3.6
Between the medians and the 6th decils	3.9
Between the 6th and the 7th decils	4.4
Between the 7th and 8th decils	5.8
Between the 8th and 9th decils	12.2
Between the 9th decils and the highest relative prices	54.7

Every year exhibits this tendency toward concentration, but in ever varying degree. For example, the margin between the fourth and sixth decils, which enclose the central fifth of the 145 relative prices, starts at eight points in 1890, drops to four points during the years of depression, and rises again to eleven points during the later years of prosperity. Relative prices are squeezed together by the pressure of business depression, and spring apart when the pressure is relaxed by returning activity.

Every one of the decils, from the first to the ninth, reflects the connection between prices and business conditions, falling when times are hard, rising when times are good. There is much the same regularity and order in the seemingly erratic fluctuations of those decils which are far from the average as in the movements of the arithmetic mean itself. The very divergences in the ups and downs of the decils are significant. The seventh, eighth, and ninth in 1909 stand high above their levels in 1890, while the first, second, and third show losses or trifling gains. This result is precisely what should come about within twenty years from reduction in the cost of manufacturing processes, from the growing scarcity of certain materials, and from the varying measure in which these two factors affect the prices of different finished products.

Tables of decils are clearly more adequate representatives of price fluctuations than tables of arithmetic means; for they show more of the facts than can any single series of averages, however constructed. But it is equally clear that tables of decils are too cumbersome for comparing the price fluctuations of different groups of commodities, or of different countries. A concentrated extract of all the figures is needed. Accordingly, for the international comparisons about to be made, we return to the use of arithmetic means, which give such an extract.

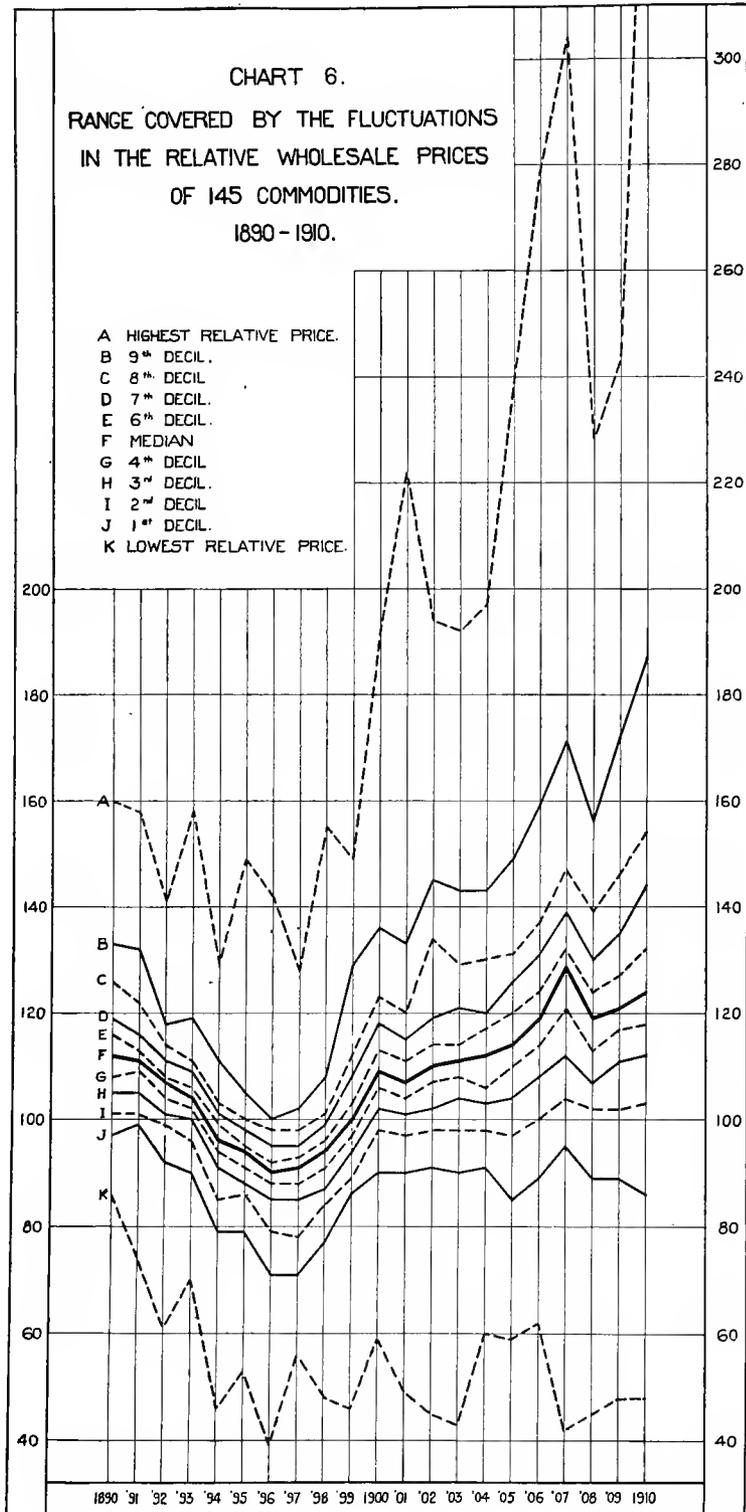


TABLE 8  
DECILS OF RELATIVE PRICES AT WHOLESALE IN THE UNITED STATES  
BY YEARS, 1890-1910

Year	Lowest relative price	1st decil	2d decil	3d decil	4th decil	Median	6th decil	7th decil	8th decil	9th decil	Highest relative price
1890	86	97	101	105	108	112	116	119	126	133	160
1891	74	99	101	105	109	111	113	116	122	132	158
1892	61	92	99	101	104	107	108	111	114	118	141
1893	70	90	96	100	102	104	106	109	111	119	158
1894	46	79	85	91	94	96	99	101	103	111	129
1895	53	79	86	88	91	94	95	98	100	105	149
1896	39	71	79	85	88	90	92	95	98	100	142
1897	56	71	78	85	88	91	93	95	98	102	128
1898	48	77	84	87	91	94	96	99	101	108	155
1899	46	86	89	94	97	100	103	108	112	129	149
1900	59	90	98	102	106	109	113	118	123	136	192
1901	49	90	97	101	104	107	111	115	120	133	222
1902	45	91	98	102	107	110	114	119	134	145	194
1903	43	90	98	104	108	111	114	121	129	143	192
1904	60	91	98	103	106	112	117	120	130	143	197
1905	59	85	97	104	110	114	120	126	131	149	238
1906	62	89	100	108	114	119	124	131	137	159	279
1907	42	95	104	112	121	129	132	139	147	171	304
1908	45	89	102	107	113	119	124	130	139	156	228
1909	48	89	102	111	117	121	127	135	146	172	243
1910	48	86	103	112	118	124	132	144	154	187	363
<i>Averages</i>											
1890-99	58	84	90	94	97	100	102	105	109	116	147
1900-09	51	90	99	105	111	115	120	125	134	151	229

### 8. *The Representative Character of Index Numbers*

Before launching upon international comparisons, we must face the problem whether the available index numbers are trustworthy representatives of the average price variations in the several countries.

The best known American, English, French, and German series differ widely in the number and character of the commodities included and in the basis of computation. That unlike lists of commodities may be expected to yield unlike results follows from the preceding demonstration that there are specific differences of variations between the prices of consumers' and producers' goods, of raw materials and manufactured articles, and of mineral, forest, animal, and farm products. May not the divergences found between series for the several countries be due chiefly to the varying proportions in which these categories of commodities are represented? Other doubts are suggested by the table of decils. If relative prices are dispersed over a range averaging more than 100 points, what warrant have we for trusting the foreign index numbers computed from data for less than fifty commodities?

The best method of answering these questions is to compare different index numbers which purport to show the trend of wholesale prices in the same country. If they agree substantially, despite dissimilarities in lists of commodities and methods of computation, then the results of comparisons between index numbers for different countries may be accepted as showing real agreements or disagreements in the movements of the price levels.

There are five American index numbers which may be submitted to this test. All are made from quotations from the great wholesale markets of the northeastern and north central states, but they are strikingly unlike in other respects.

Dun's index number is not an average of relative prices, but a sum of actual prices in dollars and cents. It purports to give "the cost of a year's supplies of all the necessaries of life" for a single individual. Three hundred and fifty articles are said to be included, and the price of each is said to be multiplied "by the quantity annually consumed by each inhabitant, as nearly as may be ascertained by statistical records." How far the results may be trusted is uncertain, because the compilers never disclosed their list of commodities, their sources for quotations, or their methods of estimating *per capita* consumption. After May, 1907, *Dun's Review* ceased to publish this index number; but the Gibson Publishing Company have undertaken a continuation. The Gibson index differs from Dun's in reducing the number of commodities from 350 to 50, and in substituting averages of relative prices for sums of actual prices. It resembles Dun's index in allowing foods a weight of 50 per cent, textiles 18 per cent, and minerals and miscellaneous goods 16 per cent each. Computation of the Gibson index for 1890 to 1906 shows that it agrees less well with the Dun figures for these years than with the figures of the other series presently to be described. On the whole, the Dun-Gibson index commands less confidence than its rivals.<sup>13</sup>

Bradstreet's index is also a sum of actual prices. It shows "the totals of the prices per pound of 96 articles," on the first day of each quarter from 1892 to 1898, and on the first day of each month from 1899 to date. The figures listed in the table are averages for the years.<sup>14</sup>

Neither Dun's nor Bradstreet's series in its original form can be compared properly with the series compiled by the Bureau of Labor. For sums of actual prices are not comparable with averages of relative prices. It is therefore necessary to convert these two series into relative figures on the basis used by the Bureau—average actual prices in 1890-99 equal 100. This conversion may be effected approximately by dividing the original figures by numbers which

<sup>13</sup> For a description of Dun's index see the *Bulletin of the Department of Labor*, March, 1902, pp. 211, 212; for the results see *Statistical Abstract of the U. S.*, 1907, p. 569; for the method of continuation by the Gibson index see J. P. Norton, *Quarterly Journal of Economics*, August, 1910, pp. 750-758; for a criticism of the whole series see W. C. Mitchell, *ibid.*, November, 1910, pp. 161-170.

<sup>14</sup> The full table for 1892 to date is currently published by *Bradstreet's* in the second weekly issue for each month.

show the ratio of their sums for 1890-99 and 1892-99 respectively to the corresponding sums of the Bureau of Labor's figures—namely, 1,000 for 1890-99 and 775.4 for 1892-99.<sup>15</sup>

These two revised series are followed by three made from materials published in the *Bulletin of the Bureau of Labor*. One gives the arithmetic means of the relative prices of the fifty commodities included in Gibson's index; a second the Bureau's own average for "all commodities," about 250 in number; a third gives the arithmetic means of the 145 series of relative prices which have been used in the preceding tables.<sup>16</sup>

When these five series are put side by side, as in Table 9, they are found to agree substantially regarding the broader movements of the price level. All show a heavy decline from 1890 to 1896 or 1897, a rise from these dates to 1900, a hesitating course from 1900 to 1904, an extremely rapid rise from 1904 to 1907, a sharp drop in 1908, and a recovery in 1909. But in detail there are numerous differences. One indicates that prices rose in 1890-91, two that prices fell slightly, one that they remained constant. One makes 1897 and two make 1896 the year of lowest prices, while two make both years the same. The fall from 1893 to 1896 varies between 16 and 23 points, and the rise from 1896 to 1900 varies between 20 and 28 points. While all agree that the net changes between 1900 and 1904 were small, they disagree concerning the course from year to year. The extent of the rise from 1904 to 1907 is nearly the same in all series—14 points in one, 15 in a second, and 16 in three; but the extent of the fall in 1908 varies between 5 and 12 points, and the extent of the reaction in 1909 between 3 and 8 points.

A more systematic comparison can be made by computing for each year the differences between some one series and the other four. The results of this operation, with the revised Bureau of Labor series as the standard of comparison, are shown in the second part of Table 9. The original series of the bureau is found to differ from the standard series by a trifle less than one point on the average, and in no year by more than three points. Next in closeness of agreement comes the improved Gibson series, then Bradstreet's, and last Dun's.

In judging the importance of these differences, it is helpful to examine the corresponding differences between the various groups of relative prices which have been contrasted in the preceding tables. A list of the maximum differences in any one year and the average differences for the whole period covered will suffice for the purpose (see Table 10).

<sup>15</sup> Dun's sum for 1890-99 is 842.9, which divided by 1,000 gives .843. Bradstreet's sum for 1892-99 is 54.23, which divided by 775.4 gives .06994. These quotients are the divisors used in the next table. To secure greater accuracy, the computations have been based on Dun's and Bradstreet's figures expressed in three digits, instead of in two as shown in the table.

<sup>16</sup> For Gibson's list of commodities see Norton's note cited above; for the Bureau of Labor's figures see *Bulletin* for March, 1910, p. 385; for the method of reducing the bureau's list of 250 commodities to 145 see footnote 8, above.

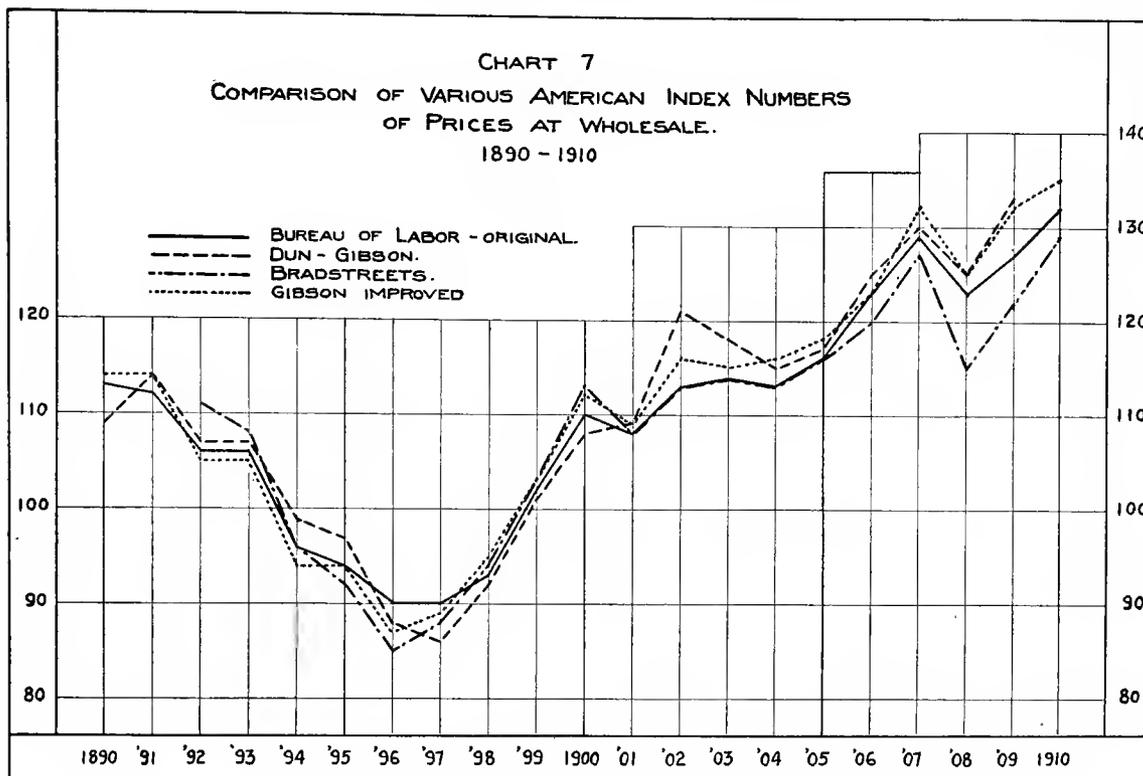


TABLE 9

COMPARISON OF VARIOUS AMERICAN INDEX NUMBERS OF WHOLESALE PRICES. BY YEARS, 1890-1911

Number of commodities	350-50 Dun- Gibson Original	96 Brad- street's Original	350-50 Dun- Gibson ÷ .843	96 Brad- street's ÷ .06994	50 Gibson Improved	Bureau of Labor	
						250 Original	145 Revised
Year							
1890	92	.....	109	.....	114	113	114
1891	96	.....	114	.....	114	112	113
1892	90	7.8	107	111	105	106	106
1893	91	7.5	107	108	105	106	105
1894	83	6.7	99	96	94	96	96
1895	82	6.4	97	92	94	94	93
1896	74	5.9	88	85	87	90	89
1897	73	6.1	86	88	89	90	89
1898	78	6.6	92	94	95	93	93
1899	85	7.2	101	103	103	102	103
1900	91	7.9	108	113	112	110	111
1901	92	7.6	109	108	109	108	110
1902	102	7.9	121	113	116	113	114
1903	100	7.9	118	114	115	114	114
1904	97	7.9	115	113	116	113	114
1905	98	8.1	117	116	118	116	116
1906	105	8.4	125	120	123	123	122
1907	110	8.9	130	127	132	129	130
1908	106	8.0	125	115	125	123	121
1909	112	8.5	133	122	132	127	124
1910	115	9.0	137	129	135	132	131
1911	109	8.7	130	125	.....	129	.....
Averages							
1890-99	84	7.0*	100	97*	100	100	100
1900-09	101	8.1	120	116	120	118	118

\* Average of 1892-99.

TABLE 9—(Concluded)

DIFFERENCES BETWEEN THE REVISED BUREAU OF LABOR SERIES AND OTHER INDEX NUMBERS

Number commodities	350-50 Dun- Gibson ÷ .843	96 Brad- street's ÷ .06994	50 Gibson Improved	250 Bureau of Labor, Original
Year				
1890	-5	.....	0	-1
1891	+1	.....	+1	-1
1892	+1	+5	-1	0
1893	+2	+3	0	+1
1894	+3	0	-2	0
1895	+4	-1	+1	+1
1896	-1	-4	-2	+1
1897	-3	-1	0	+1
1898	-1	+1	+2	0
1899	-2	0	0	-1
1900	-3	+2	+1	-1
1901	-1	-2	-1	-2
1902	-7	-1	+2	-1
1903	+4	0	+1	0
1904	+1	-1	+2	-1
1905	+1	0	+2	0
1906	+3	-2	+1	+1
1907	0	-3	+2	-1
1908	+4	-6	+4	+2
1909	+9	-2	+8	+3
1910	+6	-2	+4	+1
Sums*	56	34	33	19
Maxima*	9	6	8	3
Averages*	2.8	1.9	1.7	1.0

\* 1890-1909.

TABLE 10

MAXIMUM AND AVERAGE ANNUAL DIFFERENCES BETWEEN THE SERIES OF RELATIVE PRICES SHOWN IN TABLES 3-7

Character of relative prices compared	Maximum differences	Average differences
Table 3. Foods at Retail and Wholesale .....	11	4.5
Table 4. Consumers' and Producers' Goods .....	21	8.4
Table 5. Twenty Raw Materials and their Products .....	14	6.0
Table 6. Manufactured Consumers' and Producers' Goods ....	11	5.0
Table 7. Raw Mineral and Forest Products .....	43	13.1
Table 7. Raw Mineral and Animal Products .....	28	7.9
Table 7. Raw Mineral and Farm Products .....	22	8.9
Table 7. Raw Forest and Animal Products .....	35	12.9
Table 7. Raw Forest and Farm Products .....	44	15.8
Table 7. Raw Animal and Farm Products .....	16	6.4

The differences shown by this schedule are all larger, many much larger, than any of those shown by Table 9. In other words, while general index numbers, when compiled from widely varying lists of commodities and made by unlike methods, differ somewhat from each other, their differences are much less than those which mark off the various parts of the system of prices.

Further, the differences between the several index numbers are not arbitrary. Most of them may be accounted for when the constitution of the series is known. For example, the differences between Dun's index for 1890-1906 and the standard series are partly due to the fact that the former gives prices on July 1 while the latter gives averages for the twelve months of the year. Accordingly, the extent of these differences is no ground for misgiving. Again, the larger proportion of raw materials and the smaller proportion of finished products explains the slightly greater sensitiveness of the revised in comparison with the original Bureau of Labor series. Similarly, the still greater sensitiveness of the improved Gibson series is due to its still greater proportion of raw materials. If we knew precisely what commodities entered into Bradstreet's index, we could probably account for its idiosyncrasies in some similar fashion.<sup>17</sup>

The net result of this examination into the representative character of index numbers is reassuring. The table of decils shows that in every year the relative prices of commodities are dispersed over a wide range; but it also shows that this dispersion is itself orderly and regular even in its changes. The comparison of five American index numbers shows that no two run exactly parallel; but it also shows that all agree regarding the general trend of fluctuations. Further, the differences of detail from year to year are found to be decidedly smaller than those between the various species into which prices have been divided in earlier sections. Finally, these relatively small differences are capable of explanation by differences in the material entering into the several index numbers, so far as that material is known.

In comparing the index numbers for the United States, England, France, and Germany, then, average differences which exceed two or three points may be considered a safe indication of real divergencies in the course of prices. But in any single year wider deviations may be caused by technical differences in the method of making the several series. It is therefore desirable to supplement the comparisons between the standard series, by other comparisons between new index numbers made from the American, English, French, and German prices of identical lists of commodities.<sup>18</sup>

<sup>17</sup> *Bradstreet's* publishes regularly the prices of 106 commodities, but includes only 96 in its index number, without stating which 10 are omitted. Nor does it explain the system by which quotations by the yard, quart, gallon, square foot, thousand of brick, etc., are reduced to prices per pound.

<sup>18</sup> Since this chapter was written, Mr. R. H. Hooker has published a paper comparing English, French, German, and American index numbers. "The Course of Prices at Home and Abroad, 1890-1910," *Journal of the Royal Statistical Society*, December, 1911.

9. *The Fluctuations of Prices in the United States, England, France, and Germany*

Two excellent index numbers are currently published in England. The best known is that compiled by Mr. Augustus Sauerbeck, and for many years published in the March issue of the *Journal of the Royal Statistical Society*. It includes 45 commodities, mostly raw materials and slightly manufactured products. The averages are arithmetic means of relative prices computed on the basis of average actual prices in 1867-77. No attempt is made to weight the several commodities in accordance with their importance beyond including two varieties for such articles as wheat, iron, and coal. For purposes of comparison with the American index numbers, Sauerbeck's figures have been recomputed on the basis average actual prices in 1890-99 = 100.<sup>19</sup>

The second English series was begun by the Board of Trade in 1903, and has been continued in the *Board of Trade Labour Gazette*.<sup>20</sup> Like Sauerbeck, the Board of Trade includes 45 articles, but it selects an even larger proportion of raw materials in comparison with manufactured goods. Most of its actual prices are based on "import and export average values." The relative prices are computed on the basis of actual prices in 1900, and in making up the arithmetic means the relative prices of each commodity are weighted in accordance with its estimated consumption.<sup>21</sup> In shifting this series to the American basis (average actual prices in 1890-99 = 100) I have contented myself with the rough and easy method of dividing the original results for each year by their average for 1890-99.<sup>22</sup>

For France, also, we have two valuable series. The first, designed by M. Lucien March, Chef de la Statistique Générale de la France, is based upon the prices set on 43 staple imports by the Commission des valeurs en douane. This list of commodities corresponds closely to Sauerbeck's list of 45. Originally the relative prices were computed on the basis of average actual prices in 1867-77;<sup>23</sup> but as now published in the *Annuaire statistique de France* the series has been shifted to the basis of prices in 1891-1900.<sup>24</sup>

<sup>19</sup> In order to maintain strict continuity in the figures, I have not used the series which Sauerbeck drops or begins within this period, namely, the Cleveland quotations for pig-iron, English tough-cake copper, average import prices of hides and leather, and St. Petersburg tallow. In other respects the present figures are computed precisely like Sauerbeck's, save for the change of base. The disuse of these series does not alter the number of commodities included; for pig-iron, copper, hides, leather, and tallow are all represented by other continuous quotations in Sauerbeck's table.

<sup>20</sup> See *Report on Wholesale and Retail Prices in the United Kingdom in 1902, with Comparative Statistical Tables for a Series of Years* (London, 1903).

<sup>21</sup> See, for example, *Twelfth Abstract of Labour Statistics of the United Kingdom*, pp. 80-89.

<sup>22</sup> No use is made of the London *Economist's* index number, because this pioneer effort to maintain a running measure of price variations is distinctly inferior to its later rivals. Only 22 commodities are included, and of these an unduly large proportion show the fluctuations of cotton, in raw or manufactured form. Recognition of these long-standing defects has at last induced the *Economist* to revise its list. See the issue for February 4, 1911, p. 206.

<sup>23</sup> Compare *Bulletin de statistique et de législation comparée*, March, 1908, p. 340.

<sup>24</sup> *Annuaire statistique*, 1908, p. 201\*. For the list of articles included see *ibid.*, pp. 84\*-87\*.

M. Jules Domergue is credited with planning the second French series, maintained by *La réforme économique*. The quotations are taken from interior markets, and include 48 commodities, of which 34 correspond to commodities in the lists of March and Sauerbeck. The relative prices are based upon actual prices in the single year 1890.

In preparing these French series for comparison with the American series, I have applied the summary method of division to March's results; but recomputed Domergue's table in full on the basis of average actual prices in 1890-99. This discrimination in favor of Domergue's series is justified by its superior claims as a representative of the French price level. The prices of foreign articles imported into a country are less significant for purposes of international comparison than the prices of both foreign and domestic articles obtained from interior markets.<sup>25</sup>

The German material is less satisfactory than the English and French. Soetbeer's celebrated series has been allowed to lapse. The series based on the import values of 42 commodities at Hamburg, published in the *Annuaire statistique de France*,<sup>26</sup> is open not only to the general objection against tables which quote none but imported articles, but also to a special suspicion. It represents prices as rising between 1900 and 1901, in the face of a serious business crisis, and at a time when the two series next described show a fall. Much superior is the index number computed by Otto Schmitz from the data for 29 commodities published by the Imperial Statistical Office. Schmitz's book, *Bewegung der Waarenpreise in Deutschland*, closes with 1902, but his series is now continued in the statistical *Beilage zur Zeitschrift für Socialwissenschaft*. Since the actual prices which Schmitz uses are not available for recent years, however, the best way to secure an index number for Germany is to start afresh with the price data given by the *Statistische Jahrbücher für das Deutsche Reich*. Thirty commodities are regularly quoted here for the years 1890-1909, and the index numbers made from their prices bear a close relation to Schmitz's series for 29 commodities.<sup>27</sup> Of course, the new computations have been based upon average actual prices in 1890-99.

The various foreign index numbers which have been described are assembled in Table 11, together with the best two American series. It will be seen from the second part of the table that the two French series agree almost as closely

<sup>25</sup> By using all the commodities for which *La réforme économique* publishes complete series of actual prices since 1890, I have raised the number of articles in Domergue's index number from 48 to 64. The chief object of this change is to include all the articles for which we have prices both in America and France. The enlarging of the list makes little difference in the results.

M. A. de Foville has prepared a third index number for France by comparing the value set by the *Douane française* on imports and exports, first at the prices of the preceding, and later at the prices of the current year. Valuable as his results are, they serve the present purpose less well than the other French series, which are made by methods more nearly like those employed in computing the American and English index numbers. For de Foville's results see the *Bulletin de statistique et de législation comparé*, March, 1908, pp. 340, 341.

<sup>26</sup> 1908, p. 201\*.

<sup>27</sup> The commodities in the new index number include the 28 articles listed below, in connection with the table comparing the relative prices of identical commodities in the United States and Germany, and in addition rape-seed oil (Danzig quotations) and hemp (Lübeck quotations).

as the American pair. But the Board of Trade's figures for English prices show a decidedly smaller rise in the second decade than do Sauerbeck's figures. Manipulation of the material entering into the averages shows that a small part of the difference can be accounted for by dissimilarity in the lists of commodities and in methods of weighting.<sup>28</sup> But most of the difference is due to a dissimilar run of quotations for what purport to be the same commodities. Superficially, discrepancies traceable to the original data look suspicious. It must be remembered, however, that the Board of Trade takes most of its data from "import and export average values," while Sauerbeck takes most of his from market reports. Now, even with such staples as cotton and pig-iron, the imports and exports consist of several or many different grades, and the relative proportion of the high-priced and low-priced grades are subject to variation from year to year. Hence, while the average import and export prices may show accurately what prices England has paid for cotton per pound and received for pig-iron per ton, they do not show the prices of strictly uniform commodities. For some purposes the information concerning price fluctuations conveyed by the Board of Trade's figures is doubtless more useful than that conveyed by Sauerbeck's figures. But for comparison with index numbers for other countries made from market quotations, Sauerbeck's figures are certainly preferable. Consequently, the latter series is used in the following discussion.<sup>29</sup>

As between the two French and the two American series, it makes little difference which is used. But reasons have already been suggested for preferring Domergue's to March's figures, and, since the improved Gibson series resembles the foreign index numbers rather closely, it may be preferred to the revised Bureau of Labor series for purposes of international comparison.

In view of the demonstration that American index numbers compiled by different agencies from dissimilar materials yield substantially similar results, international comparisons based upon Gibson's, Sauerbeck's, Domergue's, and the new German series command no little confidence. Even the disagreement between the Sauerbeck and Board of Trade series is not seriously disconcerting, when its cause is known. But part of the differences shown in the second

---

<sup>28</sup> For example, the Board of Trade makes the price level higher in 1890 than in 1900, while Sauerbeck makes it lower. (1) To determine what part of the difference is due to dissimilarity in the lists of commodities, I have computed several averages for the 30 commodities included in both lists, for the 15 included by the Board of Trade and not by Sauerbeck, and for the 15 included by Sauerbeck and not by the Board of Trade. The results show that neither series would be altered more than one point by omitting the commodities not included in the other. Such an omission would raise Sauerbeck's results a trifle and reduce the Board of Trade's, thus bringing the two averages for 1890 a little closer together. (2) To determine the effects of weighting on the Board of Trade's averages, I have computed a simple arithmetic mean of its 45 relative prices for 1890, and obtained 102.3 in place of 104.0. But after both of these changes have been made the Board of Trade's figures still show a higher range of prices in 1890 than in 1900, and Sauerbeck's figures still show a lower range.

<sup>29</sup> There may be other reasons for the peculiarities of the British Board of Trade series which one familiar with the precise method of computing "import and export average values" could point out. The close agreement between the French import figures and Domergue's market prices shows that in some cases the two sources of data give substantially similar results.

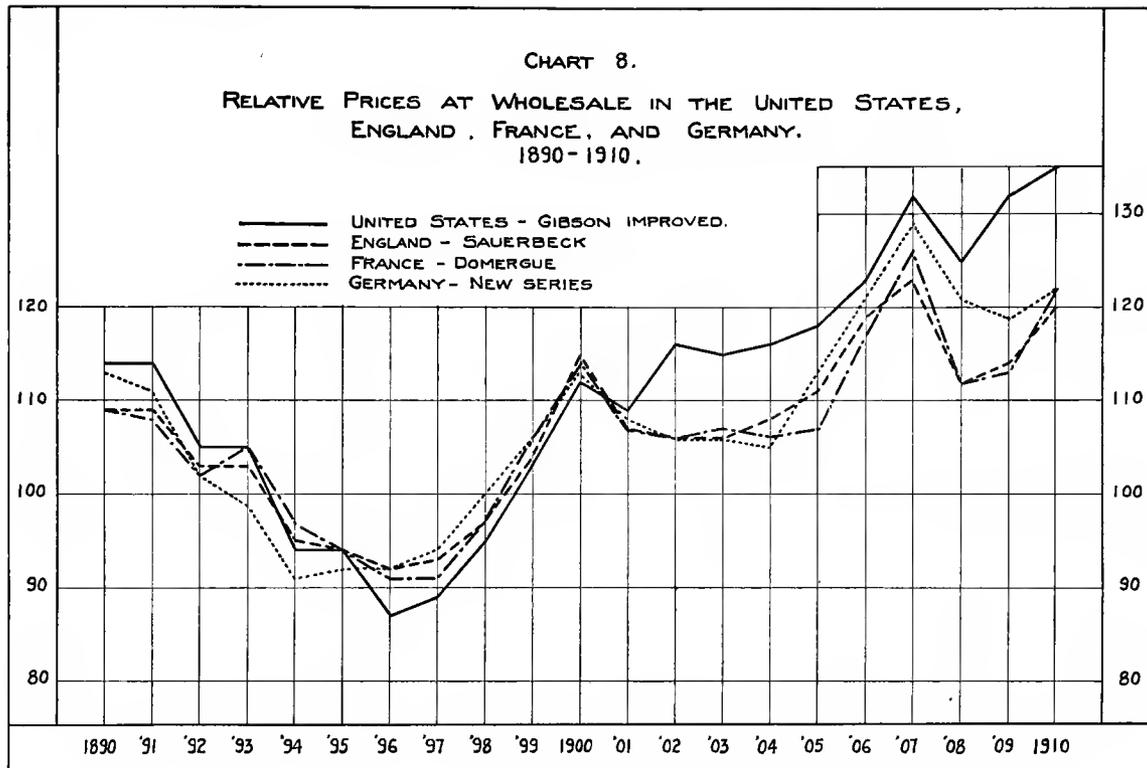


TABLE 11

COMPARISON OF AMERICAN, ENGLISH, FRENCH, AND GERMAN INDEX NUMBERS OF PRICES AT WHOLESALE.  
 BY YEARS, 1890-1910

Average actual prices in 1890-99 = 100

Number of commodities	American		English		French		German
	145 Bureau of Labor, revised	50 Gibson, improved	45 Sauerbeck	45 Board of Trade	43 March	64 Domergue, revised	30 New series
1890	114	114	109	108	111	109	113
1891	113	114	109	112	109	108	111
1892	106	105	103	106	106	102	102
1893	105	105	103	104	104	105	99
1894	96	94	95	98	96	97	91
1895	93	94	94	94	94	94	92
1896	89	87	92	92	91	91	92
1897	89	89	93	94	92	91	94
1898	93	95	97	97	95	97	100
1899	103	103	104	96	103	106	106
1900	111	112	115	104	110	114	113
1901	110	109	107	101	105	107	108
1902	114	116	106	100	103	106	106
1903	114	115	106	101	104	107	106
1904	114	116	108	102	103	106	105
1905	116	118	111	101	109	107	113
1906	122	123	119	104	116	117	121
1907	130	132	123	110	119	126	129
1908	121	125	112	107	114	112	121
1909	124	132	114	108	.....	113	119
1910	131	135	120	113*	.....	122	122
Averages							
1890-99	100	100	100	100	100	100	100
1900-09	118	120	112	104	.....	112	114

\* Provisional, subject to revision.

TABLE 11—(Concluded)

## DIFFERENCES AMONG THE SEVERAL SERIES

Year	Differences between the			Differences between Gibson's improved series for America and			Differences between Sauerbeck's series for England and		Differences between Domergue's French series and New German series
	Two American series	Two English series	Two French series	Sauerbeck's English series	Domergue's French series	New German series	Domergue's French series	New German series	
1890	0	+ 1	- 2	+ 5	+ 5	+ 1	0	-4	-4
1891	- 1	- 3	- 1	+ 5	+ 6	+ 3	+1	-2	-3
1892	+ 1	- 3	- 4	+ 2	+ 3	+ 3	+1	+1	0
1893	0	- 1	+ 1	+ 2	0	+ 6	-2	+4	+6
1894	+ 2	- 3	+ 1	- 1	- 3	+ 3	-2	+4	+6
1895	- 1	0	0	0	0	+ 2	0	+2	+2
1896	+ 2	0	0	- 5	- 4	- 5	+1	0	-1
1897	0	- 1	- 1	- 4	- 2	- 5	+2	-1	-3
1898	- 2	0	+ 2	- 2	- 2	- 5	0	-3	-3
1899	0	+ 8	+ 3	- 1	- 3	- 3	-2	-2	0
1900	- 1	+11	+ 4	- 3	- 2	- 1	+1	+2	+1
1901	+ 1	+ 6	+ 2	+ 2	+ 2	+ 1	0	-1	-1
1902	- 2	+ 6	+ 3	+10	+10	+10	0	0	0
1903	- 1	+ 5	+ 3	+ 9	+ 8	+ 9	-1	0	+1
1904	- 2	+ 6	+ 3	+ 8	+10	+11	+2	+3	+1
1905	- 2	+10	- 2	+ 7	+11	+ 5	+4	-2	-6
1906	- 1	+15	+ 1	+ 4	+ 6	+ 2	+2	-2	-4
1907	- 2	+13	+ 7	+ 9	+ 6	+ 3	-3	-6	-3
1908	- 4	+ 5	- 2	+13	+13	+ 4	0	-9	-9
1909	- 8	+ 6	.....	+18	+19	+13	+1	-5	-6
1910	- 4	+ 7	.....	+15	+13	+13	-2	-2	0
Sums*	33	103	42	110	115	95	25	53	60
Maxima*	8	15	7	18	19	13	4	9	9
Averages*	1.7	5.2	2.2	5.5	5.8	4.8	1.3	2.7	3.0

\* 1890-1909.

part of Table 11 between the figures chosen to represent the United States, England, France, and Germany must be ascribed to dissimilarity in the several lists of commodities. The comparisons will therefore be still more satisfactory if this source of disagreement can be reduced to negligible proportions. Fortunately, Sauerbeck gives the actual prices of 34 commodities which are also quoted by the Bureau of Labor. Similarly, *La réforme économique* reports the prices of 43, and the *Statistische Jahrbücher für das Deutsche Reich* report the prices of 28 articles for which the Bureau of Labor provides American data.

From this material Table 12 has been made, to show the average relative prices of substantially identical commodities in the United States, on the one hand, and on the other hand, in the three European countries.<sup>30</sup>

In all four countries, the movements of prices at wholesale have been the same in their larger phases. The decline from 1890 to 1894-96, the rise from the latter years to 1900, the reaction in 1901, the comparative stability in 1902-04, the renewed advance in 1904-07, and the sharp fall in 1908, are found alike in the United States and England, in France and in Germany.

<sup>30</sup> The commodities included in the three lists are as follows. The descriptions are intended only to enable anyone who so desires to identify the precise materials selected from each source.

## 1. THE UNITED STATES AND ENGLAND

<i>English Commodities</i>	<i>American Commodities</i>
1. Wheat: American.	"Contract: contract grades, cash."
2. Flour: Town-made white.	Av. "spring patents" and "winter straights."
3. Barley: English Gazette.	"By sample."
4. Oats: English Gazette.	"Oats: cash."
5. Maize: American mixed.	"Corn: No. 2, cash."
6. Potatoes: Good English.	"Burbank."
7. Rice: Rangoon cargoes to arrive.	"Domestic, choice."
8. Beef: Prime, by the carcass.	Cattle steers, choice to extra.
9. Beef: Middling by the carcass.	"Fresh native sides."
10. Mutton: Prime by the carcass.	Sheep wethers, plain to choice.
11. Mutton: Middling by the carcass.	"Mutton, dressed."
12. Pork: Large and small, average, by the carcass.	Hogs: average.
13. Bacon: Waterford.	Av. of "short clear sides" and "short rib sides."
14. Butter: Friesland, fine to finest.	"Creamery, extra, N. Y. market."
15. Sugar: British West Indian refinery.	"89° fair refining."
16. Coffee: Rio, Good Channel.	"Rio, no. 7."
17. Tea: Congon, Common.	"Formosa, fine."
18. Iron: Scotch pig.	"Pig-iron." "Foundry, no. 1."
19. Iron: Bars, common.	"Bar iron: best refined." Av. "From Mill" and "From Store."
20. Copper: Chile, bars.	"Ingot, lake."
21. Tin: Straits.	"Tin: pig."
22. Lead: English pig.	"Lead: pig."
23. Coal: Average export price.	"Bituminous." Av. of 3 series.
24. Cotton: Middling American.	"Upland, middling."
25. Jute: Good medium.	"Raw."
26. Wool: English, Lincoln Half Hogs.	"Ohio, medium fleece."
27. Silk: Tratilee.	"Raw: Japan filatures."
28. Hides: River Plate, Salted.	"Hides: green salted; heavy native steers."
29. Leather: Crop hides.	"Harness, oak."
30. Tallow: Town.	"Tallow."
31. Oil: Linseed.	"Linseed oil, raw."
32. Seeds: Linseeds.	"Flaxseed, no. 1."
33. Petroleum: Refined.	"Refined for export."
34. Soda: Crystals.	"Bicarbonate of, American."

## 2. THE UNITED STATES AND FRANCE

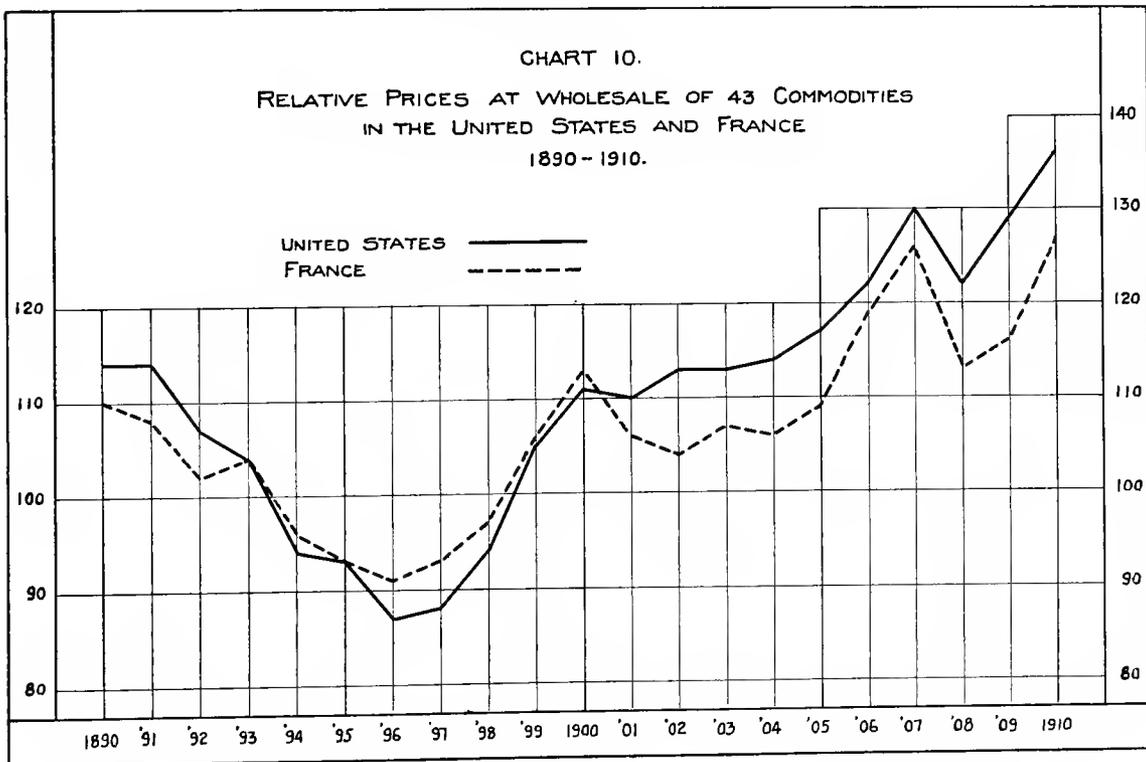
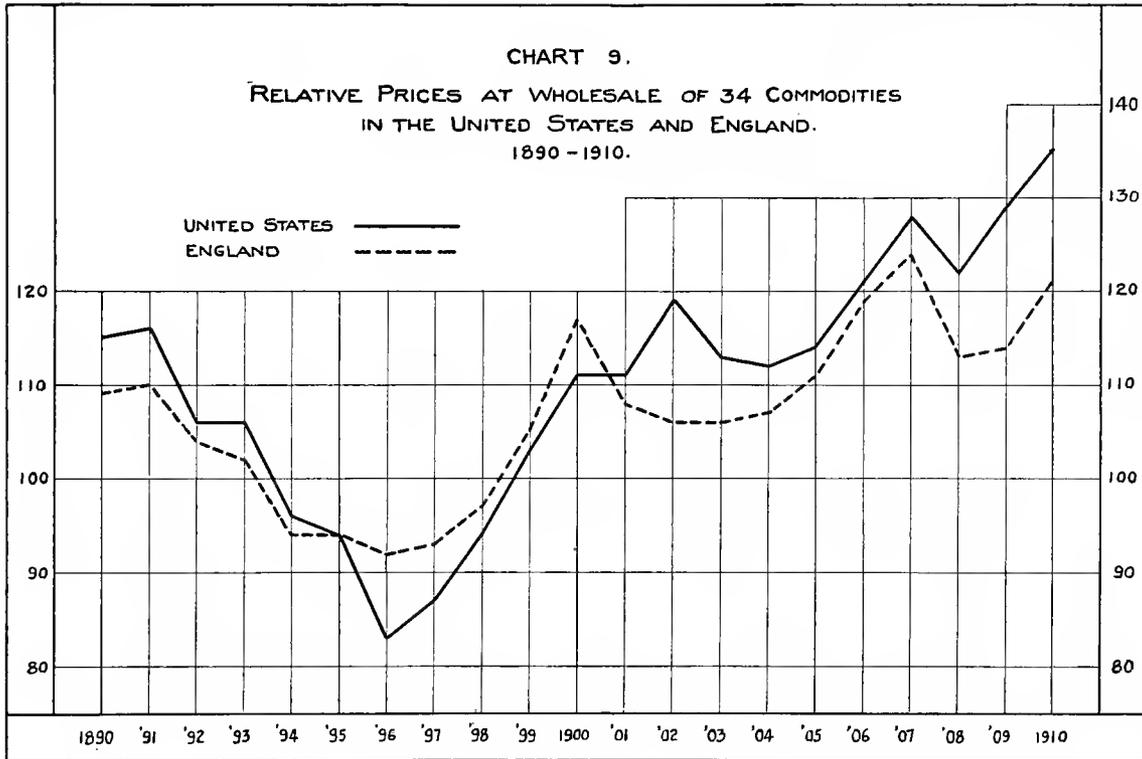
<i>French Commodities</i>	<i>American Commodities</i>
1. Wheat: Blé cote officiell.	Wheat, cash.
2. Flour: Farine fleur.	Flour, wheat, average.
3. Bread: Pain, Taxe officiel à Paris.	Bread, loaf, average.
4. Barley: Orge, marché libre.	Barley, by sample.
5. Oats: Avoine, cote officiell.	Oats, cash.
6. Corn: Mais, mixed d'Amerique.	Corn, cash.
7. Rye: Seigle, cote officiell.	Rye, no. 2 cash.
8. Rice: Riz, rangoon.	Rice, domestic choice.
9. Starch: Fecules.	Starch, pure corn.
10. Hay: Foin.	Hay, timothy no. 1.
11. Beef: Boeuf, Halles central.	Beef, fresh native sides N. Y.
12. Mutton: Mouton, Halles central.	Mutton dressed.
13. Pork: Porc, Halles central.	Hogs, average.
14. Lard: Saindoux, Americain.	Lard, prime contract.
15. Butter: Beurre, moyen.	Butter, average.

But in degree and occasionally in direction of movement numerous differences appear. The closest agreement is that between England and France. Indeed, both Sauerbeck's and Domergue's series in Table 11 and the English and French series in Table 12 accord more perfectly than do the two American, two English, or two French series. The wider discrepancy between the English and French series which appeared in 1910 was probably caused by the bad French harvests in that year.

16. Sugar: Sucre, buit, Roux.	Sugar, 89° fair refining.
17. Sugar: Sucre raffiné, 1re qualité.	Sugar, granulated.
18. Coffee: Catès santos.	Coffee, Rio no. 7.
19. Iron: Fers marchands.	Bar iron, from store, Philadelphia market.
20. Copper: Cuivre (ling) et plaques de laminage.	Copper sheet, hot-rolled (base sizes).
21. Copper: Cuivre (Barres) ordinaire.	Copper, ingot.
22. Tin: Etain banka.	Tin pig.
23. Lead: Plomb (m. ord.) livrable à Paris.	Lead pig.
24. Zinc: Zine de Sélésie.	Spelter western.
25. Steel: Acier, rails.	Steel rails.
26. Coal: Charbon du nord, TV 20 à 25% sur bateau.	Coal, bituminous Pittsburg.
27. Cotton: Coton très ord. au Havre.	Cotton, upland middling.
28. Cotton: Av. of "Coton chaine 28 ord." and "Coton trame 37 ord."	Cotton yarns, average.
29. Cotton: Coton, tissu 90 cm. 68 port. 20 fils.	Sheetings, average.
30. Jute: Jute.	Jute, raw.
31. Wool: Laine peignée, typel, Roub. Tour.	Wool, average.
32. Wool: Av. of "Fils de laine peignée chaine 40-56 mm. and "Fils de laine, trame 60 c. 50/84 mm."	Worsted yarns, average.
33. Linen: Fil de lin no. 20.	Linen shoe thread 105, Barbour.
34. Silk: Soie greges, Italie 2e ord 10/12.	Silk, raw Italian classical.
35. Hides: Boeuf, cuirs bruts.	Hides, green salted, packers' heavy native steers.
36. Rubber: Caoutchouc, marché d'Anvers.	Rubber, Para Island.
37. Tallow: Suifs, Paris.	Tallow.
38. Oil: Huile, lin.	Linseed oil, raw.
39. Alcohol: Alcool, 3/6 nord.	Alcohol, grain.
40. Glycerin: Glycerine brut, 28°.	Glycerin, refined.
41. Chemicals: Produits chimiques: sulfurique acide 66°.	Sulphuric acid, 66°.
42. Petroleum: Petrole americain.	Petroleum refined for export.
43. Lime: Produits chimiques: chlorure de chaux 105/110.	Lime, common.

## 3. THE UNITED STATES AND GERMANY

<i>German Commodities</i>	<i>American Commodities</i>
1. Weizen, München.	Wheat, cash.
2. Weizenmehl, Danzig.	Flour, wheat, average.
3. Roggen, München.	Rye, no. 2, cash.
4. Roggenmehl, Danzig.	Flour, rye.
5. Gerste, München.	Barley.
6. Hafer, München.	Oats, cash.
7. Reis, Bremen.	Rice.
8. Rohzucker, Magdeburg.	Sugar, 89° fair refining.
9. Raffinade, Magdeburg.	Sugar, granulated.
10. Kaffee, Bremen.	Coffee.
11. Kartoffelspiritus, Hamburg.	Proof spirits.
12. Rohtabak (Kentucky), Bremen.	Tobacco, plug.
13. Rindvieh, Berlin.	Cattle, average.
14. Hammel, Berlin.	Sheep, average.
15. Schweine, Berlin.	Hogs, average.
16. Schmalz, Bremen.	Lard, prime contract.
17. Heringe (Norweg.), Stettin.	Fish, herring.
18. Roheisen (Giesserei-), Breslau.	Pig-iron, foundry, no. 2.
19. Kupfer, Frankfurt a. M.	Copper, ingot.
20. Blei, Berlin.	Lead, pig.
21. Zinn, Hamburg.	Tin, pig.
22. Zink, Breslau.	Zinc, sheet.
23. Steinkohlen (niederschles.), Breslau.	Coal, bituminous, Georges Creek, f. o. b., N. Y.
24. Steinkohlen (Puddel-), Dortmund.	Coal, bituminous, Pittsburg.
25. Petroleum, Hamburg.	Petroleum, refined, for export.
26. Baumwolle, Hamburg.	Cotton.
27. Wolle, Berlin.	Wool, average.
28. Rohseide (Organs.) Krefeld.	Silk, raw, Italian classical.



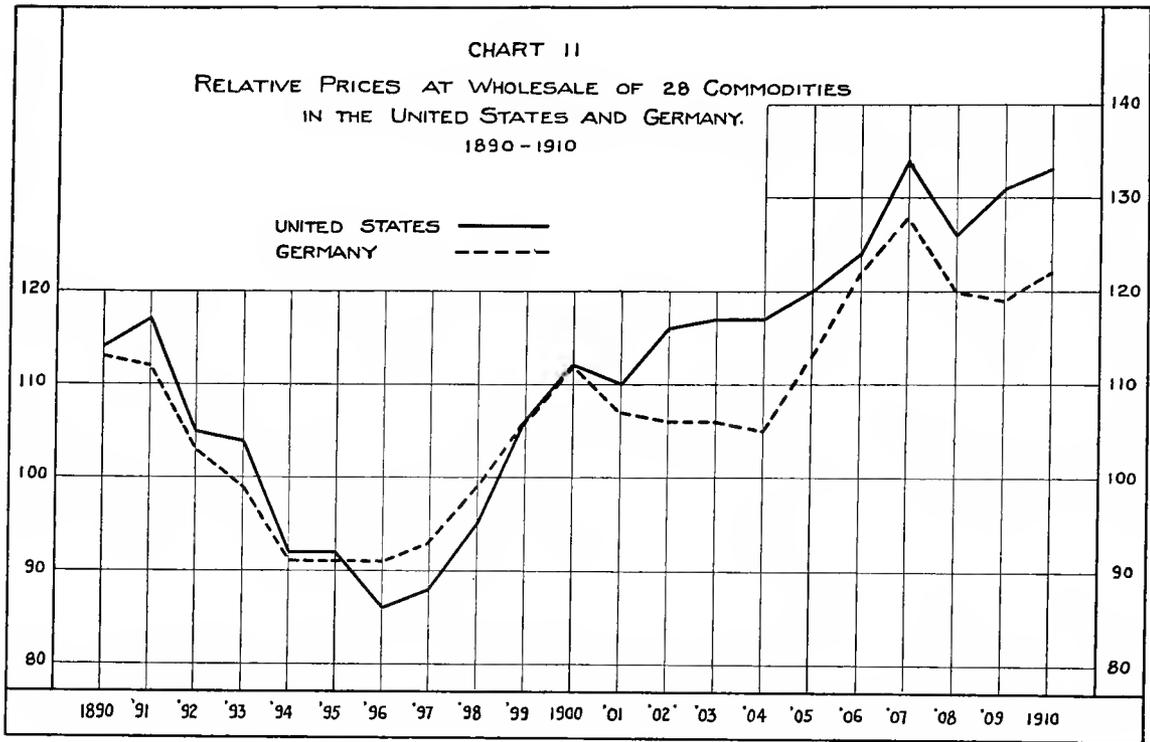


TABLE 12

INDEX NUMBERS FOR IDENTICAL LISTS OF COMMODITIES AT WHOLESALE IN THE UNITED STATES AND ENGLAND, THE UNITED STATES AND FRANCE, AND THE UNITED STATES AND GERMANY. BY YEARS, 1890-1910

Average actual prices in 1890-99 = 100

No. of commodities	United States and England		United States and France		United States and Germany	
	34 United States	34 England	43 United States	43 France	28 United States	28 Germany
Year						
1890	115	109	114	110	114	113
1891	116	110	114	108	117	112
1892	106	104	107	102	105	103
1893	106	102	104	104	104	99
1894	96	94	94	96	92	91
1895	94	94	93	93	92	91
1896	83	92	87	91	86	91
1897	87	93	88	93	88	93
1898	94	97	94	97	95	99
1899	103	105	105	106	106	106
1900	111	117	111	113	112	112
1901	111	108	110	106	110	107
1902	119	106	113	104	116	106
1903	113	106	113	107	117	106
1904	112	107	114	106	117	105
1905	114	111	117	109	120	113
1906	121	119	122	119	124	122
1907	128	124	130	126	134	128
1908	122	113	122	113	126	120
1909	129	114	129	116	131	119
1910	135	121	136	127	133	122
Averages						
1900-09	118	113	118	100	100	100
1890-99	100	100	100	112	121	114

TABLE 12—(Concluded)  
DIFFERENCES AMONG THE SEVERAL SERIES

Year	Differences between the								
	1st and 2d American series	1st and 3d American series	2d and 3d American series	English and French series	English and German series	French and German series	American and English series	American and French series	American and German series
1890	+ 1	+ 1	0	- 1	- 4	- 3	+ 6	+ 4	+ 1
1891	+ 2	- 1	- 3	+ 2	- 2	- 4	+ 6	+ 6	+ 5
1892	- 1	+ 1	+ 2	+ 2	+ 1	- 1	+ 2	+ 5	+ 2
1893	+ 2	+ 2	0	- 2	+ 3	+ 5	+ 4	0	+ 5
1894	+ 2	+ 4	+ 2	- 2	+ 3	+ 5	+ 2	- 2	+ 1
1895	+ 1	+ 2	+ 1	+ 1	+ 3	+ 2	0	0	+ 1
1896	- 4	- 3	+ 1	+ 1	+ 1	0	- 9	- 4	- 5
1897	- 1	- 1	0	0	0	0	- 6	- 5	- 5
1898	0	- 1	- 1	0	- 2	- 2	- 3	- 3	- 4
1899	- 2	- 3	- 1	- 1	- 1	0	- 2	- 1	0
1900	0	- 1	- 1	+ 4	+ 5	+ 1	- 6	- 2	0
1901	+ 1	+ 1	0	+ 2	+ 1	- 1	+ 3	+ 4	+ 3
1902	+ 6	+ 3	- 3	+ 2	0	- 2	+13	+ 9	+10
1903	0	- 4	- 4	- 1	0	+ 1	+ 7	+ 6	+11
1904	- 2	- 5	- 3	+ 1	+ 2	+ 1	+ 5	+ 8	+12
1905	- 3	- 6	- 3	+ 2	- 2	- 4	+ 3	+ 8	+ 7
1906	- 1	- 3	- 2	0	- 3	- 3	+ 2	+ 3	+ 2
1907	- 2	- 6	- 4	- 2	- 4	- 2	+ 4	+ 4	+ 6
1908	0	- 4	- 4	0	- 7	- 7	+ 9	+ 9	+ 6
1909	0	- 2	- 2	- 2	- 5	- 3	+15	+13	+12
1910	- 1	+ 2	+ 3	- 6	- 1	+ 5	+14	+ 9	+11
Sums*	31	54	37	28	49	47	107	96	98
Maxima*	6	6	4	4	7	7	15	13	12
Averages*	1.6	2.7	1.9	1.4	2.5	2.4	5.4	4.8	4.9

\* 1890-1909.

Between Germany on the one hand and England and France on the other hand, somewhat wider differences appear in both tables. (1) Prices fell faster in Germany from 1890 to 1894 than in its neighbors, but arrested their decline somewhat earlier. (2) From 1894 to 1896 the German price level was substantially stable, while the English and French levels continued to sag. (3) The advance in 1904-07 was distinctly greater in Germany, and (4) the fall in 1907-08 was distinctly less, but (5) it continued in 1908-09 when both French and English prices turned upward. On the whole, during this period of twenty years, the German price level has fluctuated through a slightly wider range than the English or French.

Much more marked are the differences between price fluctuations in the three European countries and in the United States. The improved Gibson series differs from Sauerbeck's, Domergue's and the new German series by nearly twice the margins found between any of the last three. Even more

striking is the evidence afforded by Table 12. Here the three American index numbers, of dissimilar constitution, show almost exactly the same total, maximum, and average differences among themselves as do the three European index numbers, also of dissimilar constitution. But when comparison is made between the three pairs of similarly constituted index numbers for the United States and the European countries, the total, maximum, and average differences are found to be more than twice as great as in the former cases.

These results concerning the fluctuations of prices at wholesale accord perfectly with the results reached in the chapter upon the annals of business. There it was found that while business cycles have pursued broadly similar courses in America and Europe, the differences between their courses in the United States and in the three European countries have been much wider than the corresponding differences among their courses in England, France, and Germany. Now it appears that the broad agreement and the differences in detail between the courses of business cycles have been accompanied by strikingly similar agreements and differences in the movements of wholesale prices. The United States again is found to be less closely tied by economic bonds to Europe than the three European countries are tied to each other.

In 1890 the wholesale price level stood relatively higher in America than in Europe, and this position it maintained until 1893. But the severe crisis of that year in America was felt only as an aggravation of the depression ruling in Europe. Accordingly, American prices fell far more rapidly than European prices in 1893-96, and reached a relatively lower level. The tardiness with which America recuperated from depression prevented American prices from catching up with the European level until after 1900. But since the crisis of that year was much less severe on this than on the other side of the Atlantic, the fall of American prices in 1900-01 lagged behind the European fall. Moreover, the prompt return of prosperity in America, while Europe continued to suffer business depression, brought with it a rise of prices in America while prices continued to sag in Europe. Thus the American price level became relatively higher than the European—a position which it has held ever since. America's lead was cut down by the more rapid rise of European prices in 1904-06, and increased again by the more rapid rise of American prices in 1906-07. Finally, the fall of prices after the crisis of 1907 was slighter in America and the rise in 1909 was much more marked. At the end of the period, therefore, the difference between the American and European price levels was greater than at any previous time covered by the tables. The fact that the United States had become relatively the worst country in which to buy and relatively the best country in which to sell may have had something to do with making 1910 a year of contraction in American business, while it was a year of rapid expansion in the business of England and Germany. But consideration of such questions belongs to a later stage of the investigation.

The materials for an international comparison of retail price movements are less satisfactory. The British Board of Trade publishes a weighted index number of the retail prices of 23 foods in London which now covers the years 1895-1910.<sup>31</sup> This service can be pieced back to 1890 by the aid of an experimental series compiled by Mr. George H. Wood.<sup>32</sup> With this rather dubious retail index number may be compared Sauerbeck's figures for the relative prices of 19 foods at wholesale. For France, M. Lucien March has recently published a table showing the retail prices charged by a railway *économat* in Paris. Among the 52 commodities in his list there are 36 articles of food for which actual prices are given in every year from 1890 to 1910.<sup>33</sup> A wholesale series for food prices in France can be made from data for the 23 articles of food

TABLE 13  
RELATIVE PRICES OF FOODS AT RETAIL AND WHOLESALE IN THE UNITED STATES, ENGLAND, AND FRANCE.  
BY YEARS, 1890-1910

Average actual prices in 1890-99 = 100

Number of commodities	At retail			United States		England		France	
	30 United States	23 England	36 France	30 At retail	54 At wholesale	23 At retail	19 At wholesale	36 At retail	23 At wholesale
1890	102	104	103	102	112	104	107	103	106
1891	103	105	105	103	116	105	112	105	112
1892	102	105	104	102	104	105	107	104	105
1893	104	101	107	104	110	101	105	107	107
1894	100	99	102	100	100	99	96	102	101
1895	98	95	99	98	95	95	93	99	94
1896	96	93	97	96	84	93	91	97	87
1897	96	98	91	96	88	98	95	91	91
1898	98	102	95	98	94	102	99	95	100
1899	100	98	96	100	98	98	95	96	97
1900	102	101	95	102	104	101	101	95	98
1901	105	103	96	105	106	103	98	96	96
1902	111	103	95	111	111	103	98	95	97
1903	111	105	95	111	107	105	96	95	99
1904	112	106	96	112	107	106	99	96	97
1905	113	105	97	113	109	105	101	97	97
1906	116	105	101	116	113	105	101	101	99
1907	121	107	103	121	118	107	105	103	109
1908	.....	110	105	.....	121	110	105	105	101
1909	.....	110	100	.....	125	110	107	100	101
1910	.....	112	102	.....	129	112	111	102	107
Averages									
1890-99	100	100	100	100	100	100	100	100	100
1900-09	.....	106	98	.....	112	106	101	98	99

<sup>31</sup> *Board of Trade Labour Gazette*, January, 1911, p. 4.

<sup>32</sup> "Real Wages and the Standard of Comfort since 1850," *Journal of the Royal Statistical Society*, March, 1909, especially pp. 94, 95, and 103. Wood's figures for 1890-94 have been shifted from the basis of prices in 1850 to the Board of Trade's basis of prices in 1900; and then the combined series has been shifted to the basis of average prices in 1890-99.

<sup>33</sup> "Influence des variations des prix sur le mouvement des dépenses ménagères à Paris," *Journal de la Société de Statistique de Paris*, April, 1910, pp. 162-163. In computing the index number in Table 13, the average of the relative prices of three kinds of sugar was used.

quoted by *La réforme économique*.<sup>34</sup> No systematic German material of sufficient extent to justify the computation of an index number is available.<sup>35</sup> Since the commodities included in the above retail and wholesale lists for England and France differ, the American series selected for comparison are the Bureau of Labor's simple averages for 30 foods at retail and 54 foods at wholesale.<sup>36</sup>

A minute comparison of series so lacking in uniformity as the foregoing would be out of place. But certain broad conclusions suggested by the table may be trusted. (1) Retail prices in all three countries have held a more even course than wholesale prices, rising less during prosperity, and falling still less during depression. But even the wholesale prices of foods do not reflect the course of business cycles with accuracy, because they consist almost wholly of organic goods.<sup>37</sup> (2) In the United States and England relative prices at retail were lower than relative prices at wholesale in 1890, and higher in 1907-10. This change has come about gradually because the lagging of retail prices behind wholesale is more pronounced upon the fall than upon the rise. (3) The advance of food prices during the second decade was distinctly greater in the United States than in England or France.

## II. THE PRICES OF LABOR—WAGES

### 1. *The American Data*

For measuring changes from year to year in the prices paid for labor, the largest collection of data is that published by the United States Bureau of Labor in its *Bulletins* of July, 1904-08.<sup>38</sup> The returns for 1907, for example, show the wages per hour received by 351,000 persons, following 333 occupations in 4,169 establishments. But extensive as this material is, it still falls far short of representing the prices of all important kinds of labor. Practically all the establishments from which pay-rolls are obtained are engaged in some line of manufacturing. But such great branches of employment as farming, railroad-ing, mining, lumbering, general contracting, salesmanship, and clerical work are not covered. Thus the information concerning the prices of labor, like that concerning the prices of commodities, consists of samples, drawn from a limited field, and offered as representatives of a vastly larger number of prices. For present purposes, however, it is fortunate that manufacturing is the field best covered; for, as has been pointed out, industrial centers exhibit the phenomena of business cycles in pronounced degree.<sup>39</sup>

<sup>34</sup> Starch, butter, coffee, cocoa, soda, pork, beef, mutton, veal, oats, barley, rye, rice, corn, wheat, flour, bread, lard, tallow, sugar (raw and refined), syrup, wine.

<sup>35</sup> The *Statistisches Jahrbuch für das Deutsche Reich* gives the "market prices" for five or six staples.

<sup>36</sup> *Bulletin of the Bureau of Labor*, July, 1908, p. 195.

<sup>37</sup> Compare section 6, above.

<sup>38</sup> See also the Bureau's *Nineteenth Annual Report*.

<sup>39</sup> See Chapter II, ii, 1.

But, even as a representative of wages in manufacturing industries, the Bureau of Labor's results have been questioned. For they have seemed to disagree with the results of an investigation into wages in 1890 and 1900 made by the Census Office. While the Bureau of Labor found that relative wages per hour advanced from 100.3 in 1890 to 105.5 in 1900, Professor Davis R. Dewey's census report on *Employees and Wages* indicated that the cases in which wages had been reduced between these two years were not less numerous than the cases in which wages had been raised. The rather vague impression of a discrepancy left by Professor Dewey's textual summaries was rendered definite in 1907 by Professor Henry L. Moore's paper on "The Variability of Wages."<sup>40</sup> Basing his work on Dewey's data, Moore computed the average rate of wages in thirty selected industries in 1890 and 1900, and found that relative wages had declined from 100.0 to 99.6. While neither of these careful investigators called attention to the variance of their results from those of the Bureau of Labor, or sought to criticize the latter, others were less cautious. For three or four years it was generally thought that the bureau's figures exaggerate the rise of wages by several points.

Close comparison between Professor Moore's and the bureau's tables, however, shows that the apparent discrepancy is due almost wholly to differences in scope and method of construction.<sup>41</sup> When these differences are eliminated and the bureau's data are worked up by Moore's methods, they yield relative wages of 100.0 in 1890, and 100.3 in 1900—figures which are almost the same as Moore's relative wages of 100.0 and 99.6. Clearly, therefore, there is no ground for distrusting the bureau's original data. Their trustworthiness is confirmed, not discredited, by proper comparison with the data gathered by Professor Dewey for the Census Office.

But the question remains whether the bureau's methods of computing index numbers—methods which show a considerable advance in wages between 1890 and 1900,—or Moore's methods, which reduce this advance almost to zero, are to be preferred. Professor Moore's primary object was to measure the variability of wages at two different dates, and he adapted his methods to this end. The bureau, on the contrary, aimed to measure the average change of wages from one year to the next, and chose its means accordingly. Each set of methods, therefore, has its justification. But the bureau's set is preferable for the present purpose, because this purpose is substantially that which the

<sup>40</sup> *Political Science Quarterly*, March, 1907, pp. 61-73.

<sup>41</sup> In detail these differences are as follows: Moore took wages per week, the bureau wages per hour; Moore excluded females, the bureau included them; Moore covered 30 industries, the bureau (in its *Nineteenth Annual Report*) covered 56; Moore weighted his figures by actual numbers employed, the bureau did not weight its figures for different occupations in striking averages for each industry, but did weight its figures for different industries in striking grand averages; finally, Moore computed averages in one way, the bureau in another. Moore began by tabulating the number of men receiving \$2-3 a week, \$3-4, \$4-5, and so on. Then he multiplied the mean wage in each of these groups (\$2.50, \$3.50, \$4.50) by the corresponding number of employees. To find the average actual wages, he divided the sums of these products by the total number of men represented, and then turned the average actual wages into percentages. The bureau, on the other hand, turned its actual wages per hour into percentages at the outset, and then made arithmetic means from these percentages by the curious combination of simple and weighted averaging which has been stated.

bureau had in view. That is, we need a measure of the average change in the prices of labor comparable with the preceding measures of average change in the prices of commodities.

In one respect, however, the bureau's methods of analysis may be improved. Each occupation should be weighted by the number of persons engaged in following it, instead of being treated as having the same importance as other occupations followed by many less or many more people.<sup>42</sup> In practice this change proves to make little difference in the results; but it has been adopted in constructing such of the following tables as are new. The numbers used in weighting each series are obtained by first giving every industry a weight proportionate to the number of wage-earners engaged in it according to the manufacturing census of 1900, and, second, dividing the weight for every industry among its several occupations in accordance with the average number of persons reported by the Bureau of Labor as employed in the decade 1890-99.<sup>43</sup>

## 2. *The Prices of Labor in American Manufacturing Industries*

The bureau's grand average and its results for eleven industries employing over 100,000 persons according to the census of 1900 are reproduced in the next table.<sup>44</sup> The figures indicate that the prices of labor are influenced by changes in business conditions, but in less measure than the prices of commodities, even at retail. The general average declines after the panic of 1893, recovers in 1896, advances in 1898-1903, makes very little gain in the dull year 1904, and then rises rapidly again in 1904-07. But the degree of rise and fall is considerably less than that of commodities at wholesale, and just about the same as that of foods at retail (see Chart 13).

On examining the figures for separate industries, one finds that there is less variety of fluctuation than in commodity markets. But still considerable differences appear between, say, cotton mills and foundries, or building trades and shoe factories. However, no industry escaped a reduction of wages after 1893, and none failed to register a large advance between 1894 and 1907.

In making Table 15, the series have been classified, not by industries, but by sex and rates of pay in 1890-99. The new system of weighting, spoken of above, has been introduced into this compilation; but the final results do not differ from those of the Bureau of Labor by more than one point in any year. Female wage-earners are shown to have received a greater relative increase of pay than any group of men represented by the table. This result may be due to the fact that nearly a quarter of the women represented by the data were employed in the cotton industry, where, according to Table 14, the

<sup>42</sup> For the bureau's method of weighting its series see the preceding footnote.

<sup>43</sup> The topic of this section is discussed at greater length in "The Trustworthiness of the Bureau of Labor's Index Number of Wages," *Quarterly Journal of Economics*, May, 1911, pp. 613-620.

<sup>44</sup> Compiled from *Bulletin of the Bureau of Labor*, July, 1908, Table III, pp. 126-132.

TABLE 14  
RELATIVE WAGES PER HOUR IN SELECTED MANUFACTURING INDUSTRIES OF THE UNITED STATES.  
BY YEARS, 1890-1907

Year	Arithmetic means. Average actual wages per hour in 1890-99 = 100											
	Thous. of employees 3813	143	374	218	191	303	350	100	222	283	103	126
	Average of 41 industries	Boots and shoes	Building trades	Car building, steam railroad	Clothing, factory product	Cotton goods	Foundry and machine shop	Furniture	Iron and steel*	Lumber	Tobacco, cigars	Woolen and worsted goods
1890	100	98	97	103	100	103	99	99	109	103	100	98
1891	100	96	98	102	100	99	100	102	109	102	101	99
1892	101	98	100	102	100	100	103	103	106	102	100	100
1893	101	101	100	104	100	104	102	101	102	102	100	102
1894	98	100	98	98	97	97	99	99	93	98	99	97
1895	98	101	98	98	99	97	99	97	95	97	97	97
1896	100	101	100	98	100	105	101	98	97	97	99	101
1897	100	103	101	98	100	101	100	100	93	97	102	100
1898	100	102	103	98	102	97	99	99	93	99	101	103
1899	102	102	105	100	103	97	99	103	103	102	101	104
1900	106	105	110	101	103	109	102	103	111	104	101	110
1901	108	105	115	102	107	110	105	110	114	107	113	111
1902	112	109	121	106	103	116	108	117	122	110	110	114
1903	116	116	127	112	106	123	112	118	128	113	117	115
1904	117	117	130	116	110	120	114	120	117	114	119	116
1905	119	118	132	115	111	126	114	122	121	118	121	118
1906	124	120	140	119	115	140	118	126	128	124	131	124
1907	129	124	145	124	116	158	121	127	131	128	132	132

\* Mean of Bar iron, Bessemer converting, and Blast furnaces.

advance of wages has been especially rapid; or the rapid advance of wages in the cotton industry may be due to the fact that higher rates have been demanded by women and girls. Among men, the highest priced workers have secured the most rapid increase in pay, and the lowest priced the least rapid. Perhaps these differences are connected with differences in the scope and efficiency of trade-union organization among wage-earners on the higher and lower planes.

Finally, the scope and distribution of divergences from the general trend of wage changes are set forth in Table 16. That the range covered by the relative prices of labor is narrower and the degree of concentration around the median is greater than with wholesale commodity prices, appears on comparing these decils with those of Table 8. The average margins between the decils run as follows in number of points:

	Lowest relative rates and 1st decils	1st and 2d decils	2d and 3d decils	3d and 4th decils	4th decils and medians	Medians and 6th decils	6th and 7th decils	7th and 8th decils	8th and 9th decils	9th decils and highest relative rates
Wages .....	23.1	2.3	1.4	.8	1.1	1.1	1.4	1.8	3.0	41.4
Wholesale prices ....	32.5	7.6	5.2	4.2	3.6	3.9	4.4	5.8	12.2	54.7

This table shows also that the very deviations from the general trend of fluctuations are regular and orderly in the case of prices of labor as in the case of prices of commodities. For each one of the decils undergoes changes strikingly similar in character to the changes undergone by the median, or by the arithmetic mean of Table 15. Finally, the decreased margins between the decils in 1894-96 and the increased margins in later years show that relative wages, like relative prices, are squeezed together by the pressure of business depression and spring apart when this pressure is relaxed by the return of prosperity.<sup>45</sup>

TABLE 15

RELATIVE WAGES PER HOUR OF EMPLOYEES IN FORTY-ONE MANUFACTURING INDUSTRIES, CLASSIFIED ACCORDING TO SEX AND AVERAGE ACTUAL WAGES PER HOUR IN 1890-99. BY YEARS, 1890-1907

Arithmetic means, weighted by numbers employed in each occupation and each industry. Average actual wages per hour in 1890-99 = 100

Year	Females		Males			Both sexes		
	Proportionate numbers	1895 Nearly all less than 20c per hour	3305 Less than 20c per hour	3902 20-34.99c per hour	898 35c per hour upward	8105 All rates of pay	10,000 New results	..... Bureau of Labor
1890		99	102	100	100	101	101	100
1891		100	102	100	101	101	101	100
1892		100	102	101	101	101	101	101
1893		102	102	101	101	101	101	101
1894		99	97	98	98	98	98	98
1895		98	98	99	97	98	98	98
1896		102	99	99	99	99	100	100
1897		100	98	100	100	99	99	100
1898		101	99	100	100	100	100	100
1899		100	102	102	104	102	102	102
1900		104	105	105	106	105	105	106
1901		107	107	107	110	108	108	108
1902		111	111	111	114	111	111	112
1903		114	114	116	118	115	115	116
1904		115	113	117	120	116	116	117
1905		119	115	118	122	117	118	119
1906		127	120	123	126	122	123	124
1907		136	126	127	130	127	129	129

<sup>45</sup> Of course, these figures for relative rates of pay per hour cannot safely be accepted as indices of changes in cost of labor to employers, or in money incomes to wage-earners. The latter topics receive attention in Chapter XI, i, 3, and Chapter XIII, ii, 1.

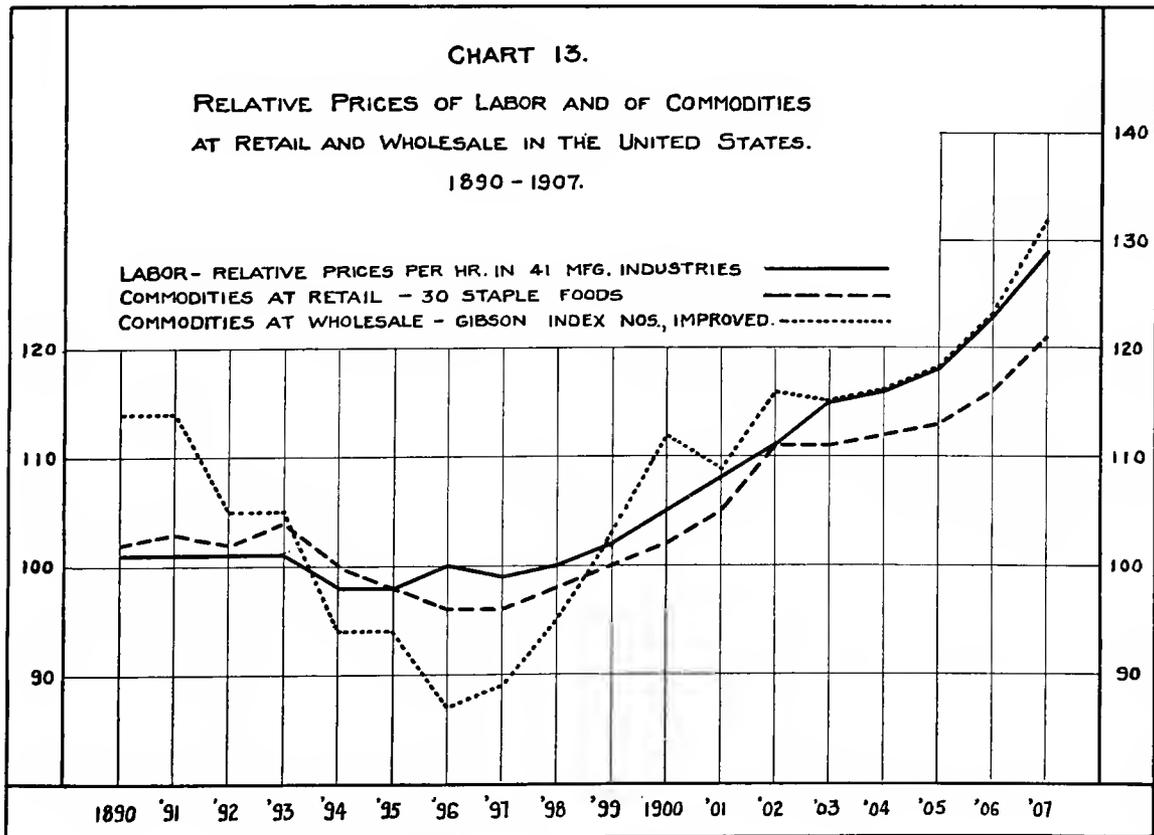
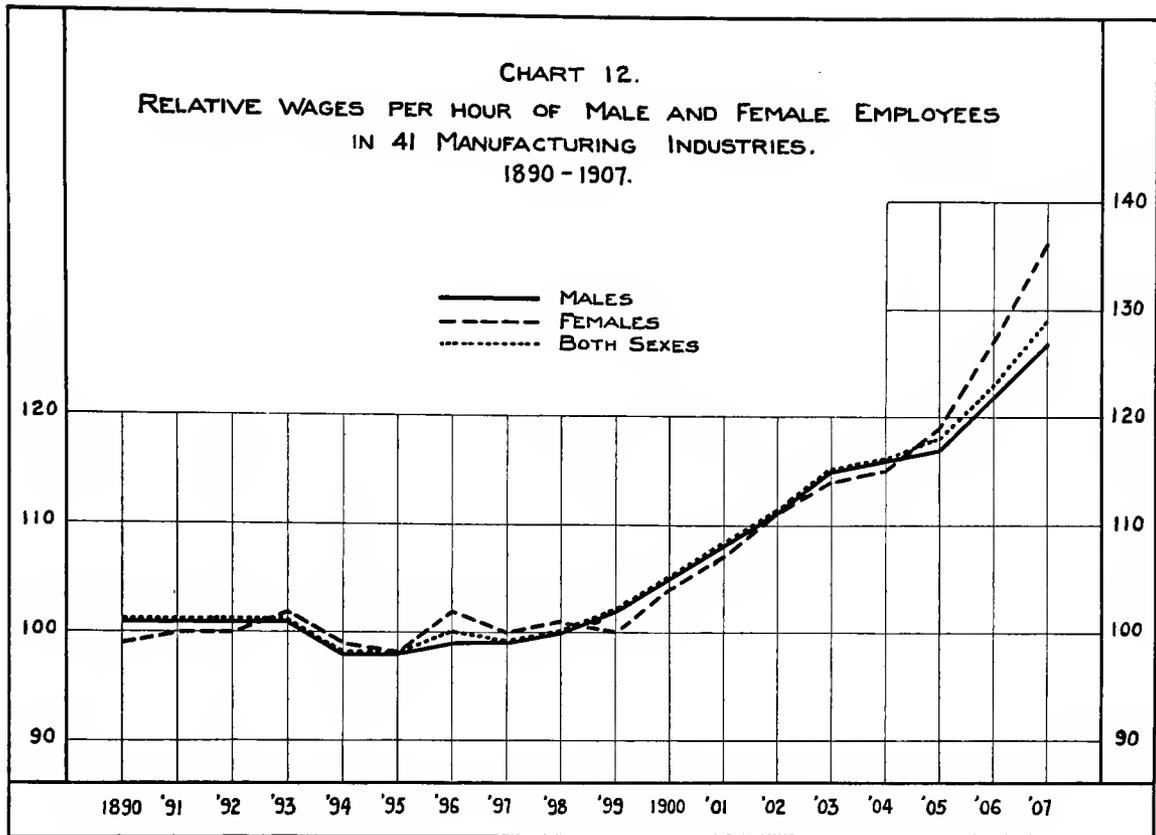


TABLE 16

DECILS OF RELATIVE WAGES PER HOUR IN FORTY-ONE MANUFACTURING INDUSTRIES OF THE UNITED STATES.

WEIGHTED BY NUMBER OF EMPLOYEES IN EACH OCCUPATION AND INDUSTRY. BY YEARS, 1890-1907

Average actual wages per hour in 1890-99 = 100

Year	Lowest relative wage	1st decil	2d decil	3d decil	4th decil	Median	6th decil	7th decil	8th decil	9th decil	Highest relative wage
1890	82	97	98	99	99	100	101	102	103	105	126
1891	84	97	98	99	99	100	101	102	103	105	123
1892	84	98	99	99	100	101	101	102	103	105	120
1893	79	98	99	100	100	101	102	102	104	106	117
1894	85	94	96	97	98	98	99	99	100	101	114
1895	74	95	97	97	98	98	99	99	100	101	128
1896	80	97	98	99	99	100	100	100	101	103	127
1897	78	95	97	99	99	100	100	101	101	102	121
1898	80	96	98	98	99	100	101	101	102	105	116
1899	75	97	99	100	101	102	103	104	105	106	127
1900	72	99	101	103	103	105	106	107	110	110	134
1901	77	102	103	104	106	107	108	110	112	114	138
1902	74	103	106	109	110	111	112	114	115	120	165
1903	73	107	110	112	113	113	115	117	120	125	186
1904	75	108	110	113	113	114	116	119	121	127	171
1905	75	108	112	114	115	117	118	121	125	130	200
1906	76	111	115	118	120	122	124	127	131	137	276
1907	76	113	120	122	125	127	129	134	137	145	304

### 3. *The Prices of Labor in England*

England alone among our foreign countries possesses comprehensive statistics of wages for the period since 1890.<sup>46</sup> Table 17 reproduces the index number of wages compiled by the Board of Trade, and indicates sufficiently the scope of the data. While agriculture and coal mining are included, the manufacturing industries are by no means so well represented as in the American material.

English wages pursue a course far more even than do prices at wholesale. But when compared with the Board of Trade's series for the retail prices of food the difference is less marked. Wages fell less than the cost of food in 1890-95, but rose more rapidly in 1896-1900. On the other hand, wages fell in 1900-03 while the retail prices of food were rising slowly. In 1905-07 workingmen regained part of this lost ground; for wages went up much faster than food prices. But after the crisis they suffered doubly—wages fell slightly and the prices of food advanced (see Chart 15).

<sup>46</sup> The best German material is that compiled by Dr. R. Kuezynski, *Die Entwicklung der gewerblichen Löhne seit der Begründung des Deutschen Reiches*, Berlin, 1909. But Kuezynski does not consider his data full enough to justify the compilation of averages for large groups of industries. A few French series are published in the *Annuaire statistique de France*.

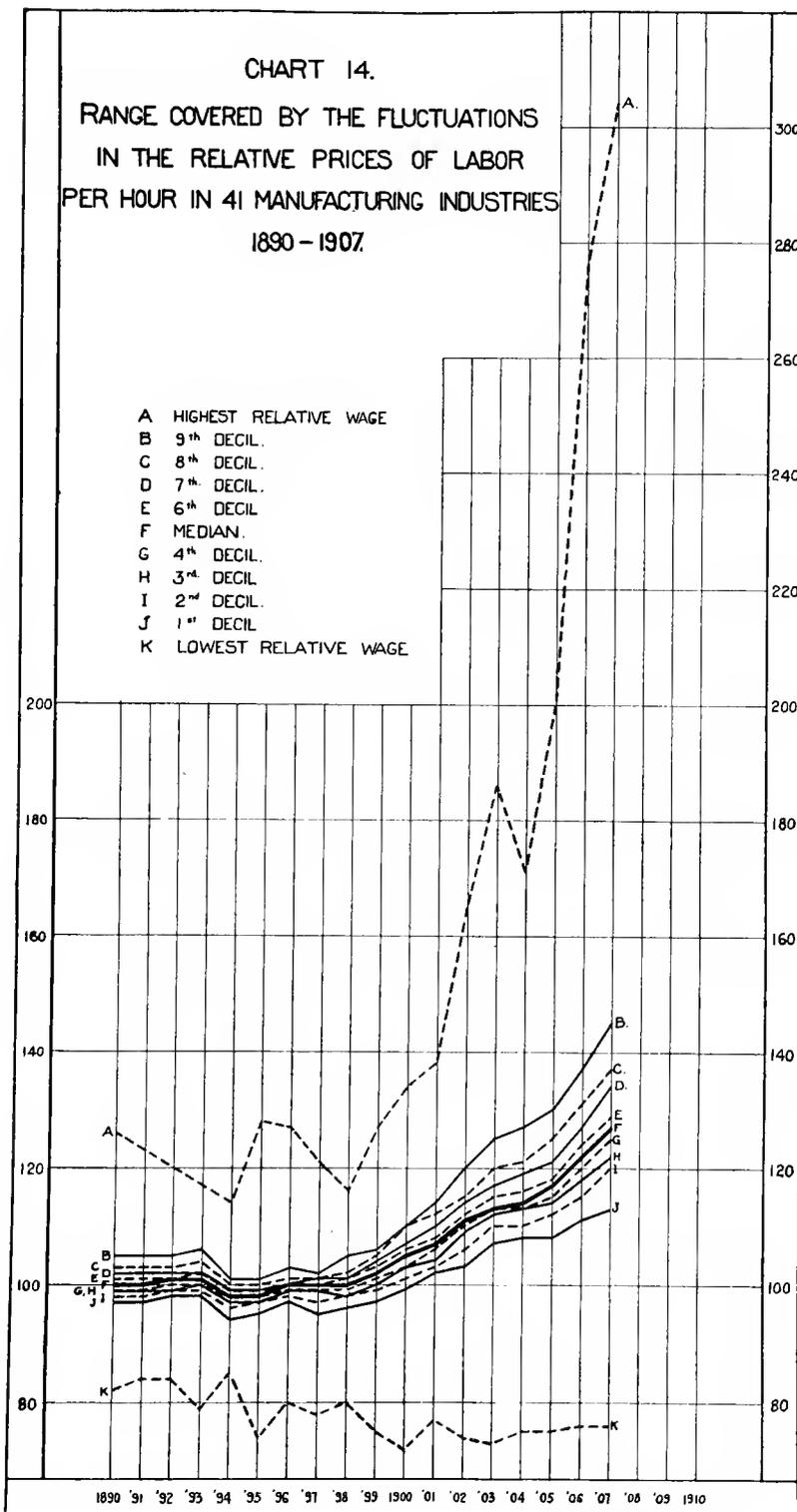


TABLE 17

## GENERAL COURSE OF WAGES IN THE UNITED KINGDOM

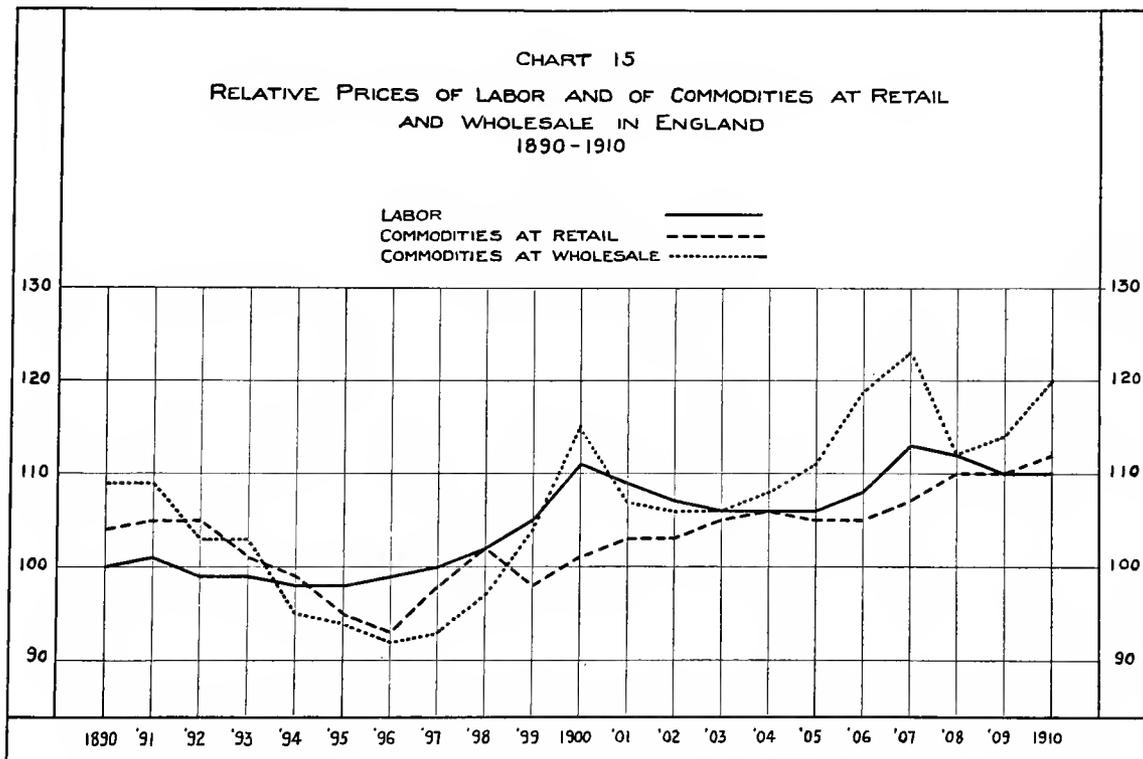
BY YEARS, 1890-1910

Average rates in 1890-99 = 100

Year	Building trades: brick-layers, carpenters, joiners, and masons. Mean of 74 rates	Coal mining: hewers. Weighted percentage changes in principal districts	Engineering: fitters, turners, iron founders, and pattern makers. Mean of 36 rates	Textile: cotton spinners and weavers, linen and jute operatives	Agriculture: ordinary laborers. Mean of 115 rates	Unweighted means of preceding groups of trades	
						Including agriculture	Excluding agriculture
1890	94	109	97	100	97	99	100
1891	95	110	98	102	100	101	101
1892	97	100	98	100	100	99	99
1893	98	102	97	99	99	99	99
1894	99	97	97	99	99	98	98
1895	100	92	98	99	99	98	98
1896	101	91	102	99	99	99	99
1897	103	92	103	99	100	100	100
1898	106	100	104	99	102	102	102
1899	107	106	105	103	103	105	105
1900	109	127	105	105	107	110	111
1901	109	119	105	105	108	109	109
1902	109	111	105	105	108	107	107
1903	109	108	105	105	108	107	106
1904	109	105	105	105	108	106	106
1905	109	103	105	107	109	107	106
1906	109	106	106	111	108	108	108
1907	109	122	107	114	108	112	113
1908	109	119	107	114	109	111	112
1909	109	113	106	112	109	110	110
1910	109	114	107	112	109	110	110
Averages							
1890-99	100	100	100	100	100	100	100
1900-09	109	113	106	108	108	109	108

Computed from the *Twelfth Abstract of Labour Statistics of the United Kingdom*, p. 54, by shifting the base from rates in 1900 = 100 to average rates in 1890-99 = 100.

Finally, when the English and American index numbers of wages are compared, they are found to reflect the differences in the course of business cycles which have twice been emphasized. In the depression of 1901-04 the English wage-earners lost much of the gains they had scored in the prosperous years 1896-1900. American wages, on the contrary, received no setback in the short-lived depression of 1903-04. It is for this reason that in 1907 the American table shows much heavier gains than the English table over the level of 1890. But when only the first decade is examined, the comparison comes out the other way. Depression was more severe on this side of the Atlantic, and the relative prices of labor in 1900 were materially lower here than in England.



## III. THE PRICES OF LOANS—INTEREST

1. *The Tables of Interest Rates*

The American statistics of interest, available for the years 1890-1911, come from a single money market. But this one market—New York—is by far the most important in the country. Moreover, it has such close connections with all the lesser financial centers that its rates both affect and are affected by changes occurring elsewhere. Loan funds are so fluid a commodity that outside banks and capitalists can lend, and outside business enterprises of large size can borrow in New York. The objections to relying upon statistics from this one market as indicative of fluctuations in the rates of interest are therefore less serious than would be the objections to a similar procedure with reference to retail prices or wages. It is true that the farmers and most business men of the interior have practically no access to the metropolitan market. Such borrowers must pay the rates of interest charged by local banks and capitalists, and these rates are usually higher than those current in New York. But these interior rates, particularly in the larger towns of the northeastern and north central states, probably rise and fall in rough conformity with rates in New York, and our interest is in the fluctuations rather than in the actual magnitude of the rates. Moreover, the reminder is again pertinent that business cycles develop their most distinctive phenomena among the larger business enterprises in the centers of industry, commerce, and finance.

In modern business the distinction between loans on long time and short time is clearly drawn and highly important. Short loans, negotiated to meet temporary capital requirements such as the purchase of supplies, the payment of labor, etc., are made chiefly by commercial banks, and by business enterprises which sell their goods on credit. Long loans, negotiated to meet permanent capital requirements such as the purchasing of land, buildings, machinery, franchises, etc., are made chiefly by individual investors, savings banks, insurance companies, and endowed institutions.<sup>47</sup>

For long-time loans no market rates of interest are regularly quoted. A good substitute for such quotations, however, is afforded by the net rates of interest realized by investors who lend money to governments or business enterprises by purchasing bonds.

The number of bonds for which net yields can be computed by months since 1890 is small. The whole class of state and municipal bonds is barred out by lack of satisfactory quotations. National bonds, while quoted every month, are prevented from reflecting accurately general market conditions by the require-

<sup>47</sup>The remainder of this section consists chiefly of a revised version of the article on "Rates of Interest and the Prices of Investment Securities, 1890-1909," published in the *Journal of Political Economy*, April, 1911.

ments of the National Banking Act. Moreover, there is no single type of United States bonds which has been upon the market during the whole period since 1890. It is only by treating the "4 per cents of 1925" as a continuation of the "4 per cents of 1907" that a continuous series can be approximated. Some arbitrary assumption is involved in grafting one of these series upon the other. The device used is to multiply the net yields of the 4s of 1907 in 1890-95 by 1.026—the ratio between the yields of the two issues of 4s in 1896, which is the first full year that both were upon the market. This shift is more simple than accurate, and the composite series which it gives cannot be highly commended.<sup>48</sup> Fortunately, there remains one class of bonds for which better quotations are available.

The railway bonds now listed on the New York Stock Exchange number over 600; but of these few date back to 1890 and have substantially complete quotations for every month since then. To be available, bonds must also have several years to run after 1911; for otherwise they are not now trustworthy indices of the interest rates which investors require on long loans. Indeed, only the ten securities described in Table 18 meet all requirements passably, and of these not all have been above suspicion as conservative investments during the whole period covered.

The lowest and highest prices of these bonds in each month of 1890-1911 were obtained from the *Financial Review*. The means between these extreme quotations were struck, after accrued interest, as of the middle of the month, had been deducted. Then net yields were computed for each month from these mean quotations by the aid of bond tables.<sup>49</sup> Finally, net yields by quarters and by years were computed by averaging the monthly figures.<sup>50</sup> To show the variations in interest rates more clearly, columns of relative rates, computed on the basis average actual net yields in 1890-99 = 100, were added to the tables.<sup>51</sup> Table 19 presents the results by years. The bonds are arranged in the order of their average net yields in 1890-99. The figures for quarters and months are given in Tables 21 and 22. Since the latter tables would be made unduly bulky by printing the full figures for all the securities only two bond series are included, namely, the general average and the series for one issue which merits especial attention. (See p. 157.)

<sup>48</sup> See Table 20. The net yields for different issues of United States bonds from 1878 to 1909 are given in A. Piatt Andrew's *Statistics for the United States* (National Monetary Commission, Senate Document, no. 570, 61st Congress, 2d session), p. 281.

<sup>49</sup> The computing was done by Donald English, sometime Assistant in Economics in the University of California. When a bond lacked a quotation for some month, its net yield was interpolated by supposing that this yield varied from the net yield of the preceding or following month in the same proportion that the average net yields of the remaining bonds varied. Interpolations were necessary, however, in less than 2 per cent of the cases.

<sup>50</sup> Frequent discrepancies of one point may be found between the average net yields by quarters and by years. They are due to the carrying of fractions of .5 or more and the dropping of smaller fractions. Statistical offices often arbitrarily change averages so as to be formally consistent with the figures from which they are struck; but this practice is less accurate in substance, though more accurate in form, than the one followed here.

<sup>51</sup> The average relative yields are computed on the index number plan from the relative figures for each of the ten bonds—not from the average actual yields of all the bonds.

TABLE 18

DESCRIPTION OF THE RAILWAY BONDS INCLUDED IN THE FOLLOWING TABLES

Name of railway	Name of bonds	Medium of payment	Dates of		Amount of issue in millions of dollars			Rate of interest %	Moody's rating in 1909*
			Issue	Maturity	Authorized	Outstanding			
						1890	1909		
Chicago and Eastern Illinois	General Consolidated and first mortgage		1887	1937	30	4	20	5	A a
Missouri, Kansas and Texas	First mortgage	Gold	1890	1990	40	39	40	4	A a
Wabash	First mortgage	Gold	1889	1939	34	23	34	5	A a a
Chesapeake and Ohio	First consolidated mortgage	Gold	1889	1939	30	22	28	5	A a
Chicago, St. Paul, Minneapolis and Omaha	Consolidated mortgage		1880	1930	30	13	16	6	A a a
Chicago, Burlington and Quincy	Nebraska Extension bonds, secured by deposit of first mortgage bonds of Nebraska branch roads		1887	1927	†	25	23	4	A a a
Central Railroad of New Jersey	General mortgage	Gold	1887	1987	50	35	45	5	A a a
Chicago, Milwaukee and St. Paul	General mortgage, "Series A"	Gold	1889	1989	150	9	49	4	A a a
New York, Chicago and St. Louis	First mortgage	Gold	1887	1937	20	20	19	4	A a a
West Shore Railroad	First mortgage, guaranteed by the New York Central		1885	2361	50	50	50	4	A a a

\* From Moody's *Analysis of Railroad Investments* (New York, 1909). Moody recognizes 14 classes of securities, of which *A a a* and *A a* are the highest.  
 † \$20,000 per mile.

TABLE 19

ACTUAL AND RELATIVE RATES OF INTEREST YIELDED BY INVESTMENTS IN TEN AMERICAN RAILWAY BONDS BY YEARS, 1890-1911: ACTUAL RATES

Year	C. & E. I. %	M. K. & T. %	Wabash %	C. & O. %	C. St. P. M. & O. %	C. B. & Q. %	C. R. R. of N. J. %	C. M. & St. P. %	N. Y. C. & St. L. %	W. S. R. R. %	Averages		
											1st five %	2d five %	All %
1890	5.24	5.20	4.99	5.09	4.96	4.53	4.55	4.39	4.38	3.88	5.10	4.35	4.72
1891	5.28	5.25	5.06	5.11	5.06	4.92	4.61	4.79	4.42	3.96	5.15	4.54	4.85
1892	5.03	5.04	4.81	4.85	4.84	4.73	4.53	4.49	4.18	3.90	4.91	4.37	4.64
1893	5.16	5.17	4.95	5.00	4.97	4.94	4.60	4.42	4.30	4.02	5.05	4.46	4.75
1894	5.14	5.04	4.83	4.75	4.63	4.72	4.40	4.46	4.04	3.87	4.88	4.30	4.59
1895	5.07	4.76	4.72	4.59	4.56	4.64	4.36	4.38	3.87	3.82	4.74	4.21	4.48
1896	5.12	4.92	4.80	4.72	4.65	4.80	4.34	4.28	3.89	3.85	4.84	4.23	4.54
1897	5.02	4.78	4.76	4.48	4.28	4.51	4.47	3.96	3.78	3.72	4.66	4.09	4.38
1898	4.71	4.57	4.54	4.29	4.12	4.07	4.46	3.83	3.80	3.69	4.45	3.97	4.21
1899	4.32	4.34	4.26	4.12	3.97	3.47	4.23	3.59	3.71	3.56	4.20	3.71	3.96
1900	4.27	4.40	4.20	4.12	4.09	3.42	4.07	3.61	3.71	3.57	4.22	3.68	3.95
1901	3.90	4.11	4.08	4.00	3.83	3.40	3.81	3.59	3.66	3.54	3.98	3.60	3.79
1902	3.84	4.05	4.07	4.01	3.81	3.50	3.63	3.51	3.73	3.55	3.96	3.58	3.77
1903	4.15	4.13	4.24	4.19	4.09	3.69	3.84	3.70	3.89	3.70	4.16	3.76	3.96
1904	4.10	4.06	4.15	4.12	4.03	3.72	3.78	3.68	3.83	3.72	4.09	3.75	3.92
1905	3.95	3.97	4.08	4.04	3.79	3.61	3.69	3.59	3.79	3.70	3.97	3.68	3.82

TABLE 19—(Concluded)

ACTUAL AND RELATIVE RATES OF INTEREST YIELDED BY INVESTMENTS IN TEN AMERICAN RAILWAY BONDS BY YEARS, 1890-1911: ACTUAL RATES

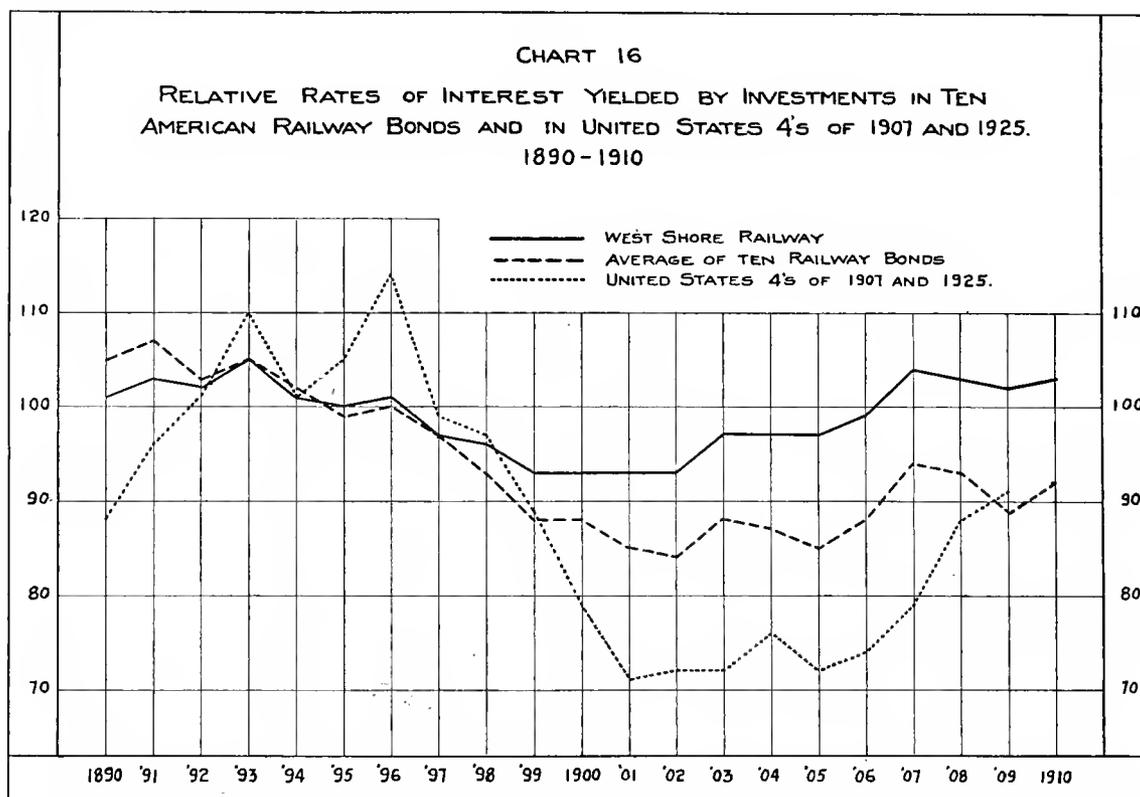
Year	C. & E. I.	M. K. & T.	Wabash	C. & O.	C. St. P. M. & O.	C. B. & Q.	C. R. R. of N. J.	C. M. & St. P.	N. Y. C. & St. L.	W. S. R. R.	Averages		
	%	%	%	%	%	%	%	%	%	%	1st five %	2d five %	All %
1906	4.06	4.03	4.24	4.10	3.97	3.78	3.89	3.71	3.82	3.80	4.08	3.80	3.94
1907	4.44	4.24	4.60	4.45	4.27	4.08	4.11	3.95	4.07	3.97	4.40	4.04	4.22
1908	4.33	4.15	4.63	4.32	4.18	4.04	4.04	3.93	4.04	3.95	4.32	4.00	4.16
1909	4.14	4.01	4.24	4.13	3.95	3.94	3.89	3.87	3.94	3.89	4.09	3.91	4.00
1910	4.33	4.08	4.42	4.25	4.14	4.08	4.02	4.03	4.04	3.96	4.24	4.03	4.14
1911	4.35	4.12	4.50	4.26	4.13	4.11	4.06	4.05	4.03	3.97	4.27	4.04	4.16
Averages													
1890-99	5.01	4.91	4.77	4.70	4.60	4.53	4.46	4.26	4.04	3.83	4.80	4.22	4.51
1900-09	4.12	4.12	4.25	4.15	4.00	3.72	3.88	3.71	3.85	3.74	4.13	3.78	3.95

RELATIVE RATES

Average actual yields in 1890-99 = 100

Av. actual yields, 1890-99	Year	C. & E. I.	M. K. & T.	Wabash	C. & O.	C. St. P. M. & O.	C. B. & Q.	C. R. R. of N. J.	C. M. & St. P.	N. Y. C. & St. L.	W. S. R. R.	Averages		
												1st five	2d five	All
1890	105	106	105	108	108	100	102	103	108	101	106	103	105	
1891	105	107	106	109	110	109	103	112	109	103	107	107	107	
1892	100	103	101	103	105	104	102	105	104	102	103	103	103	
1893	103	105	104	106	108	109	103	104	107	105	105	106	105	
1894	103	103	101	101	101	104	99	105	100	101	102	102	102	
1895	101	97	99	98	99	102	98	103	96	100	99	100	99	
1896	102	100	101	100	101	106	97	100	96	101	101	100	100	
1897	100	97	100	95	93	99	100	93	94	97	97	97	97	
1898	94	93	95	91	89	90	100	90	94	96	92	94	93	
1899	86	88	89	88	86	77	95	84	92	93	87	88	88	
1900	85	90	88	88	89	75	91	85	92	93	88	87	88	
1901	78	84	86	85	83	75	86	84	91	93	83	86	85	
1902	77	83	85	85	83	77	81	82	92	93	83	85	84	
1903	83	84	89	89	89	81	86	87	96	97	87	89	88	
1904	82	83	87	88	88	82	85	86	95	97	86	89	87	
1905	79	81	86	86	82	80	83	84	94	97	83	88	85	
1906	81	82	89	87	86	83	87	87	95	99	85	90	88	
1907	89	86	96	95	93	90	92	93	101	104	92	96	94	
1908	86	85	97	92	91	89	91	92	100	103	90	95	93	
1909	83	82	89	88	86	87	87	91	98	102	86	93	89	
1910	86	83	93	90	90	90	90	95	100	103	88	96	92	
1911	87	84	94	91	90	91	91	95	100	104	89	96	93	
Averages														
1890-99	100	100	100	100	100	100	100	100	100	100	100	100	100	
1900-09	82	84	89	88	87	82	87	87	95	98	86	90	88	

The best records of short-time interest rates in New York are likewise published in the *Financial Review*. These tables show by weeks the rates (1) for call loans at the stock exchange and at the banks and trust companies, (2) for seven kinds of time loans, ranging from 30 days to 7 months, and (3) for three descriptions of commercial paper. Of call rates, those quoted at the stock exchange are both the most important and the most regularly recorded. The record for commercial paper is not quite complete; for during the height of crises there are sometimes weeks in which no rate is quoted, or in which the quoted rates are said to be merely nominal. But the figures for time loans present even more gaps. Accordingly, the data selected are (1) the average rates for call loans at the stock exchange, (2) the rates for choice double-name commercial paper running 60 to 90 days, and (3) the rates for good single-name commercial paper running 4 to 6 months.



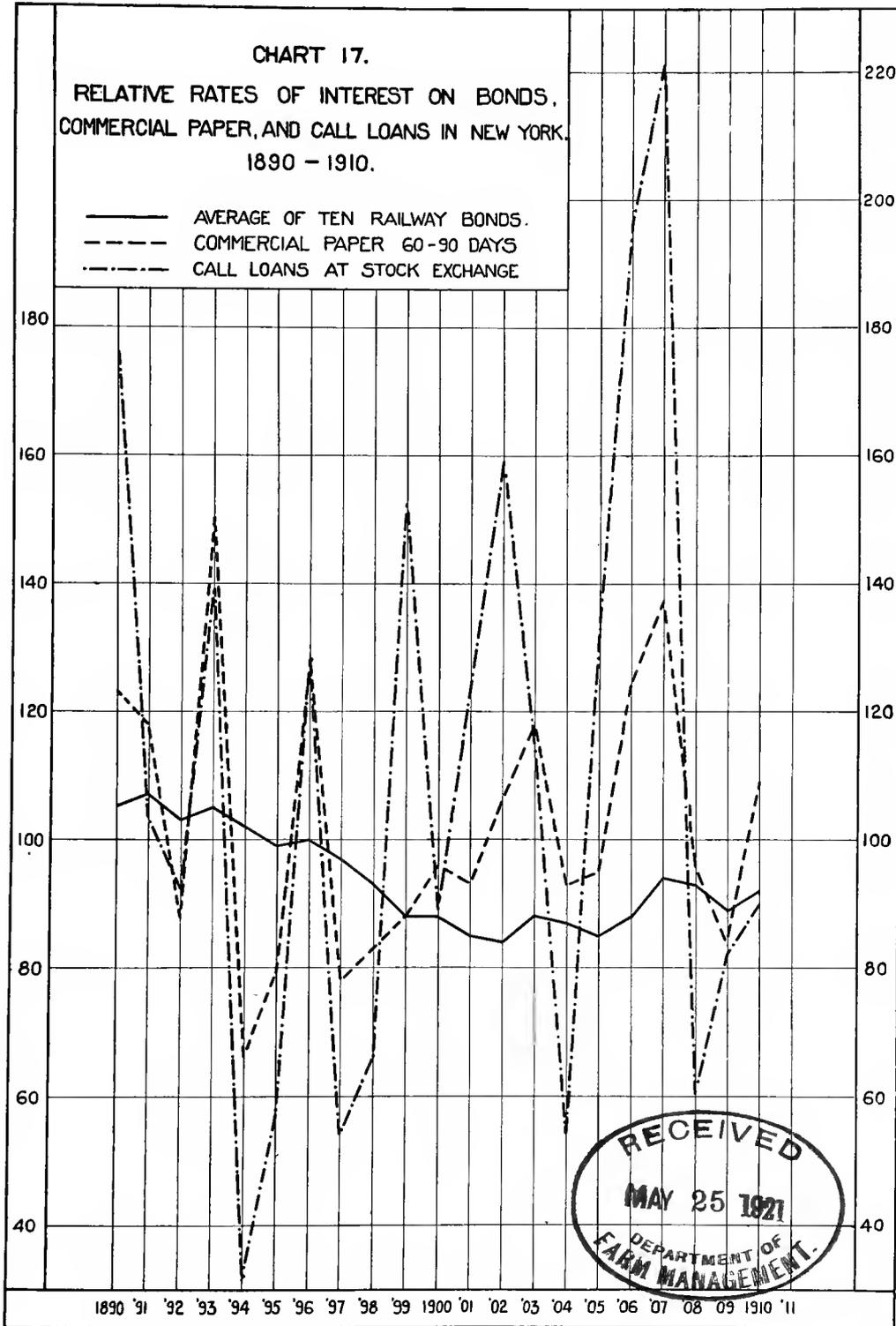


TABLE 20

ACTUAL AND RELATIVE RATES OF INTEREST ON BONDS, COMMERCIAL PAPER, AND CALL LOANS IN NEW YORK BY YEARS, 1890-1911

Year	Actual rates of interest						Relative rates of interest Average actual rates 1890-99 = 100					
	Bonds			Commercial paper			Bonds			Commercial paper		
	U. S. 4s of 1907 and 1925	West Shore R. R.	Av. of 10 R. R. bonds	4-6 months	60-90 days	Call loans at Stock Exchange	U. S. 4s of 1907 and 1925	West Shore R. R.	Av. of 10 R. R. bonds	4-6 months	60-90 days	Call loans at Stock Exchange
1890	2.43%	3.88%	4.72%	6.89%	5.64%	5.81%	88	101	105	115	123	176
1891	2.65	3.96	4.85	6.50	5.41	3.42	96	103	107	109	118	104
1892	2.80	3.90	4.64	5.38	4.04	3.03	101	102	103	90	88	92
1893	3.04	4.02	4.75	7.62	6.86	4.58	110	105	105	127	150	139
1894	2.79	3.87	4.59	5.22	3.04	1.06	101	101	102	87	66	32
1895	2.89	3.82	4.48	5.73	3.64	1.85	105	100	99	96	79	56
1896	3.14	3.85	4.54	7.02	5.76	4.21	114	101	100	117	126	128
1897	2.73	3.72	4.38	4.72	3.57	1.77	99	97	97	79	78	54
1898	2.69	3.69	4.21	5.31	3.82	2.16	97	96	93	89	83	66
1899	2.47	3.56	3.96	5.48	4.05	5.04	89	93	88	92	88	153
1900	2.18	3.57	3.95	5.71	4.38	2.93	79	93	88	95	96	89
1901	1.97	3.54	3.79	5.41	4.24	3.98	71	93	85	90	93	121
1902	1.98	3.55	3.77	5.75	4.88	5.22	72	93	84	96	106	159
1903	1.99	3.70	3.96	6.21	5.43	3.79	72	97	88	104	118	115
1904	2.09	3.72	3.92	5.13	4.24	1.78	76	97	87	86	93	54
1905	2.00	3.70	3.82	5.17	4.35	4.39	72	97	85	86	95	133
1906	2.04	3.80	3.94	6.24	5.68	6.44	74	99	88	104	124	196
1907	2.18	3.97	4.22	6.55	6.27	7.27	79	104	94	109	137	221
1908	2.44	3.95	4.16	4.95	4.42	1.97	88	103	93	83	96	60
1909	2.52	3.89	4.00	4.67	3.86	2.70	91	102	89	78	84	82
1910	2.74*	3.96	4.14	5.72	5.01	2.97	99*	103	92	96	109	90
1911	2.68*	3.97	4.16	4.71	4.02	2.57	97*	104	93	79	88	78
Averages												
1890-99	2.76	3.83	4.51	5.99	4.58	3.29	100	100	100	100	100	100
1900-09	2.14	3.74	3.95	5.61	4.78	4.05	77	98	88	93	104	123

\* Average yields of January, April, July, and October. *Report of the Comptroller of the Currency, 1911, p. 823.*

TABLE 21

RATES OF INTEREST ON BONDS, COMMERCIAL PAPER, AND CALL LOANS IN NEW YORK BY QUARTERS, 1890-1911

	Actual rates of interest					Relative rates of interest Average actual rates 1890-99 = 100				
	Bonds		Commercial paper			Bonds		Commercial paper		
	West Shore R. R.	Av. of 10 R. R. bonds	4-6 months	60-90 days	Call loans at Stock Exchange	West Shore R. R.	Av. of 10 R. R. bonds	4-6 months	60-90 days	Call loans at Stock Exchange
1890—1st quarter	3.83%	4.65%	6.44%	5.30%	5.58%	100	103	108	116	169
2d quarter	3.84	4.64	6.45	5.07	4.62	100	103	108	111	140
3d quarter	3.87	4.72	6.48	5.47	7.42	101	105	108	119	225
4th quarter	3.98	4.87	8.17	6.98	5.62	104	108	136	152	171
1891—1st quarter	3.93	4.83	6.76	5.41	3.27	103	107	113	118	99
2d quarter	3.96	4.88	6.40	5.26	3.62	103	108	107	115	110
3d quarter	3.99	4.89	6.64	5.72	3.00	104	108	111	125	91
4th quarter	3.97	4.78	6.14	5.18	3.85	104	106	103	113	117
1892—1st quarter	3.90	4.65	5.27	3.97	2.14	102	103	88	87	65
2d quarter	3.88	4.60	4.58	3.14	1.62	101	102	77	69	49
3d quarter	3.90	4.64	5.45	3.99	2.63	102	103	91	87	80
4th quarter	3.92	4.67	6.26	5.19	5.81	102	103	105	113	176
1893—1st quarter	3.95	4.62	6.33	5.84	5.31	103	103	106	127	161
2d quarter	4.03	4.71	8.10	7.02	5.62	105	105	135	153	171
3d quarter	4.15	4.97	9.84	9.33	5.65	108	110	164	204	172
4th quarter	3.96	4.71	6.29	4.68	1.74	103	104	105	102	53
1894—1st quarter	3.91	4.64	5.17	3.30	1.04	102	103	86	72	32
2d quarter	3.87	4.57	4.83	2.96	1.08	101	101	81	65	33
3d quarter	3.87	4.59	5.13	3.15	1.00	101	102	86	69	30
4th quarter	3.83	4.55	5.75	2.80	1.14	100	101	96	61	35
1895—1st quarter	3.84	4.62	6.35	3.41	1.67	100	102	106	74	51
2d quarter	3.83	4.49	5.12	3.03	1.56	100	100	86	66	47
3d quarter	3.79	4.37	5.37	3.56	1.34	99	97	90	78	41
4th quarter	3.81	4.43	6.33	4.51	2.85	100	98	106	98	87
1896—1st quarter	3.81	4.48	7.69	5.57	4.17	100	99	128	122	127
2d quarter	3.82	4.45	5.94	4.72	2.54	100	99	99	103	77
3d quarter	3.92	4.67	7.89	7.05	4.02	102	103	132	154	122
4th quarter	3.85	4.54	6.50	5.79	6.10	101	100	109	126	185
1897—1st quarter	3.77	4.43	4.56	3.26	1.67	99	98	76	71	51
2d quarter	3.72	4.43	4.54	3.39	1.36	97	98	76	74	41
3d quarter	3.70	4.34	4.83	3.79	1.61	97	96	81	83	49
4th quarter	3.68	4.31	4.96	3.74	2.45	96	95	83	82	74
1898—1st quarter	3.68	4.23	5.17	3.93	2.15	96	94	86	86	65
2d quarter	3.78	4.30	6.11	4.29	2.05	99	95	102	94	62
3d quarter	3.68	4.18	5.23	3.81	2.20	96	93	87	83	67
4th quarter	3.64	4.13	4.79	3.27	2.24	95	92	80	71	68

TABLE 21—(Continued)

RATES OF INTEREST ON BONDS, COMMERCIAL PAPER, AND CALL LOANS IN NEW YORK BY QUARTERS, 1890-1911

	Actual rates of interest					Relative rates of interest Average actual rates 1890-99 = 100				
	Bonds		Commercial paper			Bonds		Commercial paper		
	West Shore R. R.	Av. of 10 R. R. bonds	4-6 months	60-90 days	Call loans at Stock Exchange	West Shore R. R.	Av. of 10 R. R. bonds	4-6 months	60-90 days	Call loans at Stock Exchange
1899—1st quarter	3.58%	4.00%	4.77%	3.25%	3.17%	94	89	80	71	96
2d quarter	3.53	3.92	4.85	3.53	3.74	92	87	81	77	114
3d quarter	3.53	3.91	5.66	4.24	4.60	92	87	95	93	140
4th quarter	3.59	4.00	6.86	5.41	8.65	94	89	115	118	263
1900—1st quarter	3.56	3.97	6.27	4.71	3.50	93	88	105	103	106
2d quarter	3.56	3.94	5.31	3.83	2.23	93	87	89	84	68
3d quarter	3.59	3.97	5.48	4.20	1.47	94	88	92	92	45
4th quarter	3.56	3.91	5.77	4.75	4.51	93	87	96	104	137
1901—1st quarter	3.49	3.79	5.14	3.88	2.52	91	84	86	85	77
2d quarter	3.54	3.78	5.40	3.95	5.10	93	84	90	86	155
3d quarter	3.56	3.81	5.62	4.52	3.74	93	85	94	99	114
4th quarter	3.57	3.79	5.44	4.73	4.58	93	84	91	103	139
1902—1st quarter	3.56	3.75	5.44	4.38	3.70	93	84	91	96	112
2d quarter	3.54	3.73	5.37	4.50	4.55	93	83	90	98	138
3d quarter	3.52	3.77	5.81	4.96	6.19	92	84	97	108	188
4th quarter	3.58	3.83	6.58	5.84	6.44	94	85	110	127	196
1903—1st quarter	3.63	3.87	5.81	5.25	5.02	95	86	97	115	152
2d quarter	3.69	3.95	5.79	5.00	3.21	96	88	97	109	97
3d quarter	3.72	4.05	6.54	5.73	2.29	97	90	109	125	70
4th quarter	3.76	3.99	6.54	5.83	4.54	98	89	109	127	138
1904—1st quarter	3.72	3.97	5.61	4.77	1.95	97	88	94	104	59
2d quarter	3.74	3.96	4.71	3.90	1.37	98	88	79	85	42
3d quarter	3.72	3.89	4.90	3.93	1.13	97	87	82	86	34
4th quarter	3.71	3.86	5.31	4.27	2.66	97	86	89	93	81
1905—1st quarter	3.69	3.82	4.73	3.91	2.60	96	85	79	85	79
2d quarter	3.71	3.82	4.75	3.91	2.70	97	85	79	85	82
3d quarter	3.69	3.81	5.06	4.34	2.60	96	85	85	95	79
4th quarter	3.72	3.84	6.17	5.44	9.67	97	85	103	119	294
1906—1st quarter	3.74	3.87	5.81	5.13	6.25	98	86	97	112	190
2d quarter	3.79	3.93	5.82	5.34	5.52	99	88	97	117	168
3d quarter	3.82	3.97	6.52	5.97	5.39	100	88	109	130	164
4th quarter	3.84	3.99	6.77	6.27	8.59	100	89	113	137	261
1907—1st quarter	3.88	4.05	6.70	6.10	5.67	101	90	112	133	172
2d quarter	3.91	4.15	6.14	5.67	2.58	102	92	103	124	78
3d quarter	3.98	4.22	6.70	6.24	3.92	104	94	112	136	119
4th quarter	4.13	4.45	7.33	7.46	16.20	108	99	122	163	492

TABLE 21—(Concluded)

RATES OF INTEREST ON BONDS, COMMERCIAL PAPER, AND CALL LOANS IN NEW YORK BY QUARTERS, 1890-1911

	Actual rates of interest					Relative rates of interest Average actual rates 1890-99 = 100				
	Bonds		Commercial paper			Bonds		Commercial paper		
	West Shore R. R.	Av. of 10 R. R. bonds	4-6 months	60-90 days	Call loans at Stock Exchange	West Shore R. R.	Av. of 10 R. R. bonds	4-6 months	60-90 days	Call loans at Stock Exchange
1908—1st quarter	3.99%	4.26%	6.25%	5.75%	2.87%	104	95	104	125	87
2d quarter	3.98	4.20	4.70	4.00	1.62	104	93	79	87	49
3d quarter	3.92	4.14	4.58	3.75	1.22	102	92	77	82	37
4th quarter	3.92	4.06	4.69	3.97	2.10	102	90	78	87	64
1909—1st quarter	3.86	3.97	4.28	3.56	1.96	101	89	71	78	60
2d quarter	3.89	3.98	4.25	3.38	1.88	102	89	71	74	57
3d quarter	3.91	4.00	4.41	3.86	2.30	102	89	74	84	70
4th quarter	3.90	4.05	5.81	5.07	4.66	102	90	97	111	141
1910—1st quarter	3.95	4.08	5.22	4.56	3.41	103	90	87	99	104
2d quarter	3.97	4.16	5.51	4.77	3.25	104	92	92	104	99
3d quarter	3.96	4.18	6.26	5.44	1.95	103	93	105	119	59
4th quarter	3.96	4.14	5.89	5.26	3.24	103	92	98	115	98
1911—1st quarter	3.96	4.14	4.64	3.98	2.62	103	92	78	87	80
2d quarter	3.97	4.15	4.40	3.66	2.33	104	92	74	80	71
3d quarter	3.98	4.16	4.96	4.15	2.32	104	93	83	91	71
4th quarter	3.98	4.19	4.93	4.30	2.98	104	93	83	94	91

In reducing the weekly rates given in the source to monthly averages, each week was placed in that month in which fell the majority of its days. Both the high and the low figures were included in making the averages.<sup>52</sup> Relative rates were computed on the same plan as the relative rates for bonds—that is, on the basis of average actual rates in 1890-99 = 100. For convenience of comparison, the results are presented in Tables 20, 21, and 22, side by side with the net yields of bonds.<sup>53</sup>

<sup>52</sup> The averages by quarters and by years were not computed from the monthly figures, but directly from the original figures by weeks. Of course this is the more accurate method, although it permits many slight discrepancies to appear between the quarterly or annual figures as entered in the tables, and the corresponding figures which may be computed from the rates by months.

<sup>53</sup> In his *Rate of Interest*, Professor Irving Fisher gives the yearly average rate of interest in New York upon "prime two-name 60-day" paper, computed from the *Financial Review* "by averaging the highest and lowest weekly rates" (pp. 419, 420). There are numerous small discrepancies between his results and those of this investigation, for which it is difficult to account. The present figures have been checked by three computers and should be arithmetically correct.

TABLE 22

RATES OF INTEREST ON BONDS, COMMERCIAL PAPER, AND CALL LOANS IN NEW YORK BY MONTHS, 1890-1911

	Actual rates of interest					Relative rates of interest Average actual rates 1890-99 = 100				
	Bonds		Commercial paper			Bonds		Commercial paper		
	West Shore R. R.	Av. of 10 R. R. bonds	4-6 months	60-90 days	Call loans at Stock Exchange	West Shore R. R.	Av. of 10 R. R. bonds	4-6 months	60-90 days	Call loans at Stock Exchange
1890 January	3.83%	4.62%	6.45%	5.39%	7.70%	100	102	108	118	234
February	3.82	4.65	6.13	5.04	4.25	100	103	102	110	129
March	3.83	4.67	6.75	5.50	4.25	100	104	113	120	129
April	3.84	4.64	6.65	5.14	4.30	100	103	111	112	131
May	3.84	4.63	6.38	5.06	4.88	100	103	107	110	148
June	3.83	4.65	6.28	5.00	4.75	100	103	105	109	144
July	3.85	4.68	6.25	5.08	4.60	101	104	104	111	140
August	3.88	4.73	6.50	5.61	11.63	101	105	109	122	353
September	3.88	4.76	6.75	5.71	6.75	101	106	113	125	205
October	3.91	4.76	7.25	5.89	5.00	102	106	121	129	152
November	3.99	4.88	8.88	8.20	7.00	104	108	148	179	213
December	4.04	4.96	8.63	7.38	5.00	106	110	144	161	152
1891 January	3.94	4.83	7.28	5.83	3.90	103	107	122	127	118
February	3.92	4.81	6.38	5.00	2.88	102	106	107	109	87
March	3.94	4.86	6.50	5.25	2.88	103	108	109	115	87
April	3.94	4.84	6.25	5.09	3.30	103	107	104	111	100
May	3.96	4.87	6.50	5.33	4.38	103	108	109	116	133
June	3.99	4.93	6.50	5.50	3.25	104	109	109	120	99
July	4.01	4.93	6.60	5.63	2.20	105	109	110	123	67
August	4.00	4.89	6.75	5.75	2.13	105	109	113	125	65
September	3.95	4.84	6.60	5.79	4.50	103	107	110	126	137
October	3.99	4.82	6.41	5.60	4.25	104	107	107	122	129
November	3.98	4.80	6.25	5.10	4.38	104	106	104	111	133
December	3.95	4.73	5.75	4.85	2.94	103	105	96	106	89
1892 January	3.90	4.66	5.45	4.17	2.40	102	103	91	91	73
February	3.89	4.64	4.94	3.69	2.00	102	103	83	80	61
March	3.90	4.65	5.35	3.96	2.00	102	103	89	86	61
April	3.90	4.63	4.81	3.45	2.00	102	103	80	75	61
May	3.87	4.59	4.56	3.18	1.50	101	102	76	69	46
June	3.86	4.59	4.40	2.94	1.40	101	102	74	64	43
July	3.89	4.62	5.13	3.43	1.88	102	102	86	75	57
August	3.89	4.63	5.28	4.00	2.05	102	103	88	87	62
September	3.92	4.67	6.07	4.75	4.13	102	103	101	104	123
October	3.93	4.65	6.44	5.11	5.63	103	103	108	111	171
November	3.90	4.66	6.00	5.11	5.15	102	104	100	111	156
December	3.92	4.69	6.38	5.50	6.81	102	104	107	120	207
1893 January	3.94	4.64	6.06	5.18	4.00	103	103	101	113	121
February	3.93	4.60	6.00	4.85	3.00	103	102	100	106	91
March	3.97	4.64	6.80	6.80	8.20	104	103	114	148	249
April	4.02	4.64	6.13	5.75	4.88	105	103	102	125	148

TABLE 22—(Continued)

RATES OF INTEREST ON BONDS, COMMERCIAL PAPER, AND CALL LOANS IN NEW YORK BY MONTHS, 1890-1911

	Actual rates of interest					Relative rates of interest Average actual rates 1890-99 = 100				
	Bonds		Commercial paper			Bonds		Commercial paper		
	West Shore R. R.	Av. of 10 R. R. bonds	4-6 months	60-90 days	Call loans at Stock Exchange	West Shore R. R.	Av. of 10 R. R. bonds	4-6 months	60-90 days	Call loans at Stock Exchange
1893 May	4.03%	4.71%	8.35%	6.65%	3.60%	105	105	139	145	109
June	4.05	4.78	9.75	8.75	8.88	106	106	163	190	270
July	4.14	4.93	9.75	9.75	7.75	108	109	163	213	235
August	4.21	5.07	9.70	9.70	5.50	110	112	162	212	167
September	4.11	4.89	10.14	8.32	3.75	107	108	169	182	114
October	4.02	4.80	7.69	5.96	2.38	105	106	128	130	72
November	3.93	4.67	5.80	4.47	1.70	103	104	97	98	52
December	3.92	4.65	5.50	3.67	1.16	102	103	92	80	35
1894 January	3.94	4.68	5.35	3.50	1.02	103	104	89	76	31
February	3.90	4.64	5.19	3.25	1.00	102	103	87	71	30
March	3.88	4.59	4.94	3.00	1.09	101	102	83	65	33
April	3.84	4.55	4.81	3.15	1.13	100	101	80	69	34
May	3.88	4.56	4.75	2.91	1.10	101	101	79	63	33
June	3.88	4.59	4.94	2.89	1.00	101	102	83	63	30
July	3.88	4.62	4.94	3.00	1.00	101	103	83	65	30
August	3.87	4.60	4.98	3.09	1.00	101	102	83	67	30
September	3.86	4.57	5.50	3.28	1.00	101	101	92	72	30
October	3.84	4.55	5.75	2.72	1.00	100	101	96	59	30
November	3.82	4.53	5.75	2.81	1.03	100	100	96	61	31
December	3.83	4.56	5.75	2.88	1.44	100	101	96	63	44
1895 January	3.83	4.58	5.89	3.00	1.35	100	101	98	65	41
February	3.86	4.64	6.79	3.65	1.50	101	103	113	80	46
March	3.83	4.63	6.50	3.90	2.25	100	103	109	85	68
April	3.84	4.58	6.25	3.96	2.25	100	102	104	86	68
May	3.84	4.49	4.85	2.75	1.32	100	99	81	60	40
June	3.82	4.41	4.31	2.63	1.16	100	98	72	57	35
July	3.81	4.39	4.55	2.95	1.40	100	98	76	64	43
August	3.78	4.36	5.50	3.53	1.03	99	97	92	77	31
September	3.77	4.35	6.25	4.04	1.56	99	96	104	88	47
October	3.80	4.38	6.44	4.81	2.17	99	97	108	105	66
November	3.79	4.42	5.50	4.07	1.97	99	98	92	89	60
December	3.84	4.49	6.80	4.58	4.56	100	100	114	100	138
1896 January	3.83	4.53	8.90	6.00	4.90	100	100	149	131	149
February	3.80	4.46	7.31	5.70	3.94	99	99	122	124	120
March	3.81	4.46	6.56	5.18	3.50	100	99	110	113	106
April	3.81	4.46	6.31	5.31	3.02	100	99	105	116	92
May	3.83	4.44	5.75	4.53	2.53	100	98	96	99	77
June	3.82	4.45	5.75	4.25	1.94	100	99	96	93	59
July	3.89	4.59	6.40	5.13	2.07	102	102	107	112	63

TABLE 22—(Continued)

RATES OF INTEREST ON BONDS, COMMERCIAL PAPER, AND CALL LOANS IN NEW YORK BY MONTHS, 1890-1911

	Actual rates of interest					Relative rates of interest Average actual rates 1890-99 = 100				
	Bonds		Commercial paper			Bonds		Commercial paper		
	West Shore R. R.	Av. of 10 R. R. bonds	4-6 months	60-90 days	Call loans at Stock Exchange	West Shore R. R.	Av. of 10 R. R. bonds	4-6 months	60-90 days	Call loans at Stock Exchange
1896 August	3.97%	4.75%	8.33%	7.75%	4.69%	104	105	139	169	142
September	3.91	4.67	9.10	8.44	5.45	102	104	152	184	166
October	3.90	4.65	8.56	8.56	11.13	102	103	143	187	338
November	3.86	4.50	6.19	5.25	6.25	101	100	103	115	190
December	3.80	4.46	5.10	3.75	1.95	99	99	85	82	59
1897 January	3.78	4.44	4.69	3.36	1.78	99	98	78	73	54
February	3.75	4.42	4.50	3.00	1.63	98	98	75	65	50
March	3.78	4.43	4.50	3.33	1.62	99	98	75	73	49
April	3.73	4.45	4.63	3.55	1.50	97	98	77	77	46
May	3.73	4.44	4.75	3.54	1.41	97	98	79	77	43
June	3.71	4.39	4.30	3.16	1.20	97	97	72	69	36
July	3.66	4.34	4.38	3.43	1.19	96	96	73	75	36
August	3.71	4.34	4.81	3.75	1.25	97	96	80	82	38
September	3.73	4.34	5.20	4.11	2.22	97	96	87	90	67
October	3.73	4.35	5.25	4.19	2.50	97	96	88	91	76
November	3.67	4.31	4.63	3.45	1.81	96	96	77	75	55
December	3.65	4.26	5.00	3.47	2.92	95	95	84	76	89
1898 January	3.67	4.20	4.63	3.35	2.50	96	93	77	73	76
February	3.66	4.18	4.56	3.13	1.78	96	93	76	68	54
March	3.71	4.30	6.10	4.69	2.17	97	95	102	102	66
April	3.84	4.40	7.58	5.75	2.97	100	98	127	125	90
May	3.78	4.29	6.10	4.63	1.95	99	95	102	101	59
June	3.72	4.21	5.00	3.22	1.25	97	93	84	70	38
July	3.69	4.18	5.00	3.63	1.25	96	93	84	79	38
August	3.67	4.16	5.20	3.64	1.70	96	92	87	79	52
September	3.68	4.18	5.50	4.14	3.78	96	93	92	90	115
October	3.67	4.17	4.94	3.39	2.25	96	92	83	74	68
November	3.64	4.13	4.75	3.31	2.10	95	92	79	72	64
December	3.61	4.09	4.69	3.05	2.41	94	91	78	67	73
1899 January	3.59	4.02	4.50	2.88	2.72	94	89	75	63	83
February	3.58	3.99	4.50	2.95	2.47	94	89	75	64	75
March	3.56	3.99	5.20	3.79	4.10	93	89	87	83	125
April	3.54	3.95	5.25	3.71	5.13	92	88	88	81	156
May	3.54	3.92	4.80	3.59	3.52	92	87	80	78	107
June	3.50	3.89	4.50	3.31	2.63	91	86	75	72	80
July	3.49	3.90	5.06	3.66	4.47	91	87	85	80	136
August	3.51	3.90	5.70	4.35	3.27	92	87	95	95	99
September	3.58	3.94	6.29	4.83	6.38	94	88	105	105	194
October	3.58	3.98	6.00	5.10	7.50	94	88	100	111	228
November	3.57	3.98	6.80	5.36	7.60	93	88	114	117	231
December	3.63	4.03	7.38	5.88	11.13	95	90	123	128	338

TABLE 22—(Continued)

RATES OF INTEREST ON BONDS, COMMERCIAL PAPER, AND CALL LOANS IN NEW YORK BY MONTHS, 1890-1911

	Actual rates of interest					Relative rates of interest Average actual rates 1890-99 = 100				
	Bonds		Commercial paper			Bonds		Commercial paper		
	West Shore R. R.	Av. of 10 R. R. bonds	4-6 months	60-90 days	Call loans at Stock Exchange	West Shore R. R.	Av. of 10 R. R. bonds	4-6 months	60-90 days	Call loans at Stock Exchange
1900 January	3.58%	4.01%	6.60%	4.81%	4.15%	94	89	110	105	126
February	3.53	3.95	6.00	4.43	2.25	92	88	100	97	68
March	3.56	3.94	6.13	4.86	3.94	93	88	102	106	120
April	3.54	3.91	5.69	4.30	3.06	93	87	95	94	93
May	3.59	3.94	5.25	3.69	2.00	94	88	88	81	61
June	3.56	3.97	5.00	3.69	1.69	93	88	84	81	51
July	3.58	3.97	5.25	4.00	1.53	94	88	88	87	46
August	3.60	3.97	5.60	4.22	1.30	94	88	94	92	39
September	3.58	3.96	5.56	4.45	1.61	94	88	93	97	49
October	3.58	3.96	6.08	5.06	3.57	94	88	102	110	108
November	3.57	3.91	5.50	4.39	5.06	93	87	92	96	154
December	3.53	3.86	5.81	4.75	5.13	92	86	97	104	156
1901 January	3.51	3.83	5.44	4.08	3.07	92	85	91	89	93
February	3.49	3.79	5.00	3.70	2.00	91	84	84	81	61
March	3.48	3.75	4.83	3.75	2.34	91	83	81	82	71
April	3.51	3.77	5.44	3.97	4.30	92	84	91	87	131
May	3.55	3.79	5.50	3.95	6.88	93	84	92	86	209
June	3.55	3.78	5.25	3.94	4.31	93	84	88	86	131
July	3.57	3.80	5.40	4.25	4.30	93	85	90	93	131
August	3.55	3.81	5.75	4.50	2.44	93	85	96	98	74
September	3.56	3.82	5.79	4.94	4.34	93	85	97	108	132
October	3.58	3.81	5.35	4.64	3.55	94	85	89	101	108
November	3.58	3.79	5.38	4.72	4.19	94	84	90	103	127
December	3.56	3.78	5.63	4.90	6.25	93	84	94	107	190
1902 January	3.56	3.76	5.55	4.56	4.57	93	84	93	99	139
February	3.57	3.75	5.25	4.00	2.38	93	84	88	87	72
March	3.56	3.74	5.50	4.37	3.94	93	83	92	95	120
April	3.56	3.72	5.28	4.53	5.10	93	83	88	99	155
May	3.54	3.72	5.50	4.54	5.56	93	83	92	99	169
June	3.53	3.74	5.33	4.42	2.84	92	83	89	96	86
July	3.51	3.75	5.65	4.64	3.52	92	83	94	101	107
August	3.52	3.78	5.75	4.82	3.78	92	84	96	105	115
September	3.53	3.80	6.17*	5.58*	10.80	92	85	103*	122*	328
October	3.56	3.82	6.93*	5.90*	7.63	93	85	116*	129*	232
November	3.58	3.82	6.29	5.71	4.88	94	85	105	125	148
December	3.61	3.85	6.50*	6.00*	6.81	94	86	109*	131*	207
1903 January	3.63	3.84	5.71	5.22	5.75	95	86	95	114	175
February	3.62	3.85	5.60	4.90	2.88	95	86	94	107	87
March	3.64	3.91	6.08*	5.54*	6.00	95	87	102*	121*	182
April	3.69	3.95	5.91	5.19	4.19	96	88	99	113	127

\* Nominal part of the month.

TABLE 22—(Continued)

RATES OF INTEREST ON BONDS, COMMERCIAL PAPER, AND CALL LOANS IN NEW YORK BY MONTHS, 1890-1911

	Actual rates of interest					Relative rates of interest Average actual rates 1890-99 = 100				
	Bonds		Commercial paper			Bonds		Commercial paper		
	West Shore R. R.	Av. of 10 R. R. bonds	4-6 months	60-90 days	Call loans at Stock Exchange	West Shore R. R.	Av. of 10 R. R. bonds	4-6 months	60-90 days	Call loans at Stock Exchange
1903 May	3.69%	3.93%	5.66%	4.75%	2.44%	96	87	95	104	74
June	3.69	3.98	5.81	5.16	3.05	96	89	97	113	93
July	3.72	4.01	6.00	5.43	2.50	97	89	100	118	76
August	3.72	4.07	6.75	5.94	2.03	97	90	113	130	62
September	3.72	4.06	6.75	6.00	2.32	97	90	113	131	70
October	3.77	4.00	6.50	5.79	2.69	99	89	109	126	82
November	3.77	3.98	6.57	5.95	5.19	99	89	110	130	158
December	3.74	3.98	6.55	5.79	5.50	98	89	109	126	167
1904 January	3.72	3.96	5.53	4.89	2.34	97	88	92	107	71
February	3.70	3.97	5.75	4.79	1.81	97	88	96	105	55
March	3.73	3.99	5.55	4.68	1.75	97	89	93	102	53
April	3.75	3.96	4.75	4.13	1.38	98	88	79	90	42
May	3.74	3.95	4.75	3.93	1.55	98	88	79	86	47
June	3.74	3.95	4.63	3.60	1.13	98	88	77	79	34
July	3.72	3.90	4.63	3.55	1.03	97	87	77	77	31
August	3.72	3.89	4.75	3.84	.90	97	87	79	84	27
September	3.72	3.89	5.38	4.29	1.53	97	87	90	94	46
October	3.71	2.87	5.75	4.41	2.03	97	86	96	96	62
November	3.71	3.85	5.15	4.14	2.80	97	86	86	90	85
December	3.70	3.85	5.06	4.28	3.13	97	86	85	93	95
1905 January	3.69	3.83	4.71	4.00	2.25	96	85	79	87	68
February	3.68	3.81	4.71	3.81	2.19	96	85	79	83	67
March	3.70	3.82	4.75	3.93	3.20	97	85	79	86	97
April	3.70	3.82	4.75	4.00	3.25	97	85	79	87	99
May	3.72	3.82	4.75	3.98	2.42	97	85	79	87	73
June	3.71	3.82	4.75	3.75	2.50	97	85	79	82	76
July	3.69	3.81	4.75	4.13	2.31	96	85	79	90	70
August	3.68	3.80	4.85	4.19	2.05	96	85	81	91	62
September	3.69	3.82	5.63	4.72	3.56	96	85	94	103	108
October	3.69	3.83	5.75	4.92	5.31	96	85	96	107	161
November	3.72	3.83	6.00	5.53	7.70	97	85	100	121	234
December	3.74	3.86	6.75	5.79	16.50	98	86	113	126	501
1906 January	3.71	3.85	5.75	5.06	8.65	97	86	96	110	263
February	3.74	3.86	5.79	5.04	4.63	98	86	97	110	141
March	3.76	3.90	6.00	5.28	4.88	98	87	100	115	148
April	3.78	3.92	5.92	5.44	9.50	99	87	99	119	289
May	3.80	3.93	5.81	5.33	4.15	99	88	97	116	126
June	3.79	3.94	5.75	5.25	3.25	99	88	96	115	99
July	3.80	3.95	5.93	5.48	2.97	99	88	99	120	90
August	3.83	3.98	6.50	6.00	4.44	100	88	109	131	135

TABLE 22—(Continued)

	Actual rates of interest					Relative rates of interest Average actual rates 1890-99 = 100					
	Bonds		Commercial paper			Bonds		Commercial paper			
	West Shore R. R.	Av. of 10 R. R. bonds	4-6 montha	60-90 days	Call loans at Stock Exchange	West Shore R. R.	Av. of 10 R. R. bonds	4-6 months	60-90 days	Call loans at Stock Exchange	
1906	September	3.84%	3.99%	7.21%	6.56%	9.38%	100	89	120	143	285
	October	3.83	3.98	6.85	6.30	5.15	100	89	114	137	156
	November	3.84	3.98	6.69	6.25	7.50	100	89	112	136	228
	December	3.84	4.00	6.75	6.25	14.00	100	89	113	136	425
1907	January	3.85	4.01	6.69	6.15	6.15	101	90	112	134	187
	February	3.85	4.03	6.50	5.94	4.38	101	90	109	130	133
	March	3.98	4.12	6.81	6.19	6.38	103	92	114	135	194
	April	3.91	4.13	6.47	5.92	2.35	102	91	108	129	71
	May	3.91	4.13	5.71	5.40	2.31	102	92	95	118	70
	June	3.90	4.18	6.25	5.50	3.13	102	93	104	120	95
	July	3.94	4.18	6.36	5.75	4.55	103	93	106	125	138
	August	3.99	4.23	6.60	6.25	3.06	104	94	110	136	93
	September	4.01	4.27	7.17	6.79	4.00	105	95	120	148	121
	October	4.05	4.37	7.33*	7.10*	21.00	106	97	122*	155*	638
	November	4.21	4.53	.....†	7.40*	12.25	110	101	.....†	161*	372
	December	4.12	4.44	.....†	8.00*	14.60	108	99	.....†	175*	443
1908	January	3.99	4.26	6.70	6.59	4.75	104	95	112	144	144
	February	3.97	4.24	5.80	5.06	1.81	104	94	97	110	55
	March	4.01	4.27	.....†	5.63	1.85	105	95	.....†	123	56
	April	4.01	4.22	5.25	4.38	1.72	105	94	88	96	52
	May	4.00	4.18	4.25	3.94	1.66	105	93	71	86	50
	June	3.93	4.19	4.64	3.69	1.52	103	93	78	81	46
	July	3.92	4.19	4.58	3.75	1.22	102	93	77	82	37
	August	3.92	4.13	4.43	3.61	1.06	102	92	74	79	32
	September	3.92	4.11	4.75	3.89	1.35	102	92	79	85	41
	October	3.93	4.09	.....†	4.10	1.44	103	91	.....†	89	44
	November	3.93	4.05	.....†	4.04	1.75	103	90	.....†	88	53
	December	3.91	4.02	4.69	3.85	2.90	102	90	78	84	88
1909	January	3.87	3.99	4.40	3.68	1.81	101	89	74	80	55
	February	3.85	3.97	4.22	3.54	2.25	101	88	70	77	68
	March	3.87	3.97	4.28	3.50	1.85	101	89	71	76	56
	April	3.87	3.97	4.25	3.50	1.94	101	88	71	76	59
	May	3.88	3.97	4.29	3.44	1.84	101	88	72	75	56
	June	3.91	4.00	4.21	3.25	1.87	102	89	70	71	57
	July	3.90	3.99	4.15	3.38	2.06	102	89	69	74	63
	August	3.90	4.00	4.56	4.04	2.17	102	89	76	88	66
	September	3.93	4.02	4.75	4.25	2.69	103	90	79	93	82
	October	3.90	4.03	.....†	5.03	4.31	102	90	.....†	110	131
	November	3.88	4.06	5.98	5.09	4.65	101	90	100	111	141
	December	3.92	4.05	5.59	5.09	5.03	102	90	93	111	153

\* Nominal

† No business.

TABLE 22—(Concluded)

		Actual rates of interest					Relative rates of interest Average actual rates 1890-99 = 100				
		Bonds		Commercial paper			Bonds		Commercial paper		
		West Shore R. R.	Av. of 10 R. R. bonds	4-6 months	60-90 days	Call loans at Stock Exchange	West Shore R. R.	Av. of 10 R. R. bonds	4-6 months	60-90 days	Call loans at Stock Exchange
1910	January	3.94%	4.06%	5.28%	4.75%	4.72%	103	90	88	104	143
	February	3.94	4.07	5.16	4.44	2.78	103	90	86	97	84
	March	3.97	4.10	5.23	4.50	2.88	104	91	87	98	87
	April	3.98	4.13	5.59	4.75	3.28	104	92	93	104	100
	May	3.99	4.16	5.45	4.75	3.63	104	92	91	104	110
	June	3.95	4.18	5.50	4.81	2.77	103	93	92	105	84
	July	3.98	4.20	6.16	5.38	2.41	104	93	103	117	73
	August	3.96	4.19	6.30	5.43	1.55	103	93	105	118	47
	September	3.95	4.13	6.31	5.53	2.00	103	92	105	121	61
	October	3.95	4.12	6.21	5.56	3.13	103	91	104	121	95
	November	3.96	4.14	6.15	5.50	3.23	103	92	103	120	98
	December	3.96	4.15	5.28	4.66	3.38	103	92	88	102	103
1911	January	3.95	4.13	4.61	3.98	3.18	103	92	77	87	97
	February	3.97	4.14	4.72	4.09	2.28	104	92	79	89	69
	March	3.97	4.16	4.59	3.88	2.28	104	93	77	85	69
	April	3.98	4.15	4.28	3.66	2.30	104	93	72	80	70
	May	3.96	4.14	4.33	3.63	2.31	103	92	72	79	70
	June	3.96	4.14	4.63	3.69	2.40	103	92	77	81	73
	July	3.96	4.15	4.79	3.78	2.36	103	92	80	83	72
	August	3.99	4.15	4.86	4.19	2.31	104	92	81	92	70
	September	4.00	4.17	5.33	4.54	2.28	105	93	89	99	69
	October	3.99	4.20	4.93	4.35	2.33	104	93	83	95	71
	November	3.98	4.18	4.72	3.91	2.72	104	93	79	85	83
	December	3.96	4.19	5.25	4.63	4.03	103	93	88	101	123

\* Nominal.

† No business.

## 2. Rates of Interest Yielded by Investments in Bonds

The differences shown by Table 19 among the net yields of the ten bonds may readily be accounted for by differences in the proportionate value of the underlying properties, by the existence or non-existence of prior liens, by the relative financial strength of the issuing or guaranteeing corporations, etc. Similarly, the frequent changes in rank among the bonds may be ascribed to alterations in these particular conditions, which a well-advised investor considers in estimating the risks he runs in buying securities.

But there is one fact of more general interest about these differences in yield. The margins between the higher and lower yields have grown narrower in the course of twenty years. In 1890 the maximum difference was 5.24-3.88

per cent = 1.36; in 1900 it was 4.40-3.42 per cent = 0.98; in 1909, 4.24-3.87 per cent = 0.37. The chief cause of this narrowing of the margins has been an improvement since the middle nineties in the credit of the lower grade issues among investors. The risks imputed to the holding of bonds of such railways as, for example, the Chicago and Eastern Illinois have diminished. With one exception—the bonds of the West Shore Railroad—all the bonds gave lower yields in 1911 than in 1890. The West Shore bonds, guaranteed principal and interest by the New York Central and having over 400 years to run, were rated decidedly higher by investors in 1890 than any other security in the present list. But, since then, the improvement in the financial condition and prospects of other railways has gradually brought their obligations closer to the high standard of securities guaranteed by the New York Central. Indeed, in recent years the bonds of the Burlington, the Milwaukee, and the Central of New Jersey have frequently outranked the bonds of the West Shore.

Another factor in reducing the risk and therefore the net yields upon investments in bonds was the adoption of the gold standard in 1900. But it is clear that doubts about the dollar in which interest and principal would be paid troubled the minds of investors in railway bonds less than doubts about the financial condition of the issuing companies. For the bonds in highest credit during the nineties were not expressly payable in gold, and certain of the bonds in poorest credit were—for example, the securities of the Missouri, Kansas and Texas. The danger of payment in a silver dollar had most influence during Mr. Bryan's first campaign. In 1896 the average yield of the six gold bonds rose 0.25 per cent between June and August, and declined 0.24 per cent between August and December. Meanwhile the average yield of the four currency bonds rose 0.37 and declined 0.36 per cent.

The average yield of all ten bonds is the best available gauge of the changes in the rates which large American corporations have paid for new loans on long time since 1890, and also the best gauge of the net returns which permanent investors have received upon current purchases of bonds. But it is distinctly not the best gauge of changing rates upon long loans of substantially uniform security. For the latter purpose the yield of the West Shore bonds is preferable, since the financial credit of the guarantor was so firmly established in 1890 as to be little shaken by the years of depression and little strengthened by the years of prosperity. In other words, the yields of this issue reflect the changes in the supply of, and the demand for, loan capital for fixed investment with less distortion by the factor of risk than do the yields of the nine other bonds. But, since the yields of the other bonds are more typical of American experience since 1890, the detailed tables have been arranged to show both the net yields of the West Shore bonds, and the average net yields of all ten.

The general course of the average yields has been as follows: Starting at 4.62 per cent in January, 1890, the rate rose with the business difficulties of the summer and autumn to 4.96 per cent in December. During the reaction which followed the figure fell to 4.81 in February, but rose again to 4.93 in July. The extraordinary shortage in the European wheat harvest of 1891 combined with the abundant American crop to change the bond market, as it did so many other features of the business situation. Yields declined with scarcely a break to 4.59 per cent in June, 1892. Then, as financial difficulties began to accumulate again, the rate went up to 4.69 per cent in December. A brief relaxation of the strain caused a decline to 4.60 per cent in February, 1893: but when the panic broke out bonds fell in price like all other securities and the average yield mounted to 5.07 per cent in August, the highest point in the twenty-two years.

A prompt reduction in interest rates was one of the salient features of the intense depression which followed. By April, 1894, the average yield upon bonds was 4.55 per cent—decidedly less than before the panic began. With some interruptions, the fall continued to 4.35 per cent in September, 1895. Next year the free-silver campaign caused a vigorous advance from 4.45 per cent in June to 4.75 per cent in August; but rates fell again as Mr. Bryan's prospects of victory waned and by July, 1897, the average rate was 4.34 per cent—lower than in 1895.

During the years of business revival which followed the summer of 1897 bond yields continued to decline slowly, as they had done during the years of business depression. The only notable interruptions of this fall occurred in March and April, 1898, when the Spanish War began; in September-December, 1899, when the Boer War broke out and the "boom" in industrial stocks threatened to collapse; in May and June, 1900, when a business reaction began in Europe and seemed imminent in America; and in the months following the Northern Pacific corner of May, 1901. The lowest point was reached in April and May, 1902—3.72 per cent.

The period of "undigested securities" or the "rich man's panic" turned the tide, and bond yields rose rapidly to a maximum of 4.07 per cent in August, 1903. The gradual return of financial ease brought on a new decline which ran through 1904 to its culmination in August, 1905. But the record of this month—3.80 per cent—did not equal the low record of 1902.

A new phase of development began in September, 1905—business prosperity accompanied by steadily rising rates of interest on bonds, whereas the prosperous years 1898-1902 had been accompanied by falling rates. With scarcely a break, bond yields mounted month by month to a climax in November, 1907. As early as March, 1907, the highest record of the "rich man's panic" had been surpassed, and to find an equal to the record of the panic of November—4.53 per cent—it is necessary to go back eleven years to the excited summer

of 1896. But not all the ground gained in 1894-1902 was lost; for the panic of 1907 did not drive bond yields very close to the 5.07 per cent attained in 1893.

In this respect the yield upon the West Shore bonds presents a marked contrast to the average yield. This most stable of our securities had shared in most of the short-period oscillations of the average; but its long-period oscillations were different, because, as has been said, its credit was less improved by the good times after 1897 than that of the other bonds. A year before the breaking out of the crisis of 1893 the yield of the West Shore stood at 3.87 per cent; a year before the breaking out of the crisis of 1907 it stood at 3.83. The corresponding figures for the average yields were 4.59 and 3.98 per cent. The West Shore's maximum during the two crises was the same—4.21 per cent; the maxima of the average were 5.07 per cent and 4.53 per cent. In both cases, however, the increase in yields within the twelvemonth preceding the climax of the crisis was greater in 1907 than in 1893.

The conclusion suggested by these facts—that the demand for loan capital for fixed investment was greater in proportion to the supply in the later than in the earlier crisis—is supported by the contrast between the yields during the dull years which followed the two crises. In both cases yields declined after the panic, but the decline was notably less in the later case. On the basis of yields for the whole year, the ten bonds fell 0.16 per cent in 1893-94, and 0.06 per cent in 1907-08, while the West Shore bonds fell 0.15 per cent in the first case and 0.02 per cent in the second. In 1909, however, bond yields declined more in comparison with 1908 than they did in 1895 in comparison with 1894.

The rather unsatisfactory series for United States bonds (Table 20) pursues a course somewhat different from that of the railway issues. The 4 per cents both of 1907 and of 1925 are "currency" bonds, like the bonds of the West Shore; but they appear to have been influenced much more by the difficulties of the treasury in 1893-95 and by the free-silver campaign of 1896 than were any of the railway securities. The chief anomaly which they present is in giving higher yields in 1896 than in 1893. Thereafter for a time their course paralleled that of the West Shore bonds. That is, their yields declined from 1896 to 1901, advanced until 1904, declined in 1905, and then rose until 1907. But, instead of declining like the yields of railway bonds in 1908-09, they rose in both years, and stood at the close of the period well above their level of twenty years before. These peculiar movements of 1908-09 were influenced by the act of March 4, 1907, which legalized the practice begun by Secretary Shaw of accepting other than United States bonds as security for government deposits with the national banks, and also by the sale of Panama Canal bonds.

During all this time, of course, the actual yield upon "governments" remained much smaller than the yield upon any of the railway issues; but the

columns for relative rates show that the yield of no railway bond in the list has undergone such violent changes. Instead of proving the stablest of American securities from the investor's point of view, government bonds have proved the least stable among the bonds for which yields have been computed.

### 3. Rates of Interest upon Short-time Loans

How average short-time rates of interest compare with average yields of bonds is summarily shown by the little table which follows:<sup>54</sup>

TABLE 23  
AVERAGE RATES OF INTEREST YIELDED BY INVESTMENTS IN BONDS AND BY SHORT-TIME LOANS

	Actual rates			Relative rates	
	1890-1909	1890-99	1900-09	1890-99	1900-09
United States 4s .....	2.45%	2.76%	2.14%	100	78
West Shore bonds .....	3.78	3.83	3.74	100	98
Average of 10 railway bonds .....	4.23	4.51	3.95	100	88
Commercial paper, 4-6 months .....	5.78	5.99	5.58	100	93
Commercial paper, 60-90 days .....	4.68	4.58	4.78	100	104
Call loans .....	3.67	3.29	4.05	100	123

The twenty-year averages of the investment rates are all lower than the like averages for commercial paper. But the call-loan rate averages less than the yields of any investments except those in government bonds.

In comparing the two decades, it appears that the short-time rates have either advanced to higher levels in 1900-09, or receded but little;<sup>55</sup> while all the investment rates, except that on West Shore bonds, declined considerably. The diminution of risks seems to have been a less important factor in the market for short-time loans than in the market for investment securities.

Not less important than these differences in the long-period averages of investment and short-time rates are the differences in stability. How much wider is the range through which the short-time rates fluctuate appears from a glance at the extreme variations.

<sup>54</sup> The comparisons in this section are slightly inaccurate, because it is necessary to set *discount* rates on commercial paper against *interest* rates on investments in bonds and on call loans.

<sup>55</sup> If the quotations for commercial paper, 4-6 months, during the crisis of 1907 were more complete that class of short-time loans would probably show scarcely any decline in the second decade.

TABLE 24

EXTREME VARIATIONS IN THE MONTHLY RATES OF INTEREST YIELDED BY INVESTMENTS IN BONDS AND BY SHORT-TIME LOANS, 1890-1911

	Actual rates					Relative rates		
	Highest		Lowest		Difference	Highest	Lowest	Difference
	Date	Rate	Date	Rate				
West Shore bonds .....	{Aug., 1893} {Nov., 1907}	4.21%	Mar., 1901	3.48%	.73%	110	91	19
Average of 10 railway bonds .....	Aug., 1893	5.07	{Apr., 1902} {May, 1902}	3.72	1.35	112	83	29
Commercial paper, 4-6 months .....	Sept., 1893	10.14	July, 1909	4.15	5.99	169	69	100
Commercial paper, 60-90 days .....	July, 1893	9.75	June, 1895	2.63	7.12	213	57	156
Call loans .....	Oct., 1907	21.00	Aug., 1904	.90	20.10	638	27	611

What holds of these extreme variations holds also of the variations from one season of the year to the next. There is but a slight difference between the summer and autumn yields of bonds, while the rates for commercial paper and call loans undergo marked changes. Twenty-year averages for each month show the general trend of the market. Starting from the lowest point of the year in June, rates for commercial paper rise to their highest point in September or October, and then decline until February, when they stand little above the lowest level of the summer. The opening of spring business causes a temporary advance in March; but the tide quickly turns and rates decline through April and May to the low starting-point of June. Call-loan rates pursue a somewhat similar but more erratic course; for their monthly averages, even over a period of twenty years, are disturbed by the extremely high rates which occur during panics and periods of feverish speculation in stocks.<sup>56</sup>

TABLE 25

AVERAGE SEASONAL VARIATIONS IN THE RATES OF INTEREST YIELDED BY INVESTMENTS IN BONDS AND BY SHORT-TIME LOANS DURING TWENTY YEARS

	West Shore Railroad bonds	Average of 10 railway bonds	Commercial paper		Call loans
			4-6 months	60-90 days	
January	3.77%	4.23%	5.81%	4.59%	3.79%
February	3.76	4.21	5.55	4.27	2.55
March	3.77	4.23	5.74	4.66	3.41
April	3.78	4.23	5.62	4.51	3.36
May	3.79	4.21	5.41	4.26	2.85
June	3.77	4.22	5.37	4.20	2.64
July	3.78	4.24	5.54	4.50	2.69
August	3.80	4.25	5.91	4.93	2.87
September	3.79	4.25	6.33	5.24	4.06
October	3.80	4.24	6.40	5.23	5.02
November	3.80	4.23	6.01	5.02	4.75
December	3.79	4.23	6.02	4.99	6.01

<sup>56</sup> The frequent deviations from the general seasonal trend may be followed in the monthly figures of Table 22.

The twenty-year averages by years which may be computed from Table 25 do not agree precisely in all cases with the corresponding figures of Table 23. For an explanation see the statement in footnote 52 of this chapter concerning the methods by which the monthly, quarterly, and yearly averages for short-time rates were made. The figures by years are more accurate than the figures by months.

Professor E. W. Kemmerer's *Seasonal Variations in the Relative Demand for Money and Capital in the United States* (Senate Document, no. 588, 61st Congress, 2d session) provides detailed statistics of the changes in interest rates from one season of the year to the next. The results of the two investigations are in close agreement.

Table 26 shows the average rates of interest yielded by investments in bonds and by short-time loans for the successive phases of each business cycle since 1890. Here the differences which have been commented upon reappear in another form. The lower range of average bond yields in the second decade is contrasted with the relative stability of the ten-year levels for commercial paper. On the other hand, in short periods bond yields are stable and short-time loan rates are variable. But all the rates show the powerful influence of changing business conditions.

TABLE 26

RATES OF INTEREST YIELDED BY INVESTMENTS IN BONDS AND BY SHORT-TIME LOANS IN SEASONS OF BUSINESS PROSPERITY, CRISIS, AND DEPRESSION, 1890-1911

	Actual rates of interest					Relative rates of interest Average actual rates 1890-99 = 100				
	Bonds		Commercial paper			Bonds		Commercial paper		
	West Shore R. R.	Av. of 10 R. R. bonds	4-6 months	60-90 days	Call loans at Stock Exchange	West Shore R. R.	Av. of 10 R. R. bonds	4-6 months	60-90 days	Call loans at Stock Exchange
Jan., 1890-July, 1890—Prosperity .....	3.83%	4.65%	6.41%	5.17%	4.96%	100	103	107	113	151
Aug., 1890-Dec., 1890—Minor crisis .....	3.94	4.82	7.60	6.56	7.08	103	107	127	143	215
Jan., 1891-July, 1891—Depression .....	3.96	4.87	6.57	5.38	3.26	103	108	110	117	99
Aug., 1891-Aug., 1892—Prosperity .....	3.92	4.70	5.51	4.30	2.57	102	104	92	94	78
Sept., 1892-Apr., 1893—Approach of crisis .....	3.94	4.65	6.24	5.38	5.23	103	103	104	117	159
May, 1893-Oct., 1893—Major crisis .....	4.09	4.86	9.23	8.19	5.31	107	108	154	179	161
Nov., 1893-Mar., 1895—Severe depression .....	3.87	4.60	5.48	3.25	1.22	101	102	92	71	37
Apr., 1895-Sept., 1895—Revival .....	3.81	4.43	5.29	3.31	1.45	100	98	88	72	44
Oct., 1895-June, 1896—Renewed depression .....	3.81	4.45	6.59	4.94	3.17	100	99	110	108	96
July, 1896-Oct., 1896—Free-silver campaign .....	3.92	4.67	8.10	7.47	5.84	102	104	135	163	177
Nov., 1896-June, 1897—Depression .....	3.77	4.44	4.83	3.62	2.17	99	98	81	79	66
July, 1897-Feb., 1898—Revival .....	3.69	4.29	4.81	3.61	2.02	96	95	80	79	61
Mar., 1898-Apr., 1898—Spanish war impending .....	3.78	4.35	6.84	5.22	2.57	99	96	114	114	78
May, 1898-Sept., 1899—Prosperity .....	3.61	4.05	5.12	3.65	3.02	94	90	86	80	92
Oct., 1899-Dec., 1899—Minor crisis .....	3.59	4.00	6.73	5.45	8.74	94	89	112	119	265
Jan., 1900-Sept., 1900—Slight depression .....	3.57	3.96	5.68	4.27	2.39	93	88	95	93	73
Oct., 1900-Oct., 1902—Prosperity .....	3.54	3.79	5.56	4.52	4.47	93	84	93	99	136
Nov., 1902-July, 1904—“Rich man’s panic” .....	3.70	3.95	5.82	5.09	3.20	97	88	97	111	97
Aug., 1904-Aug., 1905—Revival .....	3.70	3.84	4.93	4.06	2.35	97	85	82	89	71
Sept., 1905-Sept., 1906—Prosperity .....	3.76	3.90	6.06	5.42	6.53	98	86	101	118	198
Oct., 1906-Sept., 1907—Approach of crisis .....	3.90	4.10	6.57	6.06	5.25	102	91	110	132	159
Oct., 1907-Dec., 1907—Major crisis .....	4.13	4.45	*7.33	7.50	15.95	108	99	*122	164	484
Jan., 1908-Sept., 1908—Severe depression .....	3.96	4.20	5.05	4.50	1.88	103	93	84	98	57
Oct., 1908-Dec., 1909—Revival .....	3.90	4.01	4.61	3.99	2.57	102	89	77	87	78
Jan., 1910-Dec., 1911—Reaction .....	3.97	4.15	5.22	4.52	2.77	104	92	87	99	84

\* Nominal.

In the periods of business depression which follow on crises rates of interest on well-secured loans of all kinds fall.<sup>57</sup> Call rates and discounts on 60-90 day commercial paper reach their lowest points in such seasons (see Tables 24 and 22); but the rates on 4-6 months paper and on bonds usually continue their decline through at least the earlier stages of the succeeding revival of activity. When the tide of prosperity rises, however, all the short-time rates run up. Even the current yields upon bonds rise if the prosperity is long continued and the demand for investment loans grows great, as in 1905-07. On the other hand, bond yields may continue to decline throughout a prosperous season as in 1897-1902, if the dwindling of imputed risks is notable. Finally, when the crisis comes rates on all kinds of loans reach their highest points. The available market quotations fail to show the full increase in the discount upon commercial paper during panics, because many loans of this character can scarcely be negotiated on any terms, and because the rates for such business as is done are often above the nominal quotations. But when the pressure of the panic relaxes rates to solvent borrowers fall off rapidly to the low points characteristic of depression.

#### 4. *International Comparisons*

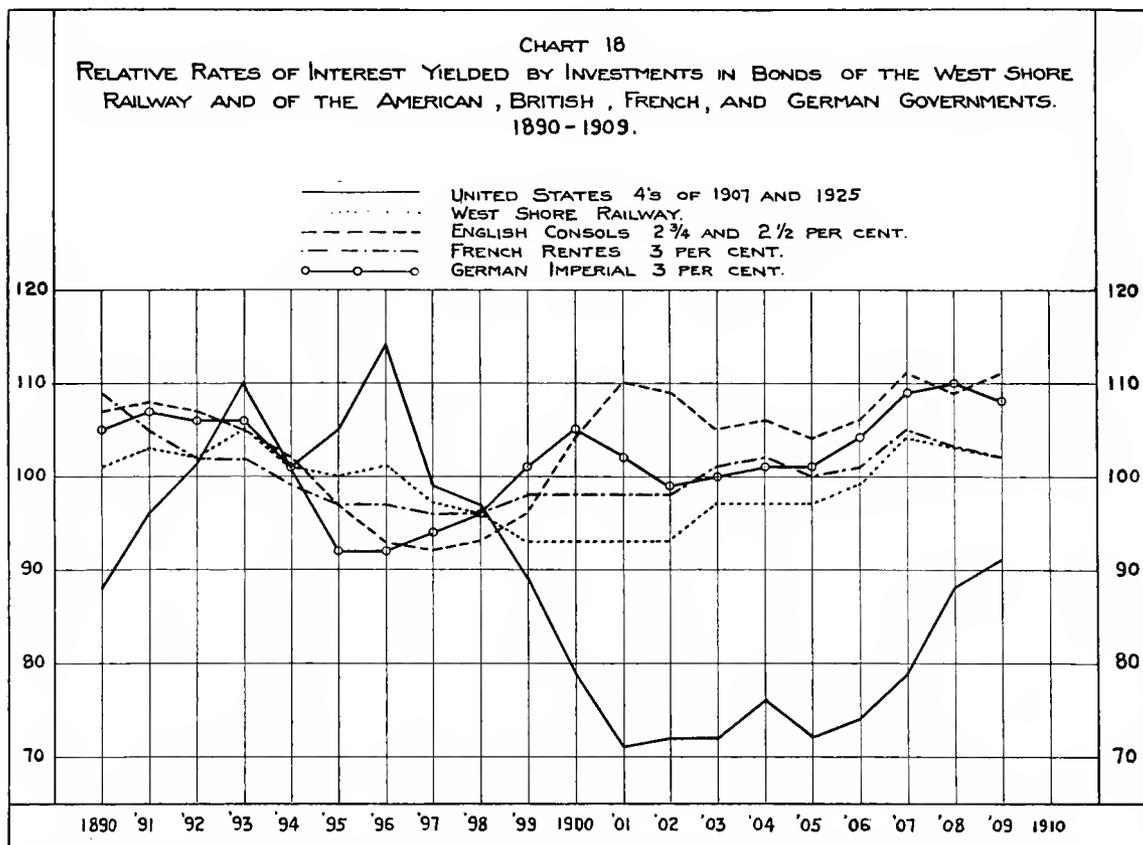
For comparison with the American tables of net yields upon investments in bonds no foreign material is readily available save with reference to government securities. Of course, British consols, French *rentes*, and imperial German bonds are ultra-conservative investments, and yield exceptionally low rates of interest. Moreover, both the supply of and the demand for these securities are subject in a special degree to certain conditions not arising from the business situation—such as prospects of war and peace, increase of government expenditures, purchases for government savings banks or sinking funds, changes in the list of securities legally open to investment by trustees, actual or prospective alterations in tax laws, and the like. These peculiar conditions may cause changes in the yields upon government bonds which are not representative of the general trend of the investment market. But until some student, with the full European material at his command, shall have provided adequate tables of the net yields upon investments in the bonds of business enterprises, changes in the yields of government securities will remain the safest guide to alterations in the long-time rates of interest.<sup>58</sup> They are cer-

<sup>57</sup> Borrowers in doubtful credit, whether merchants selling commercial paper or corporations selling bonds, may find it difficult to secure loans at any price in such seasons, or may be forced to pay very high rates as an offset to the risks incurred by lenders.

<sup>58</sup> Upon foreign rates of interest see A. H. Gibson, *The Fall in Consols and Other Investments since 1897* (London, 1908); P. L. Newman, "A Review of the Investments of Offices in Recent Years," *Journal of the Institute of Actuaries*, XLII, 294-320; F. Hawkar, "Note sur les variations du taux de l'intérêt en Belgique," *Proceedings of the Fourth International Congress of Actuaries* (New York, 1904), I, 345-350; G. Robert, *Des variations du taux de l'intérêt* (Lyon, 1902); E. Voye, "Ueber die Höhe der verschiedenen Zinsarten," *Sammlung nationalökonomischer und statistischer Abhandlungen des staatswissenschaftlichen Seminars zu Halle* (Jena, 1902); N. E. Weill, *Die Solidarität der Geldmärkte* (Frankfurt a. M., 1903); H. Albert, *Die geschichtliche Entwicklung des Zinsfußes in Deutschland von 1895 bis 1908* (Leipzig, 1910). These books contain much statistical information, but none in such form as to be strictly comparable with the American tables of the present chapter.

tainly a safer guide than the corresponding American figures would be;<sup>59</sup> for during the period considered there has been no such doubt regarding the medium in which the obligations of Great Britain, France, and Germany would be discharged as was raised by the free-silver agitation of the nineties, and removed by the Gold Standard Act of 1900. Moreover, the European markets for government bonds are not dominated by any one erratic factor to the same degree that the American market is dominated by the purchases and sales by national banks. Indeed, so exceptional has been the course of government bonds in this country that it is wiser to base the international comparisons upon the net yields of the West Shore Railroad's securities than upon the net yields of United States 4s.

The actual yields of European securities are taken from a table showing the "real interest earned upon European . . . government bonds at their average market price," published in Andrew's *Statistics for the United States*.<sup>60</sup> But



<sup>59</sup> Albert, *op. cit.*, 42-52, shows that in Germany the fluctuations of interest upon mortgage loans follow closely the fluctuations of net yields upon government bonds during the years 1895-1908.

<sup>60</sup> One of the reports of the National Monetary Commission (Senate Document, no. 570, 61st Congress, 2d session, p. 281). In turn, Andrew took his foreign data from the *Materialien zur Beurteilung der Zusammenhänge zwischen dem öffentlichen Schuldenwesen und dem Kapitalmarkte* (Berlin, 1908).

the net yield of British consols in 1903, the year in which the rate of interest was reduced from  $2\frac{3}{4}$  to  $2\frac{1}{2}$  per cent, is from A. H. Gibson's *The Fall in Consols*.<sup>61</sup> The relative rates of interest have been computed by the methods explained above. The average actual yields in 1890-99 are 2.763 per cent upon United States 4s, 3.827 per cent upon West Shore bonds, 2.673 per cent upon consols, 3.042 per cent upon *rentes*, and 3.281 per cent upon German 3s. These are the rates which equal 100 in the columns for relative yields in Table 27.

TABLE 27

ACTUAL AND RELATIVE RATES OF INTEREST YIELDED BY INVESTMENTS IN BONDS OF THE WEST SHORE RAILROAD, AND OF THE AMERICAN, BRITISH, FRENCH, AND GERMAN GOVERNMENTS

By years, 1890-1909

Year	Actual rates					Relative rates Average actual rates 1890-99 = 100				
	U. S. 4s of 1907 and 1925	West Shore R.R.	English consols $2\frac{3}{4}$ and $2\frac{1}{2}$ %	French <i>rentes</i> 3 %	German 3s	U. S. 4s of 1907 and 1925	West Shore R. R.	English consols $2\frac{3}{4}$ and $2\frac{1}{2}$ %	French <i>rentes</i> 3 %	German 3s
1890	2.43%	3.88%	2.86%	3.32%	3.45%	88	101	107	109	105
1891	2.65	3.96	2.88	3.19	3.52	96	103	108	105	107
1892	2.80	3.90	2.85	3.09	3.48	101	102	107	102	106
1893	3.04	4.02	2.81	3.10	3.48	110	105	105	102	106
1894	2.79	3.87	2.73	3.01	3.31	101	101	102	99	101
1895	2.89	3.82	2.60	2.95	3.03	105	100	97	97	92
1896	3.14	3.85	2.49	2.95	3.02	114	101	93	97	92
1897	2.73	3.72	2.45	2.91	3.07	99	97	92	96	94
1898	2.69	3.69	2.49	2.93	3.14	97	96	93	96	96
1899	2.47	3.56	2.57	2.97	3.31	89	93	96	98	101
1900	2.18	3.57	2.77	2.99	3.46	79	93	104	98	105
1901	1.97	3.54	2.93	2.98	3.36	71	93	110	98	102
1902	1.98	3.55	2.92	2.99	3.25	72	93	109	98	99
1903	1.99	3.70	2.82	3.07	3.28	72	97	105	101	100
1904	2.09	3.72	2.84	3.09	3.33	76	97	106	102	101
1905	2.00	3.70	2.79	3.04	3.33	72	97	104	100	101
1906	2.04	3.80	2.84	3.08	3.42	74	99	106	101	104
1907	2.18	3.97	2.98	3.18	3.57	79	104	111	105	109
1908	2.44	3.95	2.91	3.13	3.62	88	103	109	103	110
1909	2.52	3.89	2.98	3.09	3.54	91	102	111	102	108
Averages 1890-99	2.76	3.83	2.67	3.04	3.28	100	100	100	100	100
1900-09	2.14	3.74	2.88	3.06	3.42	77	98	108	101	104

<sup>61</sup> London, 1908; p. 54.

If the whole period of twenty years be taken, the United States bonds give the lowest average yields. Then in order come the securities of Great Britain, France, Germany, and the West Shore Railroad. The margin between the government bonds which give the lowest and highest yields is the same in 1909 as in 1890. Between these two years the American, British, and German bonds have lost ground, while French *rentes* have gained.

European statistics of discount rates are distinctly more complete and more authoritative than the corresponding American figures. It is sufficient to say that the material used consists of the bank rates and market rates in London, Paris, and Berlin. The bank rates are obtained from Palgrave's tables, as published in the National Monetary Commission's *Statistics for Great Britain, Germany, and France*.<sup>62</sup> The market rates for London and Paris are annual averages of the weekly rates given in the same document.<sup>63</sup> The Berlin market rates are compiled from the *Statistische Jahrbücher für das Deutsche Reich*. The closest American counterpart to the foreign rates is afforded by the series for double-name commercial paper, running 60-90 days.

TABLE 28

ACTUAL AND RELATIVE DISCOUNT RATES ON SHORT-TIME LOANS IN NEW YORK, LONDON, PARIS, AND BERLIN

By years, 1890-1911

Year	<i>Actual Rates</i>							
	New York 60-90 days	London bank rate	Paris bank rate	Berlin bank rate	New York 60-90 days	London market rate	Paris market rate	Berlin market rate
1890	5.64%	4.52%	3.00%	4.52%	5.64%	3.98%*	2.62%	3.78%
1891	5.41	3.26	3.00	3.79	5.41	2.44	2.53	3.02
1892	4.04	2.53	2.70	3.21	4.04	1.47	1.79	1.80
1893	6.86	3.05	2.50	4.07	6.86	2.13	2.22	3.17
1894	3.04	2.11	2.50	3.13	3.04	.97	1.78	1.74
1895	3.64	2.00	2.10	3.14	3.64	.80	1.63	2.01
1896	5.76	2.48	2.00	3.67	5.76	1.47	1.72	3.04
1897	3.57	2.63	2.00	3.81	3.57	1.81	1.81	3.09
1898	3.82	3.24	2.20	4.27	3.82	2.58	1.99	3.55
1899	4.05	3.75	3.06	5.04	4.05	3.24	2.83	4.45
1900	4.38	3.98	3.24	5.33	4.38	3.64	3.03	4.41
1901	4.24	3.72	3.00	4.10	4.24	3.19	2.41	3.06
1902	4.88	3.33	3.00	3.33	4.88	2.97	2.40	2.19
1903	5.43	3.75	3.00	3.84	5.43	3.38	2.70	3.01
1904	4.24	3.30	3.00	4.23	4.24	2.67	2.14	3.14

\* May 16 to end of the year—33 weeks.

<sup>62</sup> Senate Document, no. 578, 61st Congress, 2d session, pp. 134, 137, 140.<sup>63</sup> Pp. 44-62, 315, 316. Among the several London rates I have chosen that for 60-day bills. The London rates for 1910 are computed from the weekly reports of the *Economist*; the French and German rates for the same year are from the *Statistisches Jahrbuch für das deutsche Reich*, 1911, p. 64.\* These German tables make the market rate in Paris a trifle higher than the tables published by the Monetary Commission for 1890-1908.

TABLE 28—(Concluded)

## ACTUAL AND RELATIVE DISCOUNT RATES ON SHORT-TIME LOANS IN NEW YORK, LONDON, PARIS, AND BERLIN

By years, 1890-1911

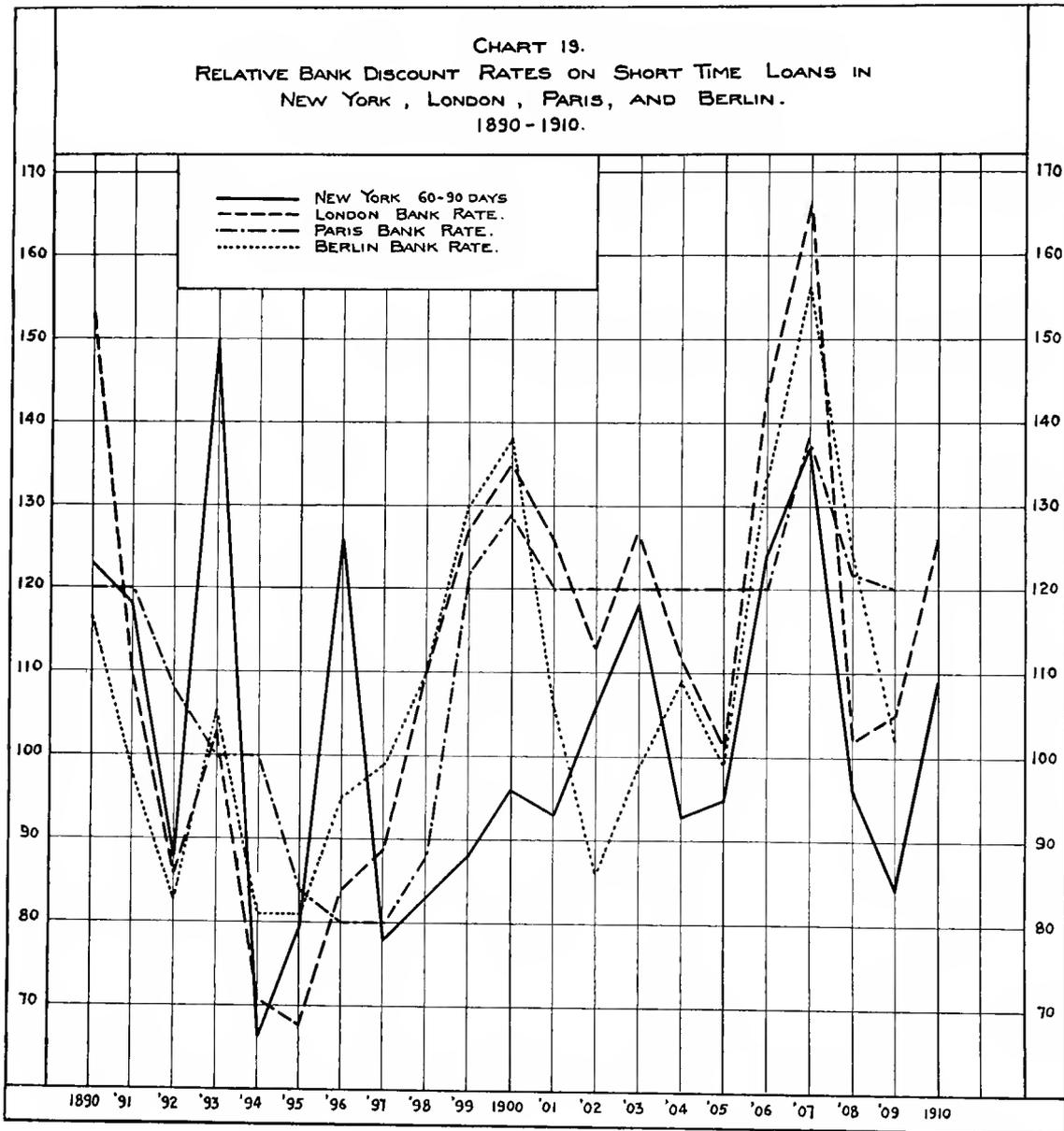
Year	<i>Actual Rates</i>							
	New York 60-90 days	London bank rate	Paris bank rate	Berlin bank rate	New York 60-90 days	London market rate	Paris market rate	Berlin market rate
1905	4.35%	3.00%	3.00%	3.81%	4.35%	2.64%	2.11%	2.85%
1906	5.68	4.26	3.00	5.15	5.68	4.06	2.69	4.04
1907	6.27	4.92	3.46	6.03	6.27	4.47	3.36	5.12
1908	4.42	3.02	3.05	4.78	4.42	2.24	2.13	3.52
1909	3.86	3.10	3.00	3.93	3.86	2.29	1.79	2.87
1910	5.01	3.72	3.00	4.35	5.01	3.16	2.44	3.54
1911	4.02	3.47	3.14	4.40	4.02	2.92	2.61	3.54
Averages								
1890-99	4.58	2.96	2.51	3.87	4.58	2.09	2.09	2.97
1900-09	4.78	3.64	3.08	4.45	4.78	3.16	2.48	3.42

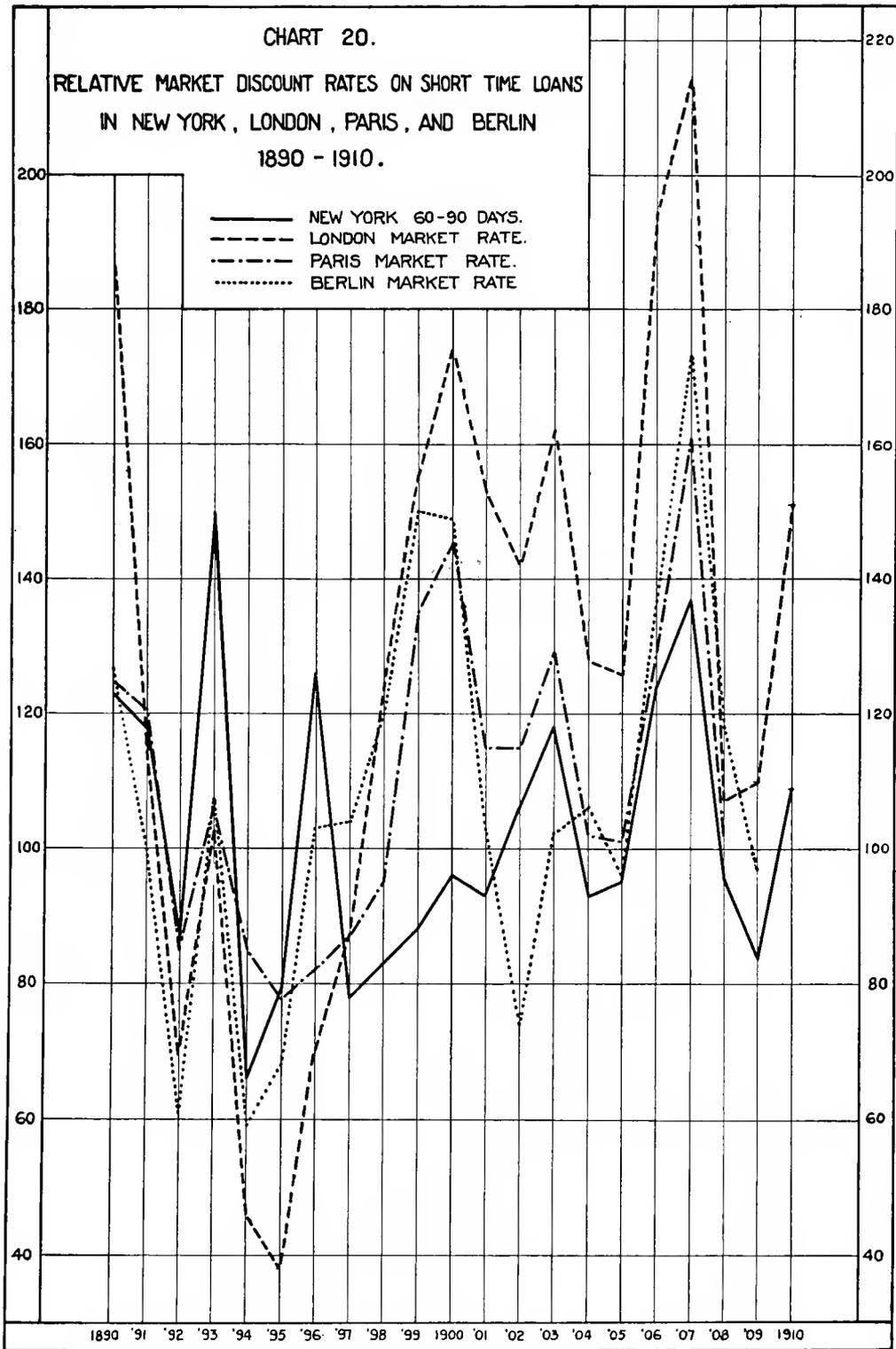
*Relative Rates*

Average actual rates in 1890-99 = 100

Year	New York 60-90 days	London bank rate	Paris bank rate	Berlin bank rate	New York 60-90 days	London market rate	Paris market rate	Berlin market rate
1890	123	153	120	117	123	191*	125	127
1891	118	110	120	98	118	117	121	102
1892	88	86	108	83	88	70	86	61
1893	150	103	100	105	150	102	106	107
1894	66	71	100	81	66	46	85	59
1895	79	68	84	81	79	38	78	68
1896	126	84	80	95	126	70	82	103
1897	78	89	80	99	78	87	87	104
1898	83	110	88	110	83	124	95	120
1899	88	127	122	130	88	155	135	150
1900	96	135	129	138	96	174	145	149
1901	93	126	120	106	93	153	115	103
1902	106	113	120	86	106	142	115	74
1903	118	127	120	99	118	162	129	102
1904	93	112	120	109	93	128	102	106
1905	95	101	120	99	95	126	101	96
1906	124	144	120	133	124	194	129	136
1907	137	166	138	156	137	214	161	173
1908	96	102	122	124	96	107	102	119
1909	84	105	120	102	84	110	86	97
1910	109	126	120	112	109	151	117	119
1911	88	117	125	114	88	140	125	119
Averages								
1890-99	100	100	100	100	100	100	100	100
1900-09	104	123	123	121	104	151	118	116

\* May 16 to end of the year—33 weeks.





Comparisons between the actual rates are unsatisfactory because of the uncertainty regarding the technical character of the paper discounted in the several markets. But it may be pointed out (1) that the annual averages of foreign bank rates are always higher than the corresponding market rates, (2) that for the whole period both bank rates and market rates are lower in Paris than in London, and lower in London than in Berlin, (3) that the advantage of Paris over London has become greater since 1898, (4) that the New York rates are higher than even the bank rates in Europe, except in 1897-1900 and 1908-09, when they are exceeded by the rates in Berlin.

A comparison between the foreign rates on short-time loans and on government bonds shows that the latter average less than the bank rates and more than the market rates, except in France, where the yields upon *rentes* are higher even than the bank rates for the whole period, though not for the second decade. But the difference in stability is more striking and more important than the difference in average rates. The relative figures of Tables 27 and 28 show that market rates fluctuate much more than bank rates, and bank rates much more than bond rates.

On the whole, however, the general trend of the fluctuations has been similar in the money and the investment markets. The most important differences are that short-time rates relaxed in 1891, while bond rates stiffened; that short-time rates rose in 1893, while bond rates changed but little; and that short-time rates rose more promptly after the years of depression and reached their highest points earlier in the years of prosperity. All the European rates show a higher level of fluctuation in 1900-09 than 1890-99—though the difference in the case of French *rentes* is small.

#### IV. THE PRICES OF SHARES IN BUSINESS ENTERPRISES

##### 1. *The Significance of the Prices of Stocks*

Business enterprises are not the subject of an organized business traffic, and we have no systematic data showing fluctuations in their prices as going concerns from year to year. As a substitute, however, we have abundant data concerning the prices of shares in joint-stock companies.

The stock quotations used here, like the interest quotations, all come from a single market. But in the case of stocks this fact is not a serious objection. For, compared with the New York Stock Exchange, other American markets are insignificant in the number and importance of the securities dealt in, and in the magnitude of their transactions.

More serious is the limitation of the available quotations to the prices of shares in transportation companies—chiefly railways. The number of industrial stocks regularly bought and sold on the market in every year since 1890

is too small to make significant averages. Further, none but large business enterprises list their stocks in New York. As in all other cases of price data, therefore, we are forced to use a comparatively small number of quotations as representative of the general trend of the market. But once again the available material comes from that part of the business field most affected by business cycles.

Whether the market prices of stocks in 100-share lots may be interpreted as showing accurately changes in the prices of the business enterprises concerned is highly questionable. If 1,000 shares in a railway which has 100,000 shares outstanding be sold at \$80 per share on a given day, it does not necessarily follow that the whole proprietary interest could be sold (or bought) for \$8,000,000. Indeed, it is seldom safe to infer the price for the total supply of any kind of goods from the current market price per unit. This fact is not troublesome in the case of commodities, labor, or loans because we are not interested in the prices of the total supply. But in the case of stocks we should like to know the changes in the prices at which enterprises as wholes could be bought outright. And that cannot be known except in the rare cases when such sales are actually made and the terms published. Hence we must content ourselves with taking the figures for what they are—prices of *shares* in business enterprises.

The attitude of the stockholder toward the concern whose shares he has purchased is generally different from the attitude of the typical merchant or manufacturer toward the enterprise which he controls. Often the stockholder's attitude is hardly distinguishable from that of the bondholder. He buys dividend-paying stocks as an income-producing investment, and knows little or nothing about the management of the business. Often the stockholder is a speculator pure and simple, who buys on margin with the intention of soon selling again, and who thinks little of dividends in comparison with the anticipated change in the price of his shares. Often the stockholder combines these two attitudes. He buys outright stocks which pay little or no income, and holds them perhaps for years in the anticipation that the increase in their price will ultimately make his speculative investment profitable. Sometimes the stockholder, by himself or as a member of some coterie of capitalists, owns or seeks the control of the enterprise. In that case he may have the attitude of the *entrepreneur* of economic theory; that is, he may identify his business interests with those of the enterprise, and manage the latter for the profit upon operation. But his attitude may also be that of the promoter trying to sell out on advantageous terms, or that of the business buccaneer seeking a profit for himself at the expense of other parties at interest through stock-market manipulation, through contracts which are injurious to the enterprise but profitable to himself, etc. Finally, the stockholder is sometimes a man primarily interested in some related or competing line of business, who desires representation upon the directorate in order to obtain early information of changes in policy or special favors for his other enterprises.

But, despite this diversity of interests among the buyers and sellers of stocks, the present and anticipated future profits of corporations are by far the most important single factor in determining the prices of their shares. Directly or indirectly, calculations dealing with these profits influence investors and speculators, controlling magnates and promoters, even business buccaneers and stockholders primarily interested in other lines of enterprise. Hence the course of the stock market is significant of the business community's hopes and fears for the future, as well as of its good or ill fortune in the present. Even though the figures do not represent accurately the prices of business enterprises as units, they are therefore of great value in the study of business cycles.

## 2. *Tables of the Relative Prices of American Common Stocks*<sup>64</sup>

The prices of stocks published by the *Wall Street Journal* and *Dun's Review*, while convenient records of daily and monthly fluctuations, are not well adapted for comparison with our tables of prices of labor and of commodities at wholesale and retail. For these stock tables give average actual prices, and the preceding tables give average relative prices. Moreover, since some stocks have prices many times as high as other stocks, the objections which have led to the disuse of average actual prices of commodities sold in high-priced and low-priced units apply, though in less degree, to average actual prices of stocks. On the other hand, the one true index number of American stocks—computed by John R. Commons and N. I. Stone<sup>65</sup>—is based upon average actual prices in 1879-89, gives results by fiscal years, and ends with 1900-01, while the preceding tables are based upon average actual prices in 1890-99, give results by calendar years, and extend at least to 1907. To determine the relations between the fluctuations in prices of different orders, it is accordingly necessary to make a table showing the relative prices of stocks on the basis of average actual prices in 1890-99.

The data for this table were obtained from "Prices of Stocks at the New York Stock Exchange" published annually in the *Financial Review*. These tables give the highest and lowest prices of each stock quoted each month—a sufficient body of quotations to be representative. All the railroads were included which had approximately complete and regular records for the twenty years 1890 to 1909. Several important lines, such as the Burlington, Lake Shore, Michigan Central, and Northern Pacific, were omitted because quotations were scanty or altogether lacking for several years. The Alton and the

<sup>64</sup> Most of the material which follows was first published in the *Journal of Political Economy*, May and July, 1910, under the captions, "The Prices of American Stocks, 1890-1909," and "The Prices of Preferred and Common Stocks, 1890-1909."

<sup>65</sup> *Quarterly Bulletin of the Bureau of Economic Research*, July and October, 1900. Reprinted in summary in *Final Report of the Industrial Commission*, XIX, 29, 1101-1103.

Rock Island have undergone changes in organization which break the continuity of their quotations. In the cases of the Pullman Company and the Adams Express Company a similar break has resulted from stock dividends. Stock dividends which did not force quotations suddenly to a lower level, and the payment of assessments which did not raise quotations suddenly to a higher level, have been disregarded. If all stocks affected by such changes since 1890 were excluded, the remaining list would be short indeed. In railways undergoing reorganization the prices of voting-trust certificates have been taken in lieu of the prices of shares. Thirty-five railways stocks were found which met requirements, and five express, steamship, and telegraph stocks were added to bring the number of series up to forty.<sup>66</sup>

TABLE 29  
LIST OF STOCKS INCLUDED IN THE FOLLOWING TABLES, AND THEIR AVERAGE ACTUAL PRICES IN 1890-99

	Average price per share in 1890-99
North Atlantic railways—	
New York, New Haven and Hartford .....	\$207.90
New York, Ontario and Western .....	17.50
New York Central .....	107.40
Pennsylvania* .....	109.30
Erie .....	17.50
Anthracite Coal railways—	
Central of New Jersey .....	108.30
Delaware and Hudson .....	126.70
Delaware, Lackawanna and Western .....	154.40
Reading .....	26.50
Middle Western railways—	
Cleveland, Cincinnati, Chicago and St. Louis .....	47.90
Wheeling and Lake Erie .....	16.50
New York, Chicago and St. Louis .....	14.80
Wabash .....	8.70
Pittsburg, Cincinnati, Chicago and St. Louis .....	24.90
Canada Southern .....	52.70
Lake Erie and Western .....	18.30
Illinois Central .....	100.80
Northwestern railways—	
Chicago, Milwaukee and St. Paul .....	79.20
Chicago and Northwestern .....	114.60
Chicago, St. Paul, Minneapolis and Omaha .....	51.40
Duluth, South Shore and Atlantic .....	5.80
Iowa Central .....	9.20
Minneapolis and St. Louis .....	19.60
Wisconsin Central .....	10.10

\* The Pennsylvania Railroad is not quoted with regularity on the New York market until September, 1897. Figures for earlier years were accordingly made by taking double the price of \$50 shares as quoted on the Philadelphia exchange.

<sup>66</sup> The work of transcribing the quotations, casting the average actual prices in 1890-99 and computing and averaging the relative prices was done mainly by Mr. and Mrs. Otto Tinnemann, of Berkeley.

TABLE 29—(Concluded)

LIST OF STOCKS INCLUDED IN THE FOLLOWING TABLES, AND THEIR AVERAGE ACTUAL PRICES IN 1890-99

	Average price per share in 1890-99
Southern railways—	
Chesapeake and Ohio .....	\$20.80
Norfolk and Western .....	12.10
Louisville and Nashville .....	62.80
Missouri Pacific .....	41.40
Missouri, Kansas and Texas .....	13.10
Texas and Pacific .....	12.30
Pacific railways—	
Atchison, Topeka and Santa Fé .....	21.60
Denver and Rio Grande .....	14.90
Southern Pacific .....	26.20
Union Pacific .....	29.30
Canadian Pacific .....	74.40
Express, steamship, and telegraph companies—	
American Express Company .....	119.20
United States Express Company .....	51.60
Wells-Fargo Express Company .....	124.20
Pacific Mail Steamship Company .....	30.40
Western Union Telegraph Company .....	86.90

Table 29 shows what stocks were used, and gives the prices which stand for 100. The list is a representative one, including railways in all parts of the country; railways which underwent reorganization in the nineties and railways which have suffered no financial disasters; railways whose stocks have long been upon an investment basis, and railways whose stocks have been a football of speculation; railways whose shares command high, medium, and low prices; railways which belong to almost all the great systems of the day.

Tables 30, 31, and 32 present the arithmetic means of the relative prices of this list of stocks by years, quarters, and months, respectively.<sup>67</sup> In order to make the record more useful, the monthly table has been supplied with certain data which aid in accounting for the fluctuations. In marking the "turning points" I have neglected minor movements, and paid attention to the mean between the highest and lowest prices, rather than to either extreme. The number of shares sold on the stock exchange is given as an indication of the waxing and waning volume of speculation. The average interest upon call

<sup>67</sup> Many discrepancies of one point appear between the relative prices by years and the averages of the relative prices by quarters; or between the relative prices by quarters and averages computed from the figures for the months included. They result from dropping fractions less than one-half, or carrying fractions of one-half or more. The two or three cases of wider discrepancy—for example, in 1890—are caused by the lack of quotations for some one stock for several months. The averages for quarters and years, in other words, have been computed directly from average actual prices—not from the relative prices by months.

The figures for "low" and "high" in the table by months are not the extreme relative prices of the single stocks which showed the widest fluctuations; but arithmetic means of these extremes for forty stocks. In the tables by quarters and years the "low" and "high" figures are similar arithmetic means based not on the highest or lowest quotations for any single month, but on averages of the highest and lowest quotations for all three, or all twelve, of the months included.

loans is computed from the average stock-exchange rates by weeks.<sup>68</sup> The net imports or exports of gold are taken from the *Reports of the Treasurer of the United States*.<sup>69</sup> Finally, the list of current events affecting the stock market has been compiled from the monthly digest of business history published in the *Financial Review*. Of course this list is necessarily incomplete, and the events mentioned are stated with such brevity as to mean little in some cases to readers who have not fresh in mind the business and political developments of the last twenty years. The purpose is merely to suggest the causes of the many short-period oscillations, which are so striking a feature of the stock market.

TABLE 30

RELATIVE PRICES OF 40 TRANSPORTATION STOCKS. BY YEARS, 1890-1911

Average actual prices in 1890-99 = 100. Arithmetic means

Year	Low	High	Spread	Average
1890	115	127	12	121
1891	107	119	12	113
1892	117	128	11	123
1893	87	100	13	93
1894	77	86	9	82
1895	80	91	11	85
1896	73	82	9	77
1897	79	88	9	84
1898	89	99	10	94
1899	121	136	15	128
1900	126	141	15	134
1901	196	225	29	211
1902	239	261	22	250
1903	189	212	23	201
1904	183	201	18	192
1905	239	260	21	250
1906	256	279	23	267
1907	192	216	24	204
1908	191	212	21	201
1909	266	288	22	277
1910	243	265	22	254
1911	241	256	15	248
Averages				
1890-99	95	106	11	100
1900-09	208	230	22	219

<sup>68</sup> In making this computation, each week was assigned to that month in which the majority of its days fell. The source of both sets of data is the *Financial Review*.

<sup>69</sup> Save for September, 1905, when the *Treasurer's Report* gives a wrong figure, and for October to December, 1909. Data for these months are from the *Monthly Summary of Commerce and Finance*. The figures exclude gold in the ore.

TABLE 31

RELATIVE PRICES OF 40 TRANSPORTATION STOCKS. BY QUARTERS, 1890-1911

Average actual prices in 1890-99 = 100. Arithmetic means

Year	First quarter		Second quarter		Third quarter		Fourth quarter	
	Low	High	Low	High	Low	High	Low	High
1890	121	131	126	138	123	133	96	113
1891	102	112	103	114	104	121	117	130
1892	121	133	118	127	117	126	114	124
1893	108	120	90	103	70	85	79	92
1894	80	88	79	87	75	84	76	83
1895	70	77	81	92	90	100	79	92
1896	76	85	76	83	65	74	75	85
1897	74	81	71	77	85	98	88	97
1898	87	98	87	94	93	101	94	106
1899	115	131	117	131	126	140	124	141
1900	125	138	126	140	121	130	133	156
1901	167	193	194	237	204	234	219	238
1902	228	244	240	259	255	280	233	261
1903	235	254	197	221	162	192	163	179
1904	170	187	164	174	182	200	213	239
1905	235	257	225	249	244	262	253	273
1906	260	284	244	273	257	279	261	282
1907	224	256	199	219	193	212	153	179
1908	158	180	181	202	200	218	223	248
1909	245	268	267	287	274	292	278	301
1910	261	287	246	270	225	244	244	260
1911	245	261	250	263	237	256	235	248
Averages								
1890-99	95	106	95	105	95	106	94	106
1900-09	205	226	204	226	209	230	213	236

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TABLE 32  
RELATIVE PRICES OF 40 TRANSPORTATION STOCKS. BY MONTHS, 1890-1911

	Relative prices of stocks				Millions of shares sold	Average call-loan rates %	Net imports (+) or exports (-) of gold in millions of dollars	Current events affecting the stock market
	Low	High	Spread	Turning points				
1890 January	125	134	9		6.4	7.70	+ .6	Reading announced inability to pay interest on preferred income bonds; difficulties of Sixth National Bank
February	121	131	10		5.2	4.25	+ .3	Reduction of surplus reserve of banks; rate-cutting by railways
March	119	128	9		4.5	4.25	+ .2	Irregular market; small corner in Reading
April	121	133	12		5.1	4.30	- .6	Silver-purchase law in prospect; large railway earnings
May	133	145	12	Max.	11.1	4.88	.....	Speculative interest keen; extra dividends by Pennsylvania and Big Four
June	131	141	10		5.4	4.75	- 3.3	Foreign buying declined; money in London firmer; fear of gold exports; speculative spirit dampened
July	129	136	7		3.0	4.60	-10.7	Silver-purchase law approved; London selling American rails
August	125	135	10		4.1	11.63	- .4	Gold exports; tight money; London selling American rails
September	118	131	13		5.1	6.75	+ 1.1	Treasury relief in money market, by purchase of bonds
October	109	123	14		7.2	5.00	+ 2.2	Continuation of selling on London account
November	92	116	24		9.1	7.00	+ 1.4	Baring crisis in London; financial failures in N. Y.; issue of clearing-house loan certificates
December	92	106	14	Min.	5.1	5.00	+ 5.4	Improvement toward end; Morgan's "harmony meeting" of railway presidents; strong report of Vanderbilt roads; bank surplus restored
1891 January	101	114	13		5.6	3.90	+ .7	Recovery aided by relaxation of strain in money market
February	105	113	8		3.3	2.88	- 3.4	Market dull, waiting till doubts about financial legislation should be set at rest by adjournment of Congress
March	101	108	7		3.6	2.88	- 4.5	Foreign situation unfavorable; state legislation hampering railways feared
April	104	117	13	Max.	7.2	3.30	-13.9	Favorable crop prospects
May	105	116	11		6.3	4.38	-30.4	Gold exports discouraging; no foreign buying
June	100	111	11		4.0	3.25	-15.5	Market very dull on continued exports of gold
July	98	107	9	Min.	3.2	2.20	- 5.6	End of gold exports on the 25th
August	99	121	22		5.8	2.13	+ 1.2	Large harvests at home assured; serious shortage abroad; sharp advance
September	114	134	20		11.2	4.50	+ 7.1	Buoyancy continued until 24th; then market declined on profit-taking sales and reports that the Goulds opposed further rise
October	119	131	12		6.7	4.25	+16.1	Financial troubles reported in Paris and Berlin; failure of Maverick National Bank; railway earnings heavy
November	113	125	12		5.3	4.38	+ 8.5	Decided improvement after middle of month; large earnings continued
December	118	132	14		6.8	2.94	+ 5.8	Market awaiting developments
1892 January	121	135	14	Max.	10.0	2.40	+ .3	Large earnings and bright prospects; money abundant; selling on foreign account
February	120	133	13		11.4	2.00	- 3.7	Reading lease of Lehigh Valley and Jersey Central railways
March	120	131	11		8.9	2.00	- 3.2	Market dull; rumors of combinations; merchandise imports exceeding exports; House rejected free-silver bill
April	120	129	9		6.8	2.00	- 7.0	Dullness continued; no important change, save the increase in gold exports
May	118	127	9		6.2	1.50	- 3.3	Business largely in specialties; heavy floods in West and South
June	116	125	9	Min.	5.4	1.40	-16.6	Receivers appointed for Richmond Terminal
July	117	128	11		3.6	1.88	-10.2	Free-coinage bill passed by Senate, defeated in House

TABLE 32—(Continued)

## RELATIVE PRICES OF 40 TRANSPORTATION STOCKS. BY MONTHS, 1890-1911

Average actual prices in 1890-99 = 100

		Relative prices of stocks				Millions of shares sold	Average call-loan rates %	Net imports (+) or exports (-) of gold in millions of dollars	Current events affecting the stock market
		Low	High	Spread	Turning points				
1892	August	120	130	10	Max.	5.4	2.05	- 5.7	Reading lease annulled; industrials buoyant
	September	114	123	9		6.9	4.13	- 2.3	Cholera "scare" in New York
	October	119	127	8		7.0	5.63	+ 2.6	Reading acquired interest in Boston and Maine and control of New York and New England
	November	114	125	11		5.8	5.15	+ 1.4	Cleveland elected president
	December	111	120	9		8.4	6.81	-11.3	Death of Jay Gould; stringent money market
1893	January	113	125	12		10.6	4.00	-12.2	Activity in industrials
	February	107	122	15		10.7	3.00	-13.0	Reading receivership
	March	102	113	11		7.4	8.20	- 1.5	Money market stringent. Industrials suffered
	April	103	115	12		6.3	4.88	-18.3	Gold reserve fell below \$100,000,000; bank failures in Australia
	May	87	103	16		9.0	3.60	-15.2	National Cordage receivership; bank failures in western states and in Australia; stock exchange panic May 4 and 5
	June	81	94	13		4.8	8.88	- 1.7	Panic spread; extra session of Congress called; four minor railway receiverships
	July	66	87	21		5.9	7.75	+ 5.8	Bank failures in West; Erie receivership
	August	68	81	13	Min.	4.9	5.50	+40.6	Premium on currency; House passed bill repealing silver-purchase act; three railway receiverships, including Northern Pacific
	September	76	88	12		4.7	3.75	+ 5.2	Premium disappeared; money market easier; four railway receiverships, including Wisconsin Central
	October	78	93	15		6.3	2.38	+ 1.1	Senate passed silver-purchase repeal law October 30; six railway receiverships, including Union Pacific
	November	83	91	8	Max.	5.5	1.70	+ 4.1	Money redundant in New York; heavy demand for high-grade bonds; two railway receiverships
	December	76	91	15		4.9	1.16	- 1.9	Four railway receiverships, including Santa Fe and New York and New England
1894	January	77	87	10	Min.	4.5	1.02	- .6	Erie reorganization plan
	February	81	86	5		3.2	1.00	- 1.1	House passed tariff bill; Treasury sold \$50,000,000 bonds to protect reserve; one railway receivership
	March	83	91	8		4.8	1.09	- 2.9	Cleveland vetoed seigniorage coinage bill; two railway reorganization plans; gold reserve above \$100,000,000
	April	85	93	8	Max.	4.0	1.13	- 9.4	Coxey's army; coal strike; Great Northern strike; one railway receivership; New York and New England reorganization plan
	May	78	86	8		4.8	1.10	-23.1	Gold reserve fell below \$100,000,000; railway rate wars; floods; Pullman strike
	June	74	81	7		3.4	1.00	-22.4	Coal strike settled; American Railway Union strike began; Santa Fe reorganization plan; Southern Railway organized
	July	72	78	6	Min.	2.8	1.00	-12.8	Railway strike riots in Chicago; Senate passed tariff bill; deadlock between the two houses; gold reserve \$55,000,000
	August	74	88	14		5.0	1.00	- 1.9	Tariff bill became law; shortage of corn crop anticipated; Minneapolis and St. Louis reorganization plan
	September	80	88	8	Max.	4.1	1.00	+ .4	Reading reorganization plan; corn reports still worse; moderate revival of general business
	October	76	85	9		3.9	1.00	+ .5	Low price of coal reacted on anthracite railways; Duluth and Winnipeg receivership
	November	76	85	9		4.5	1.03	+ 1.5	Treasury sold \$50,000,000 bonds to recruit gold reserve; one railway receivership; Populist losses in Congressional elections
	December	75	81	6		4.1	1.44	- 9.4	Cleveland's message declared for maintenance of gold payments; large exports of gold caused uneasiness

TABLE 32—(Continued)  
RELATIVE PRICES OF 40 TRANSPORTATION STOCKS. BY MONTHS, 1890-1911

Average actual prices in 1890-99 = 100

	Relative prices of stocks				Millions of shares sold	Average call-loan rates %	Net imports (+) or exports (-) of gold in millions of dollars	Current events affecting the stock market
	Low	High	Spread	Turning points				
1895 January	70	78	8		3.2	1.35	-24.7	Congress defeated administration measures to defend gold reserve, which fell to \$45,000,000
February	70	76	6	Min.	3.0	1.50	+ 4.1	Treasury contract with Morgan-Belmont gold syndicate; Norfolk and Western receivership; anthracite coal trade demoralized
March	69	78	9		5.1	2.25	+ 4.1	Syndicate loan restoring confidence; presidents of anthracite roads met, seeking to control demoralization of coal trade
April	75	85	10		5.0	2.25	+ 2.0	Business revival; Santa Fe reorganization plan; buying on European account
May	80	95	15		8.9	1.32	+ 3.3	Extensive European buying; conflicting crop reports; speculation in wheat
June	86	96	10		6.0	1.16	+ 2.0	Less foreign buying; business revival extended; "boom" in iron trade; better crop prospects; syndicate loan completed
July	89	97	8		5.8	1.40	- 3.3	Gold exports resumed; favorable business and crop conditions; attempts to effect agreement for maintenance of railway rates
August	90	100	10		5.3	1.03	-15.1	Bright crop prospects affect gold exports; Erie reorganization plans; marked rise in commodity prices
September	91	102	11	Max.	6.8	1.56	-16.7	Fall on the 13th, caused by heavy gold export, followed by recovery on reassuring announcements by the gold syndicate
October	88	98	10		5.3	2.17	- .1	Cotton crop short; speculation for rise checked exports; break in "Kaffirs" in London and Paris; Eastern Question caused selling on European account
November	82	90	8		5.0	1.97	-13.5	European bourse panic on the 9th; heavy gold exports; reaction in business; decline in commodity prices
December	66	89	23	Min.	6.9	4.56	-14.2	Cleveland's Venezuela message on the 17th caused panic on the stock exchange; new bond issue for gold reserve impending
1896 January	71	83	12		4.5	4.90	- .2	Popular loan for \$100,000,000 announced on 6th; Venezuela "war scare" died out; anthracite railway agreement
February	79	87	8		5.2	3.94	+ 9.4	Loan subscriptions \$527,000,000; Baltimore and Ohio receivership; Senate resolutions recognizing Cubans as belligerents
March	77	84	7		4.6	3.50	+ .3	House accepted these resolutions; heavy mercantile failures; severe storms
April	78	90	12	Max.	4.1	3.02	- 2.7	Buying for European account; president took no action upon Cuban resolutions
May	77	82	5		2.8	2.53	-18.5	Silver men captured many Democratic state conventions; business depressed; St. Louis tornado on 27th
June	75	84	9		4.4	1.94	- 6.1	Silver men defeated in Republican convention; continued gains in Democratic state conventions
July	66	76	10		5.6	2.07	-10.4	Bryan's nomination; gold reserve reduced to less than 90 millions; banks aided Treasury by exchanging gold for legal tenders
August	61	70	9	Min.	4.3	4.69	+ 2.1	Lowest points reached between 7th and 11th; advance after Bryan's Madison Square meeting; gold imports began late in August
September	68	77	9		4.6	5.45	+34.1	Gold Democratic convention; large Republican pluralities in Vermont and Maine; rise in price of wheat
October	70	80	10		4.9	11.13	+27.6	Increasing confidence in Bryan's defeat; stringent money market caused by hoarding gold; Western Freight Association formed
November	79	90	11	Max.	5.9	6.25	+ 6.9	McKinley elected on 3rd; sharp advance followed by reaction on profit-taking sales, small earnings of spring-wheat roads, etc.
December	75	84	9		3.9	1.95	+ 2.2	Senate discussing resolution recognizing independence of Cuba; heavy bank failures in the West

TABLE 32—(Continued)

RELATIVE PRICES OF 40 TRANSPORTATION STOCKS. BY MONTHS, 1890-1911

Average actual prices in 1890-99 = 100

	Relative prices of stocks				Millions of shares sold	Average call-loan rates %	Net imports (+) or exports (-) of gold in millions of dollars	Current events affecting the stock market
	Low	High	Spread	Turning points				
1897 January	76	83	7		3.4	1.78	+ .2	Railway earnings low; anthracite and bituminous coal carriers affected by demoralization of coal trade
February	74	79	5		2.8	1.63	+ .2	Steel-rail pool collapsed; large purchase of print cloths; renewed discussion of Cuban affairs in Senate
March	72	81	9		5.0	1.62	+ .3	Trans-Missouri Freight Association held illegal; Lake Shore refunded 7 per cent bonds at 3½ per cent; extra session of Congress for tariff legislation
April	69	75	6	Min.	3.6	1.50	- 6.0	Graeco-Turkish war; floods in Mississippi Valley; N. Y. Central refunded bonds
May	70	74	4		3.3	1.41	- 8.9	Senate resolution recognizing Cuba as a belligerent; Supreme Court denied right of Interstate Commerce Commission to fix rates
June	73	81	8		6.4	1.20	- 7.0	Marked improvement in crop situation, followed by rise of Granger stocks; Chicago and Northwestern refunded bonds
July	78	88	10		6.9	1.19	- 4.9	Dingley tariff passed; bituminous coal strike; crops excellent at home, seriously short abroad; Klondike gold rush
August	85	101	16		11.4	1.25	+ 2.4	"Boom" on stock exchange, due to crop situation and revival of business
September	92	107	15	Max.	13.1	2.22	+ 4.1	Reaction in latter part of month on profit-taking sales; rumors of war with Spain; yellow fever in the South; coal strike ended
October	90	101	11		8.0	2.50	+11.0	Recession of speculation; renewed fears of war with Spain
November	85	95	10	Min.	5.8	1.81	+ 1.8	Break on 5th caused by fears of war with Spain; recovery on good railway earnings, and end of yellow fever
December	90	97	7		7.5	2.92	+ 1.5	Meeting of Congress caused little disturbance
1898 January	91	101	10	Max.	9.3	2.50	+ 3.1	Merger of Lake Shore and Michigan Southern with N. Y. Central reported
February	88	101	13		9.0	1.78	+ 4.3	The "Maine" sunk by explosion in harbor of Havana; industrial consolidations
March	82	93	11		10.1	2.17	+29.6	Market fluctuating on conflicting rumors of war with Spain; industrial consolidations
April	83	89	6	Min.	6.0	2.97	+31.0	War began on 21st; investment buying almost ceased; more industrial consolidations
May	87	97	10		9.2	1.95	+13.0	Battle of Manila Bay on 1st; crop prospects excellent
June	94	101	7	Max.	9.2	1.25	+ 2.8	Leiter wheat corner collapsed; Baltimore and Ohio reorganization plan; several increases of railway dividends
July	92	98	6	Min.	4.8	1.25	+ 1.0	Battle of Santiago Bay on 3rd; peace overtures on 26th; low price of wheat; grain movement light
August	93	104	11	Max.	12.1	1.70	+13.1	Peace protocol signed on 12th; granger stocks rose on wheat prospects; coal shares fell on condition of trade
September	94	101	7		9.4	3.78	+13.4	Fears of monetary stringency; break in prices of industrials; Federal Steel Company formed with capital of 200 millions
October	93	100	7	Min.	7.5	2.25	+15.0	Fashoda incident threatened rupture between England and France; coal, cotton, woolen, and leather trades unsatisfactory
November	92	103	11		11.0	2.10	+ 3.8	Republican gains in elections; Fashoda incident settled; Spain agreed to cede Philippines; monetary stringency in Berlin
December	100	118	18		15.3	2.41	+ 6.9	Peace treaty signed on 10th; coal and cotton trades improved; railway dividends increased

TABLE 32—(Continued)  
RELATIVE PRICES OF 40 TRANSPORTATION STOCKS. BY MONTHS, 1890-1911

		Relative prices of stocks				Average actual prices in 1890-99 = 100			Current events affecting the stock market
		Low	High	Spread	Turning points	Millions of shares sold	Average call-loan rates %	Net imports (+) or exports (-) of gold in millions of dollars	
1899	January	110	132	22		24.3	2.72	+ 4.1	Great "boom" on stock exchange; enormous industrial consolidations; railway rate situation improved; dividend increases
	February	118	133	15	Max.	16.1	2.47	+ 4.3	Speculation subsided; unfavorable news from Philippines; severe storms
	March	118	129	11		17.7	4.10	+ 1.7	Industrial consolidations continued; great rise in iron and steel prices; speculation in industrials; disquieting news from Samoa
	April	118	133	15		17.0	5.13	+ 1.0	Break in industrials, followed by rally
	May	117	131	14		15.0	3.52	+ .6	Panic in industrials after death of Flower on 12th; \$20,000,000 indemnity paid to Spain
	June	115	129	14	Min.	10.9	2.63	-18.2	Industrials in disfavor; railways gained after a weak opening on improved crop prospects and larger earnings
	July	124	134	10		8.4	4.47	- .2	Gain continued on favorable reports of earnings and crops; numerous strikes
	August	128	144	16	Max.	13.0	3.27	+ .6	Easier money, declining foreign exchange, active trade, expanding earnings, increasing dividends, assurance of large corn crop
	September	129	142	13		12.5	6.38	+ 1.5	Tight money and prospect of war between England and the Transvaal affected the market
	October	127	140	13		10.9	7.50	+ 5.5	Boer war began; Bank of England rate raised from 3½ to 5 per cent; tight money in New York; advances in railway rates
	November	132	143	11		13.7	7.60	+ .9	Early weakness because of tight money; later strength on Treasury purchases of bonds; Bank of England rate 6 per cent
	December	114	139	25	Min.	17.1	11.13	- 7.0	Stock exchange panic on 18th; London markets disturbed by military reverses; financial difficulties in Boston from decline in copper stocks; failure Produce Exchange Trust Co. in New York; recovery after the 22d
1900	January	122	134	12		9.8	4.15	- 4.2	Activity of business; large railway earnings; advances in freight rates by changes in classification; larger dividends
	February	125	137	12		10.2	2.25	+ .1	Early advance on increased dividends; later reaction on decline of street railway and industrial stocks
	March	127	144	17		14.4	3.94	+ .5	Gold-standard act, followed by foreign buying; street railway troubles ended
	April	132	148	16	Max.	14.8	3.06	+ 1.0	American Steel and Wire Co. on 16th closed several mills, because of failing demand; confidence undermined
	May	126	138	12		9.5	2.00	- 9.1	Uncertainty about course of industry; reaction in trade more marked
	June	119	134	15		7.3	1.69	- 6.8	Unfavorable crop reports; continued reaction in trade; Boxer troubles in China
	July	123	133	10		6.2	1.53	+ 2.2	Better weather for the crops; Bryan nominated for presidency by Democrats
	August	124	131	7		4.0	1.30	-15.6	Extreme dullness, because of presidential campaign
	September	117	127	10	Min.	5.2	1.61	+ 2.7	Galveston disaster; anthracite coal strike; uneasiness about campaign
	October	123	140	17		10.9	3.57	+ 8.8	Settlement of coal strike; more confidence in Bryan's defeat; gold imports
	November	133	154	21		22.6	5.06	+ 9.5	McKinley's election followed by a great outburst of speculation; increased dividends
	December	144	175	31		23.4	5.13	+ 2.5	"Boom" extended on Morgan's purchase of Pennsylvania Coal Co. for Erie, and rumors of "community of interest" plans

TABLE 32—(Continued)

## RELATIVE PRICES OF 40 TRANSPORTATION STOCKS. BY MONTHS, 1890-1911

Average actual prices in 1890-99 = 100

	Relative prices of stocks				Millions of shares sold	Average call-loan rates %	Net imports (+) or exports (-) of gold in millions of dollars	Current events affecting the stock market
	Low	High	Spread	Turning points				
1901 January	157	181	24		30.3	3.07	- 4.7	Speculation culminated on Morgan's purchase of Central of New Jersey for the Reading; moderate reaction after the 9th
February	167	188	21		21.9	2.00	+ 1.0	U. S. Steel Corporation launched; Union Pacific bought control of Southern Pacific
March	175	210	35		27.1	2.34	+ 1.2	Marked success of steel "flotation"; rumors of further combinations
April	196	229	33		41.7	4.30	- 3.4	High tide of speculation; many rumors of further combinations; Texas oil fever
May	169	239	70	Max. and Min.	35.3	6.88	- 9.2	Northern Pacific panic on the 9th; no failures; recovery late in month
June	215	242	27	Max.	19.8	4.31	- 2.6	Early strength lost on suspension Seventh National Bank; failure H. Marquand & Co.; bank failures in Germany
July	197	234	37	Min.	16.0	4.30	- 1.5	Poor bank statement; steel workers' strike; damage to crops by drought; threatened rate reduction by Santa Fe, etc.
August	205	231	26		10.8	2.44	+ 2.4	Crop prospects somewhat improved; steel strike thought to be failing
September	209	238	29		14.0	4.34	+ 6.5	McKinley's assassination and death caused sharp declines; recovery prompt on settlement of steel strike, rumors of mergers, etc.
October	212	232	20		14.0	3.55	+ 1.0	Industrials fell, railways rose on rumors of mergers, or communities of interest, and increased dividends
November	224	242	18	Max.	18.3	4.19	-11.3	Effect of formation of Northern Securities Co. offset by break in copper stocks and fears of tight money
December	219	238	19	Min.	16.8	6.25	- 3.1	Amalgamated Copper Co. gave over attempt to hold copper at 17 cents; tight money; market stronger late in month
1902 January	223	241	18		14.8	4.57	- 1.2	Several industrial combinations in difficulty; large new stock and bond issues
February	229	246	17		13.0	2.38	- 7.7	Severe snowstorms; government began proceedings against Northern Securities Co.
March	232	245	13		12.0	3.94	- 2.8	Market continued to hold its own despite labor troubles and bad weather
April	236	261	25		26.6	5.10	- 1.9	Rampant speculation and clique manipulation; public not prominent in the market; Morgan's steamship combination announced
May	239	258	19		13.5	5.56	- 1.2	Collapse of "Webb-Meyer Securities"; anthracite coal strike; three stock exchange firms failed
June	246	260	14		7.8	2.84	+ .4	Railway dividend increases; industrial dividend reductions; peace in South Africa
July	249	268	19		16.4	3.52	- 7.0	Crop indications favorable; Rock Island Co. plan ill received; gold exports depressing at end of month
August	259	284	25		14.3	3.78	- 1.4	Excellent crop prospects outweighed coal strike and increasing firmness of money market
September	258	289	31	Max.	21.0	10.80	+ 2.0	Severe break in prices at end of month; liquidation induced by high money rates and calling of loans by banks
October	245	273	28		16.4	7.63	+ 7.2	Appointment of coal strike commission and easing of money market caused rise; later fall on new labor troubles and fears of gold exports
November	232	261	29		17.1	4.88	+ 2.3	Forced liquidation by pools; bank accommodation difficult to secure
December	222	252	30	Min.	15.7	6.81	- 1.5	Renewed liquidation due to monetary tension; later buoyancy on formation of \$50,000,000 money pool

TABLE 32—(Continued)  
 RELATIVE PRICES OF 40 TRANSPORTATION STOCKS. BY MONTHS, 1890-1911  
 Average actual prices in 1890-99 = 100

	Relative prices of stocks				Millions of shares sold	Average call-loan rates %	Net imports (+) or exports (-) of gold in millions of dollars	Current events affecting the stock market
	Low	High	Spread	Turning points				
1903 January	243	260	17	Max.	16.0	5.75	+ .8	Buoyancy for ten or twelve days, followed by reaction; marked irregularity in movements of different stocks
February	241	258	17		10.9	2.88	— .5	“Anti-trust” legislation—Bureau of Corporations established; Elkins law, law expediting hearings under Sherman anti-trust law, etc.
March	222	245	23		15.1	6.00	+ 2.7	Liquidation—labor troubles, increased operating expenses, failure of Aldrich financial bill, dissensions in large corporations
April	210	230	20		12.3	4.19	— .9	Prices broke on 13th on Northern Securities decision; later rallied on winter wheat prospects, etc.
May	199	227	28		12.5	2.44	—13.7	Liquidation renewed; many strikes; iron trade depressed, cotton speculation; stock panic in Montreal
June	180	207	27		15.4	3.05	—10.5	U. S. Shipbuilding Co. receivership; large gold exports; failures in Canada; floods in Southwest; drought in North
July	168	201	33		14.9	2.50	— 6.7	Stock exchange failures; cotton corner
August	159	191	32		14.4	2.03	+ 3.2	Two more failures on stock exchange; rally after 10th on shifting of holdings to stronger hands; corn and cotton crops late
September	159	184	25		10.8	2.32	+ 1.6	Further liquidation; reports of crop damage; cuts in iron and steel prices; labor troubles; industry depressed
October	158	175	17	Min.	12.9	2.69	+ 1.9	Low prices tempted buyers, despite bank troubles in Baltimore, Pittsburg, and St. Louis; depression in iron trade, etc.
November	161	175	14		10.7	5.19	+ 7.7	Advance latter part of month; large cotton shipments and engagements of gold for import; bond market improved
December	171	187	16		15.2	5.50	+14.6	Further large bond issues; tone distinctly more hopeful
1904 January	176	192	16	Max.	12.3	2.34	+ 6.7	Strong bond market; severe storms hampered railways; wild speculation in cotton and coffee
February	166	184	18		8.8	1.81	+ 3.2	Russo-Japanese war; Baltimore fire; break in cotton market; speculation in wheat
March	163	179	16		11.4	1.75	+ 5.0	Northern Securities decision by Supreme Court followed by rise; disagreement of Hill and Harriman interests; Sully failed
April	168	177	9		8.2	1.38	— 9.9	Hill-Harriman litigation; backward spring, gold exports, poor railway earnings
May	161	170	9	Min.	5.3	1.55	—33.2	United States paid for Panama Canal; uncertainty regarding wheat crop
June	163	172	9		5.0	1.13	+ 2.7	Rise latter part of month on better crop prospects; settlement of strike on Great Lakes; end of gold exports
July	170	185	15		12.5	1.03	+ 7.5	Parker nominated for president by Democrats; better crop prospects; strikes in packing industry, building trades, etc.
August	179	202	23		12.5	.90	— 3.8	Market stronger, despite cutting of iron and steel prices, reports of damage to wheat crop, rise of cotton, etc.
September	195	211	16		18.8	1.53	+ 1.1	Iron demand revived on further price reductions; several strikes ended; crop prospects uncertain; industry reviving
October	205	230	25		32.6	2.03	+ 3.7	Industrial revival extended; good crops assured; marked buoyancy on stock exchange
November	216	243	27		32.0	2.80	—16.7	“Boom” in stocks followed Roosevelt’s election; industrial revival continued to gain ground
December	217	244	27		28.1	3.13	—10.9	Market broke on 6th and 13th under attacks by Lawson and president’s message; prompt reaction

TABLE 32—(Continued)

## RELATIVE PRICES OF 40 TRANSPORTATION STOCKS. BY MONTHS, 1890-1911

Average actual prices in 1890-99 = 100

	Relative prices of stocks				Millions of shares sold	Average call-loan rates %	Net imports (+) or exports (—) of gold in millions of dollars	Current events affecting the stock market
	Low	High	Spread	Turning points				
1905 January	225	248	23		11.8	2.25	—15.7	Rumors of agreement between Hill-Harriman interests, and of combination of Union Pacific, Standard Oil, and Vanderbilt interests
February	238	257	19		10.6	2.19	—13.4	Further rumors of impending combinations, accompanied by heavy buying
March	243	264	21	Max.	12.9	3.20	+ 1.8	Reaction on failure of rumored combinations to materialize, and on disappointment of hopes for peace between Russia and Japan
April	229	261	32		12.7	3.25	+ .4	Symptoms of friction among railways; break in wheat market; bank defalcations in Milwaukee; insurance scandals
May	220	241	21	Min.	12.1	2.42	+ 1.3	Reaction in iron trade; renewed attacks by Lawson; further insurance scandals; Pennsylvania bond subscriptions small
June	223	242	19		10.8	2.50	— 2.7	Improvement latter part of month on prospects of peace between Russia and Japan; Ryan's purchase of Equitable stock; good crop reports
July	237	250	13		10.9	2.31	+ 2.9	Market rose on dividend disbursements and then fluctuated on crop reports; cotton statistics scandal
August	244	268	24		10.9	2.05	+ 2.1	Peace between Russia and Japan; iron trade buoyant; market broke on 30th and 31st under realizing sales and attack by Lawson
September	252	266	14		10.9	3.56	+ 3.0	Market recovered and advanced until checked by high rates for money toward close of month
October	253	270	17		12.6	5.31	+ 9.7	Course of market irregular and uncertain
November	251	272	21		13.1	7.70	+ 3.0	Market declined until 13th on dear money; Russian mutinies; large Hearst vote in N. Y.; later market rose on increased dividends
December	255	278	23		14.4	16.50	.....	Buoyancy despite extreme tension in money market; passing of dividend on preferred stock by Rock Island Co.; failure of Walsh banks in Chicago
1906 January	265	294	29	Max.	38.5	8.65	— 4.4	As monetary stringency relaxed, market rose; later decline on profit-taking sales, and proposed inquiry into restraint of trade
February	260	283	23		21.7	4.63	— 7.7	House passed Hepburn rate bill; fear of coal strike; report of Armstrong Insurance Committee, etc.
March	255	274	19		19.5	4.88	— 1.6	Fear of monetary stringency; fear of coal strike; court decisions unfavorable to corporations
April	246	276	30		24.3	9.50	+11.2	San Francisco earthquake and fire; dear money; coal strike; sales of securities by fire insurance companies
May	239	270	31	Min.	24.0	4.15	+27.9	Coal strike ended; Garfield's report on Standard Oil; money easier
June	247	271	24		20.3	3.25	— 1.8	Hepburn rate bill became law; Reynolds-Neill report on Chicago stockyards; bond market dull
July	243	263	20		16.3	2.97	+ 7.0	Crop outlook highly favorable; money market returned to ease; U. S. Steel announced dividend on common stock July 31
August	258	286	28		31.8	4.44	+ 6.2	Union Pacific and Southern Pacific dividends increased sensationally on 17th; "boom" followed; checked late in month
September	270	287	17	Max.	26.0	9.38	+27.9	Market weak and strong by turns; monetary stringency returning
October	264	285	21		21.9	5.15	+18.6	Irregularity continued; break on news of advance of Bank of England rate to 6 per cent on 19th
November	261	280	19		19.4	7.50	+ 5.8	Increase of Pennsylvania Railroad dividend strengthened market early in month; later uncertainty on dear money
December	259	281	22		20.5	14.00	+ 4.6	Tight money and announcement of large security issues offset effect of increased dividends

TABLE 32—(Continued)  
RELATIVE PRICES OF 40 TRANSPORTATION STOCKS. BY MONTHS, 1890-1911  
Average actual prices in 1890-99 = 100

	Relative prices of stocks				Millions of shares sold	Average call-loan rates %	Net imports (+) or exports (-) of gold in millions of dollars	Current events affecting the stock market
	Low	High	Spread	Turning points				
1907 January	243	270	27		22.7	6.15	— .2	Further issues of securities; substitution of short-term notes for bonds; increased operating expenses; congestion of traffic
February	234	252	18		16.5	4.38	+ 1.3	Further borrowing on short-term notes; Interstate Commerce Commission's investigation of the Harriman lines
March	193	243	50	Min.	32.2	6.38	+ 2.0	Severe liquidation on the 14th and 25th; failure of Morgan's attempt to arrange conference between Roosevelt and railway presidents
April	208	225	17	Max.	19.2	2.35	+ 1.5	Money market relaxed; stock market recovered in a measure; unfavorable crop reports
May	194	219	25	Min.	15.8	2.31	— 2.9	Unseasonable cold made crops backward; difficulty in financing capital requirements continued
June	197	213	16		9.7	3.13	—22.8	Bond syndicates expiring with large portion of bonds unsold; crop prospects somewhat brighter
July	208	222	14	Max.	12.8	4.55	— 5.1	Federal policy of asking for receivers in prosecution of trusts announced; intimations of dividend increases
August	183	211	28	Min.	15.6	3.06	— 2.4	Standard Oil fine; numerous prosecutions of corporations; signs of industrial reaction; Pope receivership
September	190	204	14	Max.	12.2	4.00	+ .2	Copper fell 22-15½ cents per pound; extra dividend by Burlington; success of N. Y. City bond sale after interest had been raised from 4 to 4½ per cent
October	151	192	41		17.3	21.00	— .1	Embarrassment of Heinze, Morse, and Thomas banks; failure of Knickerbocker Trust Co.; panic
November	149	169	20	Min.	9.7	12.25	+61.7	Panic continued; limitation of payments by banks; bargain buying of stocks in small lots
December	158	176	18		12.6	14.60	+42.5	Strain relaxed; decided gain on stock exchange in closing days of the month
1908 January	163	186	23	Max.	16.6	4.75	+ 9.4	Return of ease in money market; revival of confidence; Seaboard Air Line and Chicago Great Western receiverships
February	150	169	19	Min.	9.8	1.81	— .1	President's message and letter to Interstate Commerce Commission judged unfavorable to corporate interests; more railway receiverships
March	158	182	24		15.9	1.85	+ 1.1	President's message of March 25th judged more favorable; suspended banks reopening; copper prospects brighter
April	171	191	20		11.6	1.72	—13.0	Successful financing of Erie's capital requirements; railway expenses reduced
May	184	213	29		21.0	1.66	—24.4	Congress adjourned without passing laws adverse to corporate interests; Gould stocks weak
June	192	207	15		9.7	1.52	— 6.2	Inactivity; cut in steel prices; dividend reductions and suspensions; Taft nominated
July	196	216	20		13.9	1.22	— 2.7	Bryan nominated; Court of Appeals reversed Standard Oil fine decision; efforts to increase freight rates
August	204	219	15		18.9	1.06	— 3.1	Advance of stocks opposed by "shorts"; flagrant manipulation followed by suspension of a large brokerage firm
September	202	223	21		17.6	1.35	.....	Uneasiness over presidential campaign; suspension of dividends by American Locomotive Co.
October	208	226	18		14.3	1.44	+ .8	Revival in iron and copper trades; net earnings increasing through saving of expenses
November	222	254	32		25.0	1.75	— 1.0	Buoyancy followed Taft's election; moderate reaction on profit-taking sales, suit against "Sugar Trust," etc.
December	240	264	24		23.0	2.90	— 3.3	Market irregular; advances in freight rates announced; tariff hearings begun by Committee of Ways and Means

TABLE 32—(Continued)

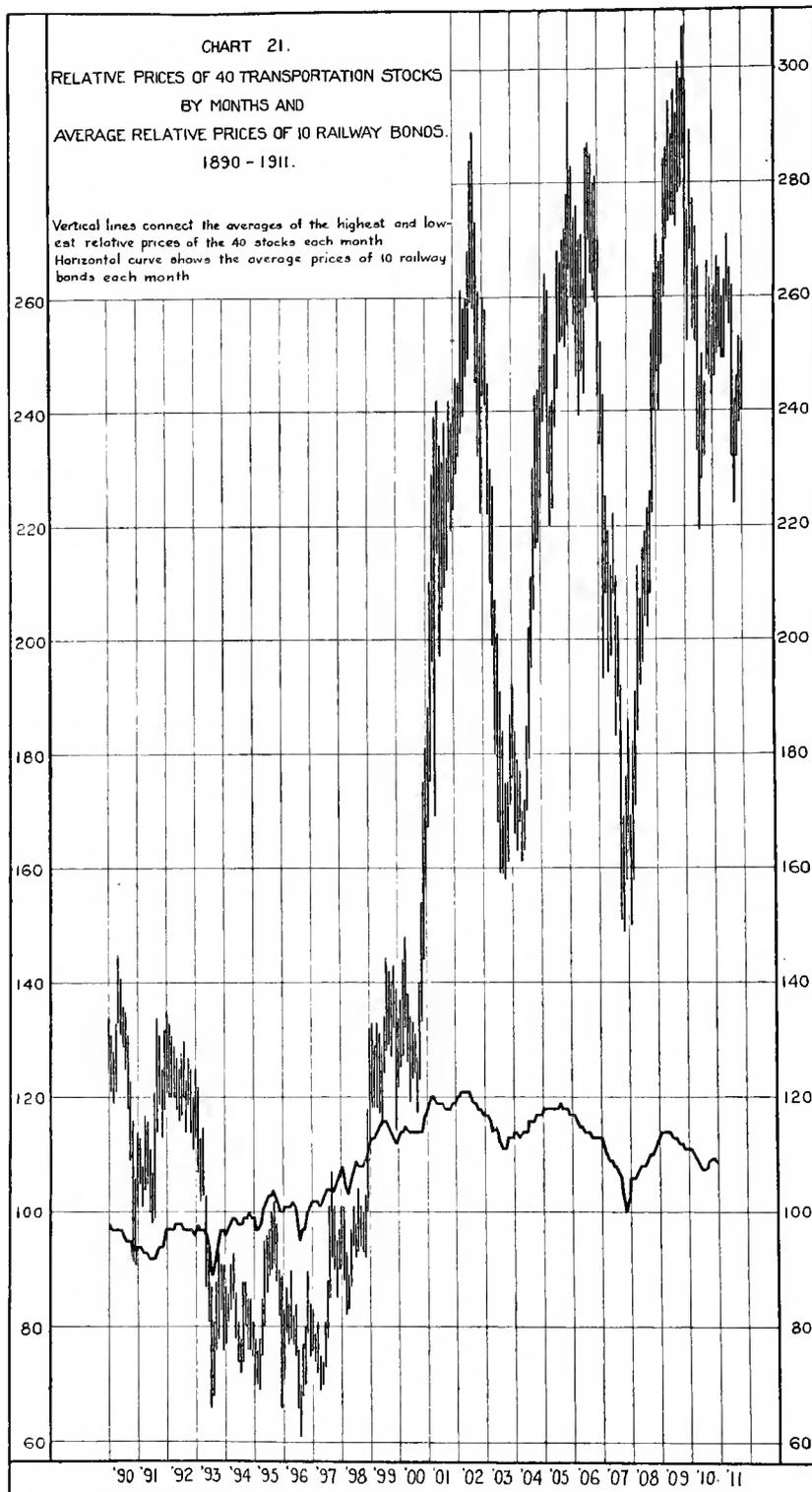
## RELATIVE PRICES OF 40 TRANSPORTATION STOCKS. BY MONTHS, 1890-1911

Average actual prices in 1890-99 = 100

	Relative prices of stocks				Millions of shares sold	Average call-loan rates %	Net imports (+) or exports (-) of dollars (—) of gold in millions	Current events affecting the stock market
	Low	High	Spread	Turning points				
1909 January	247	271	24	Max.	17.3	1.81	— 5.5	Consolidated Gas decision, maintaining legality of 80-cent rate, caused decline; Harriman entered N. Y. Central board
February	240	266	26	Min.	12.3	2.25	— 6.4	Steel Corporation announced new policy of "protecting their customers" on 19th; heavy liquidation followed
March	248	267	19		13.7	1.85	—16.7	Congress in extra session on the tariff; iron, coal, and copper trades in difficulties
April	260	284	24		19.1	1.94	— 4.1	Improved industrial conditions; larger purchases of bonds; increasing railway earnings
May	270	286	16		16.5	1.84	—10.1	Supreme Court decision on Commodities Clause of Hepburn act on 3d caused rise; expanding business activity
June	273	294	21	Max.	20.3	1.87	— 7.2	Reaction followed Taft's recommendation of tax on corporations; hitch in plan for listing Steel shares in Paris; poor state of copper trade
July	274	288	14	Min.	12.8	2.06	—14.6	Tariff nearing completion; increasing business activity; higher dividend on Steel common
August	274	296	22		24.6	2.17	— 5.0	Tariff act signed on 5th; market fluctuated on conflicting rumors of Harriman's health; crop prospects impaired by heat
September	272	292	20		20.0	2.69	— 6.0	Harriman died on 9th; Taft's speeches caused decline in third week
October	278	301	23		21.7	4.31	— 3.6	Early decline on dearer money in New York and London; foreign selling; later extensive rise
November	279	298	19		18.8	4.65	—13.1	Circuit Court found Standard Oil contravening Sherman Anti-trust Law on 20th; new stock issues depressing
December	284	307	23	Max.	17.6	5.03	— 9.4	No disturbing features in Taft's message; speculation encouraged by rise of certain special stocks; general list buoyant after Christmas
1910 January	262	298	36		24.5	4.72	— 4.0	Taft's message recommending increase in powers of Interstate Commerce Commission, etc.; Hoeking Coal and Iron Co. in hands of receivers; fall of cotton and grain prices; slackening activity in steel trade
February	252	275	23	Min.	16.0	2.78	+ .1	Signs of declining activity in several industries; failure of Fisk & Robinson
March	268	289	21	Max.	15.0	2.88	+ 2.6	N. Y. Central dividend rate increased; numerous strikes and wage advances
April	254	277	23		14.1	3.28	—34.2	Bad crop reports; gold exports, dear money, intimations of further prosecutions of corporations
May	252	272	20		11.9	3.63	+ 2.4	Large foreign sales of railway securities; crop prospects better
June	233	265	32		16.3	2.77	+ 3.0	Injunction against advance of railway rates; Interstate Commerce Commission reduces rates west of Missouri
July	219	246	27	Min.	14.3	2.41	+ 9.5	Injury to spring wheat; Interstate Commerce Commission secured postponement of advances in freight rates; further restriction of trade; Farquhar-Pearson securities taken over by Kühn, Loeb & Co.
August	228	250	22		10.4	1.55	+ 9.7	Gains by "Insurgents" in state conventions; further restriction of trade
September	232	245	13		7.7	2.00	+ 1.4	Minnesota rate decision favorable to railways; Democrats carried Maine; revival of demand for bonds
October	247	266	19	Max.	13.5	3.13	+ 3.5	Crops better than expected; Democratic success at elections forecasted; Bank of England raised rate to 5 per cent
November	246	263	17		10.7	3.23	+ 2.9	Democrats captured House of Representatives; federal suit against "Sugar Trust"; pessimistic trade forecasts

TABLE 32—(Concluded)  
RELATIVE PRICES OF 40 TRANSPORTATION STOCKS. BY MONTHS, 1890-1911  
Average actual prices in 1890-99 = 100

	Relative prices of stocks				Millions of shares sold	Average call-loan rates %	Net imports (+) or exports (-) of gold in millions of dollars	Current events affecting the stock market
	Low	High	Spread	Turning points				
1910 December	243	255	12	Min.	9.8	3.38	+ 3.6	Encouragement received from Taft's message to Congress and decision in Anthracite Coal cases; further federal suits against corporations; additional increases of wages by railways; continued restrictions of trade
1911 January	246	262	16		10.4	3.18	+ 8.6	Carnegie Trust Co. closed; restriction of production in leather and cotton trades; large loan flotations by New York City and by railways; prospects of steel trade better; net earnings of railways larger; money market easy
February	250	267	17	Max.	10.2	2.28	+ 5.4	Decline in commodity prices; several new railway loans; further improvement in steel trade; plan for double tracking Union and Southern Pacific announced; market broke on 24th after announcement that Interstate Commerce Commission refused to permit advance of railway freight rates
March	251	265	14		6.8	2.28	+ 3.6	N. Y. Central Railroad reduced dividend; railway net earnings lower; troops sent to Mexican border; new orders in steel trade smaller; copper stocks larger; money market dull
April	249	260	11	Min.	5.6	2.30	+ 3.0	Congress met in extra session; further signs of reaction in general business; increasing demand for bonds; rates for money very low
May	249	263	14		11.1	2.31	- 1.8	Supreme Court decision in Standard Oil case followed by temporary revival of speculation; general cut in steel prices; House of Representatives began investigation of U. S. Steel Corporation
June	259	271	12	Max.	10.5	2.40	+ 1.7	Sale of Panama Canal bonds highly successful; Government defeated in suit to separate Southern Pacific from Union Pacific, but won suit against "Powder Trust" and began several new prosecutions under Sherman law; crops injured by dry weather
July	255	265	10		5.5	2.36	+ .4	Further damage to grain crops, and wild speculation for advance of prices; Interstate Commerce Commission's decision regarding Pacific Coast rates deemed unfavorable to railways; new trust prosecutions; anxiety over Moroccan crisis
August	232	262	30		15.0	2.31	+ 3.6	Supporting of prices apparently ceased on Stock Exchange; liquidation on European account; threatened labor difficulties for railways; prices of steel products weaker; new trust prosecutions
September	224	242	18	Min.	17.4	2.28	+ 2.4	Speeches by Taft and Wickersham threaten extensive prosecutions of trusts; uneasiness in European markets; loans by New York to Paris and Berlin; Tripolitan war; price cutting in steel; Western railway strikes
October	232	246	14		10.9	2.33	+ .1	Federal suit against U. S. Steel Corporation; Wickersham approved plan of "Tobacco Trust" for reorganization; steel earnings larger; revolution in China; monetary tension in Europe relaxed; New York bought \$13,000,000 Prussian treasury notes; money a drug
November	238	253	15		14.9	2.72	-10.5	Circuit Court approved plan for disintegration of "Tobacco Trust"; Commerce Court enjoined order of Interstate Commerce Commission in Pacific Coast rate cases; increased railway orders for steel products; financial conditions abroad easier; over \$10,000,000 gold sent to Canada; New York reserves below 25 per cent
December	240	252	12	Max.	9.1	4.03	+ 3.7	Hadley Commission's report on railway securities well received; increasing orders for iron and steel; further trust prosecutions; receivers appointed for Wabash; rates for money somewhat firmer



### 3. *The Course of the New York Stock Market in 1890-1911*

A sketch of the general trend of the market is useful in studying these tables. From 133-145<sup>70</sup> in May of 1890 prices declined to 92-106 in December under European liquidation, stringent money, and the reflex influence of the Baring crisis in London. The first seven months of 1891 was a period of liquidation in the United States and stocks did not recover much of their lost ground; but after the scantiness of foreign wheat crops and the abundance of the American crop had become assured, prices advanced, reaching 121-135 in January, 1892. For the rest of the year and the first four months of 1893 the market sagged under the influence of gold exports, the decline of the treasury's gold reserve, foreign selling, and the financial embarrassment of certain railways and industrial corporations. In the stock market the crisis of 1893 began with a sharp panic on May 4 and 5. The lowest level touched in that disastrous summer was 68-81 in August. No material recovery occurred during the dull year 1894; but after President Cleveland made his contract with the Morgan-Belmont gold syndicate in February, 1895, stocks began to advance and reached 91-102 in September. The resumption of gold exports and the concurrent decline of the treasury's reserve again turned the tide and prices were falling when the president's Venezuelan message was published, December 17. The war scare which followed reduced stocks to as low a point as during the worst of the panic of 1893. The recovery of the next spring was checked by the gains of the free-silver party and Mr. Bryan's nomination. In August, 1896, while the issue of the presidential campaign seemed uncertain, stocks fell to their lowest point in the whole period of twenty-two years, 61-70.

The defeat of the free-silver policy paved the way for a return of business prosperity. But this immediate advance did not outlast November, and for the next eight months stocks were lower than in the week of election. Finally, in midsummer, 1897, the development of a crop situation like that of 1891 caused a sudden advance to 92-107 in September. But fear of war with Spain brought on a relapse, and when fighting began in the next April the market stood at 83-89—substantially the level of November, 1896. During the war the general trend of stock prices was upward, and peace was followed by a "boom" which carried prices to 118-133 in February, 1899. The next year and a half was a time of many vicissitudes upon the stock market in which industrial shares played the leading roles. But even the railway shares underwent a fall after ex-Governor Flower's death in May, 1899; scored a marked advance in midsummer; suffered a heavy drop in the panic of December 18; made a new high record in April, and finished in September, 1900, lower than in February, 1899.

<sup>70</sup> These figures show the arithmetic means of the lowest and highest relative prices for the month.

It is notable that in these years of business revival after the depression of 1893-96 stock prices did not equal the high record of May, 1890, until April, 1900. But the great outburst of speculation which followed President McKinley's second election turned the moderate rate of advance into a furious rush, and established what for twelve years has appeared to be a permanently higher level of fluctuations. From 117-127 in September, 1900, stocks rose with hardly a check to 239 in May. But May 9 brought the Northern Pacific corner and the market dropped to 169. The difference between these figures is 70 points—the widest spread exhibited by any month in the two decades. This extraordinary fall had but a transient effect upon the general level of prices. In June the high level of May was actually surpassed, and the general trend continued upward until September, 1902, when the figures stood 258-289.

The period of severe liquidation, known as "the rich man's panic," began in October or November, 1902. Under heavy but steady selling the market receded month by month until most of the great gains of 1901 had been lost. The lowest points were 158-175 in October, 1903, and 161-170 in May, 1904.

Another forward movement began while the presidential campaign was in progress, and, as in 1900, the election was followed by an outburst of speculation. This campaign culminated in March, 1905, with prices of 243-264. A decline was followed by a second great "bull" movement which established a record of 265-294 in January, 1906. Once more the spring brought a reaction, and once more the autumn saw an advance. On July 31 the Steel Corporation announced the resumption of dividends upon its common stock, and on August 17 the Union Pacific raised its dividend from 6 to 10 per cent, and the Southern Pacific began paying dividends on its common stock at the rate of 5 per cent. The market responded with an upward rush to 270-287 in September. Thereafter for many months a contest seems to have been waged between two powerful cliques. The efforts to carry prices higher were unavailing. Instead, the level of fluctuations gradually declined until March, 1907, when the market broke disastrously on the 14th and 25th. The range for that month was 193-243. Summer brought no great recovery, and in August another relapse resulted in prices lower than those for March. Recuperation in September was followed by the outbreak of panic in October. Next month the market fell to 149-169—lower than during the troubles of 1903-04, and lower than at any time since 1900; but still above the highest record of 1890-99.

After the crisis of 1893, recovery was slow, and a fresh decline in 1896 reduced prices to a still lower level. After the crisis of 1907, on the contrary, recovery was rather prompt. By January, 1909, the level was higher than in January, 1907. During the rest of the year the trend was upward, and by December the highest previous record—that for January, 1906—had been eclipsed.

In January, 1910, the tide turned once more, and stock prices entered upon another serious decline. Except for a temporary revival in March, the fall continued until July, by which time all the gains scored since October-November, 1908, had been wiped out. The autumn months brought a partial recovery; but the year ended with prices not far from the lowest quotations of 1909. The downward trend was interrupted in 1911 by upward movements in January-February and again in May-June; but the gains were less than the subsequent losses, which culminated in September with prices at about the same level as in July, 1910, but higher than in the spring and summer of 1907.

The general level of prices during these successive periods has been as follows:

	Average price
January, 1890–April, 1893—Before the crisis of 1893 .....	119
May, 1893–June, 1897—Crisis and depression .....	81
July, 1897–September, 1900—Revival of business activity .....	113
October, 1900–October, 1902—Flood tide of prosperity .....	219
November, 1902–July, 1904—The “rich man’s panic” .....	195
August, 1904–February, 1907—Flood tide of prosperity .....	251
March, 1907–September, 1908—Liquidation, crisis and depression .....	193
October, 1908–December, 1909—Revival of business activity .....	268
January, 1910–December, 1911—Reaction .....	251

#### 4. *The Diversity of Fluctuations in the Prices of Common Stocks*

Stock prices have a much wider range of fluctuations than commodity prices. Table 33, which presents the decils for our 40 common stocks, shows margins between the lowest and highest relative prices which average more than twice as great as the corresponding margins in Table 8, which gives the decils for 145 commodities at wholesale.

But though this dispersion of stock prices is wide, it is fairly regular. Greater density toward the middle of the field, narrowing of the margins between the decils under depression and spreading under prosperity, and general agreement between the movements of all the decils, prevail in the case of stocks as in the case of commodities, and show that the very divergencies among the fluctuations are orderly in character. Hence arithmetic means may be accepted as a convenient summary of the whole set of variations.

The stocks which have the highest relative prices in the second decade are in general those which had the lowest actual prices in the first decade. Table 34 gives the evidence in the form of the average relative prices of the seventeen stocks which averaged less than \$25 per share in 1890-99, the thirteen stocks which averaged \$25-99, and the ten stocks which averaged over \$100. The

TABLE 33

DECILS OF THE RELATIVE PRICES OF COMMON STOCKS<sup>71</sup>

40 Stocks. By years, 1890-1911. Average actual prices in 1890-99 = 100

Year	Lowest	1st decil	2d decil	3d decil	4th decil	Median	6th decil	7th decil	8th decil	9th decil	Highest
1890	30	60	92	97	105	109	120	134	146	171	266
1891	30	82	93	98	102	106	114	120	132	149	210
1892	70	96	101	105	111	115	119	125	142	167	210
1893	61	66	85	89	93	95	96	99	102	106	147
1894	40	52	65	73	79	87	91	92	96	100	106
1895	30	53	71	81	87	89	92	94	98	103	121
1896	26	53	64	75	77	81	85	88	92	96	102
1897	12	59	66	80	85	88	90	96	98	101	127
1898	17	61	79	85	89	91	98	105	107	121	178
1899	65	84	97	104	107	116	121	138	147	165	303
1900	60	85	91	102	118	124	129	138	150	195	306
1901	102	125	136	144	160	183	203	231	282	328	488
1902	104	139	149	173	204	218	241	285	342	372	564
1903	94	119	131	155	168	182	196	204	248	285	535
1904	92	104	130	157	165	168	187	208	223	284	522
1905	97	129	159	194	208	240	253	265	306	369	689
1906	94	126	170	199	223	236	271	289	327	444	748
1907	63	88	116	139	166	179	192	223	256	311	610
1908	49	92	117	131	156	169	189	219	257	348	586
1909	58	113	132	160	193	241	284	318	372	512	761
1910	32	97	125	135	165	218	233	256	386	488	817
1911	25	89	113	127	155	184	215	259	378	498	878
Averages											
1890-99	38.1	66.6	81.3	88.7	93.5	97.7	102.6	109.1	116.0	127.9	177.0
1900-09	81.3	112.0	133.1	155.4	176.1	194.0	214.5	238.0	276.3	344.8	580.9

high-priced shares have been most stable in price; but even they have advanced much more than commodities at wholesale.

A geographical arrangement according to the section of the country served by the railways (Table 35) shows differences even greater than those between low-priced and high-priced stocks. All the groups participate in the larger movements of the market. That is, all fall heavily between 1892 and 1896; all regain much more than the lost ground in 1897-02; all fall in 1903; all rise vigorously again in 1904-06; all go down once more in 1907; all move upward sharply in 1909, and finally all decline in 1910-11. But the differences in degree

<sup>71</sup> This table is compiled, not from the extreme, but from the average prices of the several stocks in each year.

TABLE 34

RELATIVE PRICES OF STOCKS CLASSIFIED ACCORDING TO AVERAGE ACTUAL PRICES IN 1890-99

Arithmetic means. By years, 1890-1911. Average actual prices in 1890-99 = 100

Year	Less than \$25 per share	\$25 to \$99 per share	Over \$100 per share
1890	125	127	106
1891	118	115	101
1892	128	126	107
1893	92	92	99
1894	76	77	95
1895	85	79	95
1896	73	72	91
1897	78	84	93
1898	89	98	100
1899	136	129	114
1900	147	130	116
1901	271	186	140
1902	325	221	161
1903	246	187	141
1904	221	192	142
1905	297	248	173
1906	319	265	183
1907	225	214	155
1908	218	214	157
1909	332	271	193
1910	301	260	166
1911	296	253	160
Averages			
1890-99	100	100	100
1900-09	260	213	156

of rise and fall are as striking as the uniformity in direction of movement. The southern, western, and Pacific stocks suffer more severely than the others in 1893-96, and score greater gains in 1897-1902. Between the earlier high record of 1902 and the later of 1909, the coal-carrying and Pacific railway stocks make large gains, the southern moderate gains, and the middle western and northwestern moderate losses, while the Atlantic railway and the express, steamship, and telegraph stocks change but little. On the whole, the last mentioned groups have been the stablest in price, and the Pacific railway stocks the most variable. But, once more, even the stablest group of stocks has risen more in price than have commodities at wholesale.<sup>72</sup>

<sup>72</sup> That these differences in the fluctuations of stocks from different sections of the country are not wholly due to the greater advance in the prices of stocks which were cheap in 1890-99 appears from the following figures:

TABLE 35

RELATIVE PRICES OF SEVEN GROUPS OF TRANSPORTATION STOCKS. BY YEARS, 1890-1911

Arithmetic means. Average actual prices in 1890-99 = 100

Year	5 North Atlantic railways	4 coal-carrying railways	6 Southern railways	8 Middle Western railways	7 North-western railways	5 Pacific railways	5 express, steamship, and telegraph companies
1890	113	117	132	120	105	144	117
1891	108	106	123	118	94	134	108
1892	119	135	114	128	119	139	108
1893	97	97	84	93	92	99	96
1894	89	95	78	83	76	65	89
1895	89	89	82	93	85	68	91
1896	86	88	67	77	78	64	85
1897	90	89	89	76	88	67	91
1898	95	84	98	93	100	87	99
1899	115	99	134	120	164	132	117
1900	110	99	151	123	180	145	108
1901	158	144	259	206	267	259	137
1902	162	181	297	256	332	292	171
1903	133	161	259	188	245	236	151
1904	130	170	250	174	214	240	153
1905	186	255	325	214	281	306	176
1906	177	305	341	227	289	363	178
1907	127	245	269	153	190	320	152
1908	125	270	246	150	192	326	142
1909	159	340	358	201	296	445	177
1910	141	331	349	197	243	406	148
1911	140	328	345	178	244	405	137
Averages							
1890-99	100	100	100	100	100	100	100
1900-09	147	217	276	189	249	293	155

### 5. *The Prices of Preferred Stocks*

Preferred stocks are hybrids—a cross between common stocks and bonds. Their owners have a legal claim to dividends at a certain rate before the common shareholders are allowed any return. Often this prior right is cumulative—any deficiency in the preferred dividend for earlier years must be made good from later profits before dividends can be declared on the common stock.

	Average actual prices, 1890-99	Gain in relative prices, 1890-09
Coal-carrying railways .....	\$103.98	223 points
North Atlantic railways .....	91.92	46 points
Express, steamship, and telegraph companies .....	82.46	60 points
Northwestern railways .....	41.41	191 points
Middle western railways .....	35.58	81 points
Pacific railways .....	33.28	301 points
Southern railways .....	27.08	226 points

A table showing the relative prices of these various groups of stocks by quarters in 1890-1909 may be found in the *Journal of Political Economy*, May, 1910, pp. 377-379.

On the other hand, all of the dividends which remain after the preferred shareholders have received their allotted rate usually go to the common shareholders, so that the latter may receive a larger dividend than the former. Further, the right of voting for directors, and hence the control of the corporation, is frequently vested in the common shareholders alone. These differences between the two kinds of stock give rise to differences in their price fluctuations. It is, therefore, desirable to keep the two kinds separate in an index number of stocks. But it is also desirable to determine the differentiating characteristics of the two sets of fluctuations, and to measure as nearly as may be the varying margin between them.

Such an investigation is best based upon the prices of preferred and common shares in the same corporations; for if preferred shares are taken in one set of companies and common shares in another set the results reflect differences in the financial fortunes of the two sets of companies, as well as differences in the business factors affecting the two types of stock. Accordingly, the following tables are made from data concerning the preferred and common stocks of the ten railways for which the most regular series of quotations could be obtained. The titles of these securities are given in Table 36, and their average relative prices in Table 37.<sup>73</sup>

The general trend of fluctuation in the relative prices of the two types of stocks has been similar. There are but two instances in which the changes from one year to the next have not been in the same direction for preferred and for common stock. Between 1890 and 1891 the preferred stocks fell slightly, while the common stocks showed no change; between 1905 and 1906 the preferred stocks fell one point, while the common rose thirteen points. In every other case the types rose or fell together.

There are, however, notable differences of degree between the two sets of fluctuations. For the first eleven years, indeed, the relative prices keep rather close together. The maximum difference occurs in 1900 and is eleven points. But even during these years of close agreement preferred shares exhibit their characteristic greater stability in price. Common stocks start higher, fall lower, and again rise higher than preferred. Further, the "spread" between the annual averages of the lowest and highest monthly prices is always greater for common stocks.

These differences in degree of rise and fall became much wider with the great stock market "boom" which began in October, 1900. Since 1901 the average relative prices of the common stocks have exceeded the figures for preferred by margins never less than 59 points and in three years running beyond 100 points. That is, the preferred stocks were much less affected by the "boom" than common stocks. They rose, indeed, and rose at a rate rapid.

<sup>73</sup> Corresponding tables by quarters for 1890-1909 may be found in the *Journal of Political Economy*, July, 1910, vol. 18, pp. 516-519. Monthly figures are given in Table 44, below.

in comparison, for example, with the advance in wholesale commodity prices; but common stocks rose more rapidly still. The greater stability of preferred stocks, therefore, stands out more clearly in the last eleven years of the table than in the first eleven years.

TABLE 36

LIST OF PREFERRED AND COMMON STOCKS INCLUDED IN THE FOLLOWING TABLES, AND THEIR AVERAGE ACTUAL PRICES, 1890-99

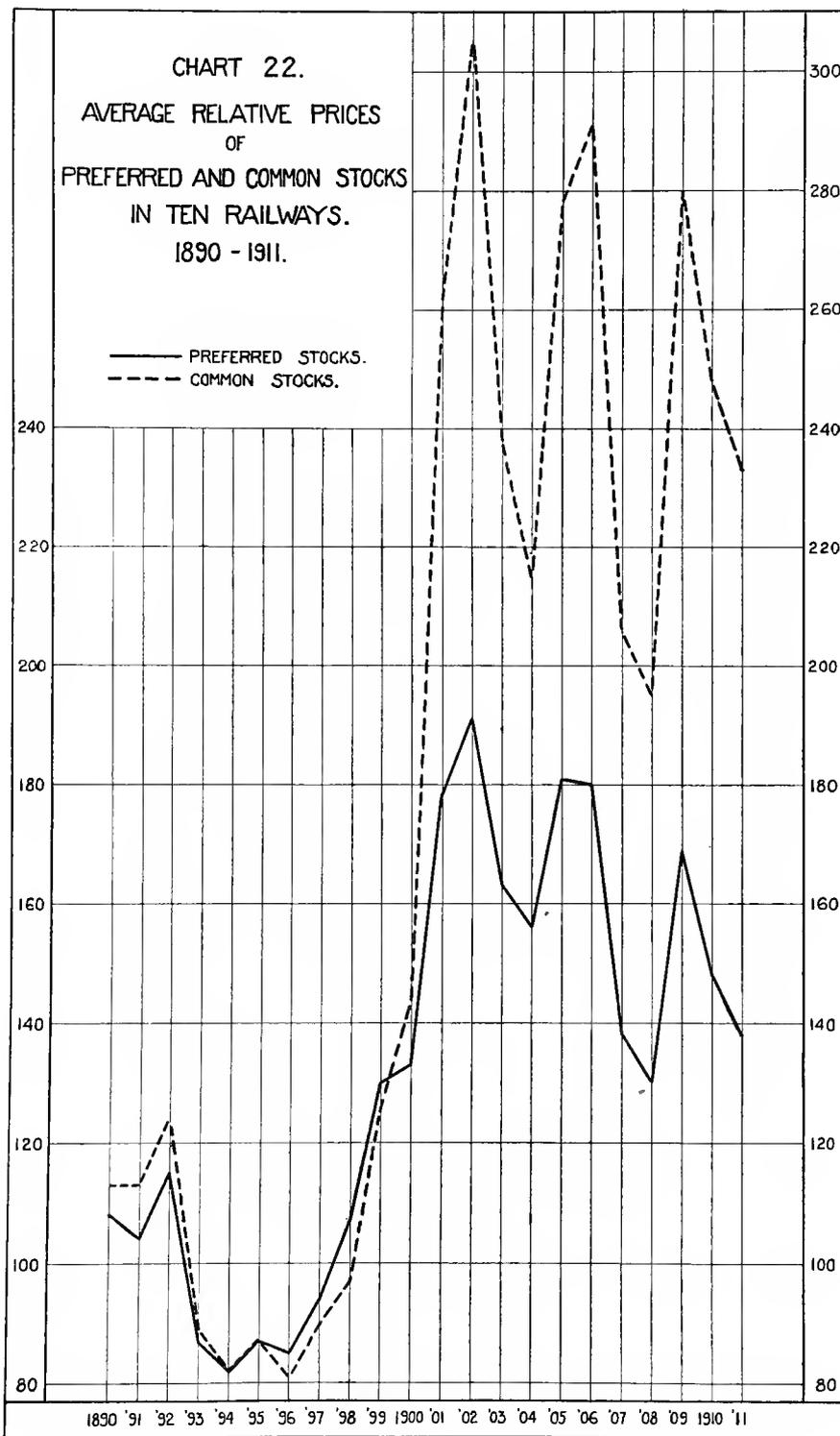
	Average prices, 1890-99		Value of Preferred compared with Common %
	Preferred stock	Common stock	
Chicago, Milwaukee and St. Paul .....	\$130.00	\$79.20	164
Chicago and Northwestern .....	152.50	114.60	133
Cleveland, Cincinnati, Chicago and St. Louis .....	89.10	47.90	186
Denver and Rio Grande .....	48.80	14.90	327
Erie .....	41.80	17.50	239
Iowa Central .....	32.30	9.20	351
Lake Erie and Western .....	69.50	18.30	380
Missouri, Kansas and Texas .....	28.14	13.10	215
Norfolk and Western .....	38.30	12.10	317
Wabash .....	20.10	8.70	231

TABLE 37

RELATIVE PRICES OF PREFERRED AND COMMON STOCKS IN TEN RAILWAYS. BY YEARS, 1890-1911

Average actual prices in 1890-99 = 100. Arithmetic means

Year	Low		High		Spread		Average	
	Preferred	Common	Preferred	Common	Preferred	Common	Preferred	Common
1890	104	106	113	120	9	14	108	113
1891	99	105	109	120	10	15	104	113
1892	111	118	119	129	8	11	115	124
1893	81	82	92	96	11	14	87	89
1894	79	77	85	87	6	10	82	82
1895	83	80	92	94	9	14	87	87
1896	81	76	89	86	8	10	85	81
1897	90	84	98	95	8	11	94	90
1898	103	91	112	102	9	11	107	97
1899	125	118	135	134	10	16	130	126
1900	128	134	138	154	10	20	133	144
1901	169	242	186	283	17	41	178	262
1902	186	290	196	320	10	30	191	305
1903	157	223	169	253	12	30	163	238
1904	152	203	161	226	9	23	156	215
1905	177	266	185	291	8	25	181	278
1906	175	277	185	306	10	29	180	291
1907	133	192	143	220	10	28	138	206
1908	125	182	136	208	11	26	130	195
1909	164	267	174	293	10	26	169	280
1910	143	234	153	262	10	28	148	248
1911	134	224	141	242	7	18	138	233
Averages								
1890-99	96	94	104	106	9	13	100	100
1900-09	157	228	167	255	11	28	162	241



The reasons for this greater stability are found in the differences already pointed out between the rights of preferred and common shareholders. From the investor's standpoint, the prior right to dividends, often coupled with a limitation upon the maximum dividend, promises a more regular return upon purchases of preferred than upon purchases of common stock. On the other hand, common stock is the speculator's favorite, precisely because it promises wider oscillations in price, so that speculative operations doubtless enhance the differences in variability which investment dealing would establish. Finally, contests for control usually center upon common stock, either because it alone carries voting privileges, or because it is cheaper.

Table 38, which gives the dividend record of our ten stocks, shows that the returns upon preferred shares have, in fact, been more regular than the returns upon common shares—except, of course, when no dividends at all have been paid upon the latter.<sup>74</sup>

It is less easy to explain why common stocks advanced so much more than preferred stocks between 1900 and 1901, and why they have since retained most of the lead thus gained. But Table 38 shows that the roads already paying the fixed rate of dividends on their preferred stocks in 1900 soon thereafter became able to begin or to increase the dividends on their common stocks. And Table 39, compiled from the statistical reports of the Interstate Commerce Commission, indicates that this course was the rule. Until the year ending June 30, 1901, the increase in dividends on preferred stocks had been relatively more rapid; thereafter the dividends on preferred stocks were approximately stable, while dividends on common stocks were more than doubled between 1901 and 1907. The more rapid rise of common stocks was favored also by the improvement in the physical condition of the properties, the higher earnings, the livelier speculative interest, and the establishment of communities of interest and purchases for control. These latter factors, not susceptible of statistical measurement, seem to have been more potent than investment considerations. For, purely on an investment basis, Table 38 would hardly justify Northwestern common, for example, in rising between 1900 and 1902 from \$162 to \$234, while Northwestern preferred was rising from \$201 to \$254.

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<sup>74</sup>The data have been taken from the "Investor's Supplement" appended to the annual issues of the *Financial Review*, and checked by *Moody's Manual*. The few discrepancies between these two sources have been settled by reference to the railway reports published in the *Commercial and Financial Chronicle*.

TABLE 38

DIVIDENDS UPON PREFERRED AND COMMON STOCK DECLARED BY THE TEN RAILWAYS LISTED IN TABLE 36  
BY YEARS, 1890-1909

Year	C. M. & St. P.		C. & N. W.		C. C. C. & St. L.		D. & R. G.		Erie	
	Preferred	Common	Preferred	Common	Preferred	Common	Preferred	Common	Preferred	Common
1890	7	0	7	6	5	4	2.75	0	0	0
1891	7	0	7	6	5	3	2.50	0	0	0
1892	7	2	7	6	5	3	0	0	3	0
1893	7	4	7	6	5	3	2	0	0	0
1894	7	4	7	5.5	5	0	0	0	0	0
1895	7	2	7	4	5	0	0	0	0	0
1896	7	4	7	5	5	0	2	0	0	0
1897	7	5	7	5	2.50	0	2	0	0	0
1898	7	5	7	5	5	0	2.50	0	0	0
1899	7	5	7	5	5	0	4	0	0	0
1900	7	5	7	6	5	3	4	0	0	0
1901	7	6	7	6	5	3.50	5	0	1.50	0
1902	7	7	8	7	5	4	5	0	3	0
1903	7	7	8	7	5	4	5	0	3.50	0
1904	7	7	8	7	5	4	5	0	4	0
1905	7	7	8	7	5	4	5	0	4	0
1906	7	7	8	7	5	4	5	0	4	0
1907	7	7	8	7	5	4	5	0	2	0
1908	7	7	8	7	5	1	5	0	0	0
1909	7	7	8	7	5	0	5	0	0	0

Year	Iowa Central		L. E. & W.		M. K. & T.		N. & W.		Wabash	
	Preferred	Common	Preferred	Common	Preferred	Common	Preferred	Common	Preferred	Common
1890	0	0	4	0	0	0	3	0	0	0
1891	0	0	4	0	0	0	3	0	0	0
1892	1	0	4.75	0	0	0	1.50*	0	0	0
1893	0	0	5	0	0	0	0	0	0	0
1894	0	0	5	0	0	0	0	0	0	0
1895	0	0	5	0	0	0	0	0	0	0
1896	0	0	5	0	0	0	0	0	0	0
1897	0	0	5	0	0	0	1	0	0	0
1898	0	0	3.75	0	0	0	3	0	0	0
1899	3	0	0	0	0	0	4	0	0	0
1900	1.50	0	2	0	0	0	4	0	0	0
1901	0	0	4	0	0	0	4	2	0	0
1902	0	0	4	0	0	0	4	2.50	0	0
1903	0	0	4	0	0	0	4	3	0	0
1904	0	0	3	0	0	0	4	3	0	0
1905	0	0	3	0	0	0	4	3.50	0	0
1906	0	0	3	0	4	0	4	4.50	0	0
1907	0	0	3	0	4	0	4	5	0	0
1908	0	0	1	0	4	0	4	4	0	0
1909	0	0	0	0	4	0	4	4.50	0	0

\* Plus 1 per cent in scrip.

TABLE 39  
 DIVIDENDS UPON PREFERRED AND COMMON STOCKS PAID BY INTERSTATE RAILWAYS  
 BY YEARS ENDING JUNE 30, 1891-1907

Years ending June 30	Actual dividends		Relative dividends*	
	Preferred stock Millions	Common stock Millions	Preferred stock	Common stock
1891	\$16.4	\$74.8	82	94
1892	17.9	79.7	90	101
1893	17.3	83.7	87	106
1894	14.0	81.5	70	103
1895	13.9	71.4	70	90
1896	16.2	71.4	81	90
1897	15.8	71.3	79	90
1898	21.5	74.7	108	94
1899	31.1	79.9	156	101
1900	35.2	104.4	177	132
1901	41.7	115.0	209	145
1902	44.0	141.4	221	178
1903	44.5	152.2	223	192
1904	46.2	175.7	232	222
1905	49.1	188.9	246	238
1906	51.6	221.2	259	279
1907	49.7	258.4	249	326

\* Average actual dividends, 1891-1900 = 100. Since 1907 the Commission's reports have not segregated the dividends upon preferred and common stocks. The aggregate sums paid have been as follows:

Year ending June 30, 1908 .....	\$390.7 millions
Year ending June 30, 1909 .....	321.1 millions
Year ending June 30, 1910 .....	405.8 millions

These figures, unlike those for 1890-1907, do not include the returns of switching and terminal companies.

In conclusion, it may not be amiss to show what effect is produced by putting preferred and common shares together in the same index number. Table 40 gives first the index number of forty common stocks from Table 30; second the index number of ten preferred stocks from Table 37; and third an index number of the two sets in combination. The composite series shows a slightly smaller fall from 1890 to 1896, and a decidedly smaller rise after 1900 than is shown by the series for common stocks alone. Despite the larger number of securities entering into the composite series, it is less significant than the index number for forty common stocks, not only because of the mixing of the two types which the preceding tables show to be different in important respects, but also because of the double weighting of the ten railways for which both kinds of stocks are included.

TABLE 40  
RELATIVE PRICES OF FORTY COMMON STOCKS AND OF TEN PREFERRED STOCKS IN TRANSPORTATION COMPANIES.  
BY YEARS, 1890-1911

Average actual prices in 1890-99 = 100. Arithmetic means

Year	40 common stocks	10 preferred stocks	50 common and preferred stocks
1890	121	108	118
1891	113	104	111
1892	123	115	121
1893	93	87	92
1894	82	82	82
1895	85	87	86
1896	77	85	79
1897	84	94	86
1898	94	107	97
1899	128	130	129
1900	134	133	134
1901	211	178	204
1902	250	191	238
1903	201	163	193
1904	192	156	185
1905	250	181	236
1906	267	180	250
1907	204	138	191
1908	201	130	187
1909	277	169	255
1911	248	138	226
Averages			
1890-99	100	100	100
1900-09	219	162	207

### 6. *The Prices of Stocks, Bonds, and Commodities*

The usual method of constructing index numbers by turning actual prices into percentages and averaging the latter cannot be applied to bonds. For, unlike staple commodities and standard stocks, all bonds which terminate in a given year are constantly changing their net values through mere lapse of time. The thing valued in the bond is the expectation of a specified annual payment for a specified number of years, coupled with repayment of the principal sum at the date of maturity. As this number of years grows less with each passing season, the thing valued changes. Bond market quotations, therefore, represent changing prices of goods which themselves are changing. Of course, the relative prices of such changing goods cannot fairly be compared with the relative prices of shares in continuous business enterprises or of substantially uniform commodities.

But an approximately accurate series of relative bond prices can be constructed by an indirect method. The preceding tables of bond yields show for each year the annual payments for which investors have been willing to lend \$100 to certain borrowers under specific agreements as to security, etc. The principal is fixed, the interest variable. But the conditions may be reversed and the principal treated as variable, the interest as fixed. That is, the problem may be stated in the form: How large a loan have investors been willing to make in each successive year in return for annual payments of some given amount, such as the average net yields for 1890-99? The problem is solved by dividing the average net yields for the decade by the average net yields for each month or year.

For example: In 1890-99 men who bought the bonds of the Chesapeake and Ohio Railway, secured by a first consolidated mortgage, required net annual interest payments averaging \$4.70 for each \$100 invested. But in 1890 they required \$5.09 per annum for each \$100 put into these bonds. Had the railway offered them interest at the rate of \$4.70 in this year they would have lent it a principal sum represented by the equation  $100 (\$4.70 \div \$5.09) = \$92.34$ . In this fashion one may compute for each month and year the sums which investors showed themselves ready to lend to each of the railways in return for fixed interest payments. And these sums may be regarded as the relative prices of bonds bearing a uniform rate of interest, and having no fixed period of termination. Further, these relative prices of bonds are fairly comparable with the relative prices of stocks and commodities computed on the basis of average actual prices in 1890-99.<sup>75</sup>

Table 41 has been made in this manner to show the relative prices of each of the ten bonds described in Table 18. While no two of the bonds have agreed perfectly in their price fluctuations, the notable feature of the table is the narrowness of the range between the highest and lowest relative prices. It would be difficult to find ten staple commodities which have kept so close together in the last twenty years. The ten common and ten preferred stocks included in the preceding section of this chapter have differed far more in relative prices than have the ten bonds.

Among the latter, those which have fluctuated through the widest range are, of course, the bonds which improved most in credit between 1893 and 1902. The poorest bonds have made the best investments and the best bonds the poorest. Not only have the poorer securities yielded higher net returns on their cost prices year by year (Table 19), but they have also been salable on more advantageous terms—bringing decidedly higher profits until 1902, and somewhat smaller losses since then. These higher returns, however, have been obtained by running greater risks.

<sup>75</sup> The tables of the relative prices of bonds were computed by Mrs. John Spasoff (Miss Mansfield Everett).

A comparison between index numbers for bonds, stocks, and commodities is made in Table 42. The series for United States bonds is made in the manner described from the net yields shown in Table 20. The first series for stocks shows the average relative prices of ten stocks which have paid dividends in each year since 1890.<sup>76</sup> The next three series for stocks are adapted from tables 30 and 37, and that for commodities from Table 9. Table 44 carries out the comparison between the relative prices of bonds and stocks by months.<sup>77</sup> It is preceded by a summary, Table 43, in which the monthly figures are averaged, as in Table 26, according to the successive phases of the business cycles which have run their course in America since 1890.

The following are the chief differences shown by these tables between the fluctuations in the prices of bonds, stocks, and commodities: (1) With the exception of the erratic series for United States 4s, bonds are steadier in price than stocks or commodities—showing higher minima in 1890-99 and lower maxima in 1900-09. (2) Bonds rise, while stocks and commodities fall, in the periods of depression following the crises of 1893 and 1907. (3) Bonds reach their highest levels in 1901-02, while common stocks and commodities mount still higher in 1906, 1907, or 1909. (4) While the level upon which bonds fluctuate is somewhat higher in the second decade than in the first, there is no such marked contrast as in the case of stocks. (5) At the end of the period, bond prices show trifling losses or moderate gains in comparison with 1890, while all the series for stocks show large gains. Even the index number for commodities marks a greater advance than the average for bonds.

The greater steadiness of bond prices requires little comment. Dividends vary, interest is fixed. The ten bonds of these tables have paid the same average return of 4.06 per cent upon their par value every year since 1890, while the average dividends upon the ten dividend-paying stocks included in Table 42 have varied as follows:

	Per cent	Per cent	Per cent	Per cent			
1890.....	6.45	1895.....	5.88	1900.....	5.95	1905.....	7.00
1891.....	6.40	1896.....	5.90	1901.....	6.30	1906.....	7.10
1892.....	6.53	1897.....	5.38	1902.....	6.90	1907.....	7.70
1893.....	6.50	1898.....	5.60	1903.....	6.90	1908.....	7.63
1894.....	6.35	1899.....	5.60	1904.....	6.90	1909.....	7.60

<sup>76</sup> The common stocks of the Central Railroad of New Jersey, Chicago and Northwestern, Delaware and Hudson, Illinois Central, New York Central, New York, New Haven and Hartford, and the American Express Company, together with the preferred stocks of the Chicago, Milwaukee and St. Paul, Chicago and Northwestern, and Cleveland, Cincinnati, Chicago and St. Louis. Unfortunately the number of stocks with clear dividend records is not large enough to permit the computation of significant averages for common and preferred stocks separately.

<sup>77</sup> The average relative prices of ten railway bonds in Table 41 are arithmetic means of the corresponding figures for each of the ten bonds. A trial showed that substantially the same results are obtained by dividing the average yields of all the bonds in 1890-99 by their average yield for each year. Since the latter method of computation is far less laborious, I have adopted it in working out the monthly figures of Table 44. The discrepancies, produced by this difference in method, between the figures of Table 41 and the annual averages which may be struck from the figures of Table 44 are negligible.

TABLE 41

RELATIVE PRICES OF TEN AMERICAN RAILWAY BONDS. BY YEARS, 1890-1911

Arithmetic means. Average actual prices in 1890-99 = 100

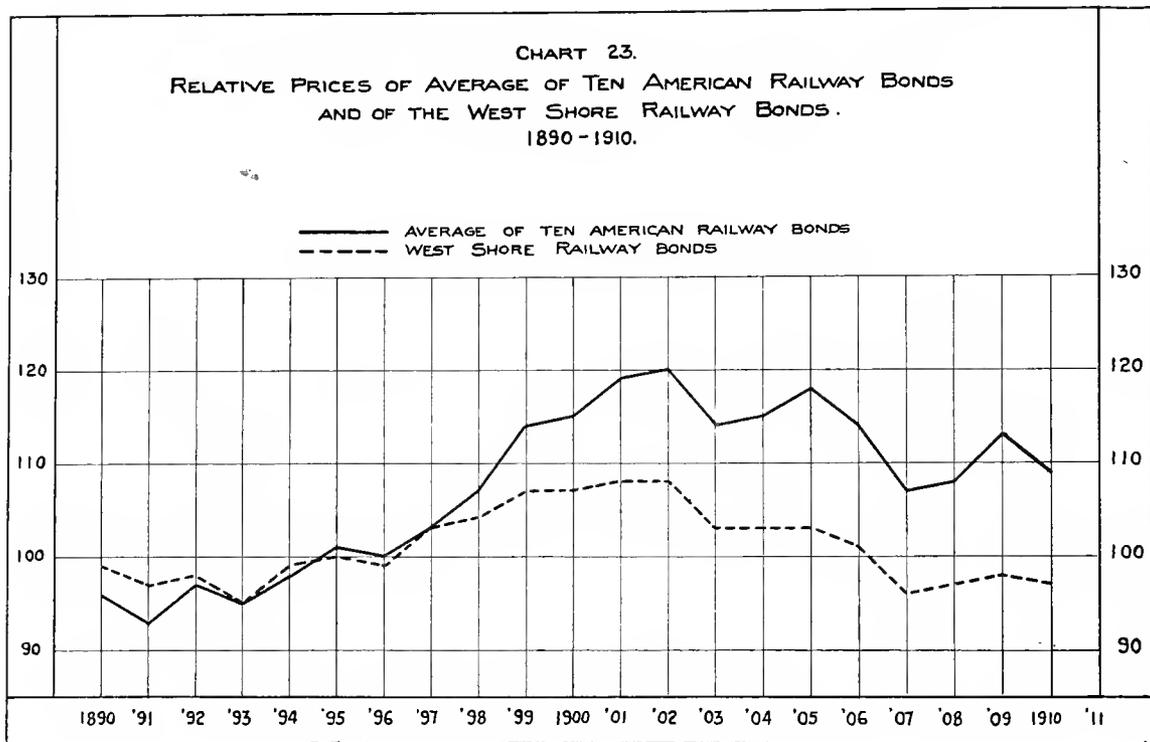
Year	C. & E. I.	M. K. & T.	Wabash	C. & O.	C. St. P. M. & O.	C. B. & Q.	C. R. R. of N. J.	C. M. & St. P.	N. Y. C. & St. L.	W. S. R. R.	Averages		
											1st five	2d five	All
1890	95.6	94.4	95.6	92.3	92.8	100.1	97.9	97.0	92.2	98.6	94.1	97.2	95.7
1891	94.9	93.5	94.3	92.0	91.0	92.1	96.6	88.9	91.3	96.6	93.1	93.1	93.1
1892	99.6	97.4	99.2	96.9	95.1	95.8	98.3	94.9	96.6	98.1	97.6	96.7	97.2
1893	97.1	94.9	96.4	94.0	92.6	91.8	96.9	96.4	93.9	95.2	95.0	94.8	94.9
1894	97.4	97.4	98.8	98.9	99.4	96.0	101.3	95.5	99.9	98.9	98.4	98.3	98.4
1895	98.8	103.1	101.1	102.4	101.0	97.7	102.2	97.2	104.3	100.2	101.3	100.3	100.8
1896	97.8	99.7	99.4	99.6	99.0	94.4	102.6	99.5	103.8	99.4	99.1	99.9	99.5
1897	99.8	102.6	100.2	104.9	107.6	100.5	99.7	107.5	106.8	102.9	103.0	103.5	103.3
1898	106.3	107.4	105.1	109.6	111.8	111.4	99.9	111.2	106.2	103.7	108.0	106.5	107.3
1899	115.9	113.0	112.0	114.1	115.9	130.6	105.3	118.6	108.8	107.5	114.2	114.2	114.2
1900	117.3	111.5	113.6	114.1	112.6	132.5	109.5	118.0	108.8	107.2	113.8	115.2	114.5
1901	128.4	119.4	117.0	117.5	120.2	133.3	116.9	118.6	110.3	108.1	120.5	117.4	119.0
1902	130.4	121.2	117.2	117.2	120.8	129.5	122.7	121.3	108.2	107.8	121.3	117.9	119.6
1903	120.7	118.8	112.5	112.2	112.6	122.8	116.0	115.1	103.8	103.4	115.4	112.2	113.8
1904	122.2	120.9	115.0	114.1	114.2	121.8	117.9	115.7	105.4	102.9	117.3	112.7	115.0
1905	126.8	123.6	117.0	116.3	121.5	125.6	120.7	118.6	106.5	103.4	121.0	115.0	118.0
1906	123.4	121.8	112.5	114.6	116.0	119.9	114.5	114.8	105.7	100.7	117.6	111.1	114.4
1907	112.8	115.7	103.7	105.6	107.8	111.1	103.4	107.8	99.2	96.4	109.1	104.6	106.9
1908	115.7	118.2	103.1	108.8	110.1	112.2	110.3	108.4	99.9	96.9	111.2	105.5	108.4
1909	121.0	122.4	112.5	113.8	116.6	115.1	114.5	110.0	102.5	98.4	117.3	108.1	112.7
1910	115.7	120.3	107.9	110.6	111.2	111.1	110.8	105.7	99.9	96.6	113.1	104.8	109.0
1911	115.1	119.1	106.0	110.3	111.5	110.3	109.7	105.2	100.2	96.4	112.4	104.4	108.4
Averages													
1890-99	100.0	100.0	100.0	100.0	101.0	101.0	100.0	101.0	100.0	100.0	100.0	101.0	100.0
1900-09	122.0	119.0	112.0	113.0	115.0	122.0	115.0	115.0	105.0	103.0	116.0	112.0	114.0

TABLE 42  
 RELATIVE PRICES OF BONDS, STOCKS, AND COMMODITIES. BY YEARS, 1890-1911  
 Arithmetic means. Average actual prices in 1890-99 = 100

Year	Bonds			Stocks				Commodities
	United States 4s of 1907 and 1925	West Shore R. R.	Average of 10 railway bonds	10 dividend paying stocks	Preferred stocks in 10 railways	Common stocks in 10 railways	Common stocks in 40 transportation companies	145 staples
1890	114	99	96	104	108	113	121	114
1891	104	97	93	100	104	113	113	113
1892	99	98	97	105	115	124	123	106
1893	91	95	95	96	87	89	93	105
1894	99	99	98	94	82	82	82	96
1895	96	100	101	95	87	87	85	93
1896	88	99	100	92	85	81	77	89
1897	101	103	103	94	94	90	84	89
1898	103	104	107	102	107	97	94	93
1899	112	107	114	118	130	126	128	103
1900	127	107	115	121	133	144	134	111
1901	140	108	119	142	178	262	211	110
1902	140	108	120	157	191	305	250	114
1903	139	103	114	136	163	238	201	114
1904	132	103	115	136	156	215	192	114
1905	138	103	118	158	181	278	250	116
1906	135	101	114	159	180	291	267	122
1907	127	96	107	129	138	206	204	130
1908	113	97	108	126	130	195	201	121
1909	110	98	113	150	169	280	277	124
1910	101*	97	109	142	148	248	254	131
1911	103*	96	108	137	138	233	248	128†
Averages 1890-99	100	100	100	100	100	100	100	100
1900-09	130	102	114	141	162	241	219	118

\* Computed from average yields of January, April, July, and October, as given by the *Report of the Comptroller of the Currency, 1911, p. 823.*

† Estimated.



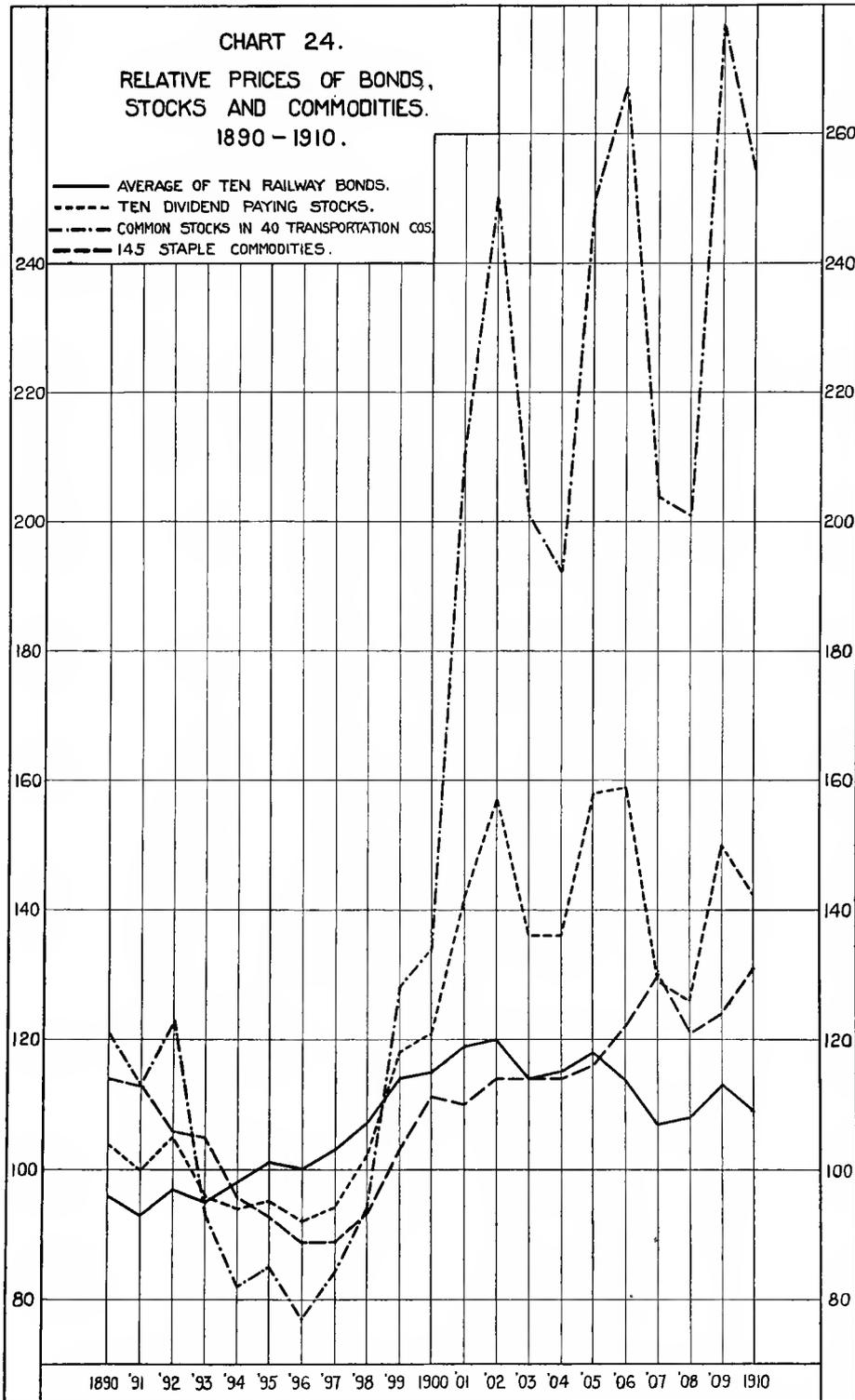


TABLE 43

RELATIVE PRICES OF BONDS AND STOCKS IN SEASONS OF BUSINESS PROSPERITY, CRISIS, AND DEPRESSION, 1890-1911

	Bonds		Stocks		
	W. S. R. R.	Av. of 10 railroad bonds	Av. of 10 preferred stocks	Av. of 10 common stocks	Av. of 40 common stocks
January, 1890-July, 1890—Prosperity .....	100	97	113	123	131
August, 1890-December, 1890—Minor crisis .....	97	94	103	108	115
January, 1891-July, 1891—Depression .....	97	93	100	103	107
August, 1891-August, 1892—Prosperity .....	98	96	115	127	123
September, 1892-October, 1893—Approach of crisis..	97	97	106	112	116
May, 1893-October, 1893—Major crisis .....	94	93	78	80	84
November, 1893-March, 1895—Severe depression .....	99	98	81	82	81
April, 1895-September, 1895—Revival .....	100	102	93	94	91
October, 1895-June, 1896—Renewed depression .....	100	101	88	84	82
July, 1896-October, 1896—Free silver campaign .....	98	97	79	74	71
November, 1896-June, 1897—Depression .....	102	102	86	83	77
July, 1897-February, 1898—Revival .....	104	105	103	98	93
March, 1898-April, 1898—Spanish war impending .....	101	104	98	85	87
May, 1898-September, 1899—Prosperity .....	106	111	121	113	113
October, 1899-December, 1899—Minor crisis .....	107	113	132	127	133
January, 1900-September, 1900—Slight depression ..	107	114	131	138	130
October, 1900-October, 1902—Prosperity .....	108	119	180	269	219
November, 1902-July, 1904—“Rich man’s panic” .....	103	114	162	228	195
August, 1904-August, 1905—Revival .....	103	118	177	263	232
September, 1905-September, 1906—Prosperity .....	102	116	182	290	265
October, 1906-September, 1907—Approach of crisis..	98	110	157	242	231
October, 1907-December, 1907—Major crisis .....	93	101	122	161	166
January, 1908-September, 1908—Severe depression ..	97	107	124	184	190
October, 1908-December, 1909—Revival .....	98	112	166	272	269
January, 1910-December, 1911—Reaction .....	97	109	143	241	251

TABLE 44

RELATIVE PRICES OF BONDS AND STOCKS. BY MONTHS, 1890-1911

	Bonds		Stocks		
	W. S. R. R.	Av. of 10 railroad bonds	Av. of 10 preferred stocks	Av. of 10 common stocks	Av. of 40 common stocks
1890 January	99.9	97.7	113.5	122.5	129.5
February	100.2	97.0	112.0	115.0	126.0
March	99.9	96.6	107.5	112.5	123.5
April	99.7	97.3	111.5	115.5	127.0
May	99.7	97.3	119.0	136.5	139.0
June	99.9	97.1	111.5	133.0	136.0
July	99.4	96.4	114.0	127.5	132.5
August	98.6	95.4	112.0	121.0	130.0
September	98.6	94.7	111.0	119.5	124.5
October	97.9	94.7	104.0	109.5	116.0
November	95.9	92.3	93.5	97.0	104.0
December	94.7	90.9	92.0	93.5	99.0

TABLE 44—(Continued)

		Bonds		Stocks		
		W. S. R. R.	Av. of 10 railroad bonds	Av. of 10 preferred stocks	Av. of 10 common stocks	Av. of 40 common stocks
1891	January	97.1	93.5	99.0	103.5	107.5
	February	97.6	93.8	101.0	104.0	109.0
	March	97.1	92.8	96.5	96.0	104.5
	April	97.1	93.2	103.0	106.0	110.5
	May	96.6	92.6	103.5	108.5	110.5
	June	95.9	91.6	98.5	102.5	105.5
	July	95.4	91.5	95.5	98.5	102.5
	August	95.7	92.2	101.0	109.5	110.0
	September	96.9	93.1	114.0	129.5	124.0
	October	95.9	93.6	113.0	134.0	125.0
	November	96.2	94.0	107.5	123.0	119.0
	December	96.9	95.3	115.5	134.5	125.0
1892	January	98.1	96.7	123.0	138.5	128.0
	February	98.4	97.3	124.0	134.5	126.5
	March	98.1	97.0	123.5	133.0	125.5
	April	98.1	97.4	119.0	130.5	124.5
	May	98.9	98.3	115.5	124.0	122.5
	June	99.1	98.4	113.5	118.5	120.5
	July	98.4	97.7	113.5	119.5	122.5
	August	98.4	97.3	114.5	123.0	125.0
	September	97.6	96.7	108.5	113.5	118.5
	October	97.4	97.0	110.5	118.5	123.0
	November	98.1	96.7	108.5	117.5	119.5
	December	97.6	96.3	105.0	111.0	115.5
1893	January	97.1	97.1	108.0	115.0	119.0
	February	97.4	98.1	105.0	111.0	114.5
	March	96.4	97.3	99.5	103.5	107.5
	April	95.2	97.3	101.0	104.0	109.0
	May	95.0	95.7	89.0	92.0	95.0
	June	94.5	94.4	82.5	84.0	87.5
	July	92.4	91.4	69.5	71.0	76.5
	August	90.9	88.9	69.5	71.5	74.5
	September	93.1	92.3	77.0	78.0	82.0
	October	95.2	93.9	78.0	83.5	85.5
	November	97.4	96.5	81.5	85.5	87.0
	December	97.6	97.0	81.5	83.0	83.5
1894	January	97.1	96.3	79.0	80.5	82.0
	February	98.1	97.2	80.5	82.5	83.5
	March	98.6	98.2	85.5	85.5	87.0
	April	99.7	99.1	89.0	90.5	89.0
	May	98.6	98.9	84.0	84.0	82.0
	June	98.6	98.3	78.5	79.5	77.5
	July	98.6	97.6	82.0	76.0	75.0

## MEMOIRS OF THE UNIVERSITY OF CALIFORNIA

TABLE 44—(Continued)

	Bonds		Stocks		
	W. S. R. R.	Av. of 10 railroad bonds	Av. of 10 preferred stocks	Av. of 10 common stocks	Av. of 40 common stocks
1894 August	98.9	98.1	83.5	84.5	81.0
September	99.1	98.8	86.0	88.5	84.0
October	99.7	99.1	79.5	81.0	80.5
November	100.2	99.5	81.5	82.0	80.5
December	99.9	99.0	78.5	77.0	78.0
1895 January	99.9	98.5	76.5	72.5	74.0
February	99.1	97.2	74.5	71.5	73.0
March	99.9	97.4	75.0	73.0	73.5
April	99.7	98.4	83.0	82.0	80.0
May	99.7	100.5	90.0	93.0	87.5
June	100.2	102.2	93.5	93.5	91.0
July	100.4	102.7	95.5	96.0	93.0
August	101.2	103.4	97.5	98.5	95.0
September	101.5	103.7	98.0	100.0	96.5
October	100.7	102.9	96.5	96.0	93.0
November	101.0	102.1	90.0	89.0	86.0
December	99.7	100.4	82.5	76.5	77.5
1896 January	99.9	99.6	81.0	78.5	77.0
February	100.7	101.1	89.0	87.0	83.0
March	100.4	101.1	90.0	82.0	80.5
April	100.4	101.0	91.0	82.5	84.0
May	99.9	101.6	88.5	80.0	79.5
June	100.2	101.3	87.5	82.5	79.5
July	98.4	98.3	79.0	72.5	71.0
August	96.4	95.0	73.0	68.0	65.5
September	97.9	96.5	80.0	76.5	72.5
October	98.1	97.1	82.0	80.5	75.0
November	99.1	100.1	91.0	92.0	84.5
December	100.7	101.1	86.0	85.5	79.5
1897 January	101.2	101.5	87.0	86.0	79.5
February	102.0	102.1	87.5	82.0	76.5
March	101.2	101.9	86.0	84.0	76.5
April	102.6	101.3	80.5	75.5	72.0
May	102.6	101.6	84.5	75.5	72.0
June	103.1	102.6	88.0	82.0	77.0
July	104.6	103.8	92.5	86.5	83.0
August	103.1	104.0	103.5	102.0	93.0
September	102.6	103.8	111.0	109.0	99.5
October	102.6	103.7	104.5	101.0	95.5
November	104.3	104.6	98.0	92.5	90.0
December	104.8	105.8	103.0	97.5	93.5

TABLE 44—(Continued)

		Bonds		Stocks		
		W. S. R. R.	Av. of 10 railroad bonds	Av. of 10 preferred stocks	Av. of 10 common stocks	Av. of 40 common stocks
1898	January	104.3	107.3	106.0	97.5	96.0
	February	104.6	107.9	107.5	96.5	94.5
	March	103.1	104.9	99.5	87.0	87.5
	April	99.7	102.5	96.0	83.0	86.0
	May	101.2	105.2	103.0	92.5	92.0
	June	102.9	107.0	108.0	97.0	97.5
	July	103.7	107.8	107.5	95.5	95.0
	August	104.3	108.5	113.0	104.5	98.5
	September	104.0	107.8	113.5	102.0	97.5
	October	104.3	108.1	106.5	94.0	96.5
	November	105.1	109.1	111.5	100.0	97.5
	December	106.0	110.2	120.0	111.5	109.0
1899	January	106.6	112.3	127.0	120.5	121.0
	February	106.9	112.9	129.0	126.0	125.5
	March	107.5	113.0	127.0	123.0	123.5
	April	108.1	114.1	129.5	126.0	125.5
	May	108.1	115.0	124.5	121.5	124.0
	June	109.3	116.0	125.5	120.5	122.0
	July	109.6	115.7	131.0	126.5	129.0
	August	109.0	115.5	136.5	133.0	136.0
	September	106.9	114.5	136.5	132.0	135.5
	October	106.9	113.5	134.0	128.5	133.5
	November	107.2	113.4	136.5	132.5	137.5
	December	105.4	111.8	126.5	121.0	126.5
1900	January	106.9	112.5	128.0	123.5	128.0
	February	108.4	114.1	131.5	128.5	131.0
	March	107.5	114.3	135.0	141.0	135.5
	April	108.1	115.3	139.0	150.5	140.0
	May	106.6	114.4	133.5	143.0	132.0
	June	107.5	113.7	128.5	139.0	126.5
	July	106.9	113.6	128.0	137.5	128.0
	August	106.3	113.6	127.5	138.5	127.5
	September	106.9	114.0	125.5	137.0	122.0
	October	106.9	113.8	129.0	145.5	131.5
	November	107.2	115.3	137.0	160.5	143.5
	December	108.4	116.9	150.0	188.0	159.5
1901	January	109.0	117.7	159.5	202.5	169.0
	February	109.6	119.1	165.5	217.0	177.5
	March	110.0	120.2	173.0	243.0	192.5
	April	109.0	119.6	182.0	269.0	212.5
	May	107.8	119.1	172.0	257.5	204.0
	June	107.8	119.2	188.0	286.5	228.5
	July	107.2	118.6	181.5	267.0	215.5
	August	107.8	118.3	180.0	271.0	218.0

TABLE 44—(Continued)

		Bonds		Stocks		
		W. S. R. R.	Av. of 10 railroad bonds	Av. of 10 preferred stocks	Av. of 10 common stocks	Av. of 40 common stocks
1901	September	107.5	118.0	182.0	282.5	223.5
	October	106.9	118.3	180.5	280.0	222.0
	November	106.9	119.1	185.5	293.0	233.0
	December	107.5	119.2	183.5	280.0	228.5
1902	January	107.5	119.9	184.5	285.5	232.0
	February	107.2	120.2	188.5	293.0	237.5
	March	107.5	120.5	188.5	296.0	238.5
	April	107.5	121.2	192.5	304.5	248.5
	May	108.1	121.2	197.0	299.0	248.5
	June	108.4	120.7	200.5	303.5	253.0
	July	109.0	120.4	197.5	313.0	258.5
	August	108.7	119.4	203.5	331.0	271.5
	September	108.4	118.8	199.0	334.0	273.5
	October	107.5	118.2	191.5	317.5	259.0
	November	106.9	118.1	188.0	298.0	246.5
	December	106.0	117.1	184.5	281.0	237.0
1903	January	105.4	117.3	187.5	307.5	251.5
	February	105.7	117.2	188.5	303.5	249.5
	March	105.1	115.5	186.5	282.0	233.5
	April	103.7	114.3	179.0	265.0	220.0
	May	103.7	114.9	173.0	260.0	213.0
	June	103.7	113.5	168.5	228.5	193.5
	July	102.9	112.4	154.5	218.0	184.5
	August	102.9	110.9	152.0	204.0	175.0
	September	102.9	111.1	148.5	198.0	171.5
	October	101.5	112.7	141.5	191.5	166.5
	November	101.5	113.4	146.5	191.5	168.0
	December	102.3	113.4	152.0	205.0	179.0
1904	January	102.9	113.9	156.0	205.5	184.0
	February	103.4	113.6	147.0	194.0	175.0
	March	102.6	113.1	148.5	192.5	171.0
	April	102.0	113.8	152.0	196.5	172.5
	May	102.3	114.1	147.5	187.0	165.5
	June	102.3	114.3	143.5	183.5	167.5
	July	102.9	115.7	155.5	195.0	177.5
	August	102.9	115.9	156.5	210.5	190.5
	September	102.9	116.0	162.0	230.0	203.0
	October	103.1	116.6	169.0	250.0	217.5
	November	103.1	117.0	176.5	267.5	229.5
	December	103.4	117.2	178.0	266.0	230.5
1905	January	103.7	117.8	181.0	274.5	236.5
	February	104.0	118.3	185.0	284.0	247.5
	March	103.4	118.2	186.0	290.0	253.5

TABLE 44—(Continued)

		Bonds		Stocks		
		W. S. R. R.	Av. of 10 railroad bonds	Av. of 10 preferred stocks	Av. of 10 common stocks	Av. of 40 common stocks
1905	April	103.4	118.2	181.0	277.0	245.0
	May	102.9	118.0	174.0	256.5	230.5
	June	103.1	118.0	177.5	258.0	232.5
	July	103.7	118.3	182.0	270.0	243.5
	August	104.0	118.6	188.5	283.5	256.0
	September	103.7	118.1	184.0	286.5	259.0
	October	103.7	117.9	187.5	285.5	261.5
	November	102.9	117.8	180.5	284.0	261.5
	December	102.3	117.0	188.0	290.5	266.5
1906	January	103.1	117.2	187.0	311.5	279.5
	February	102.3	116.7	186.0	304.5	271.5
	March	101.8	115.7	185.5	295.0	264.5
	April	101.2	115.1	180.5	288.0	261.0
	May	100.7	114.7	176.5	278.0	254.5
	June	101.0	114.3	184.0	282.0	259.0
	July	100.7	114.1	179.0	274.0	253.0
	August	99.9	113.5	173.5	295.0	272.0
	September	99.7	113.1	177.0	295.5	278.5
	October	99.9	113.4	184.0	291.0	274.5
	November	99.7	113.3	184.0	291.5	270.5
	December	99.7	112.6	173.5	290.5	270.0
1907	January	99.4	112.5	171.5	270.0	256.5
	February	99.4	111.9	164.0	256.5	243.0
	March	97.4	109.5	147.5	225.5	218.0
	April	97.9	109.1	144.5	220.5	216.5
	May	97.9	109.2	142.5	209.5	206.5
	June	98.1	107.9	153.0	213.5	205.0
	July	97.1	107.9	149.5	224.5	215.0
	August	95.9	106.7	147.5	208.0	197.0
	September	95.4	105.6	123.0	205.0	197.0
	October	94.5	103.3	126.0	169.5	171.5
	November	90.9	99.5	117.5	152.5	159.0
	December	92.9	101.6	123.5	161.5	167.0
1908	January	95.9	105.8	124.5	166.5	174.5
	February	96.4	106.4	102.5	152.0	159.5
	March	95.4	105.6	120.5	158.0	170.0
	April	95.4	106.8	119.5	171.0	181.0
	May	95.7	108.0	119.0	191.5	198.5
	June	97.4	107.6	125.5	200.5	199.5
	July	97.6	107.7	133.5	208.0	206.0
	August	97.6	109.2	135.0	204.5	211.5
	September	97.6	109.7	134.0	203.0	212.5
	October	97.4	110.3	138.5	211.5	217.0
	November	97.4	111.3	149.0	238.0	238.0
	December	97.9	112.1	160.5	259.5	252.0

## MEMOIRS OF THE UNIVERSITY OF CALIFORNIA

TABLE 44—(Concluded)

		Bonds		Stocks		
		W. S. R. R.	Av. of 10 railroad bonds	Av. of 10 preferred stocks	Av. of 10 common stocks	Av. of 10 common stocks
1909	January	98.9	113.2	164.5	269.0	259.0
	February	99.4	113.7	156.0	262.5	253.0
	March	98.9	113.6	161.5	262.0	257.5
	April	98.9	113.5	172.5	279.0	272.0
	May	98.6	113.6	168.5	282.0	278.0
	June	97.9	112.9	173.0	284.5	283.5
	July	98.1	113.0	173.0	285.0	281.0
	August	98.1	112.9	181.0	289.5	285.0
	September	97.4	112.2	169.5	281.5	282.0
	October	98.1	111.9	174.5	301.5	289.5
	November	98.6	111.2	178.5	283.5	288.5
	December	97.6	111.2	172.0	295.5	295.5
1910	January	97.1	111.1	167.7	284.3	280.0
	February	97.1	110.8	156.2	262.8	263.5
	March	96.4	110.0	160.8	278.2	278.5
	April	96.2	109.2	156.6	266.5	265.5
	May	95.9	108.4	154.0	260.0	262.0
	June	96.9	107.9	146.0	237.8	249.0
	July	96.2	107.4	136.8	217.4	232.5
	August	96.6	107.6	138.9	227.4	239.0
	September	96.9	109.2	150.5	229.7	238.5
	October	96.9	109.5	145.5	242.9	256.5
	November	96.6	108.9	120.4	238.5	254.5
	December	96.6	108.7	140.7	242.6	249.0
1911	January	96.9	109.1	141.2	254.3	254.0
	February	96.4	109.0	156.5	243.6	258.5
	March	96.4	108.5	153.2	255.9	258.0
	April	96.2	108.6	158.3	234.7	254.5
	May	96.6	108.9	145.8	238.7	256.0
	June	96.6	108.9	144.9	248.0	265.0
	July	96.6	108.8	142.0	244.5	260.0
	August	95.9	108.7	136.6	227.4	247.0
	September	95.7	108.2	132.3	215.8	233.0
	October	95.9	107.5	134.5	222.4	239.0
	November	96.2	108.0	120.7	229.2	245.5
	December	96.6	110.1	126.0	233.1	246.0

Moreover, the owners of many high-priced stocks have derived a considerable irregular gain in addition to dividends from the privileges accorded them from time to time of subscribing for new issues of stock on highly profitable terms.<sup>78</sup> Upon the other stocks included in the table dividends, when paid at all, have been much more variable. Even among the ten preferred stocks only three have yielded dividends every year.<sup>79</sup> The general situation is best shown by Table 45, which compares the amounts per mile of line paid by the interstate railways as interest upon funded debt, and as dividends.<sup>80</sup> The broad differences between the relatively stable interest payments and the highly variable dividend disbursements go far toward accounting for the differences between the courses pursued by the prices of bonds and stocks.

On a purely investment basis, therefore, stocks should fluctuate more violently than bonds. In addition, considerations other than those of an investor intent upon income and safety are a more potent factor in the stock than in the bond market. Speculation, manipulation, contests for control, etc.—all the transactions which produce fluctuations not warranted by changes in the incomes yielded by securities—are primarily phenomena of the stock exchange, and touch the bond market but indirectly. In proportion as stocks become firmly established as “dividend-payers,” however, their prices come increasingly under the control of investment considerations and approximate more closely the steadiness of bond prices. It is partly for this reason that preferred stocks fluctuate less than common stocks, and mainly for this reason that the ten dividend-paying stocks in Table 42 fluctuate less than the ten preferred.

The failure of bonds to match stocks in attaining a much higher level of prices in the second decade is a particular aspect of the general difference in stability, which merits especial attention. The salient facts upon which an explanation must proceed are brought out by Table 45.

The fiscal years 1893-97 were disastrous to American railways. The table shows the loss of nearly half the net income of 1892, the cutting of dividends, and the slow reduction of interest charges. Common stocks bore the brunt of these bad years and fell heavily in price. Preferred stocks, though less affected than common, fell more than commodities at wholesale. Even the strongest dividend-paying stocks dropped from 105 in 1892 to 92 in 1896.<sup>81</sup> But bonds, while falling during the crisis, promptly rose during the years of depression to prices higher than had prevailed in the prosperous months of

<sup>78</sup> Compare T. W. Mitchell, “Stockholders’ Profits from Privileged Subscriptions,” *Quarterly Journal of Economics* (February, 1905).

<sup>79</sup> See Table 38.

<sup>80</sup> Compiled from the statistical reports of the Interstate Commerce Commission. Certain changes in the plan of accounting impair somewhat comparisons between the data for income in 1908-09 and in earlier years. But the commission’s report for 1908 states that the “main figures” of the income account are comparable (p. 86). I have rearranged the figures for the last two years to make them correspond as nearly as possible with those for 1890-1907.

<sup>81</sup> Annual averages of relative prices. See Table 42.

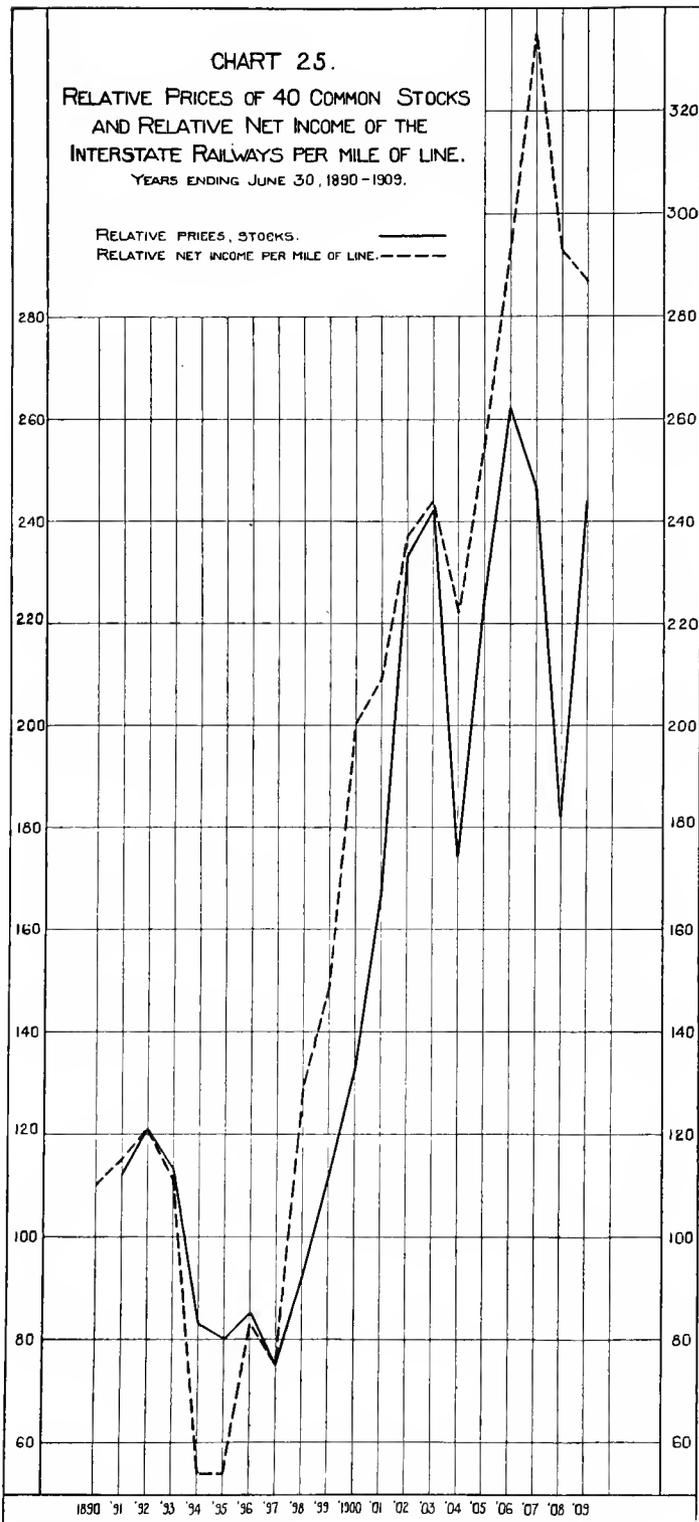
TABLE 45

ACTUAL AND RELATIVE NET INCOME, DIVIDENDS, AND INTEREST ON FUNDED DEBT OF THE INTERSTATE RAILWAYS,  
PER MILE OF LINE. BY YEARS ENDING JUNE 30, 1890-1909

Years ending June 30	Actual amounts			Relative amounts Av. actual amounts 1890-99 = 100		
	Interest on funded debt	Dividends	Net income	Interest on funded debt	Dividends	Net income
1890	\$1,416	\$574	\$651	101	104	110
1891	1,361	598	682	97	108	115
1892	1,478	628	714	106	113	121
1893	1,474	606	654	105	109	111
1894	1,439	578	317	103	105	54
1895	1,420	484	316	102	87	54
1896	1,371	484	492	98	87	83
1897	1,352	477	444	97	86	75
1898	1,333	521	760	95	94	129
1899	1,339	592	875	96	107	148
1900	1,313	725	1,180	94	131	200
1901	1,340	802	1,235	96	145	209
1902	1,371	926	1,400	98	167	237
1903	1,383	960	1,443	99	173	244
1904	1,403	1,046	1,313	100	189	222
1905	1,431	1,097	1,507	102	198	255
1906	1,451	1,227	1,732	104	221	293
1907	1,513	1,355	1,976	108	245	335
1908	1,616	1,718	1,729	116	310	293
1909	1,639	1,377	1,696	117	248	287
Averages						
1890-99	1,398	554	591	100	100	100
1900-09	1,446	1,123	1,521	103	203	258

1891-92. For investors, frightened by the panic and discouraged by hard times, were in a mood to value more highly than before the relative security of bonds. And this willingness to pay higher prices for relative security more than offset the increased risk which attached to the bonds themselves, owing to the weakened position of railway finances.

With the return of prosperity in the summer of 1897 the whole situation changed. The net income of railways was more than trebled between the years ending June 30, 1897 and 1902. Dividends were raised on the stocks which had paid them regularly in the worst of years; dividends were renewed on other stocks, and dividends were gradually begun on many issues which had never paid a dollar. But the railway directors did not distribute all of their increased profits among stockholders. They carried liberal sums over to restore surpluses impaired by the period of hard times, and devoted part of their earnings to bettering the physical condition of their properties which had run down. At the same time they took advantage of the improvement in their



credit and of the favorable rates of interest to sell new issues of bonds, and spent the proceeds largely in increasing their equipment. The result of this policy was to enhance the capacity of the railways for handling traffic and to reduce the cost per unit. Increased profits abundantly rewarded these efforts. Even after reduction to a mileage basis, the net incomes of the railways from 1901-09 were never less than double the average net incomes of 1890-99.

Just as common stocks were most affected by the years of depression, so they were most affected by the years of prosperity. The profits of the railways doubled, and so did the prices of common stocks—though the increase of dividends was less rapid than the increase of net income. But preferred stocks, most of which confer but a limited right to participate in increased dividends, rose considerably less than common stocks. Yet more moderate was the rise of the few stocks which had paid dividends even in the middle nineties. Most moderate of all was the rise of bonds. The increased financial strength of the railways gave the holders of bonds secured by prior liens a wider margin of safety, and therefore advanced the price of bonds to a somewhat higher level. But the bondholders made no other gains. On the contrary, the alluring prospects of profits in the rising stock market tempted bondholders to convert their bonds into stocks. Further, the keen competition among borrowing corporations gave investors an opportunity to exact better terms, and the increasing cost of living spurred them to make the most of their opportunity. Hence the marked contrast between the relative prices of bonds and of stocks in 1900-09.

Another difference between the relative prices of bonds and stocks which requires comment is their course in periods of prosperity, crisis, and depression. Table 43 shows the facts succinctly.

From the standpoint of profit and loss upon resale, bonds have been the better investments in periods of crisis and depression, and stocks in periods of revival and prosperity. Barring the peculiar series for United States 4s, the tables show no exception to the statements that bonds fall less than stocks during crises, and rise less during prosperity.<sup>82</sup> But the common statement that during periods of depression bonds rise while stocks fall requires qualification. Bonds did not rise during the dull months January-July, 1891, and stocks did rise during the dull months January-September, 1908. The truth is that stocks, like all goods for which we have detailed data, react from the extremely low points touched during a severe crisis. But, if the crisis is succeeded by a long period of depression, stock prices sag again, and may, as in 1895, 1896, and 1897, touch lower figures than those of the crisis itself. Bonds, on the contrary, rise during a long period of depression, unless circum-

<sup>82</sup> An apparent anomaly in Table 43 is that the average prices of all classes of securities stand higher in the minor crisis of October to December, 1899, than in the preceding period of prosperity. But the monthly figures of Table 44 show that there was a decline during the period of stress from the level attained toward the close of the prosperous months.

stances are such as to cast doubt upon the ability of corporations to pay their interest coupons. Low grade bonds affected by such doubts fall at the same time that high grade bonds are rising. But Table 41 shows that in 1894 and again in 1908 only one bond in the present list fell below its average price during the preceding year of crisis—the bond of the Chicago, Milwaukee and St. Paul in the first case and of the Wabash in the second. Further, a comparison between tables 41 and 19 shows that the bonds in highest credit rose less in price during these years of depression than several of the other securities. Investors who had been frightened out of the stock market did not insist upon having the very best of bonds; but sought rather for issues which appeared safe, and at the same time yielded  $\frac{1}{4}$ - $\frac{1}{2}$  per cent more upon the investment than did the bonds guaranteed by the New York Central.

In brief, bonds are more stable in price than commodities, commodities more stable than dividend-paying stocks, the latter more stable than preferred stocks, while common stocks are most variable of all. Further, bond prices differ strikingly from stock and commodity prices in rising during periods of business depression, and sometimes falling in periods of business prosperity.

### 7. *International Comparisons*

Unfortunately, no statistics of the prices of securities in other countries have been published which are comparable in form with the preceding tables. The usual practice in treating the course of the stock market is to quote the prices of securities selected at random for certain dates, or to give the total prices of a long list of bonds and stocks lumped together. Such material may serve other purposes passably; but it is obviously of little value for determining the relations between the price fluctuations of securities and commodities. True index numbers of stocks and bonds are needed, but they have not been provided.<sup>83</sup>

Our international comparisons must therefore be confined to the relative prices of the few foreign bonds for which interest yields have already been presented.<sup>84</sup> The relative prices of these securities and of their best American counterparts are shown in Table 46.

In respect to the price fluctuations which the bonds have undergone from year to year, the three European series are rather like each other and decidedly different from the American series. The year 1891 was one of "undigested securities" in Europe, not unlike 1903-04 in the United States. A vast mass

<sup>83</sup> The best known of the foreign series is that published by the *Bankers' Magazine* of London, giving the total market value of over 300 securities at the quotations of the end of each month (with occasional omissions). These figures are conveniently summarized for the years 1887-1907 by P. L. Newman, "A Review of the Investments of Offices in Recent Years, with notes on Stock Exchange Fluctuations and the Future Rate of Interest," *Journal of the Institute of Actuaries*, vol. 42, pp. 294-320. The list of securities included has been changed several times during this period. A somewhat similar tabulation for France is published nearly every year by Raffalovich in *Le marché financier*, see, for example, 1909-10, p. 251.

<sup>84</sup> See Chapter IV, iii, 4, above.

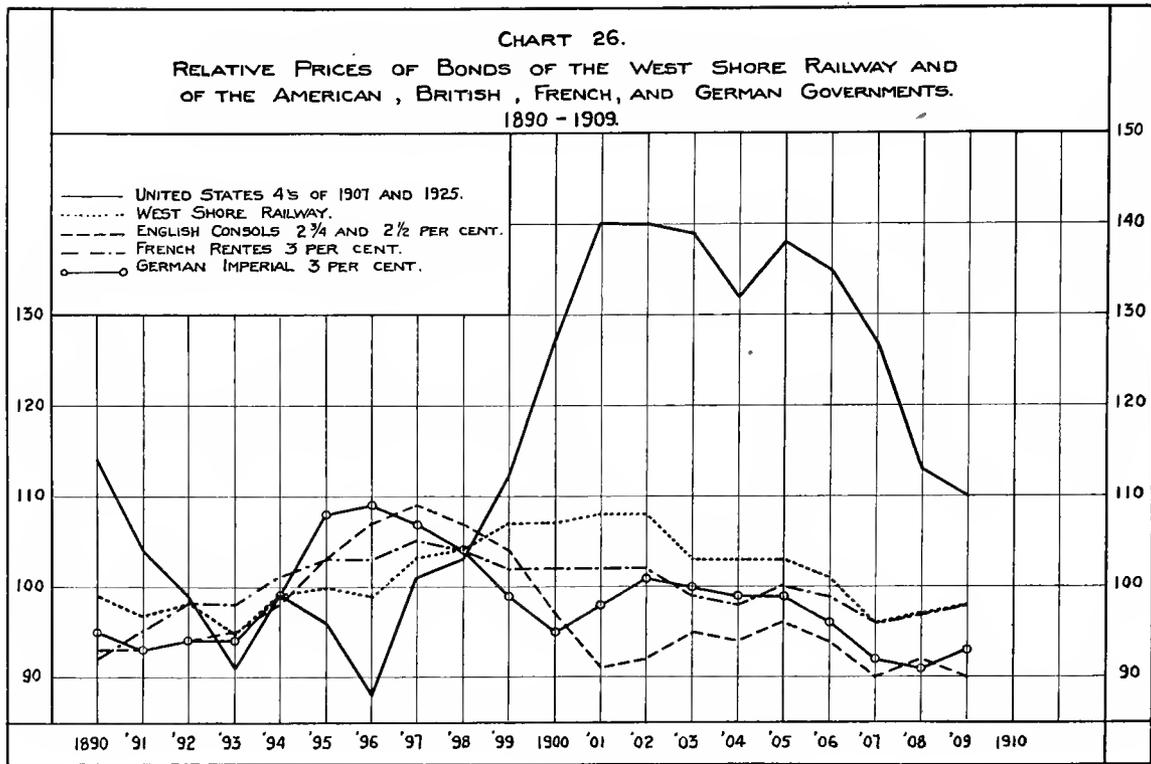


TABLE 46

RELATIVE PRICES OF BONDS OF THE WEST SHORE RAILROAD AND OF THE AMERICAN, BRITISH, FRENCH, AND GERMAN GOVERNMENTS. BY YEARS, 1890-1909

Year	United States		Great Britain, Consols 2 3/4 and 2 1/2 per cent	France, <i>Rentes</i> 3 per cent	Germany, Imperial 3 per cent
	U. S. 4s of 1907 and 1925	West Shore R. R.			
1890	114	99	93	92	95
1891	104	97	93	95	93
1892	99	98	94	98	94
1893	91	95	95	98	94
1894	99	99	98	101	99
1895	96	100	103	103	108
1896	88	99	107	103	109
1897	101	103	109	105	107
1898	103	104	107	104	104
1899	112	107	104	102	99
1900	127	107	97	102	95
1901	140	108	91	102	98
1902	140	108	92	102	101
1903	139	103	95	99	100
1904	132	103	94	98	99
1905	138	103	96	100	99
1906	135	101	94	99	96
1907	127	96	90	96	92
1908	113	97	92	97	91
1909	110	98	90	98	93
Averages					
1890-99	100	100	100	100	100
1900-09	130	102	93	99	96

of stocks and bonds, which European investors had bought during the hopeful years 1888-90 from promoters and underwriters at home and abroad, weighed heavily upon the market after the disaster of Barings in November, 1890. To protect these doubtful holdings many overloaded firms and individuals were forced to sell their gilt-edged securities, not only in London and Berlin, but also in New York. Hence the decline in the price of bonds shown by Table 46 in 1891. *Rentes* escaped the decline, because French investors, sobered by the collapse of the copper ring, the *Comptoir d'Escompte*, and the Panama Canal Company early in 1889, had taken less share in speculative ventures.

During the dull years which followed European investors became as timid as they had been bold, and sought security above all things. The result was a fairly steady rise of high grade bonds in England, France, and Germany until 1896 or 1897. In America the course of affairs was very different, because of the panic of 1893 and the agitation for free coinage of silver—disturbing factors of which Europe felt but a moderate reflex influence.

After the depression business activity began to revive somewhat earlier on the other side of the Atlantic—in 1896 or even in 1895, instead of in the summer of 1897. Confidence returned with prosperity and investors began to show preference for securities which promised higher returns than government bonds. Hence the latter declined in price and their net yields rose gradually until 1900-01. But American investors, with the panic of 1893 and the setback of 1896 still fresh in mind, kept on buying high grade bonds freely until 1901-02.

The crisis of 1900 was more serious in Europe than here. It again disposed investors to seek safety, and bond prices turned upward—vigorously in Germany, where the crisis was most severe, mildly in France and England. The highest points reached, however, were much below the records of 1896-97. The movements of 1903-05 were irregular and slight—save that United States 4s declined heavily in 1904. But after 1905 the renewed prosperity brought renewed neglect of bonds, and prices fell rapidly until 1907. This time the American trend harmonized with the European. The difficulties experienced in financing large enterprises in New York had their counterparts in London, Paris, and Berlin. After the crisis, bond prices rose again; but the yearly averages for United States and German bonds were less in 1908 than in 1907. In the last year the French, German, and West Shore bonds rose slightly, while consols and United States 4s fell.

The chief differences between the trend of the bond market in this country and abroad, then, are the interruption of the rise of prices in America by the panic of 1893 and by the free-silver campaign of 1896, and the rise of American bonds in 1897-1901, while the European bonds were falling. This rise of American bonds under conditions of marked prosperity, such as usually dispose investors to seek investments of a more lucrative character, is the most

surprising result of the whole investigation. So far as United States 4s are concerned, the settlement of all doubts about the medium in which the obligations would be paid, and the increasing demand for bonds as a basis of national-bank circulation, provide an adequate explanation. The Gold Standard Act may also have improved the rating of the West Shore bonds, which are not expressly payable in gold; but it will be recalled that these bonds were not greatly affected by the free-silver agitation, save in the summer of 1896. More influence was exercised by the notable increase in the financial strength of American railways, to which attention has been called. Directly, the West Shore bonds were less affected by this factor than the issues of roads which had been in straits during the years of depression. But an increase in the prices of so large a group of securities as the bonds of other railways must have reacted upon the price of any single issue; for the prices of all high grade bonds are intimately related to each other through the tie of substitution goods.

## CHAPTER V

### THE VOLUME OF BUSINESS

#### I. THE PHYSICAL AND THE PECUNIARY VOLUME OF BUSINESS

From the viewpoint of economic welfare, changes in the volume of goods provided for a people's use are the most important features of business cycles. Depression is misfortune because it increases the number of families which cannot get sufficient food, clothing, and shelter, and because it prevents many families above the poverty line from getting certain of the good things in life to which they have been accustomed. The fluctuations of prices are relatively artificial matters, which acquire significance only because they react upon the process of providing goods for gratifying wants.

But Chapter II shows that in attempting to account for business cycles we cannot keep steadily to the consideration of economic welfare. For where money economy prevails there economic activity is animated and guided by the prospects of winning pecuniary profits. To understand the rhythmical alternations of expansion and contraction to which this activity is subject, we must therefore look at affairs from the business viewpoint. And from this viewpoint, changes in the volume of goods made available for use are by no means the most important phenomena of prosperity, crisis, and depression. On the contrary, they count merely as one of the factors affecting present and prospective profits, and stand on the same level as the fluctuations in prices which were treated in the preceding chapter.

In analyzing the factors on which prosperity depends, prices and volume of business can be segregated only by making volume of business mean tons of pig-iron, bales of cotton, bushels of wheat, gallons of petroleum, and the like. To the man on the street, however, volume of business means pecuniary quite as often as physical volume. A department store reckons the increase in the size of its trade not by the yards of cloth, pairs of shoes, and number of frying-pans it sells in successive years, but by its aggregate sales in dollars and cents. Thus, like most of the terms which economics borrows from work-a-day life, volume of business is ambiguous.

In theoretical discussions, the aim is usually to select some one among the several current meanings of such a term, erect it into an "economic concept,"

and use the word only in this technical sense. But in the present case we face a special difficulty. Among the chief indices of the volume of business are several which have no other than a pecuniary meaning—for example, bank clearings, gross receipts of railways, and domestic bills of exchange. We cannot dispense with these measures, because those expressed in physical terms are too scanty. And if we could dispense with them, we should miss the interesting facts which may be learned by comparing changes in the physical with changes in the pecuniary volume of trade.

Accordingly, the phrase must be allowed to keep both of its current meanings, and both sets of facts which it covers must be investigated. Misunderstandings may be prevented by using one of the two explanatory adjectives wherever the context does not show whether pecuniary or physical quantities are meant.

## II. THE MOVEMENT OF THE POPULATION

Changes in the physical volume of business from one phase to the next within a business cycle are but slightly affected by changes in the number of hands capable of work or in the number of mouths needing to be filled. The best official estimates of the numbers of Americans, English, French, and Germans indicate that the rate of increase is not much faster in periods of prosperity than in periods of depression.

Table 47 shows that in 1890-1909 the United States grew faster in population than did Germany, and Germany faster than England, while France grew but little. These differences help to account for the fact, brought out by subsequent tables, that during these twenty years the physical volume of business increased faster in America than in Germany, faster in Germany than England, and faster in England than in France. But it is only in periods which can be reckoned by decades that the population factor assumes great prominence.

Even when we turn to birth-rates and death-rates, we find it difficult to establish a close correlation between them and the condition of business. There are no comprehensive American data on the subject, but the excellent foreign figures point to a similarity of conditions among nations of western culture. Germany has both a higher birth-rate and a higher death-rate than her neighbors; but in all three countries both the birth- and death-rates have declined during the twenty years. This decline is the notable feature of Table 48. Refined methods of analysis covering a longer period might establish a connection between the varying pace of the decline and business cycles; but certainly the present figures have no such connection plainly stamped upon their face, as have the figures for prices with which we have been dealing.<sup>1</sup> The marriage

<sup>1</sup> Tugan-Baranowsky, *Handelskrisen in England*, pp. 292-3, shows that the influence of crises upon the vital statistics of England was greater in the second than in the fourth quarter of the nineteenth century. He ascribes the change to an improvement in the economic condition of the wage-earners.

rate, on the contrary, does vary with the condition of business. It declines in the middle nineties when times were bad, rises with the return of prosperity in the later nineties, dips again in the dull years 1902-04, and rises once more between 1904 and 1906 or 1907. Further, there is slight change in the decennial averages from 1890-99 to 1900-09.<sup>2</sup> But since these variations in the marriage rate are not followed by corresponding variations in the birth-rate, they possess little significance for the growth of population.

The one factor of change in population which is clearly and closely connected with changes in business conditions is immigration and emigration. Immigration into the United States has shown a marked increase from one decade to the next; but this growth is exceedingly unsteady. In prosperous

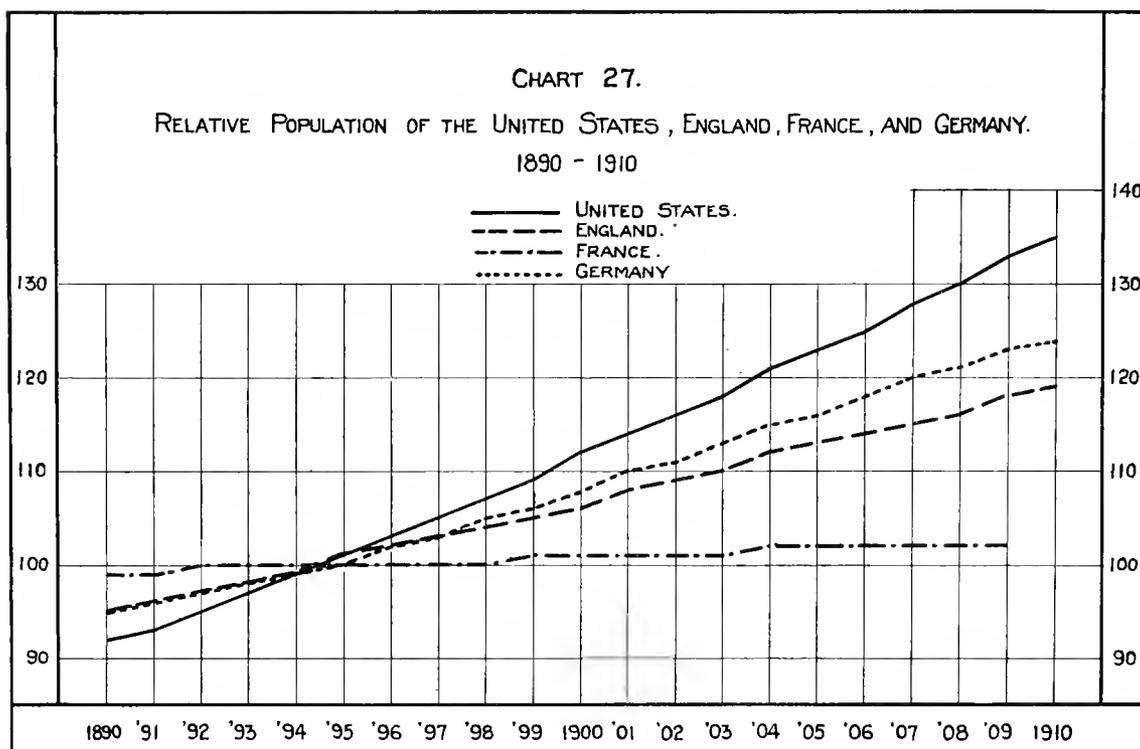
TABLE 47  
POPULATION OF THE UNITED STATES, ENGLAND, FRANCE, AND GERMANY  
BY YEARS, 1890-1910

Year	Actual figures In millions and tenths of millions				Relative figures Average actual population 1890-99 = 100			
	United States	England and Wales	France	Germany	United States	England and Wales	France	Germany
1890	62.9	28.8	38.4	49.2	92	95	99	95
1891	63.8	29.1	38.4	49.8	93	96	99	96
1892	65.1	29.4	38.4	50.3	95	97	100	97
1893	66.3	29.8	38.4	50.8	97	98	100	98
1894	67.6	30.1	38.4	51.3	99	99	100	99
1895	68.9	30.5	38.5	52.0	101	101	100	100
1896	70.3	30.8	38.5	52.8	103	102	100	102
1897	71.6	31.2	38.6	53.6	105	103	100	103
1898	72.9	31.5	38.8	54.4	107	104	100	105
1899	74.3	31.9	38.9	55.2	109	105	101	106
1900	76.3	32.2	38.9	56.0	112	106	101	108
1901	77.6	32.6	39.0	56.9	114	108	101	110
1902	79.2	33.0	39.1	57.8	116	109	101	111
1903	80.8	33.3	39.1	58.6	118	110	101	113
1904	82.5	33.6	39.2	59.5	121	111	102	115
1905	84.1	34.0	39.2	60.3	123	112	102	116
1906	85.7	34.3	39.3	61.2	125	113	102	118
1907	87.3	34.7	39.3*	62.0	128	114	102	119
1908	88.9	35.1	39.4*	62.9	130	116	102	121
1909	90.6	35.4	39.4*	63.7	133	117	102	123
1910	92.2	35.8	39.5*	64.6	135	118	103	124
1911	93.8	36.2	39.5*	65.4	137	119	103	126
Averages								
1890-99	68.34	30.31	38.53	51.94	100	100	100	100
1900-09	83.30	33.82	39.19	59.89	122	112	102	115

\* Provisional figures.

Compiled from the statistical abstracts of the several countries.

<sup>2</sup> The marriage rate tends to rise, where the decline in both birth- and death-rates is raising the average age of the population.



years the increase is very rapid; in bad years there comes not a slackening of the increase, but a heavy decrease. A year or two is required, however, for a change in business conditions to develop its full influence upon immigration. Emigration from the United Kingdom follows in general the same course as immigration into the United States. It seems to depend less on business conditions at home than on business conditions abroad. Hard times and unemployment in Britain do not drive people abroad so much as good times and full employment elsewhere attract them, or enable their friends who have gone before to send back passage money. In Germany, on the contrary, conditions at home appear to be the factor of greatest weight. The dull times after 1890 led to an increase in emigration; and the return of prosperity led to a decrease. The dull times following the crisis of 1901-02 were followed by another increase, and the return of prosperity by a further decrease. But the most striking fact about the German figures is the decline in the level of fluctuations since the early nineties. The rapid development of the country's industries which began in 1895 has provided work at home for every one who sought it in the years of prosperity, and the years of depression have been neither very severe nor numerous. Finally, the French figures for emigration possess little significance beyond showing that the French prefer to stay at

TABLE 48  
BIRTH RATES, DEATH RATES, AND MARRIAGE RATES OF ENGLAND, FRANCE, AND GERMANY  
BY YEARS, 1890-1909

Year	Number of births per hundred of the population			Number of deaths per hundred of the population			Number of persons married per hundred of the population		
	England and Wales	France	Germany	England and Wales	France	Germany	England and Wales	France	(†) Germany
1890	3.02	2.18	3.57	1.95	2.28	2.44	1.55	1.40	1.60
1891	3.14	2.26	3.70	2.02	2.29	2.34	1.56	1.49	1.60
1892	3.04	2.23	3.57	1.90	2.28	2.41	1.54	1.51	1.58
1893	3.07	2.28	3.67	1.92	2.25	2.46	1.47	1.49	1.58
1894	2.96	2.23	3.59	1.66	2.12	2.23	1.50	1.49	1.58
1895	3.03	2.17	3.61	1.87	2.22	2.21	1.50	1.47	1.60
1896	2.96	2.25	3.63	1.71	2.00	2.08	1.57	1.51	1.64
1897	2.96	2.23	3.60	1.74	1.95	2.13	1.60	1.51	1.68
1898	2.93	2.18	3.61	1.75	2.09	2.05	1.62	1.48	1.68
1899	2.91	2.19	3.58	1.82	2.11	2.15	1.65	1.53	1.70
1900	2.87	2.14	3.56	1.82	2.19	2.21	1.60	1.55	1.70
1901	2.85	2.20	3.57	1.69	2.01	2.06	1.59	1.56	1.64
1902	2.85	2.16	3.50	1.63	1.95	1.94	1.59	1.51	1.58
1903	2.85	2.11	3.38	1.55	1.93	2.00	1.57	1.51	1.58
1904	2.80	2.09	3.41	1.63	1.94	1.96	1.53	1.52	1.60
1905	2.73	2.06	3.29	1.53	1.96	1.98	1.53	1.54	1.62
1906	2.72	2.05	3.31	1.55	1.99	1.82	1.57	1.56	1.64
1907	2.65	1.97*	3.23	1.51	2.02*	1.80	1.59	1.60*	1.62
1908	2.67	2.02*	3.21	1.48	1.89*	1.81	1.51	1.60*	1.60
1909	2.58	1.95*	3.11	1.46	1.92*	1.72	1.47	1.56*	1.56
1910	2.51	1.96*	2.98	1.35	1.78*	1.62	1.50	1.56*	1.54
Averages									
1890-99	3.00	2.22	3.61	1.83	2.16	2.25	1.56	1.49	1.62
1900-09	2.76	2.08	3.36	1.59	1.98	1.93	1.56	1.55	1.61

\* Provisional figures.

† Twice the rate for number of marriages per hundred.

Compiled from the statistical abstracts of the several countries. The German rates have been recomputed to exclude the still-born.

home whether times are good or bad. They are as conservative in choosing their homes as in choosing their investments.

But though emigration and immigration are clearly connected with business conditions, except in France, they are not sufficiently important factors in the total population of any great nation to accelerate or retard the growth of numbers in a notable degree. If the official estimates of population given in Table 47 may be trusted, even the United States increases in numbers at a fairly steady rate whether times be good or bad.

To provide steady employment for the ever growing army of workers, then, it is not sufficient to maintain unimpaired the supply of raw materials and of industrial equipment.<sup>3</sup> And to provide steady sustenance for the growing army

<sup>3</sup> This is the fact upon which Pohle has laid such stress. See note, on p. 19, above.

TABLE 49

IMMIGRATION INTO THE UNITED STATES AND EMIGRATION FROM THE UNITED KINGDOM, FRANCE, AND GERMANY  
BY YEARS, 1890-1910

Year	Actual numbers Thousands of immigrants or emigrants				Relative numbers Average actual numbers in 1890-99 = 100			
	United States ( <sup>1</sup> )	United Kingdom ( <sup>2</sup> )	France ( <sup>3</sup> )	Germany ( <sup>4</sup> )	United States	United Kingdom	France	Germany
1890	455	218	21	97	123	122	313	161
1891	560	219	6	120	152	122	90	199
1892	580	210	6	116	157	117	90	192
1893	440	209	6	88	119	117	90	146
1894	286	156	4	41	77	87	60	68
1895	259	185	5	37	70	103	75	61
1896	343	162	5	34	93	90	75	56
1897	231	146	5	25	63	81	75	41
1898	229	141	4	22	62	79	60	36
1899	312	146	5	24	84	81	75	40
1900	449	169	5	22	122	94	75	36
1901	488	172	4	22	132	96	60	36
1902	649	206	4	32	176	115	60	53
1903	857	260	6	36	232	145	90	60
1904	813	271	5	28	220	151	75	46
1905	1,026	262	5	28	278	146	75	46
1906	1,101	325	6	31	298	181	90	51
1907	1,285	396	8	32	348	221	119	53
1908	783	263	5	20	212	147	75	33
1909	752	289	5	25	204	161	75	41
1910	1,042	398	.....	26	282	222	.....	43
1911	879	455	.....	23	238	254	.....	38
Averages								
1890-99	369.5	179.2	6.7	60.4	100	100	100	100
1900-09	820.3	261.3	5.3	27.6	222	146	79	46

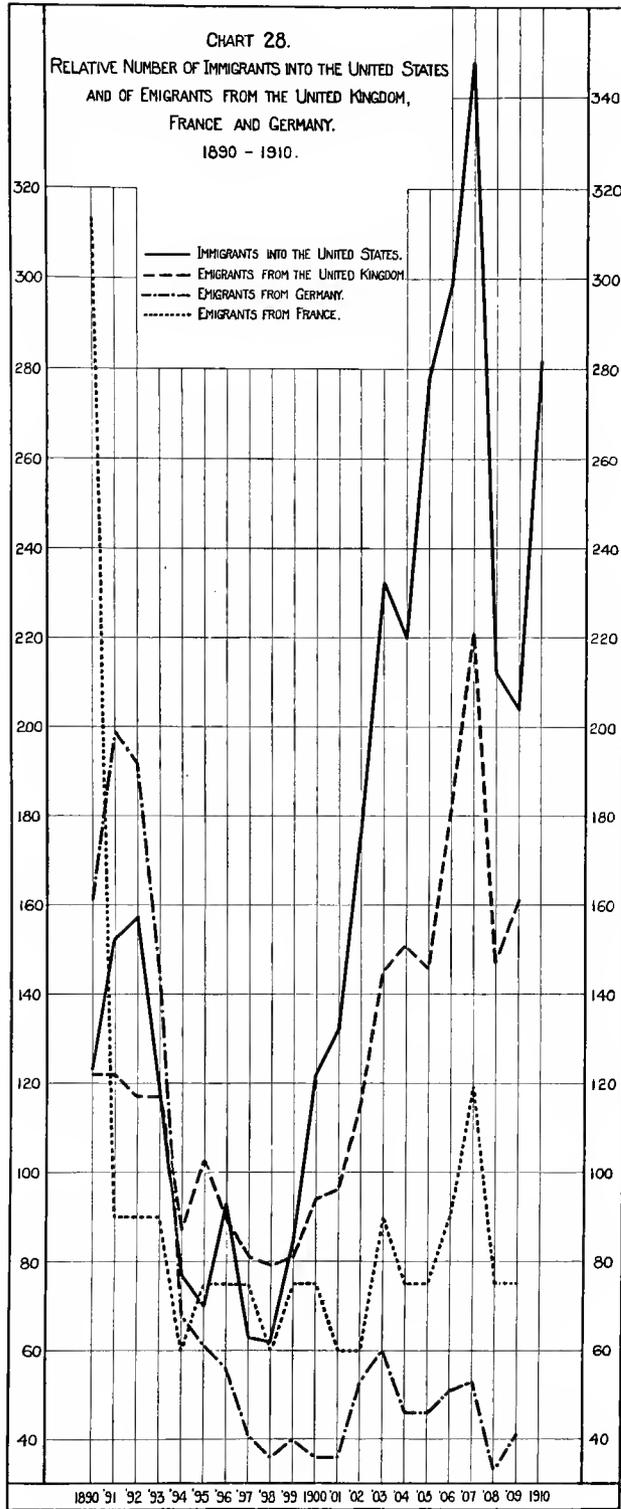
<sup>1</sup> By years ending June 30. Revised figures from the Immigration Commission's *Abstract of the Statistical Review of Immigration to the United States*, p. 8. The data show thousands of "immigrants arriving" in 1890-1903, of "aliens admitted" in 1904-05, and of "immigrant aliens admitted" in 1906-10.

<sup>2</sup> Thousands of British and Irish passengers leaving the United Kingdom for countries outside of Europe. From the *Statistical Abstract of the United Kingdom*.

<sup>3</sup> Thousands of emigrants to countries outside of Europe. From the *Annuaire Statistique de France*.

<sup>4</sup> Thousands of Germans leaving for countries overseas by both German and foreign ports. From the *Statistische Jahrbücher für das Deutsche Reich*.

of consumers it is not sufficient to maintain a constant supply of food, clothing, and shelter. In both cases the provision must be made on a larger scale in each successive year. A period of unchanging physical volume of business, therefore, means actual deterioration in the economic wellbeing of the community—deterioration which is more serious in the United States, where population increases fast, than in France, where population increases slowly. Similarly, a decline in this volume means a more serious setback than the face of the figures suggests, and a rise means a less considerable gain.



## III. THE VOLUME OF GOODS PRODUCED

Coal is typical of Sombart's "inorganic goods," the supply of which ordinarily follows the fluctuations of market demand.<sup>4</sup> Strikes, railway blockades, or the like, may interfere for a time with filling orders, and in dull times the operators may prefer to accumulate stocks rather than to reduce their output; but, in general, the rate of production is adjusted to the volume of orders. The latter, however, is far steadier in the case of coal than in that of most commodities. A large proportion of the demand is for domestic uses, and times must be hard indeed to cause a considerable decline in the amount of fuel used for heating and cooking. The business demand is more variable, but nevertheless steadier than the business demand for almost any other staple. For coal is largely consumed by every great industry in the country, so that it is not dependent for its market upon the prosperity of any one.

For these reasons the production of coal pursues a remarkably even course. Table 50 shows that the output in all four of our countries has increased rapidly since 1890—much more rapidly than population. The development has been fastest in the United States, then in order come Germany, Great Britain, and France. So strong is this factor of growth that a mild depression of business serves only to lessen the rate at which production increases, and even a severe depression causes a relatively slight and brief falling off. Thus the lowest points touched during depression in one business cycle are higher than the highest points reached during prosperity in the preceding cycle.

Pig-iron resembles coal in that its production can ordinarily be adjusted promptly to changes of demand; but it differs from coal in that the demand is wholly for business uses. Moreover, the business demand itself is more fluctuating for pig-iron than for coal, because it is distributed less evenly among different lines of business and is less continuous in any one line. Coal is burned every day a factory runs, but pig-iron and its products are bought in much greater amounts when factories and railways are striving to increase their equipment than in duller seasons.

Consequently the production of pig-iron undergoes wider oscillations than the production of coal. The factor of growth is as prominent in Table 51 as in Table 50, and the average rate of gain is not notably different.<sup>5</sup> Again, the United States has gained most, and Germany next. France, however, shows a more rapid increase than Great Britain; but that is mainly because the smaller scale of production in France in 1890-99 makes comparatively moderate actual increases in 1900-09 appear as large percentages of the basic figures.<sup>6</sup> This growth, however, has been broken by more numerous and more serious setbacks

<sup>4</sup> See Chapter I, ii, 11.

<sup>5</sup> The increase in the output of pig-iron has been rather more rapid than the gain in the coal output in the United States, Germany, and France. The opposite is true of Great Britain.

<sup>6</sup> In coal production also the French scale of production was much smaller than the British in 1890-99. Nevertheless the British increase was greater not only absolutely but also relatively.

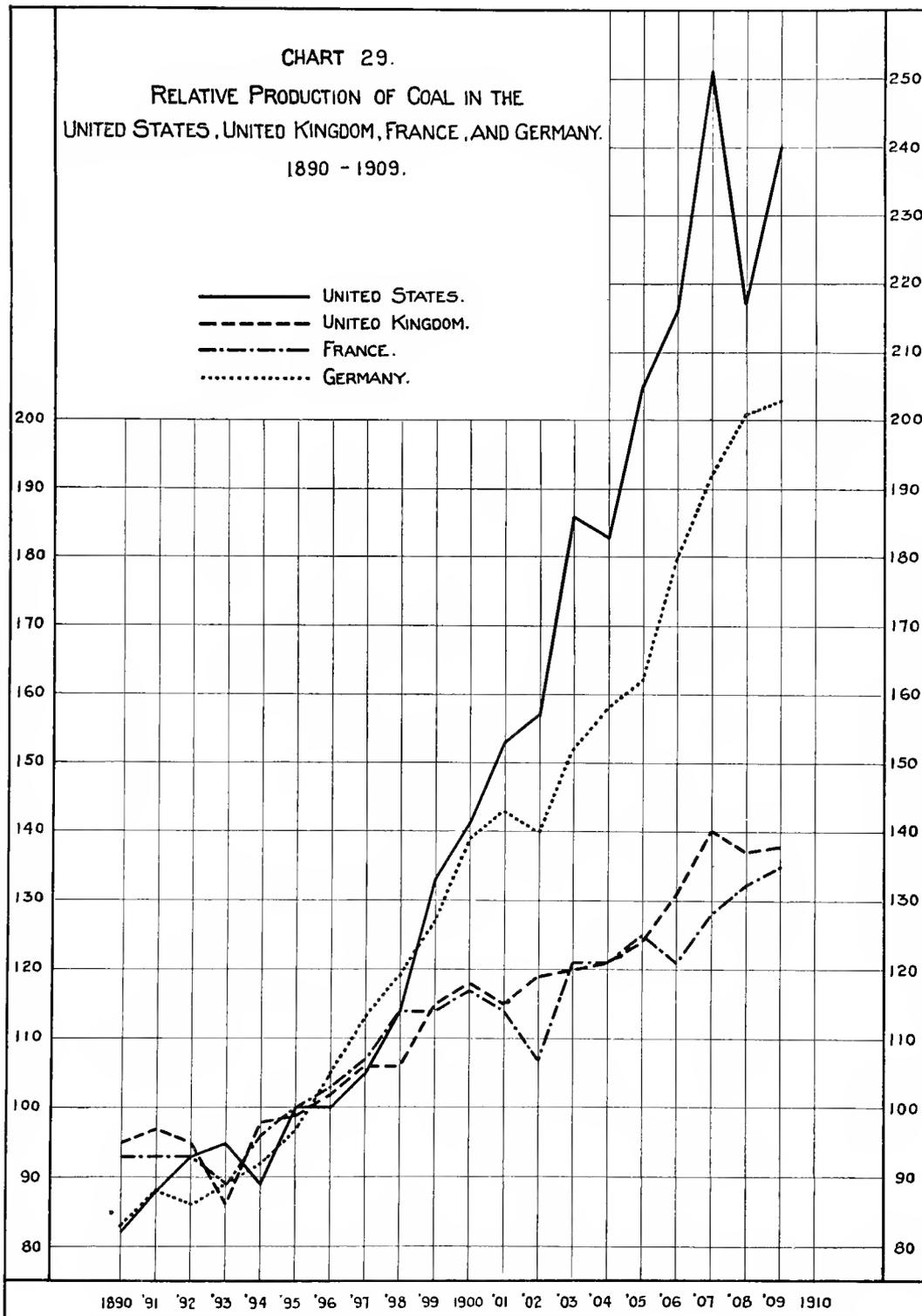


TABLE 50  
 PRODUCTION OF COAL IN THE UNITED STATES, UNITED KINGDOM, FRANCE, AND GERMANY  
 BY YEARS, 1890-1909

Year	Actual amounts Millions of long tons				Relative amounts Average actual amounts 1890-99 = 100			
	United States	United Kingdom	France	Germany	United States	United Kingdom	France	Germany
1890	141	182	26	88	82	95	93	83
1891	151	185	26	93	88	97	93	88
1892	160	182	26	91	93	95	93	86
1893	163	164	25	94	95	86	89	89
1894	152	188	27	97	89	98	96	92
1895	172	190	28	102	100	99	100	97
1896	171	195	29	111	100	102	103	105
1897	179	202	30	119	105	106	107	113
1898	196	202	32	126	114	106	114	119
1899	227	220	32	134	133	115	114	127
1900	241	225	33	147	141	118	117	139
1901	262	219	32	151	153	115	114	143
1902	269	227	30	148	157	119	107	140
1903	319	230	34	160	186	120	121	152
1904	314	232	34	167	183	121	121	158
1905	351	236	35	171	205	124	125	162
1906	370	251	34	190	216	131	121	180
1907	429	268	36	203	251	140	128	192
1908	371	262	37	212	217	137	132	201
1909	411	264	37	214	240	138	132	203
1910	448	264	38*	219	262	138	135*	208
Averages								
1890-99	171.2	191.0	28.1	105.5	100	100	100	100
1900-09	333.7	241.4	34.2	176.3	195	126	122	167

\* Provisional figures.

Compiled from the statistical abstracts of the several countries. The German figures include both "Braunkohlen" and "Steinkohlen." The metric tons of France and Germany are reduced to long tons by dividing by 1.0156.

than in the case of coal, and, on the other hand, the gain in periods of prosperity has been correspondingly more rapid. Indeed, the statistics of pig-iron output form one of the most sensitive barometers of business conditions.

But, marked as is the effect of depression and prosperity upon the physical volume of pig-iron produced, the effect upon the pecuniary value of the output is greater still. Depression brings not only a reduction of output, but also a reduction of price, which accentuates the change in volume when the data are converted from tons into dollars. The price often continues to decline for a time after the lowest ebb of production has been passed, so that, as Table 52

TABLE 51  
 PRODUCTION OF PIG-IRON IN THE UNITED STATES, UNITED KINGDOM, FRANCE, AND GERMANY  
 BY YEARS, 1890-1910

Year	Actual amounts Hundreds of thousands of long tons				Relative amounts Average actual amounts 1890-99 = 100			
	United States	United Kingdom	France	Germany	United States	United Kingdom	France	Germany
1890	92	79	19.	46	98	99 ✓	88	79 ✓
1891	83	74	19	46	89	93	88	79
1892	92	67	20	49	98	84	93	84
1893	71	70	20	49	76	88	93	84
1894	67	74	20	53	72	93	93	91
1895	94	77	20	54	100	97	93	93
1896	86	87	23	63	92	109	107	109
1897	97	88	24	68	104	111	112	117
1898	118	86	25	72	126	108	116	124
1899	136	94	25	80	145	118	116	138
1900	138	90	27	84	147	113	126	145
1901	159	79	24	78	170	99	112	134
1902	178	87	24	84	190	109	112	145
1903	180	89	28	99	192	112	130	171
1904	165	87	29	99	176	109	135	171
1905	230	96	30	107	246	121	140	185
1906	253	101	33	121	270	127	153	209
1907	258	101	35	127	276	127	163	219
1908	159	91	34	116	170	114	158	200
1909	258	95	35*	124	276	119	163*	214
1910	273	100	40*	146	292	126	186*	252
Averages								
1890-99	93.6	79.6	21.5	58.0	100	100	100	100
1900-09	197.8	91.6	29.9	103.9	211	115	139	179

\* Provisional figures, subject to revision.

Compiled from the statistical abstracts of the several countries. The metric tons of France and Germany are reduced to long tons by dividing by 1.0156.

shows, the season of lowest value is frequently one or more years later than the season of smallest output. Even after the price has turned upward, its advance is slow for a while, so that new high records of value are much later in being made than new high records of production. For example, the output record of 1890 was surpassed in 1895 in America, in 1896 in England, and as early as 1892 in both France and Germany; but the value records of 1890 were not surpassed until 1899 in America and England, 1897 in France, and 1896 in Germany. Finally, at the culmination of prosperity the advance of prices becomes very rapid, so that the extreme fluctuations of value are much greater than the extreme fluctuations of output. In other words, the pig-iron industry is steadier than the pig-iron business.

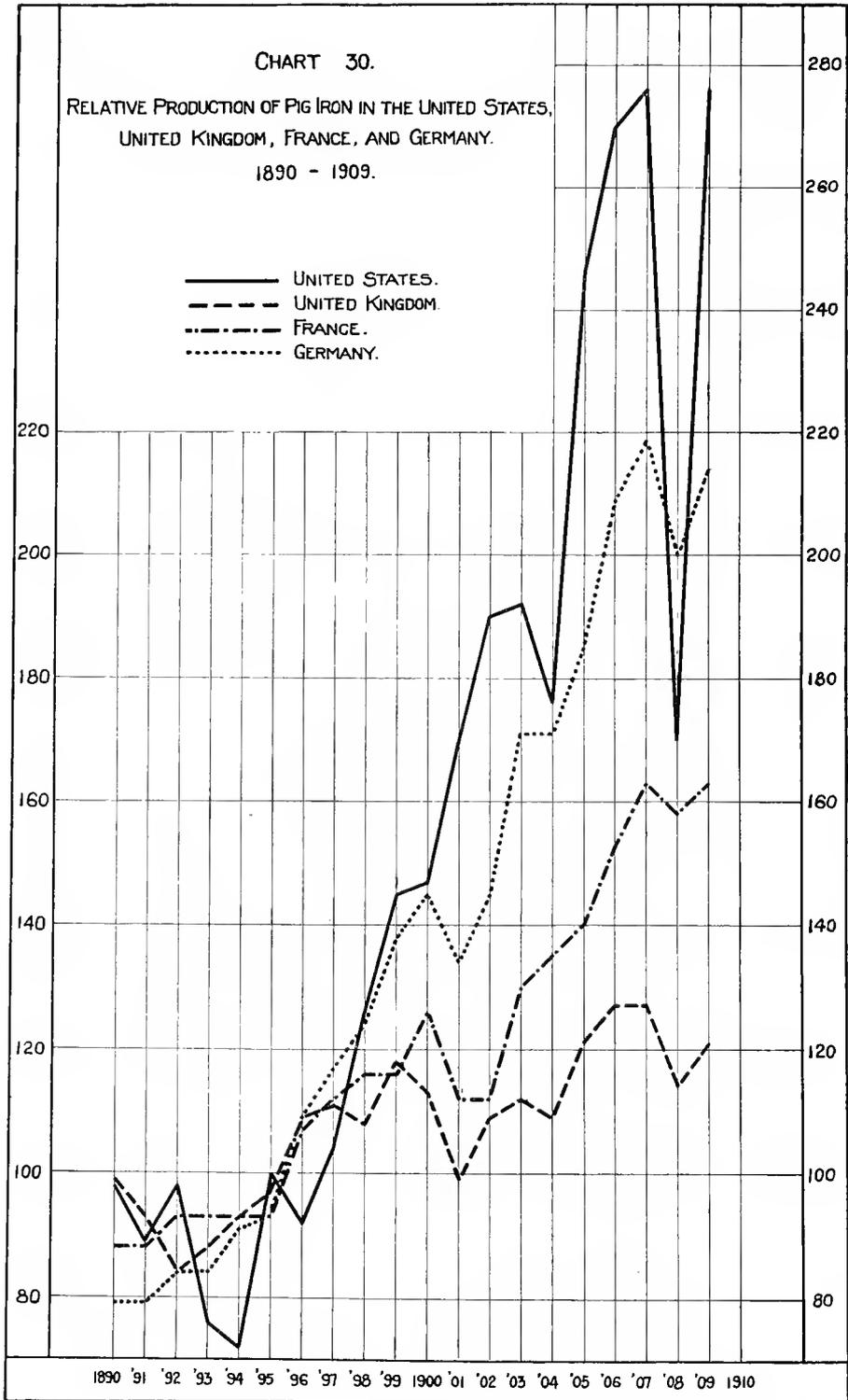


TABLE 52

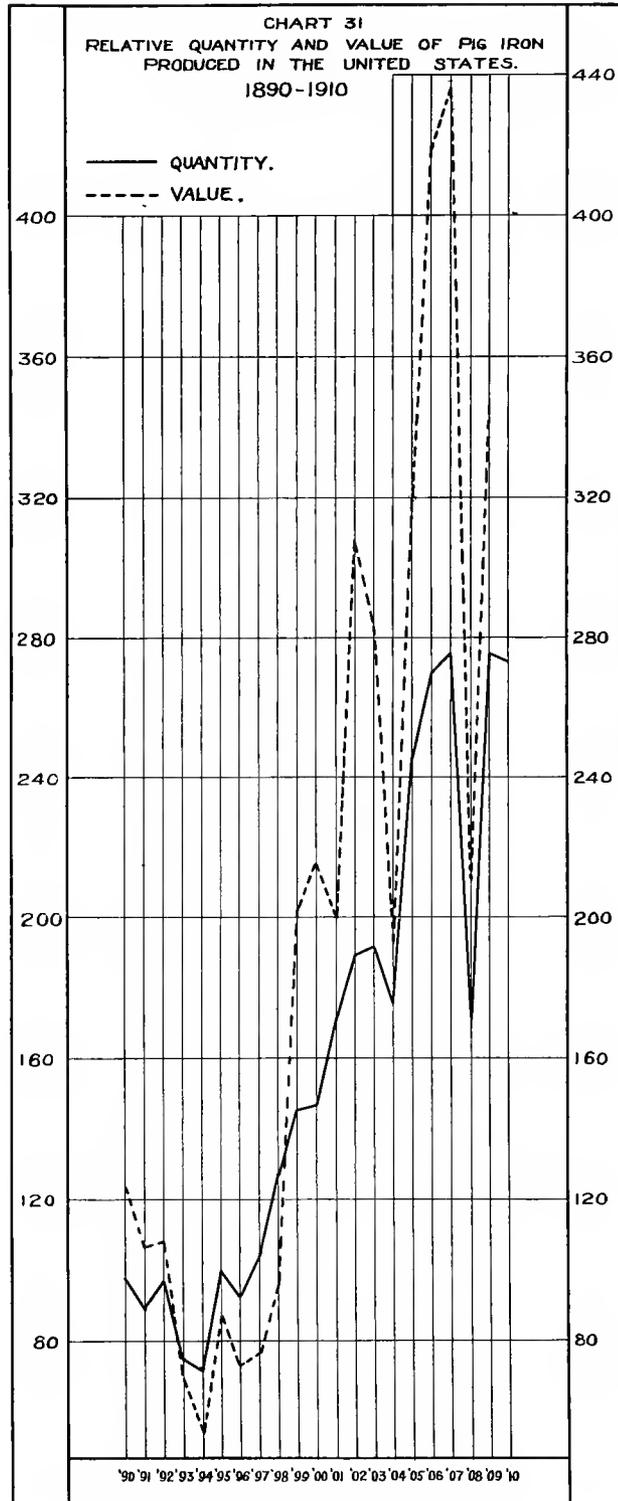
VALUE OF PIG-IRON PRODUCED IN THE UNITED STATES, UNITED KINGDOM, FRANCE, AND GERMANY, AND RELATIVE VALUE IN COMPARISON WITH RELATIVE AMOUNT OF PRODUCT

BY YEARS, 1890-1909

Year	Actual values In millions of dollars				Relative figures Average actual figures 1890-99 = 100							
	United States	United Kingdom	France	Germany	United States		United Kingdom		France		Germany	
					Tons	Value	Tons	Value	Tons	Value	Tons	Value
1890	151	117	27	64	98	125	99	115	88	103	79	93
1891	128	95	24	55	89	106	93	93	88	91	79	80
1892	131	84	24	55	98	108	84	82	93	91	84	80
1893	85	77	23	51	76	70	88	76	93	87	84	74
1894	65	83	23	55	72	54	93	81	93	87	91	80
1895	105	90	21	56	100	87	97	88	93	80	93	81
1896	90	101	26	71	92	74	109	99	107	99	109	103
1897	95	103	28	83	104	78	111	101	112	106	117	121
1898	117	110	31	90	126	97	108	108	116	118	124	131
1899	245	159	36	108	145	202	118	156	116	137	138	157
1900	260	183	43	131	147	215	113	180	126	163	145	190
1901	242	121	33	117	170	200	99	119	112	125	134	170
1902	373	137	31	108	190	308	109	134	112	118	145	157
1903	344	137	35	125	192	284	112	184	130	133	171	182
1904	233	124	37	124	176	192	109	122	135	141	171	180
1905	382	147	41	138	246	315	121	144	140	156	185	201
1906	506	172	51	170	270	417	127	169	153	194	209	247
1907	530	182	41	196	276	437	127	179	163	156	219	285
1908	254	140	54*	170	170	210	114	137	158	205*	200	247
1909	419	150	57*	165	276	346	121	147	163	217*	214	240
1910	425	167	.....	191	292	351	126	164	186	.....	252	278
Averages												
1890-99	121.2	101.9	26.3	68.8	100	100	100	100	100	100	100	100
1900-09	354.3	149.3	42.3	144.4	211	292	115	147	139	161	179	210

\* Provisional figures, subject to revision.

Values compiled from the statistical abstracts of the several countries. American figures prepared by the U. S. Geological Survey. Values at Philadelphia 1890-94: at point of production 1895-1909.



As representatives of the production of organic goods, where man's control over the factors determining supply is far less complete than in the cases of coal and pig-iron, we may take the wheat crops of our four countries.

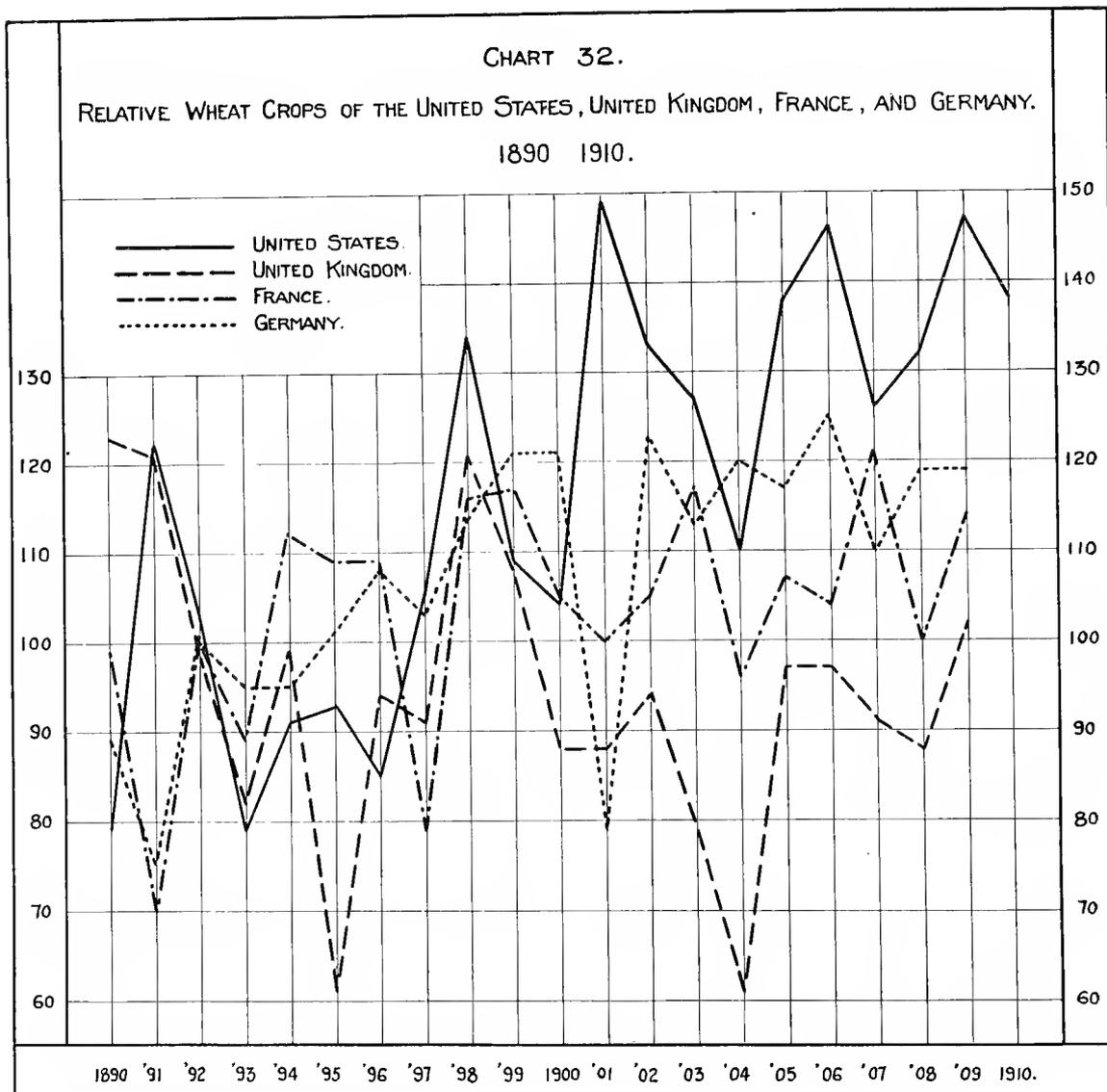
A comparison between Table 53 and Tables 51 and 50 shows that the factor of growth has been far less notable in the production of wheat than in the production of pig-iron and coal. The British yield has actually fallen off in recent years, the French yield has gained but a trifle. While the German and American yields show distinctly higher averages in the second than in the first decade, the gains are small in comparison with those scored in the coal and iron trades, and not much greater than the increase of population.

TABLE 53

WHEAT CROPS OF THE UNITED STATES, UNITED KINGDOM, FRANCE, AND GERMANY  
BY YEARS, 1890-1911

Year	Actual figures Millions of bushels				Relative figures Average actual crops 1890-99 = 100			
	United States	United Kingdom	France	Germany	United States	United Kingdom	France	Germany
1890	399	78	309	104	79	123	99	89
1891	612	77	219	86	122	121	70	74
1892	516	63	311	116	103	99	100	100
1893	396	52	278	110	79	82	89	95
1894	460	63	348	111	91	99	112	95
1895	467	39	340	117	93	61	109	101
1896	428	60	340	126	85	94	109	108
1897	530	58	247	120	105	91	79	103
1898	675	77	363	133	134	121	116	114
1899	547	69	364	141	109	108	117	121
1900	522	56	326	141	104	88	105	121
1901	748	56	311	92	149	88	100	79
1902	670	60	328	143	133	94	105	123
1903	638	50	364	131	127	79	117	113
1904	552	39	299	140	110	61	96	120
1905	693	62	335	136	138	97	107	117
1906	735	62	325	145	146	97	104	125
1907	634	58	377	128	126	91	121	110
1908	665	56	318	138	132	88	102	119
1909	737	65	356	138	147	102	114	119
1910	635	58	258	142	126	91	83	122
1911	621	66	315	149	123	104	101	128
Averages								
1890-99	503.0	63.6	311.9	116.4	100	100	100	100
1900-09	659.4	56.4	339.9	133.2	131	89	107	115

Compiled from the *Yearbooks of the Department of Agriculture*. Data for 1890 from *Report of the Secretary of Agriculture*, 1891, p. 305.



As for the changes from one phase of the business cycle to the next, there are many cases in which increased yields accompanied increased prosperity or in which poor crops and depression went together. But the correlation between volume of production and business conditions is far less perfect for wheat than for minerals. For example, note the decline in the American harvest of 1899, the British harvest of 1895, the French harvest of 1897, and the German harvest of 1907, and the increase of the American harvest in 1908, the British harvest in 1902, the French harvest in 1903, and the German harvest in 1902. In all these cases short crops occurred in a year of improving business or large crops in a year of retrogression. The figures indicate that as a business factor the wheat crop is less an effect than a cause of change in conditions, particularly in countries where agriculture employs more hands than manufactures. Good crops tend to bring prosperity and poor crops depression in the seasons which follow. But the numerous exceptions to this rule show that other factors often overbalance the effect of the harvests.

To show the relation between the physical volume and pecuniary value of farm products it is sufficient to take data for corn, wheat, and cotton in America (Table 54). With pig-iron it is the rule that reduced prices and, with the exceptions noted above, increased production and high prices go together. In general, the opposite holds of crops—reduced yields cause high prices and increased yields cause low prices. Indeed, a deficiency in the yields sometimes causes such a rise of prices as to make the pecuniary value of the short crop greater than that of a large one, and superabundant yields sometimes cause such a drop in prices as to reduce their pecuniary value. Instances of the first kind occurred, for example, with corn in 1901, wheat in 1904, and cotton in 1909; instances of the second kind in 1894 with cotton, 1895 with corn, and 1898 with wheat. But, in the case of staples having several important sources of supply, this relation between light yields and high prices and heavy yields and low prices is far from regular. An increased yield of wheat in America was accompanied by a rise in price in 1891, 1895, 1897, 1901, 1908, and 1909, while a decreased yield was accompanied by a fall in price in 1892 and 1893. Such cases are rather less numerous with corn and cotton, of which the United States produces a much larger proportion of the world's supply. But, with corn, reduced production and reduced prices went together in 1892 and 1893, and increased production and increased prices in 1890 and 1900.<sup>7</sup> Thus the relations between physical production and pecuniary value are decidedly irregular with agricultural products. Neither yields nor prices are controlled to the same extent by business conditions as are the output and prices of minerals.

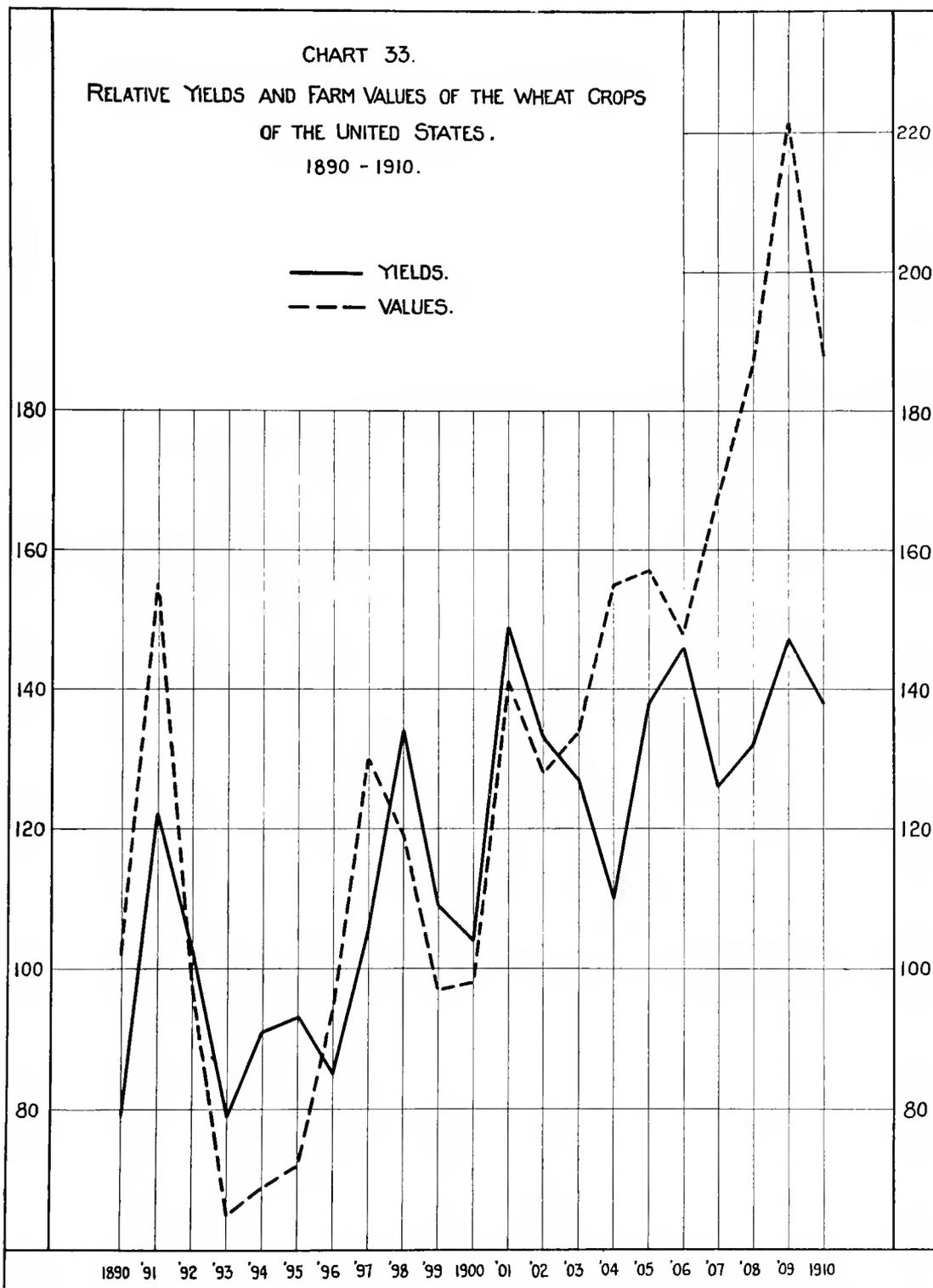
<sup>7</sup> *Year Book of the Department of Agriculture*, 1908, pp. 598, 608, and 674-5. The prices of cotton in 1900 and 1901 are computed from Table 54.

TABLE 54

YIELDS AND FARM VALUES OF THE CORN, WHEAT, AND COTTON CROPS OF THE UNITED STATES  
BY YEARS, 1890-1910

Year	Corn				Wheat				Cotton			
	Actual figures		Relative figures Av. actual figures 1890-99 = 100		Actual figures		Relative figures Av. actual figures 1890-99 = 100		Actual figures		Relative figures Av. actual figures 1890-99 = 100	
	Million bushels	Million dollars	Yields	Values	Million bushels	Million dollars	Yields	Values	10,000 bales	Million dollars	Yields	Values
1890	1,490	754	81	124	399	335	79	102	865	352	96	120
1891	2,060	836	112	137	612	513	122	155	904	312	101	106
1892	1,628	642	89	105	516	322	103	98	670	267	75	91
1893	1,619	592	88	97	396	213	79	65	755	251	84	86
1894	1,213	555	66	91	460	226	91	69	990	220	110	75
1895	2,151	545	117	89	467	238	93	72	716	259	80	88
1896	2,284	491	124	81	428	311	85	94	876	276	98	94
1897	1,903	501	104	82	530	429	105	130	1,120	356	125	121
1898	1,924	552	105	91	675	393	134	119	1,127	314	126	107
1899	2,078	629	113	103	547	320	109	97	951	324	106	111
1900	2,105	751	115	123	522	324	104	98	1,025	470	114	160
1901	1,523	922	83	151	748	467	149	141	948	387	106	132
1902	2,524	1,017	138	167	670	422	133	128	1,078	422	120	144
1903	2,244	953	122	156	638	443	127	134	1,002	576	112	197
1904	2,467	1,087	134	178	552	510	110	155	1,370	561	153	191
1905	2,708	1,117	148	183	693	518	138	157	1,073	557	120	190
1906	2,927	1,167	159	190	735	490	146	148	1,331	640	148	218
1907	2,592	1,337	141	219	634	554	126	168	1,133	553	126	189
1908	2,669	1,616	145	265	665	617	132	187	1,343	551	150	188
1909	2,772	1,653	151	271	737	730	147	221	1,039	688	116	235
1910	2,886	1,385	157	227	635	561	126	170	1,197	820	133	280
1911	2,531	1,565	138	257	621	543	123	165	.....	.....	.....	.....
Averages												
1890-99	1,835.0	609.7	100	100	503.0	330.0	100	100	897.4	293.1	100	100
1900-09	2,453.1	1,162.0	134	191	659.4	507.5	131	154	1,134.2	540.5	126	184

Compiled from A. P. Andrew, *Statistics for the United States*. (Publications of the National Monetary Commission), Senate Document no. 570, 61st Congress, 2d session; pp. 14, 15. The data for 1910-11 are from the *Statistical Abstract of the United States*.



## IV. THE VOLUME OF DOMESTIC TRADE

Since every business enterprise of any size directly or indirectly makes use of the railways on the one hand and on the other hand of the banks, the records of railway traffic and bank transactions afford perhaps the best single gauges of the amount of business going on within the limits of a country.

Gross receipts from operations are the most readily comparable among the various records of railway traffic. These figures, assembled in Table 55, show the United States in the lead, with respect to absolute amounts, rate of growth, and violence of fluctuations. Germany ranks second, the United Kingdom third, and France last, though there is little difference between the rate of growth in the two latter countries. Except in the United States, periods of business depression do little more than to interrupt the expansion of railway traffic for a single year. Germany shows a decline of 3 per cent in 1901 and

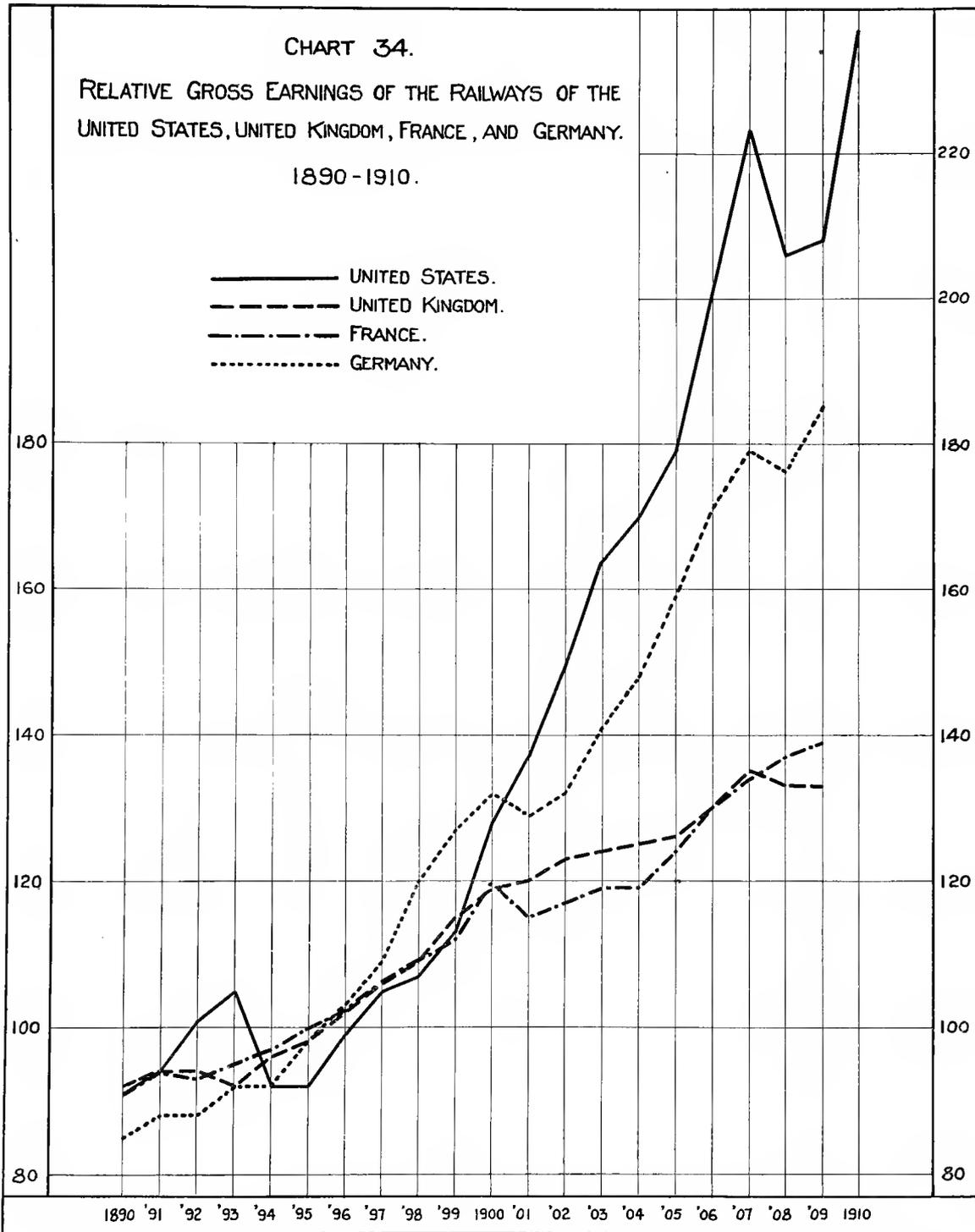
TABLE 55

GROSS EARNINGS OF THE RAILWAYS OF THE UNITED STATES, UNITED KINGDOM, FRANCE, AND GERMANY

Year	Actual amounts Millions of dollars				Relative amounts Average actual amounts 1890-99 = 100			
	United States	United Kingdom	France	Germany	United States	United Kingdom	France	Germany
1890	1,052	373	223	310	91	92	91	85
1891	1,097	381	229	320	94	94	94	88
1892	1,171	382	228	321	101	94	93	88
1893	1,221	374	233	335	105	92	95	92
1894	1,073	389	238	336	92	96	97	92
1895	1,075	396	244	357	92	98	100	98
1896	1,150	415	250	378	99	102	102	103
1897	1,222	430	258	399	105	106	106	109
1898	1,247	443	267	438	107	109	109	120
1899	1,314	466	275	463	113	115	112	127
1900	1,487	481	293	483	128	119	120	132
1901	1,589	485	281	470	137	120	115	120
1902	1,726	497	285	482	149	123	117	132
1903	1,901	502	290	515	164	124	119	141
1904	1,975	505	292	540	170	125	119	148
1905	2,082	512	304	580	179	126	124	159
1906	2,326	527	318	626	200	130	130	171
1907	2,589	546	328	653	223	135	134	179
1908	2,394	538	335	642	206	133	137	176
1909	2,419	539	340*	677	208	133	139*	185
1910	2,751	556	.....	723	237	137	.....	198
Averages								
1890-99	1,162.2	404.9	244.5	365.7	100	100	100	100
1900-09	2,048.8	513.2	306.6	566.8	176	127	125	155

\* Provisional figures.

Compiled from the *Statistical Reports of the Interstate Commerce Commission* and from the statistical abstracts of the United Kingdom, France, and Germany. With the possible exception of France, the figures show gross receipts from operations. The American figures are for years ending June 30.



1908; France of 1 per cent in 1892 (perhaps because of the reduction in railway rates brought about by a change in the tax laws), and one of 5 per cent in 1901, the year following a great international exposition; the United Kingdom shows a decline of 2 per cent in both 1893 and 1908.<sup>8</sup> The wider fluctuations of American business are shown by decreases of 13 per cent in 1894 and 17 per cent in 1908. But while the volume of traffic shrinks little in Europe even in periods of severe depression, it grows at a pace considerably faster than the average when prosperity reigns. The maximum increases from one year to the next are 12 per cent in Germany (1906), 8 per cent in France (1900), and 6 per cent in England (1899). Again the United States with an increase of 23 per cent (1907) far surpasses the other countries. Judged by this standard, then, the volume of domestic trade is subject to so large a factor of growth that it contracts but a trifle when business is dull, and shows the effects of business cycles mainly by expanding faster than usual when business is brisk. American business, however, is subject to more violent oscillations than European.

It is only in England and the United States that bank clearings are a trustworthy gauge of volume of trade. In France and Germany bank notes, bank transfers, domestic bills of exchange, etc., are used for many of the transactions effected in the Anglo-Saxon countries by checks, and bank clearings accordingly are comparatively small. For the sake of completeness, the Parisian and German clearings are shown in Table 56; but these figures have little value aside from indicating that the use of checks has made relatively rapid progress since 1890.

As indices of the volume of domestic trade, the American and English clearings show wider variations than do railway receipts. The factor of growth is larger in clearings; but nevertheless the decreases in times of depression are greater and last longer. But the discrepancies between the testimony borne by the two sets of data are more apparent than real. Clearings are more affected than railway receipts by changes in prices, which Chapter IV showed to be large in the period covered by the tables. Even when subject to no governmental regulation, it is notoriously difficult for railways to readjust their complicated schedules promptly as the level of prices rises and falls. Hence clearings vary more than railway receipts for much the same reason that the value of pig-iron varies more than the output. Second, speculation in stocks and commodities exerts a powerful influence upon the volume of clearings, while it does not perceptibly affect the earnings of railways. And such speculation is a branch of trade peculiarly susceptible to wide and sudden fluctuations.

How important is this second factor may be judged from the difference between the course followed by clearings in New York and by clearings in the rest of the country. The latter clearings decline somewhat more than railway receipts in times of depression when prices are falling and speculation is stag-

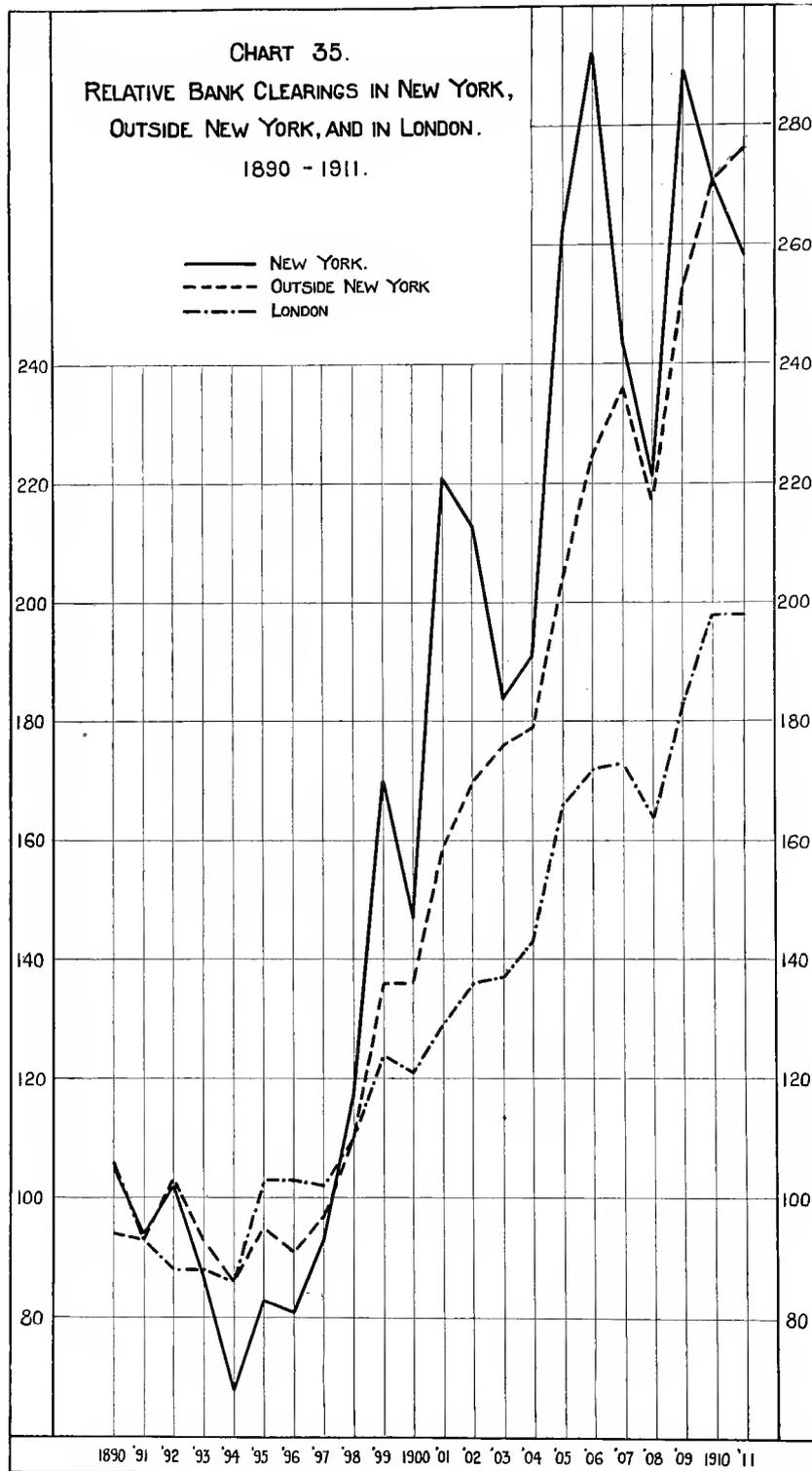
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<sup>8</sup> These percentages are based on the average annual receipts of 1890-99.

TABLE 56  
BANK CLEARINGS IN THE UNITED STATES, ENGLAND, FRANCE, AND GERMANY  
BY YEARS, 1890-1911

Year	Actual amounts In hundreds of millions of dollars						Relative amounts Average actual amounts 1890-99 = 100					
	United States			London	Paris	Germany		United States				
	New York	Outside New York				No. of clearing houses	Amount of clearings	New York	Outside New York	London	Paris	Germany
		No. of clearing houses	Amount of clearings			No. of clearing houses	Amount of clearings					
1890	375	55	231	380	12	9	43	105	94	106	88	84
1891	337	55	229	333	9	9	42	94	93	93	66	82
1892	367	66	253	315	9	9	40	102	103	88	66	78
1893	313	73	229	315	10	9	43	87	93	88	74	84
1894	244	78	211	308	12	9	43	68	86	86	88	84
1895	298	78	233	370	14	9	50	83	95	103	103	98
1896	289	82	224	369	15	9	54	81	91	103	110	106
1897	334	82	238	365	16	9	57	93	97	102	118	112
1898	420	82	269	394	18	10	67	117	110	110	132	131
1899	608	82	333	445	21	10	72	170	136	124	154	141
1900	526	86	334	436	21	10	70	147	136	121	154	137
1901	794	90	390	465	19	10	69	221	159	129	140	135
1902	763	93	417	488	21	11	71	213	170	136	154	139
1903	660	97	432	492	23	11	74	184	176	137	169	145
1904	686	97	439	514	27	11	78	191	179	143	199	153
1905	938	107	500	598	34	12	89	262	204	166	250	174
1906	1,047	113	552	619	48	13	100	292	225	172	353	196
1907	872	113	578	620	50	14	108	243	236	173	368	211
1908	793	113	531	590	52	17	109	221	217	164	382	213
1909	1,036	111	622	658	51	.....	.....	289	254	183	375	.....
1910	973	.....	668	713	66	.....	.....	271	273	198	485	.....
1911	924	.....	676	711	58	.....	.....	258	276	198	426	.....
Averages												
1890-99	358.5	.....	245.0	359.4	13.6	.....	51.1	100	100	100	100	100
1900-09	811.5	.....	479.3	548.0	34.6	.....	.....	226	196	152	254	.....

American figures from the *Financial Review* (calendar years); English and German figures from *Statistics for Great Britain, Germany, and France* (Publications of the National Monetary Commission), Senate Document no. 578, 61st Congress, 2d Session, pp. 12 and 152; French figures from *Annuaire statistique de France*, 1908, p. 65\*, and *La réforme économique*. The French figures are for years beginning April 1.



nant, and advance somewhat more in times of prosperity when prices are rising and speculation is rampant. But the margins between the relative figures for these country clearings and for railway receipts are narrower than the margins between country clearings and New York clearings. More than almost any other branch of business, stock speculation is concentrated in New York. The establishment of the Stock Exchange Clearing House in May, 1892, relieved the banks from much of the work they formerly did in connection with stock dealings, and was partly responsible for the decline in the volume of New York clearings in the years which followed.<sup>9</sup> But the purchase of stocks still requires a heavy use of bank checks, so that an increase of activity upon the stock exchange is always reflected at the bank clearing house. Hence the rough concomitance, shown by Table 57, between the changes in the number of shares sold and in the volume of clearings. On the whole, the clearings are steadier than the stock sales, because the other branches of trade which require the use of checks fluctuate less wildly than does speculation in stocks. But the contribution made by the stock exchange to bank clearings is so huge as to invalidate the use of the New York figures as a gauge of the activity of general business. The country clearings are a far more trustworthy witness, and, as has been pointed out, their testimony agrees well with that borne by railway receipts, after allowance has been made for changes in prices, and for the measure of speculation which enters into every branch of trade.

London clearings agree with British railway receipts in much the same manner that country clearings in the United States agree with American railway receipts. Of course, under the influence of changes in prices and speculation they fall off more than railway receipts in the middle nineties, and rise more in the second decade. Stock exchange transactions, however, cut a less figure at the London than at the New York clearing house, largely because the London exchange makes fortnightly instead of daily settlements. Hence the London figures are a less accurate gauge of volume of speculation and a more accurate gauge of volume of general trade than the New York figures. Like the indices previously examined, bank clearings show a smaller factor of growth in English than in American business. But this difference does not prevent the series for London and for the United States outside of New York from reflecting the agreements and disagreements pointed out in Chapter III between the course of business cycles in the two countries.

Since bank clearings are so small in France and Germany, it is advisable to seek some other gauge of the domestic volume of trade. The wide use of the domestic bill of exchange by business enterprises of every kind in Europe gives this instrument of credit a significance as an index of volume of business transacted not unlike that of the bank check in Anglo-Saxon countries. More-

<sup>9</sup> *Financial Review*, 1893, p. 12.

TABLE 57

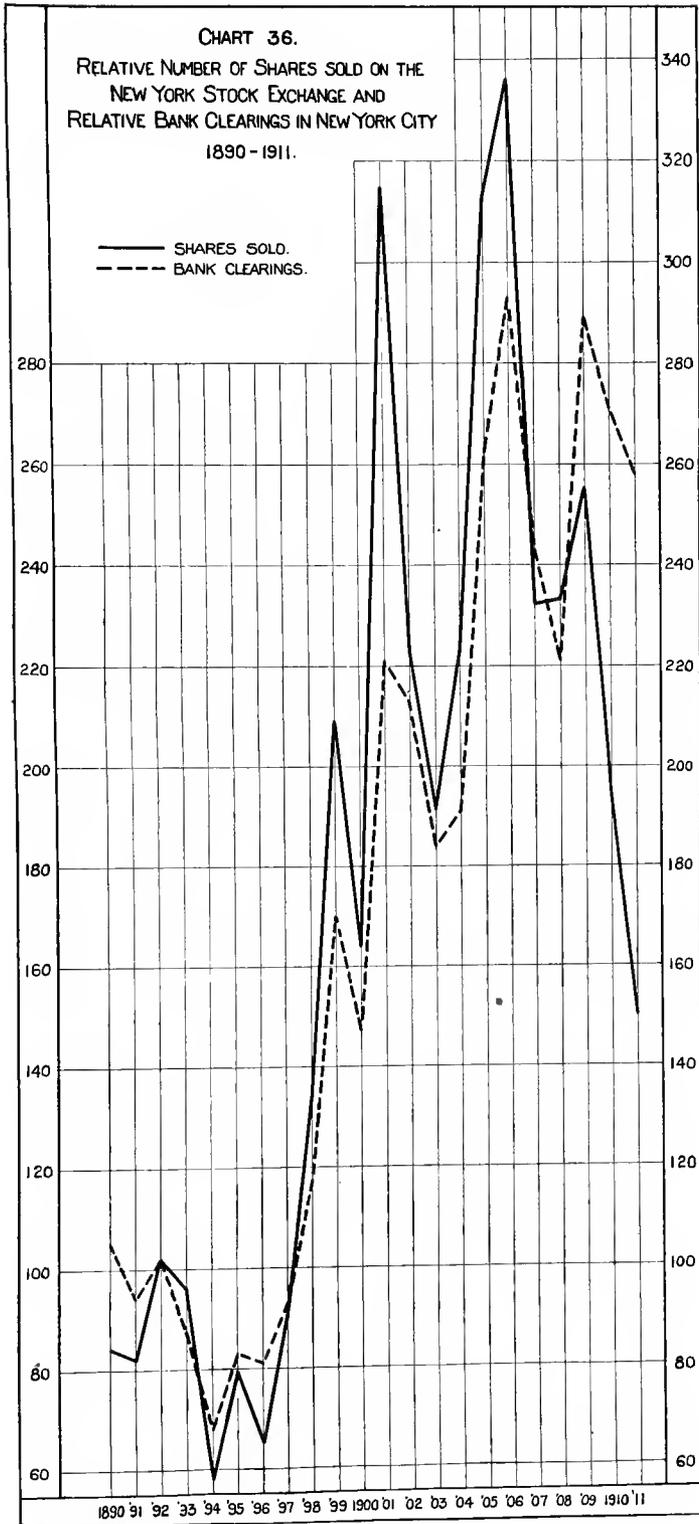
NUMBER OF SHARES SOLD ON THE NEW YORK EXCHANGE AND BANK CLEARINGS IN NEW YORK CITY  
BY YEARS, 1890-1911

Year	Actual amounts		Relative amounts Average actual amounts in 1890-99 = 100	
	Shares sold. Millions of shares	Bank clearings. Hundreds of millions of dollars	Shares sold	Bank clearings
1890	71	375	84	105
1891	69	337	82	94
1892	86	367	102	102
1893	81	313	96	87
1894	49	244	58	68
1895	67	298	79	83
1896	55	289	65	81
1897	77	334	91	93
1898	113	420	134	117
1899	176	608	209	170
1900	128	526	164	147
1901	266	794	315	221
1902	189	763	224	213
1903	161	660	191	184
1904	187	686	222	191
1905	263	938	312	262
1906	284	1,047	336	292
1907	196	872	232	243
1908	197	793	233	221
1909	215	1,036	255	289
1910	164	973	194	271
1911	127	924	150	258
Averages				
1890-99	84.4	358.5	100	100
1900-09	209.6	811.5	248	226

Data from the *Financial Review*.

over, the imposition of stamp taxes upon such bills supplies data from which the amount in circulation from year to year may be estimated with approximate accuracy.<sup>10</sup>

<sup>10</sup> On the value of these data as a gauge of business activity see K. Helfferich, *Der deutsche Geldmarkt 1895 bis 1902* (Schriften des Vereins für Socialpolitik, vol. 110), p. 27. The German figures are computed from the receipts of the *Wechselstempelsteuer* by a formula used by the Reichsbank in compiling its anniversary volume for the years 1876-1900. The tax receipts (at the rate of one-half per mille) are capitalized, and from the sum 10 per cent is deducted as an allowance for the lower rate of taxation upon large bills. The amounts of bills on which the French tax is collected are given in the *Annuaire statistique*, 1908, p. 90.\* Two errors of the press have been corrected in changing these figures into American money. That the original data are not in thousands but in millions of francs appears from p. 3\* and from a comparison between the amount of the tax and the amount of the bills. The first digit in the amount for 1898 should be 3 instead of 2.

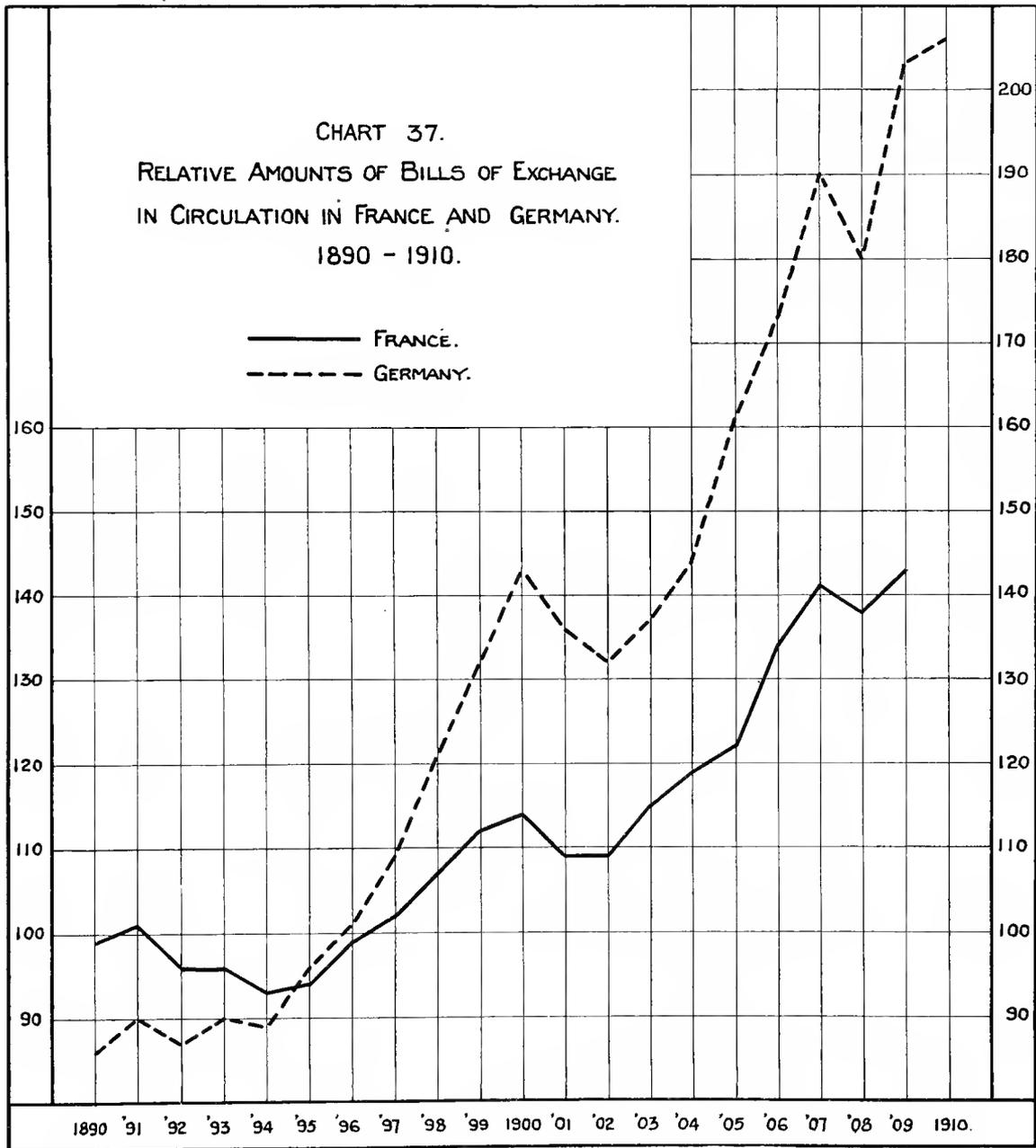


These figures, presented in Table 58, agree more closely with railway receipts in their respective countries than do bank clearings in America and England. They fall more than railway receipts during years of depression and rise more during years of prosperity; for, of course, the amount of bills of exchange in circulation is affected by changes in the price level. The reason why these divergencies are smaller than the corresponding divergencies between clearings and railway receipts in America and England appears to be that bills of exchange, based mainly upon the sale of actual commodities, are less affected by speculation than are bank clearings. Finally, the differences between the increase from the first to the second decade in the volume of bills outstanding in France and Germany confirm the conclusion drawn from earlier tables that German business has been expanding at a considerably faster pace than French business in the last twenty years.

TABLE 58  
BILLS OF EXCHANGE IN CIRCULATION IN FRANCE AND GERMANY  
BY YEARS, 1890-1910

Year	Actual amounts In tens of millions of dollars		Relative amounts Average actual amounts in 1890-99 = 100	
	France	Germany	France	Germany
1890	542	335	99	86
1891	551	350	101	90
1892	524	339	96	87
1893	525	350	96	90
1894	509	349	93	89
1895	514	374	94	96
1896	539	394	99	101
1897	556	426	102	109
1898	586	471	107	121
1899	611	516	112	132
1900	621	558	114	143
1901	596	532	109	136
1902	594	517	109	132
1903	625	536	115	137
1904	647	561	119	144
1905	668	629	122	161
1906	733	676	134	173
1907	769	743	141	190
1908	751	703	138	180
1909	778	794	143	203
1910	844	803	155	206
1911	.....	838	.....	215
Averages				
1890-99	545.7	390.4	100	100
1900-09	678.2	629.9	124	160

Data obtained from the statistical abstracts of France and Germany. For method of computing the amount of bills from the stamp-tax receipts in Germany see preceding note. The German figures are for the fiscal years beginning April 1.



## V. THE VOLUME OF FOREIGN COMMERCE

Table 59, which brings together the grand totals of foreign commerce for our four countries as nearly as may be in comparable shape, shows that in this branch of business the United States is far surpassed by the United Kingdom, and surpassed also by Germany in volume of imports, though not in volume of exports. France, as usual, ranks last. Even in rate of increase the United States takes second place, Germany ranking first, England third, and France fourth. It is worthy of remark that in each of the countries the increase of

TABLE 59

MERCHANDISE IMPORTS AND EXPORTS OF THE UNITED STATES, UNITED KINGDOM, FRANCE, AND GERMANY  
BY YEARS, 1890-1911

Year	Actual amounts in millions of dollars							
	United States		United Kingdom		France Special trade		Germany Special trade	
	Imports	Domestic exports	Net imports	Domestic exports	Imports	Exports	Imports	Exports
1890	823	858	1,732	1,282	856	724	990	792
1891	828	971	1,818	1,203	920	689	988	756
1892	841	938	1,749	1,106	808	668	956	703
1893	776	876	1,683	1,062	744	625	943	736
1894	676	825	1,706	1,051	743	594	937	705
1895	802	825	1,737	1,100	718	651	981	790
1896	682	1,006	1,876	1,169	733	656	1,025	839
1897	743	1,100	1,903	1,140	764	694	1,114	865
1898	635	1,256	1,995	1,136	863	678	1,209	894
1899	799	1,275	2,044	1,287	872	801	1,305	1,001
1900	829	1,478	2,238	1,417	907	793	1,372	1,098
1901	880	1,465	2,210	1,363	843	774	1,290	1,055
1902	969	1,361	2,251	1,379	848	821	1,340	1,113
1903	995	1,485	2,302	1,415	927	821	1,429	1,193
1904	1,036	1,451	2,340	1,463	869	859	1,512	1,243
1905	1,179	1,627	2,372	1,605	922	939	1,697	1,364
1906	1,321	1,798	2,545	1,828	1,086	1,016	1,909	1,513
1907	1,423	1,923	2,696	2,073	1,201	1,080	2,082	1,629
1908	1,116	1,753	2,498	1,835	1,089	975	1,824	1,523
1909	1,476	1,701	2,595	1,840	1,205	1,104	2,028	1,569
1910	1,563	1,829	2,796	2,094	1,384	1,203	2,126	1,779
1911	1,533	2,058	2,812	2,211	1,575*	1,191*	2,310	1,929
Averages								
1890-99	760.5	993.0	1,824.3	1,153.6	802.1	678.0	1,044.8	808.1
1900-09	1,122.4	1,604.2	2,404.7	1,621.8	989.7	918.2	1,648.3	1,330.0

\* Provisional figures.

Figures for United States (calendar years) from A. P. Andrew, *Statistics for the United States* (Publications of the National Monetary Commission), Senate Document no. 570, 61st Congress, 2d Session, p. 10. Figures for foreign countries compiled from the (American) *Statistical Abstract for Foreign Countries*, 1909, pp. 21, 22, and 42. The foreign figures for 1906-11 are computed from tables in the British, French, and German statistical abstracts, or from preliminary reports in the business journals.

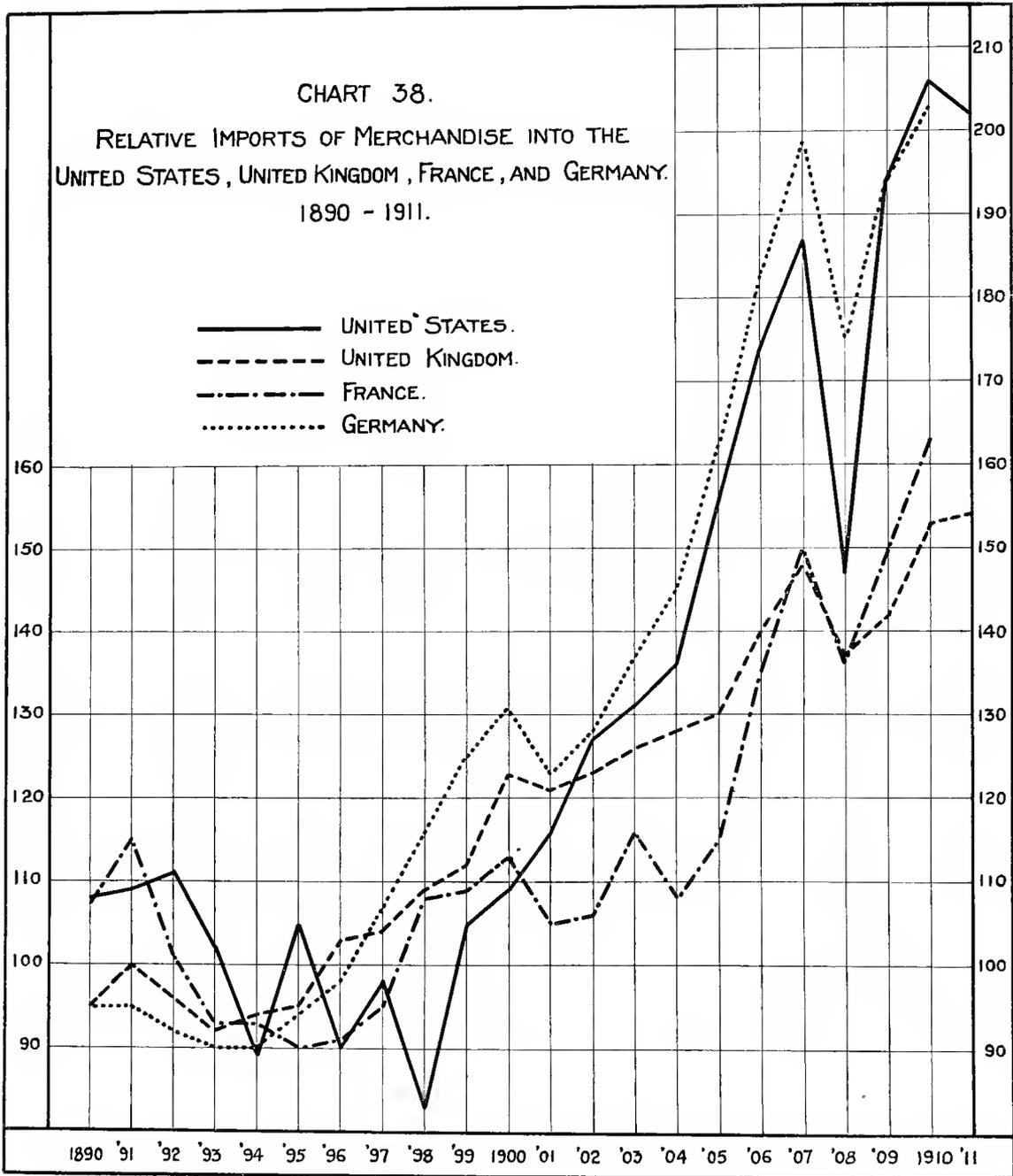
TABLE 59—(Concluded)  
 MERCHANDISE IMPORTS AND EXPORTS OF THE UNITED STATES, UNITED KINGDOM, FRANCE, AND GERMANY  
 BY YEARS, 1890–1911

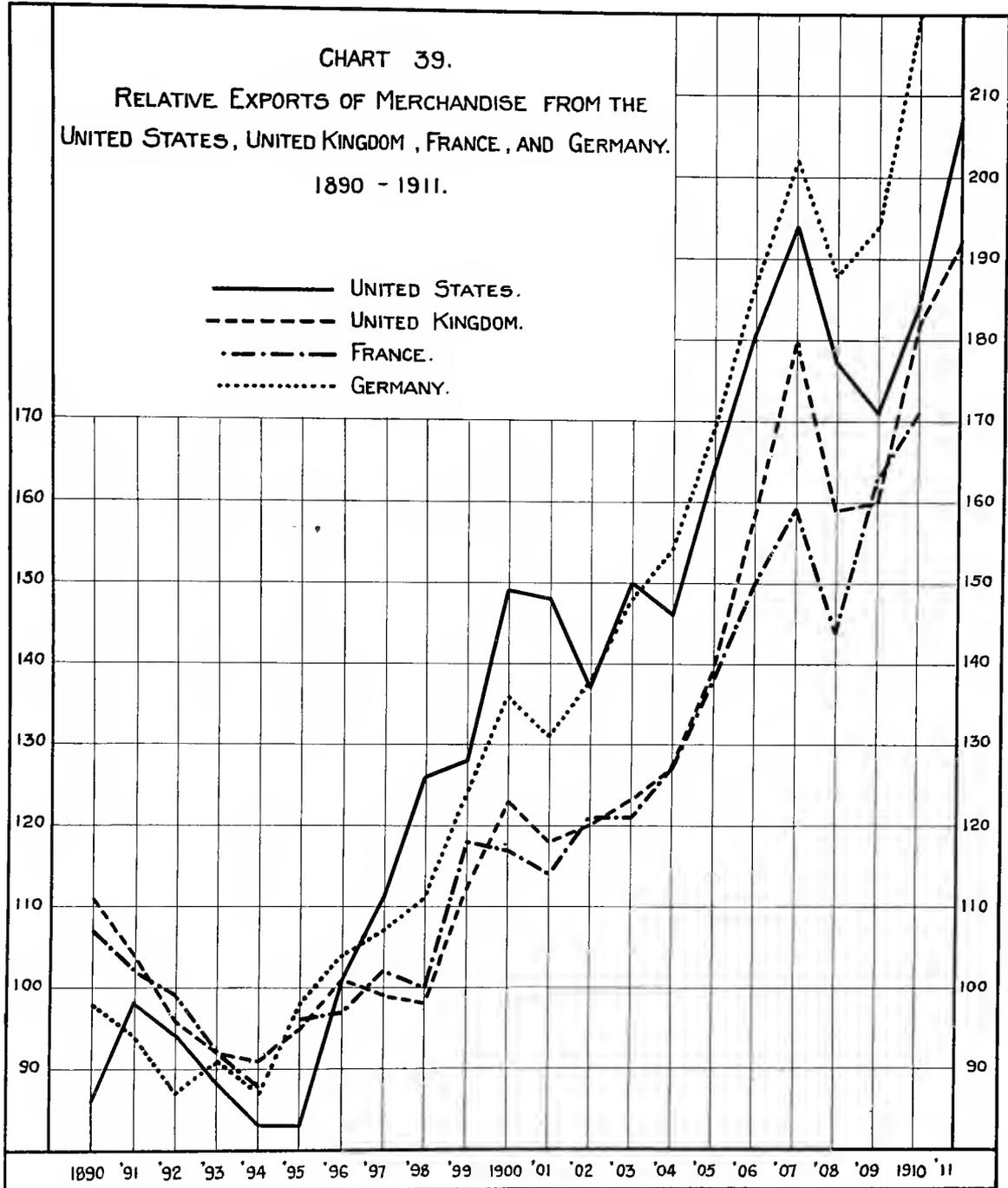
	Relative amounts Average actual amounts 1890-99 = 100							
	United States		United Kingdom		France Special trade		Germany Special trade	
	Imports	Domestic exports	Net imports	Domestic exports	Imports	Exports	Imports	Exports
1890	108	86	95	111	107	107	95	98
1891	109	98	100	104	115	102	95	94
1892	111	94	96	96	101	99	92	87
1893	102	88	92	92	93	92	90	91
1894	89	83	94	91	93	88	90	87
1895	105	83	95	95	90	96	94	98
1896	90	101	103	101	91	97	98	104
1897	98	111	104	99	95	102	107	107
1898	83	126	109	98	108	100	116	111
1899	105	128	112	112	109	118	125	124
1900	109	149	123	123	113	117	131	136
1901	116	148	121	118	105	114	123	131
1902	127	137	123	120	106	121	128	138
1903	131	150	126	123	116	121	137	148
1904	136	146	128	127	108	127	145	154
1905	155	164	130	139	115	138	162	169
1906	174	181	140	158	135	150	183	187
1907	187	194	148	180	150	159	199	202
1908	147	177	137	159	136	144	175	188
1909	194	171	142	160	150	163	194	194
1910	206	184	153	182	173	177	203	220
1911	202	207	154	192	196*	176*	221	239
Averages								
1890-99	100	100	100	100	100	100	100	100
1900-09	148	162	132	141	123	135	158	165

\* Provisional figures.

exports has exceeded that of imports. Every year the United States has so-called favorable balances of trade, while the European countries, except France in 1905, have unfavorable balances.

The close dependence of the pecuniary volume of foreign trade upon business cycles is stamped upon this table. Both imports and exports rise in years of prosperity, and both decline in years of depression. A few exceptions to this rule are brought about by causes not originating in the world of business. For example, 1891 was a dull year, yet imports increased in Europe and exports in the United States, because of the short European and abundant American harvests; 1897 and the first half of 1898 was a period of business revival in England, yet British exports declined a little because of famine in India,





drought in South Africa, poor crops and political unrest in South America, the Dingley tariff in the United States, the Spanish-American War, and the Fashoda incident;<sup>11</sup> two of these same factors—the Dingley tariff and the Spanish War—were chiefly responsible for the decline of imports into the United States in the prosperous year 1898, etc. Apparent exceptions to the rule may also be brought about by a difference in the course of business in different countries. Thus in 1901, when Europe was visited by depression, both imports and exports declined; while the United States, still prosperous, increased its imports, but suffered a decline of exports, because its leading customers bought less freely.

This case suggests a difference in the character of the relation borne by business conditions toward imports and toward exports. Prosperity at home tends directly to increase imports, but to decrease exports. For the large domestic demand and the rising prices which accompany prosperity make producers less dependent upon foreign markets. On the contrary, while depression clearly decreases imports, there is reason to expect that it should increase exports. For the lower level of prices at home and the reduced domestic demand make producers more eager to sell goods abroad. Since the movement of exports usually contradicts these expectations, the reason must be not only that business cycles run a substantially similar course in countries having important commercial relations, but also that business conditions among the customer nations have more influence upon the volume of exports than business conditions among the producers.

It is occasionally said that prosperity works its own undoing through the effects it produces upon foreign commerce. The argument is that, by encouraging imports and discouraging exports, prosperity reduces a favorable and augments an unfavorable balance of trade upon merchandise account, and therefore tends to produce an outflow of gold. In turn, the latter reduces bank reserves, causes a restriction of credit, and so brings the movement of expansion to a close.

With the international movements of gold and their effects upon business cycles, we are not yet ready to deal. But it is pertinent to examine the relation between business conditions and the balance of trade in merchandise. For this purpose, the excesses of exports over imports or of imports over exports have been computed from Table 59 and set down in Table 60. The figures do not give unequivocal support to the above stated theory. For example, England's excess of imports was greater in the dull years 1901-04 than in the brisk years 1905-07; America's excess of exports rose with the rise of prosperity from 1904 to 1907; France's greatest excess of imports came in the dull years 1891 and 1911, and Germany's excess of imports declined in 1899—the *annus mirabilis*. But the cases which support the theory are more numerous. As a rule the excess of exports in America has fallen at the culmination of a period

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<sup>11</sup> See the *Economist's* Commercial History and Review of 1897 and 1898.

of prosperity and risen in the subsequent period of depression. *Mutatis mutandis*, the rule holds good also for France and Germany. The truth seems to be that prosperity in a given country does stimulate imports and check exports; but that this effect is often offset by counter-influences, such as fluctuations in the harvest and business conditions among customer or competitor nations.

The elaborate form in which statistics of foreign trade are published makes it possible to examine the influence exercised by business cycles upon exports

TABLE 60

EXCESS OF MERCHANDISE IMPORTS OVER EXPORTS (—) OR OF EXPORTS OVER IMPORTS (+) IN THE UNITED STATES,  
UNITED KINGDOM, FRANCE, AND GERMANY

BY YEARS, 1890-1911

Year	Actual amounts in millions of dollars			
	United States	United Kingdom	France	Germany
1890	+ 35	—450	—132	—198
1891	+143	—615	—231	—232
1892	+ 97	—643	—140	—253
1893	+100	—621	—119	—207
1894	+149	—655	—149	—232
1895	+ 23	—637	— 67	—191
1896	+324	—707	— 77	—186
1897	+357	—763	— 70	—249
1898	+621	—859	—185	—315
1899	+476	—757	— 71	—304
1900	+649	—821	—114	—274
1901	+585	—847	— 69	—235
1902	+392	—872	— 27	—227
1903	+490	—887	—106	—236
1904	+415	—877	— 10	—269
1905	+448	—767	+ 17	—333
1906	+477	—717	— 70	—396
1907	+500	—623	—121	—453
1908	+637	—663	—114	—301
1909	+225	—755	—101	—459
1910	+266	—702	—181	—347
1911	+525	—601	—384*	—381
Averages				
1890-99	+232.5	—670.7	—124.1	—263.7
1900-09	+481.8	—782.9	— 71.5	—318.3

\* Provisional figures.  
Compiled from Table 59.

and imports in great detail. It will suffice for present purposes to take the three grand divisions under which exports and imports of merchandise are classified: foodstuffs, raw materials, and manufactured goods.<sup>12</sup>

Tables 61 and 62 show that the correlation between business conditions and imports and exports of foodstuffs is far from close. Whether the changes from

TABLE 61  
RELATIVE IMPORTS OF FOODSTUFFS, RAW MATERIALS, AND MANUFACTURED PRODUCTS INTO THE UNITED STATES,  
FRANCE, AND GERMANY  
BY YEARS, 1890-1911

Average actual amounts	Average actual amounts in 1890-99 = 100								
	Foodstuffs			Raw materials			Manufactured goods		
	United States	France	Germany	United States	France	Germany	United States	France	Germany
1890-99	261.6	237.1	361.8	185.5	446.0	457.3	303.8	119.1	225.4
1900-09	266.6	171.4	511.0	357.3	637.4	843.9	456.1	181.2	293.5
Year									
1890	100	118	92	92	103	92	115	100	104
1891	114	135	100	99	106	90	117	108	95
1892	120	114	99	101	94	86	104	100	90
1893	109	86	87	113	96	91	120	91	95
1894	110	98	95	70	91	87	76	89	88
1895	95	84	91	98	91	94	97	95	98
1896	95	82	97	107	94	98	108	100	99
1897	99	84	106	106	100	109	101	99	102
1898	73	123	120	102	102	117	76	100	107
1899	85	77	114	113	123	136	86	118	121
1900	88	67	116	149	131	146	111	137	127
1901	90	64	125	134	122	128	110	125	112
1902	83	67	130	163	121	133	125	126	116
1903	90	78	128	178	131	148	149	133	128
1904	96	66	129	173	123	165	136	135	129
1905	111	67	154	210	134	180	142	141	140
1906	105	77	153	224	160	229	174	162	137
1907	118	84	161	257	174	256	210	190	147
1908	112	76	149	196	155	216	174	181	131
1909	126	77	168	243	178	244	171	191	135
1910	125	115	163	305	188	265	215	229	144
1911	135	162*	197	276	201*	274	214	248*	152
Averages									
1890-99	100	100	100	100	100	100	100	100	100
1900-09	102	72	141	193	143	185	150	152	130

\* Provisional figures.

Compiled from data in the statistical abstracts of the several countries. The American figures are for years ending June 30.

<sup>12</sup> Great Britain is excluded from the following comparisons, because I have not found the threefold classification carried back to 1890 in the available documents. To make the fivefold American classification correspond as closely as may be with the less detailed French and German tables, I have combined crude with manufactured foodstuffs, and "manufactures for further use in manufacturing" with "manufactures ready for consumption." Since these American figures are for fiscal years, they do not tally with the American figures for calendar years in Table 59.

year to year or from decade to decade be examined, it appears that international trade in food is controlled quite as much by the harvests as by the alternations of business activity and stagnation. But these figures do throw light upon the general trend of economic development in the three countries. France has become distinctly less and Germany distinctly more dependent upon foreign supplies of food since 1890, while American imports of this character have increased but a trifle, despite the rapid growth of population.

TABLE 62

RELATIVE EXPORTS OF FOODSTUFFS, RAW MATERIALS, AND MANUFACTURED PRODUCTS FROM THE UNITED STATES, FRANCE, AND GERMANY

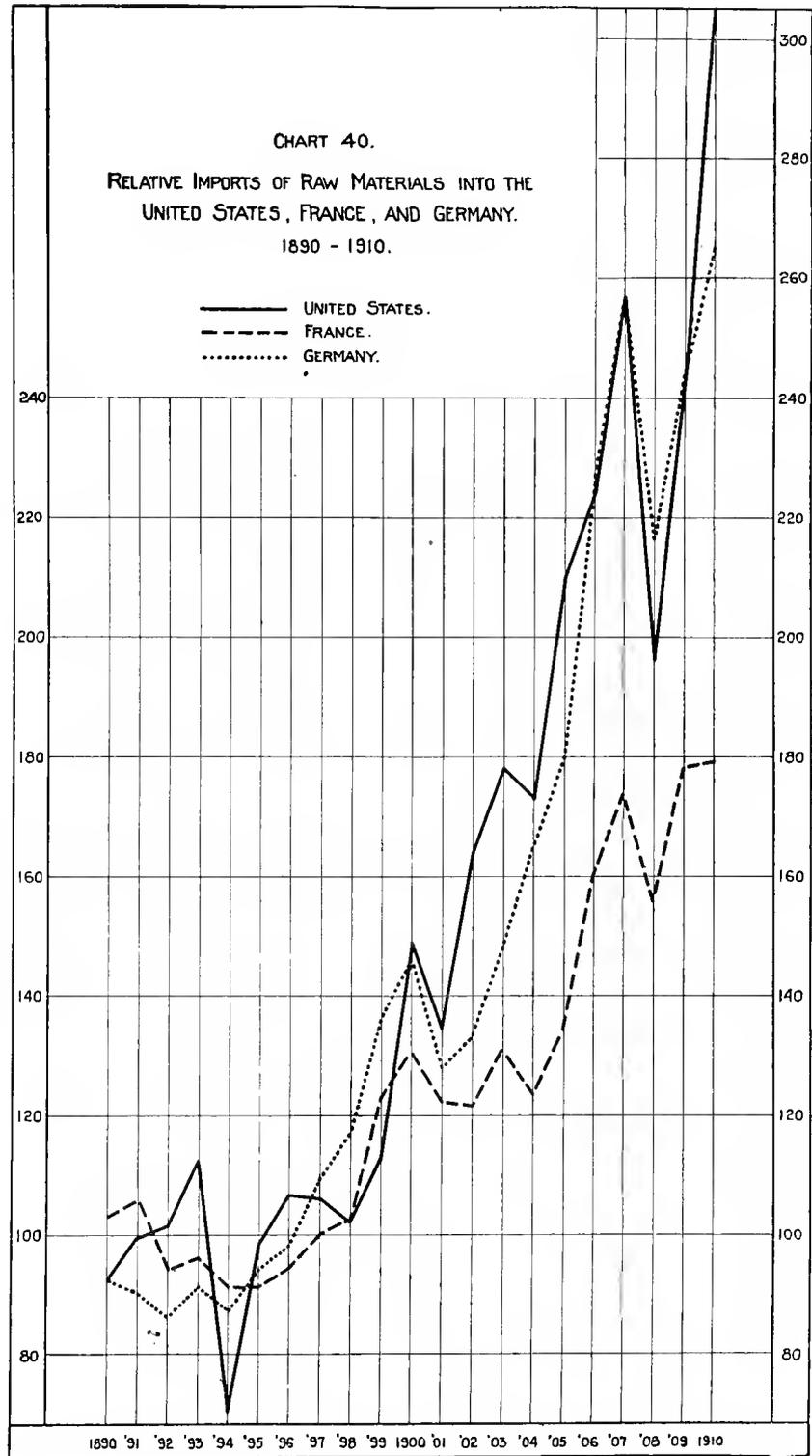
BY YEARS, 1890-1911

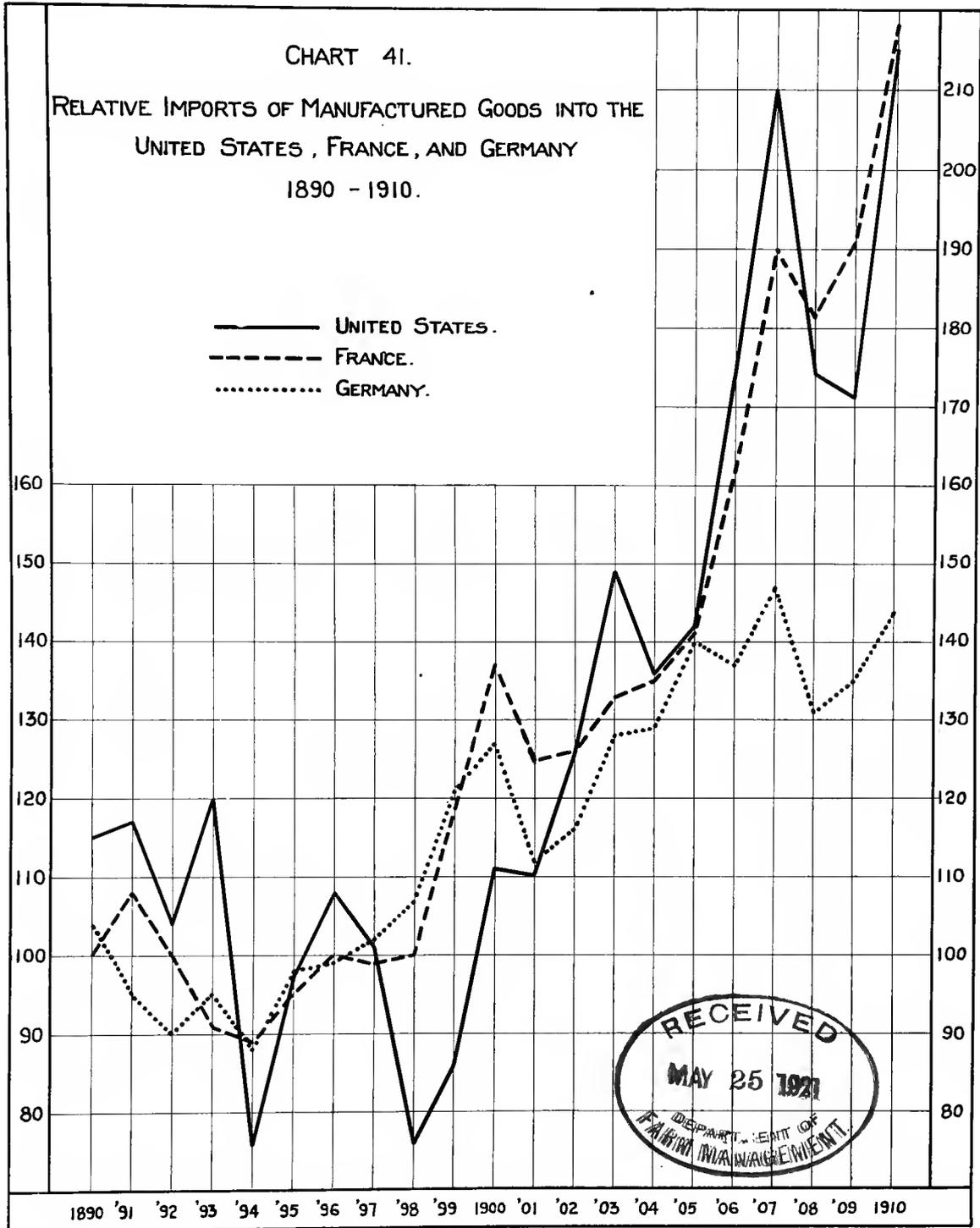
Average actual amounts in 1890-99 = 100

Average actual amounts	Foodstuffs			Raw materials			Manufactured goods		
	United States	France	Germany	United States	France	Germany	United States	France	Germany
1890-99	419.6	137.1	106.8	286.7	171.5	179.6	241.1	369.5	521.3
1900-09	499.4	142.6	127.9	461.4	251.6	325.3	585.5	524.7	876.8
Year									
1890	85	120	105	106	101	94	74	105	98
1891	79	114	98	121	94	91	78	101	93
1892	122	107	82	110	93	84	76	98	89
1893	95	100	95	86	88	89	74	91	91
1894	91	94	92	96	85	89	84	87	86
1895	76	83	93	92	98	96	85	100	99
1896	83	92	101	88	94	102	107	100	105
1897	99	102	115	104	106	108	129	101	105
1898	141	93	112	100	105	113	135	100	109
1899	128	95	107	97	136	135	158	118	124
1900	130	108	115	114	122	147	201	118	136
1901	139	105	101	139	115	144	193	117	132
1902	122	100	95	130	132	154	188	124	141
1903	121	93	114	143	132	162	194	126	150
1904	106	98	117	161	137	167	217	133	157
1905	96	110	113	165	151	186	253	144	174
1906	125	100	128	175	166	198	285	161	196
1907	122	105	123	207	170	219	307	175	212
1908	124	105	142	194	151	209	311	155	191
1909	104	116	150	182	191	226	278	167	192
1910	88	121	170	197	217	254	318	180	219
1911	92	102*	178	249	216*	269	376	184*	241
Averages									
1890-99	100	100	100	100	100	100	100	100	100
1900-09	119	104	120	161	147	181	243	142	168

\* Provisional figures.

Compiled from data in the statistical abstracts of the several countries. The American figures are for years ending June 30.





The fairly close correspondence established by Table 59 between the volume of foreign commerce and business cycles is confined almost wholly to imports and exports of raw materials and manufactured goods. Occasional breaks in the parallelism are caused by changes in tariffs, by wars, by the influence of crops on purchasing power, and other factors not directly connected with business activity; but, as a rule, imports rise when times are good at home, exports rise when times are good abroad, and *vice versa*.

The chief purpose of the next table is to show that these classes of commodities which do fluctuate in harmony with business cycles make a smaller proportion of American than of foreign trade. Particularly as an exporter, America deals more largely in foodstuffs than France or Germany. On the other hand, more than half of the French and German exports consist of manufactured goods.<sup>13</sup> Conversely, among imports, manufactured goods take the lead in America, raw materials in France and Germany.<sup>14</sup>

An exaggerated idea of the relative magnitude of foreign as compared with domestic trade is made by the fullness of the statistics for the former and the scantiness of the statistics for the latter. Lacking records for the value of goods bought and sold in interior markets, we are unduly impressed by the imposing totals of imports and exports furnished by the customs houses. But

TABLE 63

ANALYSIS OF THE MERCHANDISE IMPORTS AND EXPORTS OF THE UNITED STATES, FRANCE, AND GERMANY, BY DECADES, 1890-1909

IMPORTS						
Average actual amounts in millions of dollars						
	United States		France		Germany	
	1890-99	1900-09	1890-99	1900-09	1890-99	1900-09
Foodstuffs .....	261.6	266.6	237.1	171.4	361.8	511.0
Raw materials .....	185.5	357.3	446.0	637.4	457.3	843.9
Manufactured goods .....	303.8	456.1	119.1	181.2	225.4	293.5
Total .....	750.9	1,080.0	802.2	990.0	1,044.5	1,648.4
Relative amounts Total actual amounts = 100						
	United States		France		Germany	
	1890-99	1900-09	1890-99	1900-09	1890-99	1900-09
Foodstuffs .....	34.8%	24.7%	29.6%	17.3%	34.6%	31.0%
Raw materials .....	24.7	33.1	55.6	64.4	43.8	51.2
Manufactured goods .....	40.5	42.2	14.8	18.3	21.6	17.8
Total .....	100.0	100.0	100.0	100.0	100.0	100.0

<sup>13</sup> The United States, however, has been making rapid progress in the exports of manufactured goods, so that in the second decade this class of merchandise exceeded foodstuffs in value.

<sup>14</sup> Certain slight discrepancies—less than \$1,000,000 in all cases—may be noted between the decennial averages for France and for Germany in tables 59 and 63.

The large American imports of foodstuffs consist chiefly of such articles as sugar, coffee, tea, tobacco, fruits and nuts, etc.

TABLE 63—(Concluded)

ANALYSIS OF THE MERCHANDISE IMPORTS AND EXPORTS OF THE UNITED STATES, FRANCE, AND GERMANY, BY  
DECADES, 1890-1909

EXPORTS						
Average actual amounts in millions of dollars						
	United States		France		Germany	
	1890-99	1900-09	1890-99	1900-09	1890-99	1900-09
Foodstuffs .....	419.6	499.4	137.1	142.6	106.8	127.9
Raw materials .....	286.7	461.4	171.5	251.6	179.6	325.3
Manufactured goods .....	241.1	585.5	369.5	524.7	521.3	876.8
Total .....	947.4	1,546.3	678.1	918.9	807.7	1,330.0

Relative amounts Total actual amounts = 100						
	United States		France		Germany	
	1890-99	1900-09	1890-99	1900-09	1890-99	1900-09
Foodstuffs .....	44.3%	32.3%	20.2%	15.5%	13.2%	9.6%
Raw materials .....	30.3	29.8	25.3	27.4	22.2	24.5
Manufactured goods .....	25.4	37.9	54.5	57.1	64.6	65.9
Total .....	100.0	100.0	100.0	100.0	100.0	100.0

Compiled from data in the statistical abstracts of the several countries. The American figures are for years ending June 30. An error in the French figures for imports of raw materials in 1897 has been corrected.

an effort to cast up corresponding totals for domestic trade shows that it must be vastly greater in volume. Professor Irving Fisher's computations for 1909 make the aggregate imports and exports of the United States "a paltry 3 billions as compared with a total national trade of 387 billions."<sup>15</sup> Rough as are certain elements in this estimate, no plausible changes in the figures could make the foreign trade equal 2 per cent of the domestic trade. For the other three countries we have no corresponding data; but the relative proportion of foreign to total trade is certainly considerably larger in Great Britain and Germany than in the United States, and probably somewhat larger in France. In none of these countries, however, can the foreign trade make 5 per cent of the domestic trade. For example, if British imports and exports were fully double, and if British domestic trade were only half the American, still, on the basis of Fischer's estimate, the foreign commerce of Great Britain would not equal 4 per cent of her total business.

Accordingly, the statistics of foreign trade which have been presented are important for present purposes, less because of the magnitude of foreign trade itself than because changes in the volume of imports and exports reflect changes in the volume of domestic business at home and abroad. The figures of chief value in this respect have been shown to be, not the grand totals, but the data concerning the imports and exports of raw materials and manufactured goods.

<sup>15</sup> *The Purchasing Power of Money* (New York, 1911), p. 306.

## VI. THE VOLUME OF GOODS CONSUMED

The many efforts made to account for crises as a result of under-consumption lend interest to the estimates of per capita consumption of staple commodities. But unfortunately the statistics concerning this subject provided by official bureaus are not very useful.

The chief difficulty is that the figures do not really show the quantity of goods consumed, but the supply made available for consumption. The tacit assumption that a nation does use up within each year substantially the quantity of wheat and corn, tea and coffee, provided by its farmers and merchants is of exceedingly doubtful validity. For example, if the American statistics may be trusted, there was a notable decline in consumption between the fiscal years 1897 and 1898. Table 64 shows that in the latter year the average inhabitant economized to the extent of 31 pounds of sugar, 10 ounces of tea, and 3 pounds of wool. The fact is that extraordinarily large quantities of these commodities

TABLE 64  
PER CAPITA CONSUMPTION OF NINE COMMODITIES IN THE UNITED STATES  
BY YEARS, 1890-1909

Years ending June 30	Actual amounts								
	Wheat and wheat flour Bushels	Corn and corn meal Bushels	Sugar Pounds	Coffee Pounds	Tea Pounds	Distilled spirits Pf. gallons	Malt liquors Gallons	Wines Gallons	Raw wool Pounds
1890	6.09	32.09	51.00	7.83	1.33	1.40	13.67	.46	6.03
1891	4.59	22.84	60.70	8.00	1.29	1.43	14.84	.46	6.44
1892	5.94	30.48	60.22	9.67	1.38	1.49	15.24	.43	6.75
1893	4.89	23.83	64.24	8.31	1.32	1.52	16.19	.48	7.10
1894	3.44	22.96	72.99	8.30	1.36	1.34	15.32	.32	5.13
1895	4.59	17.18	62.69	9.33	1.40	1.14	15.13	.30	7.39
1896	4.85	29.18	63.98	8.11	1.33	1.01	15.85	.27	6.98
1897	3.95	29.40	78.20	10.12	1.58	1.02	14.94	.53	8.40
1898	4.29	23.19	47.55	11.68	.93	1.12	15.96	.28	5.44
1899	6.09	23.51	61.98	10.79	.98	1.18	15.30	.35	4.51
1900	4.74	24.44	58.68	9.81	1.09	1.28	16.02	.39	5.72
1901	3.95	24.77	71.92	10.48	1.14	1.33	16.22	.37	5.18
1902	6.50	18.92	63.53	13.42	.94	1.36	17.50	.63	6.07
1903	5.81	30.45	79.38	10.91	1.30	1.46	18.04	.48	5.74
1904	6.33	26.74	69.26	11.79	1.34	1.48	18.34	.53	5.66
1905	6.15	28.59	72.47	12.17	1.23	1.45	18.50	.42	6.52
1906	7.07	30.73	77.07	9.94	1.10	1.52	20.19	.55	5.88
1907	6.86	33.11	82.61	11.40	.99	1.63	21.24	.67	5.81
1908	5.41	29.11	75.61	10.07	1.07	1.44	20.98	.60	4.95
1909	6.22	29.71	82.24	11.74	1.29	1.37	19.79	.70	6.67
Averages									
1890-99	4.872	25.466	62.355	9.214	1.29	1.265	15.244	.388	6.417
1900-09	5.904	27.657	73.277	11.173	1.149	1.432	18.682	.534	5.820

Compiled from the *Statistical Abstract of the United States*, 1909.

TABLE 64—(Concluded)  
 PER CAPITA CONSUMPTION OF NINE COMMODITIES IN THE UNITED STATES  
 BY YEARS, 1890-1909

Years ending June 30	Relative amounts Average actual amounts 1890-99 = 100								
	Wheat and wheat flour	Corn and corn meal	Sugar	Coffee	Tea	Distilled spirits	Malt liquors	Wines	Raw wool
1890	125	126	82	85	103	111	90	119	94
1891	94	90	97	87	100	113	97	119	100
1892	122	120	97	105	107	118	100	111	105
1893	100	94	103	90	102	120	106	124	111
1894	71	90	117	90	105	106	100	82	80
1895	94	67	101	101	109	90	99	77	115
1896	100	115	103	88	103	80	104	70	109
1897	81	115	125	110	122	81	98	137	131
1898	88	91	76	127	72	89	105	72	85
1899	125	92	99	117	76	93	100	90	70
1900	97	96	94	106	85	101	105	101	89
1901	81	97	115	114	88	105	106	95	81
1902	133	74	102	146	73	108	115	162	95
1903	119	120	127	118	101	115	118	124	89
1904	130	105	111	128	104	117	120	137	88
1905	126	112	116	132	95	115	121	108	102
1906	145	121	124	108	85	120	132	142	92
1907	141	130	132	124	77	129	139	173	91
1908	111	114	121	109	83	114	138	155	77
1909	128	117	132	127	100	108	130	180	104
Averages									
1890-99	100	100	100	100	100	100	100	100	100
1900-09	121	109	117	121	89	113	122	138	91

were rushed to American ports in the fiscal year 1897 and early in 1898, in order to avoid the increased duties about to be levied under the Dingley tariff. Later, these large stocks, piled up in warehouses, made it possible to supply the market for many months without new importations. There is no ground for thinking that consumption was so large as the fresh supplies provided in 1897, or so small as the fresh supplies provided in 1898.

The American figures for wheat and corn are made by deducting the net exports from the standard crop, and dividing the remainder by the number of the population.<sup>16</sup> No account is taken of the stock on hand at the beginning of the year, or of the stock carried over for use in the year following. Thus, the influence of commerce in moderating the irregularity of current production, by collecting stocks in seasons of abundance and distributing the store in seasons

<sup>16</sup> See the *Statistical Abstract*, 1909, pp. 585, 586.

TABLE 65

## PER CAPITA CONSUMPTION OF SIX COMMODITIES IN THE UNITED KINGDOM

Year	Actual amounts						Relative amounts Average actual amounts in 1890-99 = 100					
	Coffee Pounds	Tea Pounds	Wine Gallons	Spirits Gallons	Beer Gallons	Tobacco Pounds	Coffee	Tea	Wine	Spirits	Beer	Tobacco
1890	0.75	5.17	0.40	1.02	30.00	1.55	106	93	103	100	98	92
1891	0.76	5.35	0.39	1.04	30.16	1.61	107	96	101	102	99	95
1892	0.74	5.43	0.38	1.03	29.75	1.64	105	97	98	101	98	97
1893	0.69	5.40	0.37	0.98	29.55	1.62	97	97	96	96	97	96
1894	0.68	5.51	0.35	0.97	29.41	1.66	96	99	90	95	96	98
1895	0.70	5.65	0.37	1.00	29.58	1.66	99	101	96	98	97	98
1896	0.69	5.75	0.40	1.01	30.79	1.72	97	103	103	99	101	102
1897	0.68	5.79	0.39	1.02	31.29	1.75	96	104	101	100	103	103
1898	0.68	5.83	0.41	1.03	31.76	1.82	96	104	106	101	104	108
1899	0.71	5.95	0.41	1.09	32.53	1.88	100	107	106	107	107	111
1900	0.71	6.07	0.38	1.12	31.56	1.95	100	109	98	110	104	115
1901	0.76	6.16	0.37	1.09	30.77	1.89	107	110	96	107	101	112
1902	0.68	6.06	0.36	1.05	30.24	1.92	96	109	93	103	99	114
1903	0.71	6.03	0.33	0.99	29.69	1.93	100	108	85	97	97	114
1904	0.67	5.99	0.28	0.95	28.79	1.95	95	107	72	93	94	115
1905	0.67	5.99	0.28	0.91	27.70	1.96	95	107	72	89	91	116
1906	0.66	6.17	0.28	0.90	27.97	1.97	93	111	72	88	92	116
1907	0.66	6.21	0.28	0.91	27.58	2.03	93	111	72	89	90	120
1908	0.66	6.18	0.25	0.85	26.62	2.02	93	111	65	83	87	119
1909	0.66	6.30	0.25	0.69	25.83	1.95	93	113	65	68	85	115
Averages												
1890-99	0.708	5.583	0.387	1.019	30.482	1.691	100	100	100	100	100	100
1900-09	0.684	6.116	0.306	.946	28.675	1.957	97	110	79	93	94	116

Data from the *Statistical Abstract of the United Kingdom*.

of scarcity, is neglected. Similarly, the figures for wine have little value except as showing the fluctuating yields from season to season, and as indicating a growing taste for this beverage.<sup>17</sup>

Indeed, the only American estimates of consumption of value to the student of business cycles are the figures for spirituous liquors and beer. The imposition of stamp taxes enables the Commissioner of Internal Revenue to determine with substantial accuracy the quantity sold each season.<sup>18</sup> Even these figures are made rather irregular by changes in the rates of taxation and in the prohibition laws. Further, the considerable factor of growth blurs the effect of business cycles. Nevertheless both series, as given in Table 64, show a rough correlation with business conditions, falling or rising slowly in hard times, rising more rapidly in good times.

<sup>17</sup> The domestic production of wine, minus exports, is nowadays six times the volume of imports. *Ibid.*, p. 597.

<sup>18</sup> *Ibid.*, p. 597, note 2.

TABLE 66

## PER CAPITA CONSUMPTION OF SIX COMMODITIES IN FRANCE

Year	Actual amounts						Average actual amounts in 1890-99 = 100 Relative amounts					
	Sugar Pounds	Coffee Pounds	Cocoa Pounds	Wine Gallons	Spirita Gallons	Beer Gallons	Sugar	Coffee	Cocoa	Wine	Spirita	Beer
1890	26.24	3.90	0.81	24.82	1.15	5.81	104	93	92	85	100	93
1891	26.02	4.03	0.83	27.98	1.15	5.81	103	96	94	96	100	93
1892	27.12	4.13	0.84	25.61	1.20	6.34	108	98	95	88	105	102
1893	24.26	3.96	0.82	37.75	1.14	6.34	96	94	93	130	99	102
1894	26.02	4.01	0.85	29.04	1.07	5.81	103	95	96	100	93	93
1895	26.68	4.15	0.87	21.91	1.07	6.07	106	99	99	75	93	97
1896	23.59	4.30	0.90	35.11	1.11	6.34	94	102	102	120	99	102
1897	22.93	4.42	0.92	25.87	1.13	6.34	91	105	104	89	99	102
1898	24.26	4.52	0.99	26.40	1.24	6.60	96	107	112	91	108	106
1899	24.92	4.64	1.00	36.96	1.21	6.86	99	110	113	127	105	110
1900	25.80	4.67	0.99	47.52	1.23	7.13	102	111	112	163	107	114
1901	24.03	4.89	1.04	40.39	0.93	9.77	95	116	118	139	81	157
1902	26.02	4.99	1.10	28.51	0.86	9.77	103	119	125	98	75	157
1903	29.77	6.31	1.17	26.40	0.93	9.24	118	150	133	91	81	148
1904	33.30	4.30	1.22	48.05	1.03	9.77	132	102	138	165	90	157
1905	29.99	5.12	1.22	40.13	0.94	8.98	119	122	138	138	82	144
1906	32.63	5.49	1.31	37.49	0.94	9.77	129	131	148	129	82	157
1907	32.85	5.71	1.30	46.46	0.87	9.50	130	136	147	159	76	152
1908	33.52	5.77	1.14	43.82	0.91	10.03	133	137	129	150	79	161
1909	34.62	6.02	1.30	39.34	0.91	10.03	137	143	147	135	79	161
Averages												
1890-99	25.204	4.206	0.883	29.145	1.147	6.232	100	100	100	100	100	100
1900-09	30.253	5.327	1.179	39.811	0.955	9.399	120	127	134	137	83	151

Data from the *Annuaire statistique de France*.

The British statistics in Table 65 are more regular and more significant than the American. But again, changing habits of consumption mask part of the influence of business conditions. Since 1890 the British have been using more tea and less coffee, while the opposite is true of Americans. Further, the British consumption of wine, spirits, and beer has declined, while the American consumption has risen. There are indications, however, that business prosperity tends to check a decline and to stimulate a growth in consumption, while business depression has the opposite tendencies.

Finally, the French figures (Table 66) are almost as irregular as the American. Sugar and wine reflect the fortunes of French agriculture; coffee shows an extraordinary jump in 1903 and decline in 1904; beer appears to be affected by the abundance or scarcity of wine and has a very high factor of growth which may well result from the diminishing use of spirits; finally, cocoa, like beer, seems to be used partly as a substitute for wine, but nevertheless shows a rough correlation with business cycles.

## VII. UNEMPLOYMENT

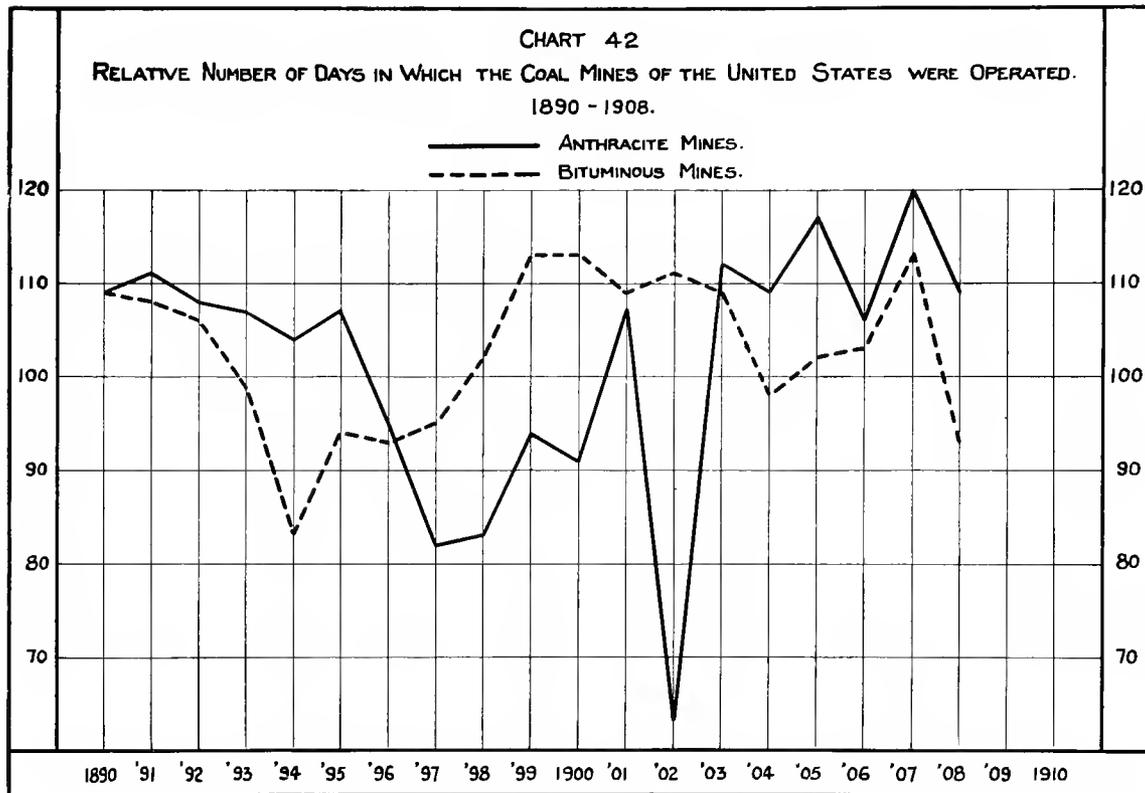
Another aspect of the volume of business is shown by the statistics of unemployment. Unfortunately, systematic information upon this subject is exceedingly meagre in the United States. The Geological Survey reports annually the average number of days in which the bituminous and anthracite coal mines are operated; but we have data covering no other industry in each year since 1890.<sup>19</sup> Of these two series, that for bituminous mines is the more significant, because less affected by serious strikes. The figures reflect the decline of business activity after the panic of 1893, the brief revival of 1895, the sustained revival after 1896, the depression of 1903-04, the fresh revival of 1905-07, and the depression of 1908.

TABLE 67  
AVERAGE NUMBER OF DAYS IN WHICH THE COAL MINES OF THE UNITED STATES WERE OPERATED  
BY YEARS, 1890-1908

Year	Actual number of days		Relative number of days Average actual number in 1890-99 = 100	
	Anthracite mines	Bituminous mines	Anthracite mines	Bituminous mines
1890	200	226	109	109
1891	203	223	111	108
1892	198	219	108	106
1893	197	204	107	99
1894	190	171	104	83
1895	196	194	107	94
1896	174	192	95	93
1897	150	196	82	95
1898	152	211	83	102
1899	173	234	94	113
1900	166	234	91	113
1901	196	225	107	109
1902	116	230	63	111
1903	206	225	112	109
1904	200	202	109	98
1905	215	211	117	102
1906	195	213	106	103
1907	220	234	120	113
1908	200	193	109	93
Averages 1890-99	183.3	207.0	100	100

Compiled from the reports of the U. S. Geological Survey on *Mineral Resources of the United States*, 1908, Part II, p. 41.

<sup>19</sup> See Scott Nearing, "The Extent of Unemployment in the United States," *Quarterly Publications of the American Statistical Association*, September, 1909; vol. xi, pp. 525-542; "Statistics of Unemployment," *Bulletin of the United States Bureau of Labor*, No. 109, October 15, 1912.



In England the trade-unions which pay unemployed benefits report to the Labor Department the percentage of their members receiving such aid on the last day of each month.<sup>20</sup> These reports have made possible the admirable British statistics of unemployment. While the returns are far from covering the whole field of industry, they are sufficiently inclusive in their scope "to make the movements of the general unemployed percentage over a period of years fairly representative of labour conditions as a whole."<sup>21</sup> Table 68 shows this general percentage, the percentages for several trades separately, and the official index numbers of employment. For convenience of comparison, the corresponding series showing the percentage of members out of work among the reporting French unions is inserted in the same table.

The British series indicates that work was plentiful in 1890. Thereafter times grew steadily worse for wage-earners until 1893-94, then better until 1899, worse again until 1904, better once more until 1906, worse until 1908, and finally better again in 1910-11. That is, the fluctuations of unemployment accord almost perfectly with reports of business conditions published by the

<sup>20</sup> "Persons on strike or locked out, sick or superannuated, are excluded from the figures." *Twelfth Abstract of Labour Statistics of the United Kingdom, 1906-07*, p. 3, note.

<sup>21</sup> W. H. Beveridge, *Unemployment* (London, 1909), pp. 22, 23.

*Economist*. The maximum swing from the best to the worst years is 5.5 per cent of the membership of the reporting unions in 1890-99 and 5.3 per cent of the membership in 1900-09.

The French figures run upon a higher level than the British; but that fact possesses little significance because of differences in the trades represented. The series does not begin until recovery from the depression of the early nineties was under way. A fairly stable level of employment is indicated until 1900. But the crisis of that year was followed by hard times and involuntary idleness increased among workingmen until 1904. The tide turned in 1905; 1906 and 1907 were busy years, and even the depression of 1908 was less severe than that of 1902-04 if this gauge may be trusted.<sup>22</sup>

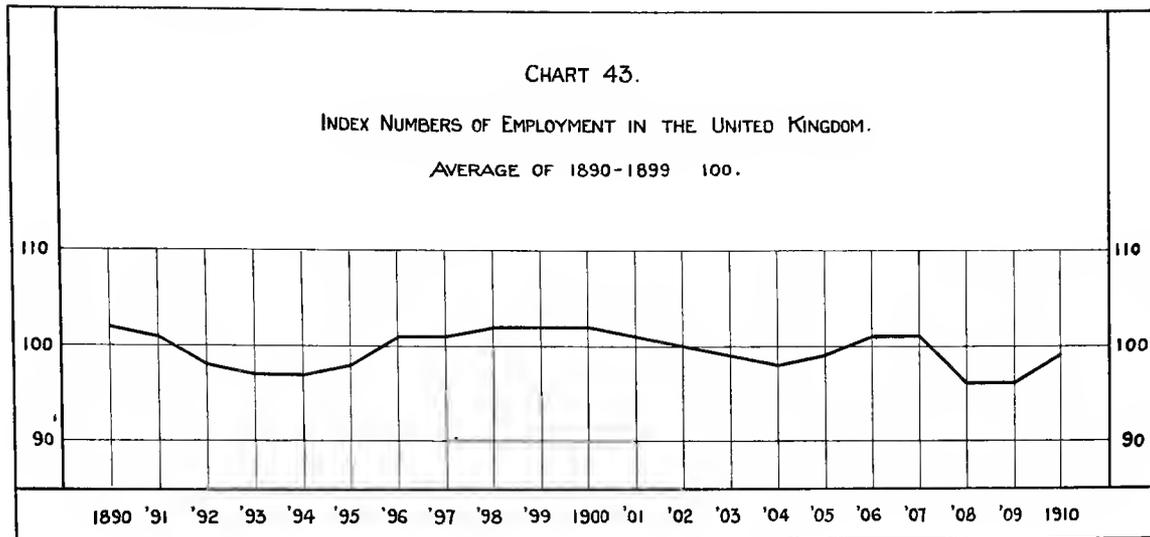
TABLE 68

## STATISTICS OF UNEMPLOYMENT IN THE UNITED KINGDOM AND FRANCE

Year	Index number of employment Average of 1890-99 = 100	United Kingdom Percentages unemployed in certain industries					France	
		All unions included in the returns	Engineering, shipbuilding, and metal	Building	Woodworking and furnishing	Printing and bookbinding	All other trades included in the returns	Percentage unemployed among members of trade unions
1890	102	2.1	2.2	2.2	2.5	2.2	1.6	.....
1891	101	3.5	4.1	1.9	2.1	4.0	1.7	.....
1892	98	6.3	7.7	3.1	3.8	4.3	5.6	.....
1893	97	7.5	11.4	3.1	4.1	4.1	2.6	.....
1894	97	6.9	11.2	4.3	4.4	5.7	1.9	.....
1895	98	5.8	8.2	4.4	3.6	4.9	3.3	7.0
1896	101	3.3	4.2	1.3	2.0	4.3	2.3	6.7
1897	101	3.3	4.8	1.2	2.2	3.9	1.8	6.9
1898	102	2.8	4.0	0.9	2.3	3.7	1.5	7.3
1899	102	2.0	2.4	1.2	2.1	3.9	1.2	6.6
1900	102	2.5	2.6	2.6	2.8	4.2	1.6	6.8
1901	101	3.3	3.8	3.9	3.7	4.5	2.1	7.8
1902	100	4.0	5.5	4.0	4.1	4.6	1.9	9.9
1903	99	4.7	6.6	4.4	4.7	4.4	2.5	9.4
1904	98	6.0	8.4	7.3	6.8	4.7	3.0	10.2
1905	99	5.0	6.6	8.0	5.8	5.1	2.3	9.0
1906	101	3.6	4.1	6.9	4.8	4.5	1.9	7.6
1907	101	3.7	4.9	7.3	4.6	4.3	1.6	7.0
1908	96	7.8	12.5	11.6	8.3	5.5	2.9	8.6
1909	96	7.7	13.0	11.7	7.6	5.6	2.6	7.3
1910	99	4.7	6.8	8.3	5.4	4.9	2.2	5.8
1911	101	3.0	3.4	4.2	3.3	5.1	2.1	4.7
Averages								
1890-99	100	4.35	6.02	2.36	2.91	4.10	2.35	.....
1900-09	99	4.83	6.80	6.77	5.32	4.74	2.24	8.36

Data from the *Fourteenth Abstract of Labor Statistics of the United Kingdom, 1908-09*, pp. 2 and 6; *Annuaire statistique de France, 1908*, p. 178\*.

<sup>22</sup> The German figures showing the percentage of unemployment cover too short a time to possess much significance as yet.



Among the American figures patterned after the British statistics of unemployment, the following series published by the New York State Department of Labor Statistics is perhaps the best. It shows the average percentage of members reported out of work by upwards of 200 trade unions.

1902.....	14.8%	1907.....	16.2%
1903.....	17.5	1908.....	29.7
1904.....	16.9	1909.....	18.5
1905.....	11.2	1910.....	19.1
1906.....	9.3	1911.....	21.1

The exceedingly high level upon which these figures fluctuate concerns us less than the violence of the changes from good years to poor. The depression of 1903-04, the prosperous times of 1905-06, the panic of 1907, the depression of 1908, the brief revival of 1909, and the return of depression in 1910-11 are all reflected in this series. But the most striking fact is that the maximum percentage of unemployment is more than three times the minimum.

### VIII. PER CAPITA INDICES OF THE VOLUME OF BUSINESS

The volume of business important for the study of business cycles is usually the total volume as measured in physical or pecuniary units. But sometimes it is desirable to know the changes in this volume as compared with the changes in population. To serve such purposes, several of the most significant indices shown in the preceding tables have been reduced to a per capita basis.

The results, presented in the next table, throw the effects of prosperity and depression into higher relief, because they reduce, though without wholly eliminating, the obscuring factor of growth. Per capita figures also make possible fairer comparisons between the provision made in different countries for the material welfare of each citizen. Especial interest attaches to the relative figures. They show that the rate of progress has been fastest in the United States and next fastest in Germany, except in reference to foreign commerce, where the rank of these two leaders is reversed. More surprising is the conclusion that in most of the lines investigated France has progressed more rapidly than the United Kingdom.

TABLE 69

INDICES OF THE VOLUME OF BUSINESS IN THE UNITED STATES, UNITED KINGDOM, FRANCE, AND GERMANY,  
REDUCED TO A PER CAPITA BASIS  
BY YEARS, 1890-1910

Year	Tons of coal produced per capita				Tons of pig-iron produced per capita				Value of pig-iron produced in dollars per capita			
	United States	United Kingdom	France	Germany	United States	United Kingdom	France	Germany	United States	United Kingdom	France	Germany
1890	2.24	4.85	.677	1.79	.46	.211	.049	.093	2.40	3.12	.703	1.30
1891	2.37	4.89	.677	1.87	.130	.196	.049	.092	2.01	2.51	.625	1.10
1892	2.46	4.78	.677	1.81	.141	.176	.052	.097	2.01	2.20	.625	1.09
1893	2.46	4.26	.651	1.85	.107	.182	.052	.096	1.28	2.00	.599	1.00
1894	2.25	4.83	.703	1.89	.099	.190	.052	.103	0.96	2.13	.599	1.07
1895	2.50	4.85	.727	1.96	.136	.196	.052	.104	1.52	2.30	.545	1.08
1896	2.43	4.92	.753	2.10	.122	.220	.060	.119	1.28	2.55	.675	1.34
1897	2.50	5.05	.777	2.22	.135	.220	.062	.127	1.33	2.58	.725	1.55
1898	2.69	5.00	.825	2.32	.162	.213	.064	.132	1.61	2.72	.799	1.65
1899	3.06	5.39	.823	2.43	.183	.230	.064	.145	3.30	3.90	.925	1.96
1900	3.16	5.46	.848	2.63	.181	.218	.069	.150	3.41	4.44	1.105	2.34
1901	3.38	5.26	.821	2.65	.205	.190	.062	.137	3.12	2.91	.846	2.06
1902	3.40	5.40	.767	2.56	.225	.207	.061	.145	4.71	3.26	.793	1.87
1903	3.95	5.45	.870	2.73	.223	.211	.072	.169	4.26	3.25	.895	2.13
1904	3.81	5.45	.867	2.81	.200	.204	.074	.166	2.82	2.91	.944	2.08
1905	4.17	5.49	.893	2.84	.273	.223	.077	.177	4.54	3.42	1.046	2.29
1906	4.32	5.78	.865	3.10	.295	.233	.084	.198	5.90	3.96	1.298	2.78
1907	4.91	6.13	.916	3.27	.296	.231	.089	.205	6.07	4.17	1.043	3.16
1908	4.17	5.94	.939*	3.37	.179	.206	.086*	.184	2.86	3.17	1.370*	2.70
1909	4.54	5.93	.939*	3.36	.285	.213	.089*	.195	4.62	3.37	1.446*	2.59
1910	4.86	5.88	.962*	3.39	.296	.223	.101*	.226	4.61	3.72	.....	2.96
Averages												
1890-99	2.496	4.882	.7290	2.024	.1361	.2034	.0556	.1108	1.770	2.601	.682	1.314
1900-09	3.981	5.629	.8725	2.932	.2362	.2136	.0763	.1726	4.231	3.486	1.0786	2.400

\* Provisional figures, subject to revision.

Computed from data in the preceding tables of this chapter, except that the population of the United Kingdom (instead of the figures for England and Wales given in Table 47) is used as the divisor of amounts which relate to that area.

TABLE 69—(Continued)

INDICES OF THE VOLUME OF BUSINESS IN THE UNITED STATES, UNITED KINGDOM, FRANCE, AND GERMANY,  
REDUCED TO A PER CAPITA BASIS

Year	Bushels of wheat produced per capita				Railway gross earnings in dollars per capita				Bank clearings in dollars per capita		Bills of exchange in dollars per capita	
	United States	United Kingdom	France	Germany	United States	United Kingdom	France	Germany	U. S. outside New York	England London	France	Germany
1890	6.34	2.08	8.05	2.11	16.7	9.9	5.81	6.30	367	1,319	141	68.1
1891	9.59	2.04	5.70	1.73	17.2	10.1	5.96	6.43	359	1,144	143	70.3
1892	7.93	1.65	8.10	2.31	18.0	10.0	5.94	6.38	389	1,071	136	67.4
1893	5.97	1.35	7.24	2.17	18.4	9.7	6.07	6.59	345	1,057	137	68.9
1894	6.81	1.62	9.06	2.16	15.9	10.0	6.20	6.55	312	1,023	133	68.0
1895	6.78	.99	8.83	2.25	15.6	10.1	6.34	6.87	338	1,213	134	71.9
1896	6.09	1.52	8.83	2.39	16.4	10.5	6.49	7.16	319	1,198	140	74.6
1897	7.40	1.45	6.40	2.24	17.1	10.7	6.68	7.44	332	1,170	144	79.5
1898	9.26	1.91	9.36	2.45	17.1	11.0	6.88	8.05	369	1,251	151	86.6
1899	7.36	1.69	9.36	2.55	17.7	11.4	7.07	8.39	448	1,395	157	93.5
1900	6.84	1.36	8.38	2.52	19.5	11.7	7.53	8.62	438	1,354	160	99.6
1901	9.64	1.35	7.98	1.62	20.5	11.7	7.21	8.26	503	1,426	153	93.5
1902	8.46	1.43	8.39	2.47	21.8	11.8	7.29	8.34	527	1,479	152	89.4
1903	7.90	1.18	9.31	2.24	23.5	11.9	7.42	8.79	535	1,477	160	91.5
1904	6.69	.92	7.63	2.35	23.9	11.9	7.45	9.08	532	1,530	165	94.3
1905	8.24	1.44	8.55	2.26	24.8	11.9	7.76	9.62	595	1,759	170	104.3
1906	8.58	1.43	8.27	2.37	27.1	12.1	8.09	10.23	644	1,804	187	110.4
1907	7.26	1.33	9.59	2.06	29.7	12.5	8.35	10.53	662	1,787	196	119.8
1908	7.48	1.27	8.07*	2.19	26.9	12.2	8.50*	10.21	597	1,681	191*	111.8
1909	8.14	1.46	9.04*	2.17	26.7	12.1	8.63*	10.63	687	1,859	197*	124.6
1910	6.89	1.29	6.53*	2.20	29.8	12.4	.....	11.19	724	1,991	214*	124.3
1911	6.62	1.46	7.97*	2.28	.....	.....	.....	.....	721	1,964	.....	128.1
Averages												
1890-99	7.353	1.630	8.093	2.236	17.01	10.34	6.344	7.016	357.8	1,184.1	141.6	74.88
1900-09	7.923	1.317	8.521	2.225	24.44	11.98	7.823	9.431	572.0	1,615.6	173.1	103.92

\* Provisional figures, subject to revision.

TABLE 69—(Continued)

INDICES OF THE VOLUME OF BUSINESS IN THE UNITED STATES, UNITED KINGDOM, FRANCE, AND GERMANY,  
REDUCED TO A PER CAPITA BASIS

Year	Imports of merchandise in millions of dollars				Exports of merchandise in millions of dollars			
	United States	United Kingdom	France	Germany	United States	United Kingdom	France	Germany
1890	13.1	46.2	22.3	20.1	13.6	34.2	18.9	16.1
1891	13.0	48.1	24.0	19.8	15.2	31.8	17.9	15.2
1892	12.9	45.9	21.0	19.0	14.4	29.0	17.4	14.0
1893	11.7	43.7	19.4	18.6	13.2	27.6	16.3	14.5
1894	10.0	43.9	19.3	18.3	12.2	27.0	15.5	13.7
1895	11.6	44.3	18.6	18.9	12.0	28.1	16.9	15.2
1896	9.7	47.4	19.0	19.4	14.3	29.5	17.0	15.9
1897	10.4	47.6	19.8	20.8	15.4	28.5	18.0	16.1
1898	8.7	49.4	22.2	22.2	17.2	28.1	17.5	16.4
1899	10.8	50.1	22.4	23.6	17.2	31.5	20.6	18.1
1900	10.9	54.3	23.3	24.5	19.4	34.4	20.4	19.6
1901	11.3	53.1	21.6	22.7	18.9	32.8	19.8	18.5
1902	12.2	53.6	21.7	23.2	17.2	32.8	21.0	19.3
1903	12.3	54.6	23.7	24.4	18.4	33.5	21.0	20.4
1904	12.6	54.9	22.2	25.4	17.6	34.3	21.9	20.9
1905	14.0	55.2	23.5	28.1	19.3	37.3	24.0	22.6
1906	15.4	58.6	27.6	31.2	21.0	42.1	25.9	24.7
1907	16.3	61.7	30.6	33.6	22.0	47.4	27.5	26.3
1908	12.6	56.6	27.6*	29.0	19.7	41.6	24.7*	24.2
1909	16.3	58.3	30.6*	31.8	18.8	41.4	28.0*	24.6
1910	17.0	62.3	35.0*	32.9	19.8	46.6	30.5*	27.5
1911	16.3	62.1	39.9*	35.3	21.9	48.8	30.2*	29.5
Averages								
1890-99	11.19	46.66	20.80	20.07	14.47	29.53	17.60	15.52
1900-09	13.39	56.09	25.24	27.39	19.23	37.76	23.42	22.11

\* Provisional figures, subject to revision.

TABLE 69—(Continued)

INDICES OF THE VOLUME OF BUSINESS IN THE UNITED STATES, UNITED KINGDOM, FRANCE, AND GERMANY,  
REDUCED TO A PER CAPITA BASIS

Year	Relative figures. Average actual figures 1890-99 = 100											
	Tons of coal produced per capita				Tons of pig-iron produced per capita				Value of pig-iron produced per capita			
	United States	United Kingdom	France	Germany	United States	United Kingdom	France	Germany	United States	United Kingdom	France	Germany
1890	90	99	93	98	107	104	88	84	136	120	130	99
1891	95	100	93	92	96	96	88	83	114	97	92	84
1892	99	98	93	89	104	87	94	88	114	85	92	83
1893	99	87	89	91	79	89	94	87	72	77	88	76
1894	90	99	96	93	73	93	94	93	54	82	88	81
1895	100	99	100	97	100	96	94	94	86	88	80	82
1896	97	101	103	104	90	108	108	107	72	98	99	102
1897	100	103	107	110	99	108	112	115	75	99	106	118
1898	108	102	113	115	119	105	115	119	91	105	117	126
1899	123	110	113	120	134	113	115	131	186	150	136	149
1900	127	112	116	130	133	107	124	135	193	171	162	178
1901	135	108	113	131	151	93	112	124	176	112	124	157
1902	136	111	105	126	165	102	110	131	266	125	116	142
1903	158	112	119	135	164	104	129	153	241	125	131	162
1904	153	112	119	139	147	100	133	150	159	112	138	158
1905	167	112	122	140	201	110	138	160	256	131	153	174
1906	173	118	119	153	217	115	151	179	333	152	190	212
1907	197	126	126	162	217	114	160	185	343	160	153	240
1908	167	122	129*	166	132	101	155*	166	162	122	201*	205
1909	182	121	129*	166	209	105	160*	176	261	130	212*	197
1910	195	120	132*	167	217	110	182*	204	260	143	.....	225
Averages												
1890-99	100	100	100	100	100	100	100	100	100	100	100	100
1900-09	159	115	120	145	174	105	137	156	239	134	158	183

\* Provisional figures, subject to revision.

TABLE 69—(Continued)

INDICES OF THE VOLUME OF BUSINESS IN THE UNITED STATES, UNITED KINGDOM, FRANCE, AND GERMANY,  
REDUCED TO A PER CAPITA BASIS

Relative figures. Average actual figures 1890-99 = 100

Year	Bushels of wheat produced per capita				Railway gross earnings per capita				Bank clearings per capita		Bills of exchange per capita	
	United States 86	United Kingdom 138	France 99	Germany 94	United States 98	United Kingdom 96	France 92	Germany 90	U. S. out- side N. Y. 103	England London 111	France 100	Germany 91
1891	130	125	70	77	101	98	94	92	100	97	101	94
1892	108	101	100	103	106	97	94	91	109	90	96	90
1893	81	83	89	97	108	94	96	94	96	89	97	92
1894	93	99	112	97	93	97	98	93	87	86	94	91
1895	92	61	102	101	92	98	100	98	94	102	95	96
1896	83	93	109	107	96	102	102	102	89	101	99	100
1897	101	89	79	100	101	103	105	106	93	99	102	106
1898	126	117	116	110	101	106	108	115	103	106	107	116
1899	100	104	116	114	104	110	111	120	125	118	111	125
1900	93	83	104	113	115	113	119	123	122	114	113	133
1901	131	83	99	72	121	113	114	118	141	120	108	125
1902	115	88	104	110	128	114	115	119	147	125	107	119
1903	107	72	115	100	138	115	117	125	150	125	113	122
1904	91	56	94	105	141	115	117	129	149	129	117	126
1905	112	88	106	101	146	115	122	137	166	149	120	139
1906	117	88	102	106	159	117	128	146	180	152	132	147
1907	99	82	118	92	175	121	132	150	185	151	138	160
1908	102	78	100*	98	158	118	134*	146	167	142	135*	149
1909	111	90	112*	97	157	117	136*	152	192	157	139*	166
1910	94	79	81*	98	175	120	.....	159	202	168	151*	166
1911	90	90	98*	102	.....	.....	.....	.....	201	166	.....	171
Averages												
1890-99	100	100	100	100	100	100	100	100	100	100	100	100
1900-09	108	81	105	99	144	116	123	134	160	136	122	139

\* Provisional figures, subject to revision.

TABLE 69—(Concluded)

INDICES OF THE VOLUME OF BUSINESS IN THE UNITED STATES, UNITED KINGDOM, FRANCE, AND GERMANY,  
REDUCED TO A PER CAPITA BASIS

Relative figures. Average actual figures 1890-99 = 100

Year	Imports of merchandise per capita				Exports of merchandise per capita			
	United States	United Kingdom	France	Germany	United States	United Kingdom	France	Germany
1890	117	99	107	100	94	116	107	104
1891	116	103	115	99	105	108	102	98
1892	115	98	101	95	100	98	99	90
1893	105	94	93	93	91	93	93	93
1894	89	94	93	91	84	91	88	88
1895	104	95	89	94	83	95	96	98
1896	87	102	91	97	99	100	97	102
1897	93	102	95	104	106	97	102	104
1898	78	106	107	111	119	95	99	106
1899	97	107	108	118	119	107	117	117
1900	97	116	112	122	134	116	116	126
1901	101	114	104	113	131	111	112	119
1902	109	115	104	116	119	111	119	124
1903	110	117	114	122	127	113	119	131
1904	113	118	107	127	122	116	124	135
1905	125	118	113	140	133	126	136	146
1906	138	126	133	155	145	143	147	159
1907	146	132	147	167	152	161	156	169
1908	113	121	133*	144	136	141	140*	156
1909	146	125	147*	158	130	140	159*	158
1910	152	134	168*	164	137	158	173*	177
1911	146	133	192*	176	151	165	172*	190
Averages								
1890-99	100	100	100	100	100	100	100	100
1900-09	120	120	121	136	133	128	133	143

\* Provisional figures, subject to revision.

## CHAPTER VI

### THE CURRENCY

#### I. THE PRODUCTION OF GOLD

Gold mining is one of the branches of production in which the output is but slightly affected by business cycles. It has often been pointed out that prosperity tends to check the production of gold by increasing the operating expenses of mines. Of course the gold miner has not the recourse open to most business men of raising the price of his product. Hence mines which pay but a small profit in years of depression may be closed in years of prosperity. What is more important, the low-grade ore in profitable mines may be extracted or not according as operating expenses fall or rise. But it is not often noted that capital for exploiting gold mines, improving transportation in mining districts, and the like, can be raised more readily when investors are in an optimistic frame of mind than when they are rendered conservative by hard times. Which of these factors is the more weighty is neither easy nor important to determine. For the factors of decisive weight in changing the annual production in the period under discussion belong to a different order—the discovery of new deposits of gold, improvements in the arts of mining and metallurgy, and the maintenance of peace in the chief producing districts.

How large a part the latter factors have had in causing the marked increase in gold production since 1890 may be inferred from the following table. The development of the South African mines, discovered in the eighties, has contributed the lion's share of the increase. But the low-grade African ores could not have been worked at a profit by the methods in use a generation before. A similar combination of discoveries and advance in technique made in other quarters of the globe accounts for the remaining increase. On the other hand, the marked decline of production in 1900 was due to the Boer War.

Rapid as the increase has been, the *rate* of increase has fallen off in a notable degree since the later nineties. This fact is brought out by the last column of the table, which shows the annual gain or loss in the form of a percentage of the preceding year's output. The average of these percentages in the second decade is less than half the average of the first decade.

TABLE 70

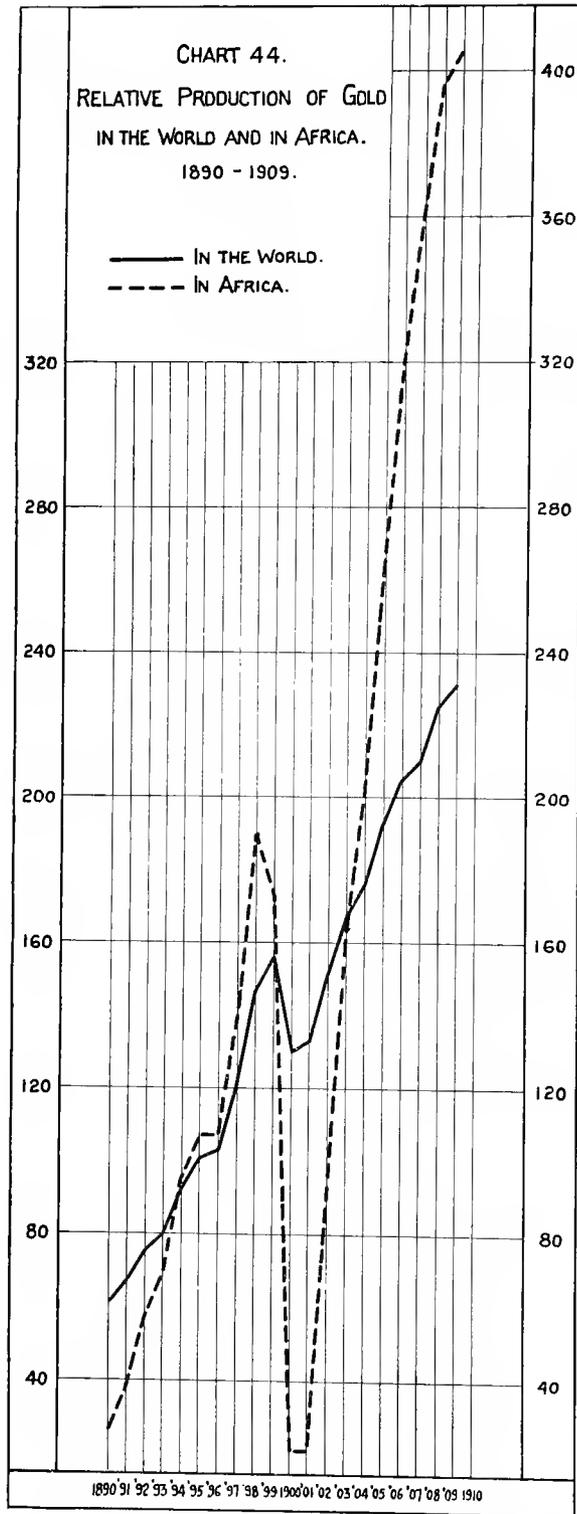
## THE PRODUCTION OF GOLD BY YEARS, 1890-1911

Year	Annual production of gold				Per cent of increase (+) or decrease (—) in comparison with preceding year
	Actual amounts Millions of dollars		Relative amounts Average actual amounts in 1890-99 = 100		
	World	Africa	World	Africa	
1890	119	11	61	26	— 3.8%
1891	131	16	67	38	+ 9.9
1892	147	24	75	57	+12.2
1893	157	29	80	69	+ 7.4
1894	181	40	92	95	+15.0
1895	199	45	101	107	+ 9.7
1896	202	45	103	107	+ 1.8
1897	236	59	120	140	+16.7
1898	287	80	146	190	+21.5
1899	307	73	156	173	+ 6.9
1900	255	9	130	21	—17.0
1901	261	9	133	21	+ 2.5
1902	297	39	151	92	+13.7
1903	328	68	167	161	+10.4
1904	347	86	176	204	+ 6.0
1905	380	113	193	268	+ 9.5
1906	403	135	205	320	+ 5.8
1907	413	152	210	360	+ 2.5
1908	443	167	225	396	+ 7.3
1909	454	171	231	405	+ 2.5
1910	455	175	231	415	+ .2
1911	462	194	235	460	+ 1.5
Averages					
1890-99	196.6	42.2	100	100	+ 9.7
1900-09	358.1	94.9	182	225	+ 4.3

Data compiled from the *Reports of the Director of the Mint upon the Production of the Precious Metals*.

## II. THE QUANTITY OF GOLD CURRENCY

How much of this new gold has gone into monetary use, and remained there, is not definitely known. Scrupulously accurate records are kept of the quantity of gold coined, but they do not solve the problem, (1) because large sums of uncoined gold serve monetary uses in the reserves of governments and banks, (2) because considerable sums of gold coin are annually melted down by goldsmiths, etc., and (3) because few mint reports distinguish between the new



bullion and the old coin, old plate, etc., which they turn into money. Indeed, the tables compiled by the American mint make out that more gold has been coined in the world since 1890 than has been mined.<sup>1</sup>

Another method of attacking the problem is to estimate the quantity of new gold which is consumed in the arts and drained away to the Orient. Since 1893 the Director of the United States Mint has undertaken to make annual estimates of "the world's industrial consumption of gold." His figures indicate that in 1893-1909 about one-quarter of the annual output of the mines has been used in the arts. If the absorption of gold by British India is added to the industrial consumption, the proportion of the output withdrawn from monetary use in the Occident is raised from one-quarter to rather more than one-third.<sup>2</sup> These estimates, however, are admittedly based on inadequate returns, and are therefore subject to a wide margin of error. Another competent authority, Professor L. de Launay of the *Ecole Supérieure des Mines*, has recently estimated the industrial consumption at 40 per cent of the output, oriental absorption at 16 per cent, and coinage at 44 per cent.<sup>3</sup> Whether the actual proportion of the new gold which has gone into monetary use in the west is nearer the mint's ratio of two-thirds or Launay's ratio of two-fifths,

<sup>1</sup> For 1890-1909 the figures are: aggregate production \$5,547 millions, aggregate coinage \$5,811. *Report on the Production of the Precious Metals* in 1909, p. 36; *Report of the Director of the Mint*, 1910, p. 61. Of course, the discrepancy may be due in part to an underestimate of the gold production. For the grounds for suspecting such an error in the figures, see L. de Launay, *The World's Gold*, translated by O. C. Williams (London, 1908), pp. 161-168.

2 THE INDUSTRIAL CONSUMPTION AND INDIAN ABSORPTION OF GOLD

Year	Industrial consumption			Total Columns 1, 2, and 3	World's production of gold	Per cent of column 4 to column 5
	United States	Other countries	Indian absorption			
1893	13	39	+ 6	58	157	37%
1894	10	44	— 11	43	181	24
1895	12	48	+ 14	74	199	37
1896	11	50	+ 14	75	202	37
1897	11	50	+ 24	85	236	36
1898	13	54	+ 29	96	287	33
1899	17	58	+ 39	114	307	37
1900	19	58	+ 12	89	255	35
1901	20	62	+ 16	98	261	38
1902	23	55	+ 38	116	297	39
1903	24	55	+ 43	123	328	38
1904	23	57	+ 43	123	347	35
1905	28	57	+ 13	98	380	26
1906	33	61	+ 59	153	403	38
1907	34	66	+ 69	168	413	41
1908	15	63	+ 27	106	443	24
1909	30	82	+ 90	202	454	44
1910	34	78	+ 75	187	455	41
Sums	370	1,037	+600	2,008	5,705	.....
Per cent of production	6.5%	18.2%	10.5%	35.2%	100%	.....

Column 1 shows the amount of new bullion and gold coin consumed in the arts in the United States. In accordance with the Director of the Mint's revision of the gold-stock estimate, \$2,000,000 a year has been added to the consumption in 1893-1902 to correct the original understatement of the gold coin melted by jewelers. (See the Director's report for 1907, p. 86.) Column 2 has been compiled from the annual *Reports on the Production of the Precious Metals*. Column 3 shows the production of gold in British India, plus the net imports, or minus the net exports. The figures are for the fiscal years, beginning April 1. They are taken from an article by F. J. Atkinson, Accountant-General of the United Provinces of India (*Journal of the Royal Statistical Society*, vol. 72, p. 563). The data for 1909 and 1910 have been computed from the *Report on the Production of the Precious Metals*.

<sup>3</sup> *The World's Gold*, p. 178. Launay does not publish the data upon which his estimate rests.

we do not know. We cannot even aver with certainty that the average ratio falls within these limits. The one fact of present interest which the mint's investigation does establish is that the industrial consumption of gold, like that of other luxuries, varies widely between periods of prosperity and of depression. So far as this factor counts, it restricts the increase in the quantity of money when business is active and expands the increase when business is dull.

The United States is the only one of our four countries in which the statistics of coinage and industrial consumption are used in framing an annual estimate of the quantity of gold money. Starting with his estimate for the close of the preceding year, the Director of the Mint adds the net increase in gold coined during the current year and the imports of American coin. On the other hand, he deducts the estimated industrial consumption and the exports of coin. Of these items, none but the coinage can be accurately determined. Even the exports and imports must be guessed at in part; for no one knows what sums of gold coin are taken out of and brought into the country by immigrants, emigrants, and travelers. Moreover, if the error in the estimates runs the same way year after year a mistake of a million will presently mount to tens of millions. Convinced by the criticisms of Muhleman and others that the official estimate was too high, the Director of the Mint made a thorough revision of the figures in 1907, and deducted a round \$135,000,000 from the monetary stock of gold to correct errors which had been accumulating since 1873.<sup>4</sup> There is no satisfactory way of determining the margin of error to which even these revised figures are subject; but they probably do show with approximate accuracy the facts of most importance for this inquiry, namely, the change from one year to the next since 1890.

According to the figures (Table 71), the monetary stock of gold declined \$145 millions between the end of 1890 and 1895—a period when business was depressed, the treasury in straits, and, most important of all, when the maintenance of the gold standard seemed doubtful. After Mr. Bryan had been defeated, the treasury deficit had been wiped out, and business had improved, the gold losses were promptly made up—made up more than twice over by 1900. Thereafter the increase was steady but moderate until 1906 and 1907, when more than \$300 millions were added to the stock. The dull year 1908 brought a small additional gain, and the more active year 1909 a still smaller loss. Thus the largest relative gains were scored by the gold stock in 1896-98 and again in 1906-07—the first a season of increasing trade and reviving confidence in the monetary situation, the second a season when a great business boom culminated and ended in a panic.

The chief sources from which arise the gains or losses of gold shown by Table 71 are set forth in the next table. According to these official estimates,

<sup>4</sup> *Report of the Director of the Mint, 1907, pp. 66-94.*

in the long run the United States—though one of the leading gold producers of the world—absorbs a part of the metal produced elsewhere, in addition to the output of its own mines. But in short periods monetary legislation and business conditions frequently reverse this situation, not merely stopping the American absorption of foreign gold but even expelling a part of the current American product to foreign lands.<sup>5</sup>

TABLE 71

OFFICIAL ESTIMATE OF THE MONETARY STOCK OF GOLD IN THE UNITED STATES ON DECEMBER 31 OF EACH YEAR, 1890-1911

Year	Monetary stock		Increase (+) or decrease (—) during the year	
	Actual amounts in millions of dollars	Relative amts. Av. actual amounts in 1890-99 = 100	Actual amounts in millions of dollars	In percentagea of stock at end of preceding year
1890	648	101	+ 15	+ 2.2%
1891	626	97	— 22	— 3.4
1892	582	90	— 44	— 7.0
1893	591	92	+ 9	+ 1.5
1894	539	84	— 52	— 8.8
1895	503	78	— 36	— 6.7
1896	589	91	+ 86	+17.1
1897	638	99	+ 49	+ 8.3
1898	832	129	+194	+30.4
1899	897	139	+ 65	+ 7.8
1900	989	153	+ 92	+10.3
1901	1,050	163	+ 61	+ 6.2
1902	1,121	174	+ 71	+ 6.8
1903	1,192	185	+ 71	+ 6.3
1904	1,217	189	+ 25	+ 2.1
1905	1,288	200	+ 71	+ 5.8
1906	1,458	226	+170	+13.2
1907	1,605	249	+147	+10.1
1908	1,654	257	+ 49	+ 3.1
1909	1,638	254	— 16	— 1.0
1910	1,709	265	+ 71	+ 4.3
1911	1,797	279	+ 88	+ 5.1
Averages				
1890-99	644.5	100	+ 26.4	+ 4.1
1900-09	1,321.2	205	+ 74.1	+ 6.3

Compiled from the "corrected" figures for 1890-1906 in the *Report of the Director of the Mint*, 1907, p. 87, and continued from the *Report of the Treasurer of the United States*, 1910, pp. 61-62.

<sup>5</sup> The discrepancies shown by Table 72 between the net gain or loss of gold by mining, foreign trade, and industrial consumption, on the one hand, and on the other hand the net increase or decrease in the estimated monetary stock, are due chiefly to the carrying of coin out of or into the country by travelers, soldiers going to the Philippines, emigrants, and immigrants. Such exports and imports of gold escape record by the customs houses. A minor source of discrepancy is that each year over \$1,000,000 of old jewelry, etc., passes over from industrial to monetary use. See *Report of the Director of the Mint*, 1907, pp. 87-92.

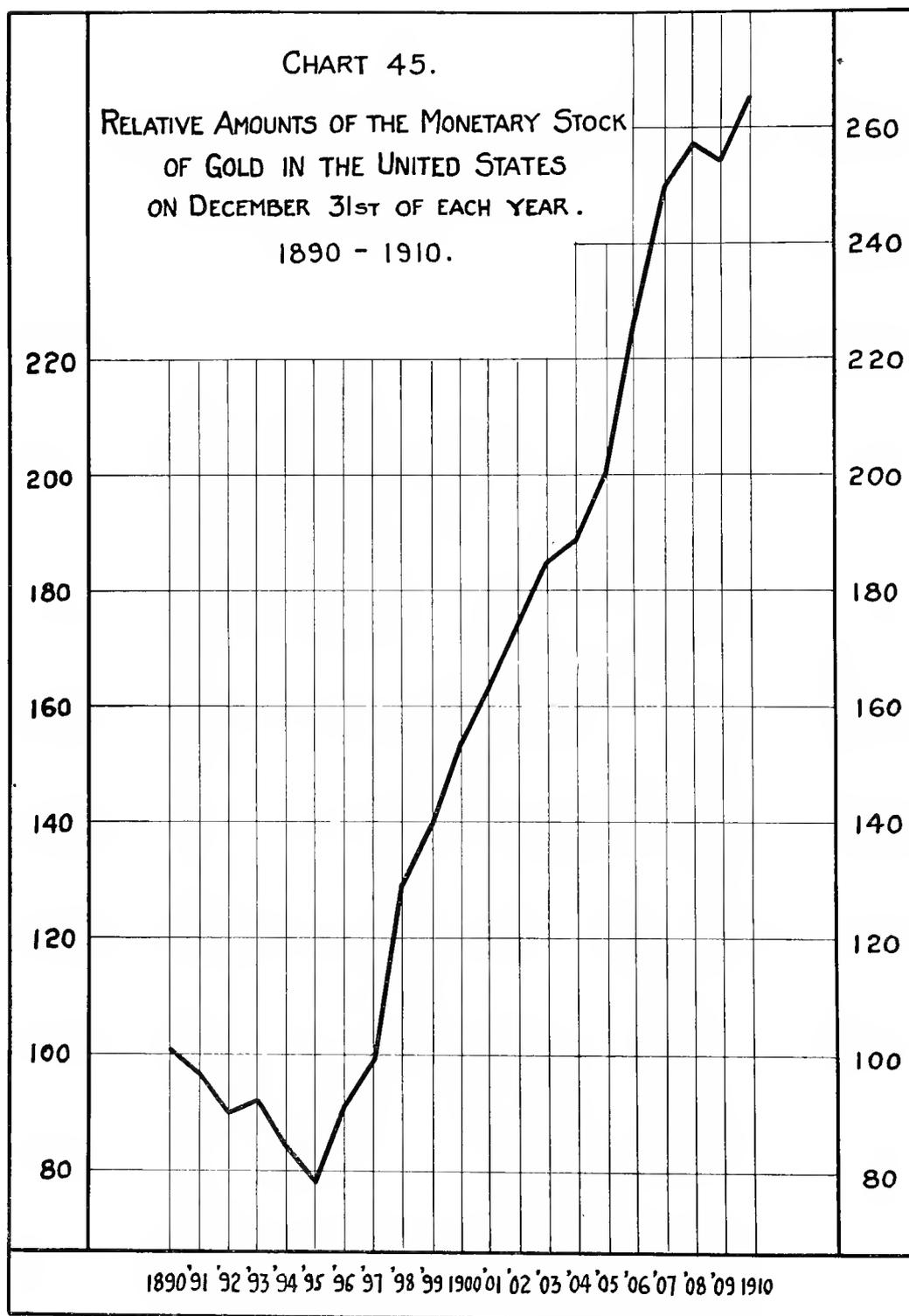


TABLE 72

CHIEF SOURCES OF GAIN OR LOSS TO THE MONETARY STOCK OF GOLD IN THE UNITED STATES  
BY YEARS, 1890-1910

Year	Production of gold in the United States	In millions of dollars		Net gain (+) or loss (-) from preceding sources	Increase (+) or decrease (-) in estimated stock of gold
		Excess of gold imports (+) or exports (-)	Industrial consumption of coin and new bullion		
1890	33	— 4	15	+ 14	+ 15
1891	33	— 34	15	— 16	— 22
1892	33	— 59	15	— 41	— 44
1893	36	— 7	13	+ 16	+ 9
1894	40	— 81	10	— 51	— 52
1895	47	— 71	12	— 36	— 36
1896	53	+ 46	11	+ 88	+ 86
1897	57	.....	11	+ 46	+ 49
1898	64	+142	13	+193	+194
1899	71	+ 6	17	+ 60	+ 65
1900	79	+ 13	19	+ 73	+ 92
1901	79	— 3	20	+ 56	+ 61
1902	80	+ 8	23	+ 65	+ 71
1903	74	+ 21	24	+ 71	+ 71
1904	80	— 36	23	+ 21	+ 25
1905	88	+ 3	28	+ 63	+ 71
1906	94	+109	33	+170	+170
1907	90	+ 88	34	+144	+147
1908	95	— 31	15	+ 49	+ 49
1909	100	— 89	30	— 19	— 16
1910	96	.....	34	+ 62	+ 71
Averages					
1890-99	46.7	— 6.2	13.2	+ 27.3	+ 26.4
1900-09	85.9	+ 8.3	24.9	+ 69.3	+ 74.1

Columns 1 and 3 are from the *Report on the Production of the Precious Metals in 1909*, pp. 13, 14, and 28. The original data in column 3 have been raised \$2,000,000 for the years 1893-1902, to correct the original underestimate of the consumption of gold coin in the arts (see *Report of the Director of the Mint, 1907*, p. 86). Column 2 is from A. P. Andrew, *Statistics for the United States* (Publications of the National Monetary Commission), p. 11. Column 4 is computed from columns 1, 2, and 3. Column 5 is from Table 71, above.

For comparison with these American figures, there are a few official estimates of the gold circulation of the United Kingdom and France, made at irregular intervals. The data are assembled in Table 73. Both of the European countries, like the United States, lost gold between the later eighties and the early nineties.<sup>6</sup> From the early to the middle nineties, on the contrary, the European countries gained gold and the United States lost. Finally, since the middle nineties all the countries have gained, but at very different rates—the United States five or six times as fast as the European countries, and Great Britain about two times as fast as France. The per capita circulation of gold, however, remains much larger in France than in any other country.

<sup>6</sup> The figures for America in 1885 and 1891 indicate a gain, but merely because the loss from 1888-91 was smaller than the gain in 1885-88.

These European data are so scanty that they may be supplemented by the record of net imports or exports of gold. In England, France, and Germany the domestic production of gold is so slight that the customs-house returns are the best available index of the yearly changes in the total stock of gold, though not in the monetary stock.<sup>7</sup> Of course, part of the net imports are absorbed into industrial use; part of the net exports consist of gold that was not used as money; the existing monetary stock is decreased by melting coins, or

TABLE 73

ESTIMATED MONETARY STOCK OF GOLD AT INTERVALS IN THE UNITED KINGDOM AND FRANCE, WITH ESTIMATES FOR CORRESPONDING DATES IN THE UNITED STATES

Year	Estimated stock in millions of dollars		Increase (+) or decrease (—) in the estimated stock			
	United Kingdom	United States	In millions of dollars		In percentages of the stock at preceding estimate	
			United Kingdom	United States	United Kingdom	United States
1888	499	650	.....	.....	.....	.....
1892	438	582	— 61	— 68	—12.2%	— 10.5%
1895	450	503	+ 12	— 79	+ 2.7	— 13.7
1903	567	1,192	+117	+689	+26.0	+137.0
	France	United States	France	United States	France	United States
1885	965	558	.....	.....	.....	.....
1891	772	626	—193	+ 68	—20.0%	+ 12.2%
1897	811	638	+ 39	+ 12	+ 5.0	+ 1.9
1903	926	1,192	+115	+554	+14.2	+ 86.8

Compiled from the National Monetary Commission's *Statistics for Great Britain, France, and Germany* (Senate document, no. 578, 61st Congress, 2d session), pp. 75 and 345. The British estimates were made by the Royal Mint, except that for 1892, which was made by the Chancellor of the Exchequer. The French estimates were all made by M. de Foville on the basis of official monetary investigations. The British estimate of 1888 is now held to have been too high. The American figures are from the *Report of the Director of the Mint*, 1907, p. 87.

increased by coining plate, etc. But the statistics of Table 74 show that in all three of our foreign countries there has been a rapid increase in the annual supply of fresh gold available for monetary use, and it is safe to suppose that there has been a roughly proportionate increase in the annual additions to the monetary stock.

Within this period of twenty years France has absorbed a decidedly larger part of the new gold than Germany, and Germany a slightly larger part than England. But whether the relative increase in the French monetary stock of gold has been larger than the German, or the German larger than the English, remains uncertain. In all three countries the net movements are steadier than in the United States and more uniformly on the side of an excess of imports over exports. Nevertheless, the European oscillations are violent in compar-

<sup>7</sup> These are the reasons for suspecting that the statistics of both imports and exports are incomplete, because not all the shipments and receipts are recorded. (Launay, *The World's Gold*, pp. 165-167.) For this reason no attempt is made to base refined comparisons upon Table 74.

TABLE 74

NET IMPORTS (+) OR NET EXPORTS (—) OF GOLD FOR THE UNITED STATES, UNITED KINGDOM, FRANCE, AND GERMANY  
BY YEARS, 1890–1911

Year	Actual amounts In millions of dollars				Relative amounts Average actual amounts in 1890-99 = 100			
	United States	United Kingdom	France	Germany	United States	United Kingdom	France	Germany
1890	— 4	+45	— 26	+14	— 65	+139	—133	+ 74
1891	— 34	+30	+ 25	+24	— 548	+ 93	+128	+127
1892	— 59	+33	+ 53	+ 7	— 952	+102	+272	+ 37
1893	— 7	+26	+ 36	+ 9	— 113	+ 80	+185	+ 48
1894	— 81	+58	+ 68	+60	—1,306	+179	+349	+317
1895	— 71	+71	+ 2	+ 4	—1,145	+219	+ 10	+ 21
1896	+ 46	—28	— 2	+ 5	+ 742	— 86	— 10	+ 26
1897	.....	....	+ 31	+ 9	.....	.....	+159	+ 48
1898	+142	+35	— 22	+25	+2,291	+108	—113	+132
1899	+ 6	+54	+ 30	+32	+ 97	+167	+154	+169
1900	+ 13	+38	+ 64	+30	+ 210	+117	+328	+159
1901	— 3	+33	+ 55	+49	— 48	+102	+282	+259
1902	+ 8	+30	+ 61	+ 8	+ 129	+ 93	+313	+ 42
1903	+ 21	+ 4	+ 36	+45	+ 339	+ 12	+185	+238
1904	— 36	+ 4	+103	+93	— 581	+ 12	+528	+492
1905	+ 3	+38	+125	+43	+ 48	+117	+641	+228
1906	+109	+17	+ 52	+69	+1,758	+ 52	+267	+365
1907	+ 88	+30	+ 56	— 5	+1,419	+ 93	+287	— 26
1908	— 31	—19	+192	+74	— 500	— 59	+985	+392
1909	— 89	+36	+ 35	+ 7	—1,435	+111	+179	+ 37
1910	.....	+31	+ 11	+42	.....	+ 96	+ 56	+222
1911	+ 20	+42	.....	+35	+ 323	+130	.....	+185
Averages								
1890–99	— 6.2	+32.4	+ 19.5	+18.9	100	100	100	100
1900–09	+ 8.3	+21.1	+ 77.9	+41.3	134	65	399	218

Compiled from the (American) *Statistical Abstract of Foreign Countries*, Part i, for the years 1890-1907, and completed from the statistical abstracts of England, France, and Germany. The data for the United States are from Andrew's *Statistics for the United States* (Publications of the National Monetary Commission), p. 11.

ison with most of the data exhibited in preceding chapters, as the columns of relative figures show. To account for these changes in detail year by year would be an exceedingly difficult task, because of the multiplicity of the factors affecting the balance of payments in international trade. For present purposes it suffices to note that no simple rule holds for all the countries concerning the relations between the course of business cycles and the net imports or exports of gold.

## III. THE QUANTITY OF SILVER AND OF PAPER MONEY

The quantity of other forms of money in the United States can be estimated more accurately than the quantity of gold coin. There is no industrial consumption of greenbacks and bank notes, and but a trifling industrial consumption of silver coin, since silver bullion costs less than half as much as silver dollars. Moreover, neither paper nor silver money is acceptable to foreigners, so that the small sums carried out of the country are promptly sent back again. Only one source of error in the statements need be feared—accidental loss or burning. On this account the treasury has already written off \$1,000,000 from the amount of United States notes outstanding, and might safely write off several millions more from that item and from the amount of silver coins and bank notes. But these unrecorded losses cannot make more than a small per-

TABLE 75

MONETARY STOCK OF THE UNITED STATES ON JULY 1 OF THE YEARS 1890-1911

Year	Actual amounts in millions of dollars							Per cent of gold
	Gold	Silver dollars	Subsidiary silver	United States notes	Treasury notes of 1890	National bank notes	Total	
1890	639	380	77	347	.....	186	1,629	39
1891	591	389	78	347	50	168	1,623	36
1892	600	389	78	347	102	173	1,689	36
1893	532	391	77	347	147	179	1,673	32
1894	548	395	76	347	153	207	1,726	32
1895	542	402	77	347	146	212	1,726	31
1896	507	422	76	347	130	226	1,708	30
1897	594	442	76	347	115	231	1,805	33
1898	747	460	76	347	101	228	1,959	38
1899	849	470	75	347	94	241	2,076	41
1900	917	490	83	347	76	310	2,223	41
1901	1,003	520	90	347	48	354	2,362	42
1902	1,068	540	97	347	30	357	2,439	44
1903	1,124	554	102	347	19	414	2,560	44
1904	1,198	560	107	347	13	449	2,674	45
1905	1,228	559	115	347	9	496	2,754	45
1906	1,343	561	118	347	7	561	2,937	46
1907	1,466	562	130	347	6	604	3,115	47
1908	1,618	563	147	347	5	698	3,378	48
1909	1,642	564	159	347	4	690	3,406	48
1910	1,636	565	155	347	4	713	3,420	48
1911	1,753	565	160	347	3	728	3,556	49
Averages								
1890-99	614.9	414.0	76.6	347.0	115.3	205.1	1,761.4	34.8
1900-09	1,260.7	547.3	114.8	347.0	21.7	493.3	2,784.8	45.0

The data for 1890-1909 are from Andrew's *Statistics for the United States* (Publications of the National Monetary Commission), p. 156. The data for 1910 and 1911 are from the *Report of the Treasurer of the United States*. The figures for gold in 1890-1900 are revised on the basis of the new estimates made by the Director of the Mint in 1907. See page 282, and note 8, page 289.

TABLE 75—(Concluded)

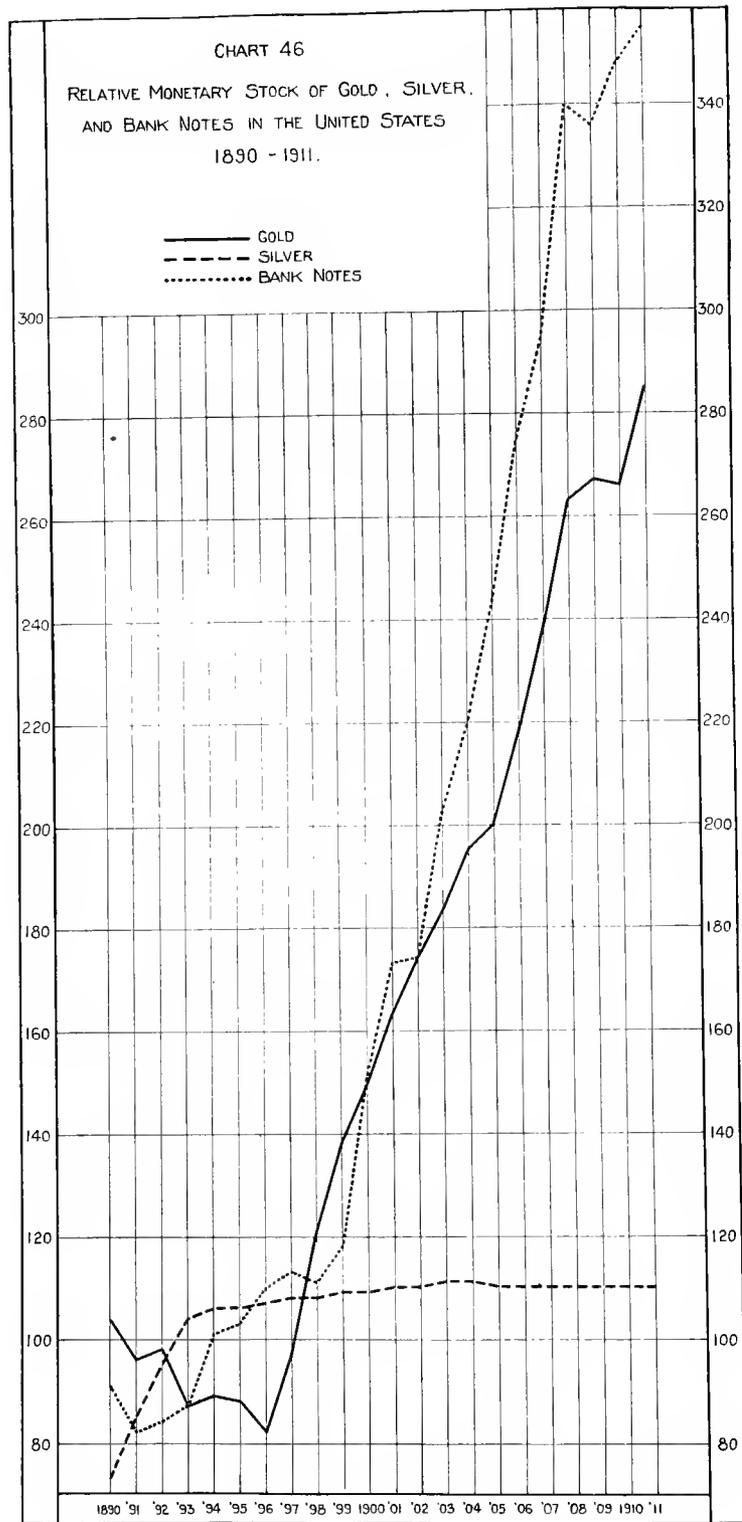
## MONETARY STOCK OF THE UNITED STATES ON JULY 1 OF THE YEARS 1890-1911

Year	Relative amounts.			Average actual amounts in 1890-99 = 100				Total
	Gold	Silver dollars	Subsidiary silver	United States notes	Treasury notes of 1890	National bank notes		
1890	104	92	101	100	.....	91	92	
1891	96	94	102	100	43	82	92	
1892	98	94	102	100	88	84	96	
1893	87	94	101	100	127	87	95	
1894	89	95	99	100	133	101	98	
1895	88	97	101	100	127	103	98	
1896	82	102	99	100	113	110	97	
1897	97	107	99	100	100	113	102	
1898	121	111	99	100	88	111	111	
1899	138	114	98	100	82	118	118	
1900	149	118	108	100	66	151	126	
1901	163	126	117	100	42	173	134	
1902	174	130	127	100	26	174	138	
1903	183	134	133	100	16	202	145	
1904	195	135	140	100	11	219	152	
1905	200	135	150	100	8	242	156	
1906	218	136	154	100	6	274	167	
1907	238	136	170	100	5	294	177	
1908	263	136	192	100	4	340	192	
1909	267	136	208	100	3	336	193	
1910	266	133	202	100	3	348	194	
1911	285	136	209	100	3	355	202	
Averages								
1890-99	100	100	100	100	100	100	100	
1900-09	205	132	150	100	19	241	158	

centage of the total. Thus the official figures, reproduced in Table 75, may be trusted to show with approximate accuracy the variations in the monetary stock since 1890.<sup>8</sup>

So long as the mints were working up the silver bullion purchased under the Sherman Act of July 14, 1890, the stock of silver dollars increased steadily, in dull times as in brisk times, when the currency was redundant as when it was scanty. But the last silver dollar was struck in 1904, and since then the stock has remained substantially constant at about \$560 millions. The treasury notes of 1890, issued in payment for silver bullion, also increased rapidly until the Sherman Act was repealed on the first of November, 1893. Thereafter the stock of these notes began to decline as rapidly as they were presented to

<sup>8</sup> The gold and silver certificates need not be included in the table, because they are fully covered by corresponding amounts of gold and silver coins in the treasury. The Director of the Mint has not published his revised estimates for the gold stock on July 1, 1890-1906. I have therefore been compelled to assume that the revised figures for this day would bear a ratio to the old figures midway between the ratios born by the revised to the old figures for the December preceding and following.



the treasury for redemption in silver dollars; for the law had provided that "no greater or less amount of such notes shall be outstanding at any time than the cost of the silver bullion and the standard silver dollars coined therefrom then held in the treasury."<sup>9</sup> In 1900 the process of reduction was hastened by the Gold Standard Act, which required the Secretary of the Treasury to replace the treasury notes which came into his hands by silver certificates, as fast as the remaining bullion was made into dollars or subsidiary coin. In consequence of this measure, the treasury notes have all but disappeared from circulation. Their gradual reduction since 1894 has been roughly concomitant with the gradual increase of silver dollars, so that the volume of the two forms of money when taken together has varied within limits of \$26 millions—about 1 per cent of the average monetary stock.<sup>10</sup>

The estimated stock of the United States notes has not changed at all since the Act of May 31, 1878, stopped the reduction provided for by the Resumption Act of 1875, and directed that these notes when received by the treasury should be "reissued and paid out again and kept in circulation."

The subsidiary coins require little attention, because the volume of "change" in use exercises no perceptible influence upon business conditions, beyond facilitating retail trade. The stock remained nearly stationary from 1890 to 1899, and then began to rise steadily at such a pace as to double in volume by 1909.

Since the subsidiary coins may be set aside, since the stock of the United States notes has remained constant, and since the combined stock of silver dollars and treasury notes has changed but little since 1894, it follows that for sixteen years the only variable elements in the American monetary system have been the gold coin and the national bank notes.<sup>11</sup>

The bank notes increased at a moderate pace from 1891 to 1899, without much reference to the changing needs of business. But in 1900 the Gold

<sup>9</sup> See F. W. Taussig, "The Conversion of the Treasury Notes of 1890 into Silver Certificates," *Quarterly Journal of Economics*, vol. X, pp. 350, 351.

<sup>10</sup> When the columns for silver dollars and treasury notes of 1890 are combined the following figures result:

Year	Actual amounts	Relative amounts	Year	Actual amounts	Relative amounts
1890	380	73	1903	573	111
1891	439	85	1904	573	111
1892	491	95	1905	568	110
1893	538	104	1906	568	110
1894	548	106	1907	568	110
1895	548	106	1908	568	110
1896	552	107	1909	568	110
1897	557	108	1910	568	110
1898	561	108	1911	568	110
1899	564	109			
1900	566	109	Averages		
1901	568	110	1890-99	517.8	100
1902	570	110	1900-11	569.0	110

<sup>11</sup> E. W. Kemmerer, *Seasonal Variation in the Relative Demand for Money and Capital in the United States* (Senate Document, no. 588, 61st Congress, 2d session), chapter VI, shows that the seasonal elasticity of all kinds of money in circulation outside of the treasury is limited to the fact that the year's normal increase tends to take place in the fall and early winter when currency is most needed. No kind of money exhibits much capacity for contracting in the slack months of the year.

Standard Act caused an increase of more than 25 per cent in a single year. By raising the limit of note issue from 90 to 100 per cent of the par value of the government bonds held as security, and by reducing the rate of taxation upon notes secured by the new consols of 1930, the law enhanced the profit which national banks already established might derive from exercising their rights of issue. Further, by permitting the organization of national banks with capital of less than \$50,000 the law brought a large number of new institutions into the system. The rapid expansion of note circulation started by this statute was afterwards promoted by the efforts of a secretary of the treasury who employed his power of distributing the much desired government deposits to induce the banks to keep outstanding their full quotas of notes.<sup>12</sup> Still later the decline in the market price of the 2 per cent consols to the neighborhood of par tended to raise the profit upon circulation. Finally, the activity of business stimulated the organization of new banks and brought home to new and old an insistent demand for more currency. Favored by all of these circumstances, the volume of bank notes rose after 1899 even faster than the rapidly rising volume of gold coin.

Concerning gold, the present table brings out the same facts as Table 71, with a few minor differences arising from the use of data for July 1 in one case, and for December 31 in the other. But the present table also shows the proportion borne by the volume of gold money to the total monetary stock. This proportion fell rapidly from 39 per cent in 1890 to 32 per cent in 1893, in consequence not only of the direct loss of gold but also of the joint increase of silver dollars and treasury notes of 1890. From 1893 to 1896 the proportion changed but little. But after the free-silver party had been defeated at the polls and business began to revive the incoming flood of gold speedily raised the proportion again to 38 per cent in 1898. Since that time there has been a slow but steady advance to 49 per cent in 1911.

When all these different kinds of money are added together it appears that the total stock has but a rudimentary power of adjusting its volume to the changing demands of trade. On the whole, the increase in volume has been more rapid during good times than during bad; but the increase from 1893 to 1894, from 1902 to 1904, and from 1907 to 1908 shows an absence of the power to contract when trade falls off.

No paper money is issued by the governments of Great Britain and France, and none by the German government aside from 120,000,000 marks in treasury notes, which offset an equal sum of gold coin held in the war chest. Of course silver coin is widely used in these countries, but no estimates of its volume are regularly published. The European data available for comparison with the

<sup>12</sup> For details see A. P. Andrew, "The Treasury and the Banks under Secretary Shaw," *Quarterly Journal of Economics*, August, 1907, vol. 21, pp. 519-568.

preceding figures are therefore limited to the statistics of bank notes in circulation. The most significant of these statistics are brought together in Table 76.

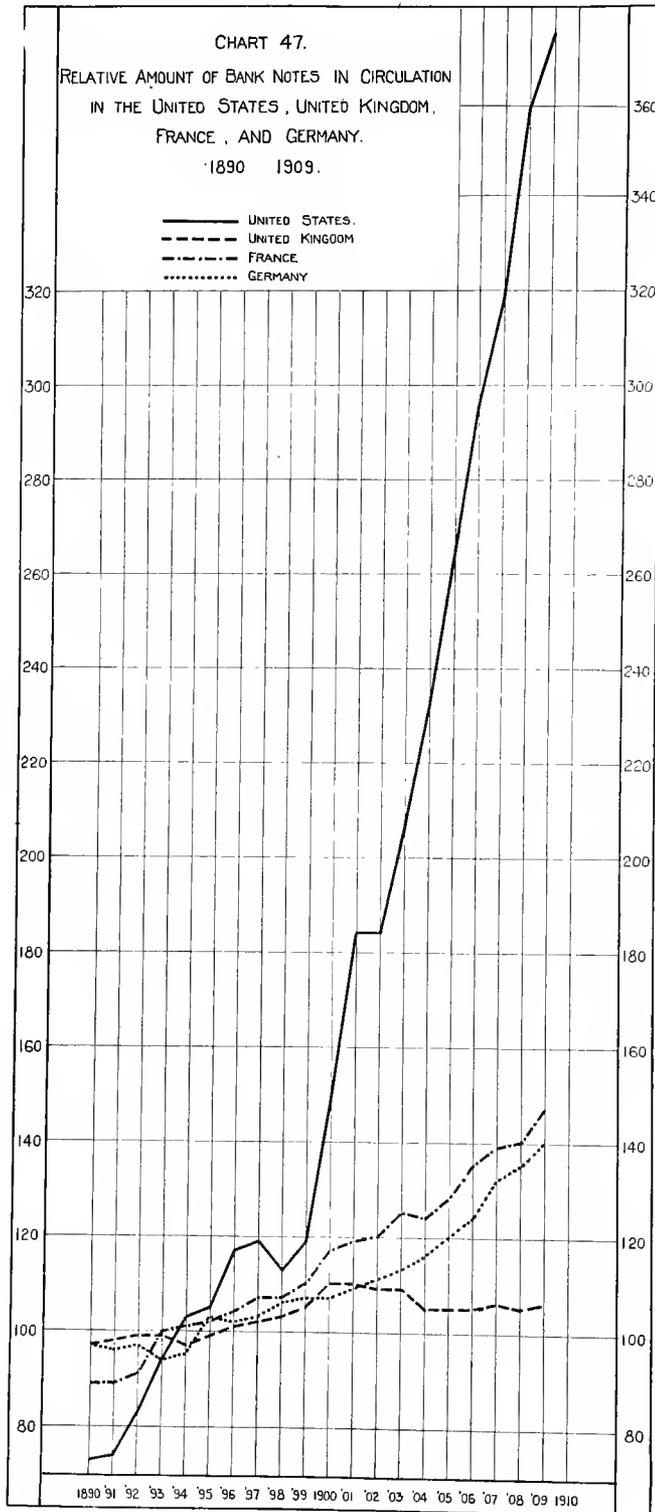
In none of the three foreign countries has the increase in the stock of bank notes been comparable with the extraordinary increase in America. In Great Britain the quantity has even declined since 1900, probably because the public has acquired the habit of paying a larger portion of small bills by check. In France, on the other hand, the figures reflect an increasing preference among the people for bank notes in place of gold coin—a change in monetary habits which causes the “unproductive circulation” of the Bank of France to grow

TABLE 76

AVERAGE ANNUAL CIRCULATION OF BANK NOTES IN THE UNITED STATES, UNITED KINGDOM, FRANCE, AND GERMANY  
BY YEARS, 1890–1911

Year	Actual amounts In millions of dollars				Relative amounts Average actual amounts in 1890-99 = 100			
	United States	United Kingdom	France	Germany	United States	United Kingdom	France	Germany
1890	128	195	591	285	73	97	89	97
1891	130	197	595	281	74	98	89	96
1892	145	198	608	284	83	99	91	97
1893	165	198	665	276	94	99	100	94
1894	181	195	671	279	103	97	101	95
1895	184	199	681	303	105	99	102	103
1896	205	202	696	300	117	101	104	102
1897	208	205	712	301	119	102	107	103
1898	198	207	713	311	113	103	107	106
1899	209	211	737	315	119	105	110	107
1900	260	221	779	313	148	110	117	107
1901	323	220	794	320	184	110	119	109
1902	322	219	803	327	184	109	120	111
1903	362	218	832	332	206	109	125	113
1904	407	210	827	341	232	105	124	116
1905	462	211	851	353	264	105	128	120
1906	519	211	899	365	296	105	135	124
1907	558	212	926	386	318	106	139	132
1908	628	210	937	396	358	105	140	135
1909	655	212	980	410	374	106	147	140
1910	685	209	1,003	417	391	104	150	142
1911	699	213	1,012	431	399	106	152	147
Averages								
1890–99	175.3	200.7	666.9	293.5	100	100	100	100
1900–09	449.6	214.4	862.8	354.3	256	107	129	121

The American figures show the average amounts of national bank notes secured by bonds outstanding on the first day of each month. Computed from the *Reports of the Comptroller of the Currency*. The British figures show the average amounts of notes issued by all English, Scotch, and Irish banks in the hands of the public. From Palgrave's tables in the National Monetary Commission's *Statistics for Great Britain, Germany, and France*, p. 125. The French figures show the average note issues of the Bank of France. From the *Annuaire Statistique*, 1910, p. 68\*. The German figures include the notes of all banks of issue, as given by the *Statistische Jahrbücher für das Deutsche Reich*. The British figures for 1910 and 1911 are based on returns for March, June, September, and December as given in the *Statistical Abstract of the United Kingdom*, adjusted to fit as nearly as may be the Palgrave series.



steadily larger. In Germany the bank-note currency remained substantially constant in 1890-94 at a level of about \$280 millions, in 1895-97 at a level of about \$300 millions, and in 1898-1900 at a level of about \$313 millions. But after 1900 the volume began to grow steadily, a little faster in good times than in bad.

In general there is but a slight degree of correspondence between the fluctuations of bank notes and the fluctuations of business activity from one year to the next. Even the European countries which have the most elastic systems of issue do not regularly retire large sums of notes when business is depressed. The controlling factors seem to be changes in monetary habits and perhaps the slow but steady growth in population. A very different conclusion would be drawn, however, if the figures of monthly circulation were used in place of annual averages. Then it would appear that there are notable changes between the different seasons of the same year in the amount of notes used. In other words, bank notes in Great Britain, France, and Germany are a much more elastic form of currency within short periods than they are within the longer periods covered by business cycles.

#### IV. THE DISTRIBUTION OF THE MONETARY STOCK AMONG THE BANKS, THE PUBLIC, AND THE TREASURY

Since 1892 the Comptroller of the Currency has utilized his bank reports to compile an annual estimate of the proportions in which the monetary stock is held by the banks, the public, and the federal Treasury. Dr. A. P. Andrew has carried the figures back to 1867.<sup>13</sup> The next table presents these data for 1890-1911 in a revised form. The change in the official estimates of the gold stock in 1890-1906, the amount of money in banks which do not report to the comptroller, the former confusion of "cash" and "cash items" in bank reserves, etc., have all been allowed for as accurately as may be.<sup>14</sup>

The figures indicate that on the average the treasury holds a little more than a tenth of the country's money, the banks a little more than a third, and the public a little more than one-half. The banks seem to be slowly increasing their proportion at the expense both of the treasury and of the public. But this average distribution undergoes marked changes, which correspond with the successive phases of business cycles.<sup>15</sup> At the height of a panic the public withdraws large sums from the banks, reducing the quota of the latter to its mini-

<sup>13</sup> *Statistics for the United States*, Publications of the National Monetary Commission, p. 155.

<sup>14</sup> For the details see the note appended to the present chapter, "A Revised Estimate of the Amount of Money Held by the Banks of the United States in 1890-1911."

<sup>15</sup> Compare O. M. W. Spragne, "The Distribution of Money between the Banks and the People since 1893," *Quarterly Journal of Economics*, August, 1904, vol. 18, pp. 513-528.

TABLE 77

DISTRIBUTION OF THE MONETARY STOCK OF THE UNITED STATES AMONG THE PUBLIC, THE BANKS, AND THE FEDERAL TREASURY ON OR ABOUT JULY 1, 1890-1911

Year	Actual amounts In millions of dollars					Proportions of the total stock held by the			Proportions of the stock outside of the treasury held by the	
	Total stock	In the treasury as assets	Outside of the treasury	Held by banks	Held by the public	Treasury	Banks	Public	Banks	Public
1890	\$1,629	\$256	\$1,373	\$492	\$881	15.7%	30.2%	54.1%	35.8%	64.2%
1891	1,623	180	1,443	504	939	11.1	31.0	57.9	34.9	65.1
1892	1,689	151	1,538	585	953	9.0	34.6	56.4	38.0	62.0
1893	1,673	142	1,531	517	1,014	8.5	30.9	60.6	33.8	66.2
1894	1,726	144	1,582	680	902	8.3	39.4	52.3	43.0	57.0
1895	1,726	217	1,509	620	889	12.6	35.9	51.5	41.1	58.9
1896	1,708	294	1,414	556	858	17.2	32.6	50.2	39.3	60.7
1897	1,805	266	1,539	649	890	14.7	36.0	49.3	42.2	57.8
1898	1,959	236	1,723	713	1,010	12.0	36.4	51.6	41.4	58.6
1899	2,076	286	1,790	748	1,042	13.8	36.0	50.2	41.8	58.2
1900	2,223	285	1,938	787	1,151	12.8	35.4	51.8	40.6	59.4
1901	2,362	308	2,054	828	1,226	13.0	35.1	51.9	40.3	59.7
1902	2,439	314	2,125	875	1,250	12.9	35.9	51.2	41.2	58.8
1903	2,560	317	2,243	881	1,362	12.4	34.4	53.2	39.3	60.7
1904	2,674	284	2,390	1,016	1,374	10.6	38.0	51.4	42.5	57.5
1905	2,754	295	2,459	1,024	1,435	10.7	37.2	52.1	41.6	58.4
1906	2,937	333	2,604	1,043	1,561	11.3	35.5	53.2	40.1	59.9
1907	3,115	343	2,772	1,139	1,633	11.0	36.6	52.4	41.1	58.9
1908	3,378	341	3,037	1,394	1,643	10.1	41.3	48.6	45.9	54.1
1909*	3,406	309	3,097	1,466	1,631	9.1	43.0	47.9	47.3	52.7
1910	3,420	317	3,103	1,445	1,658	9.3	42.2	48.5	46.6	53.4
1911	3,556	342	3,214	1,573	1,641	9.6	44.2	46.1	48.9	51.1
Averages										
1890-99	1,761.4	217.2	1,544.2	606.4	937.8	12.3	34.3	53.4	39.1	60.9
1900-09	2,784.8	312.9	2,471.9	1,045.3	1,426.6	11.4	37.2	51.4	42.0	58.0

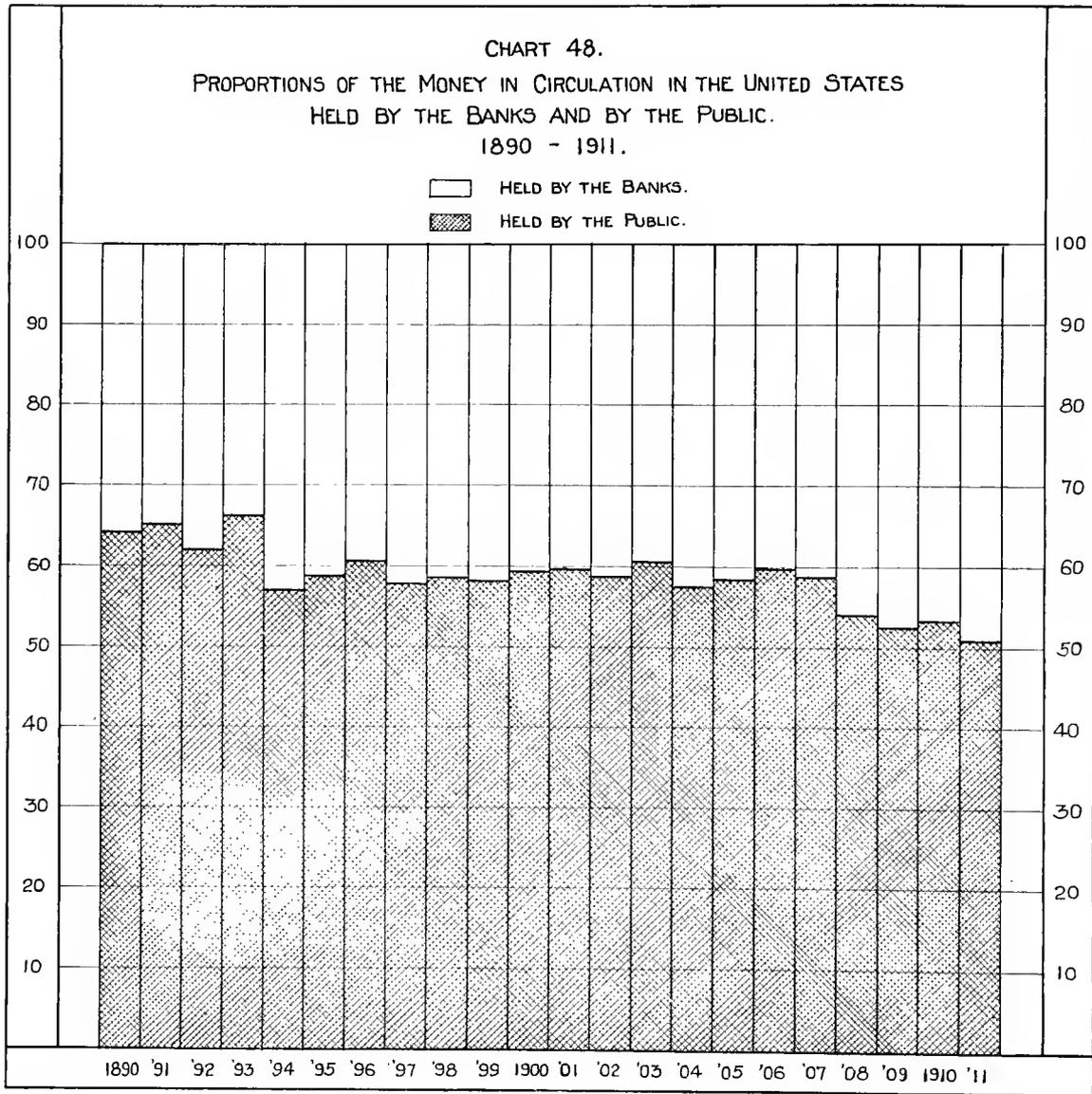
\* Figures for April 30th, instead of July 1st.

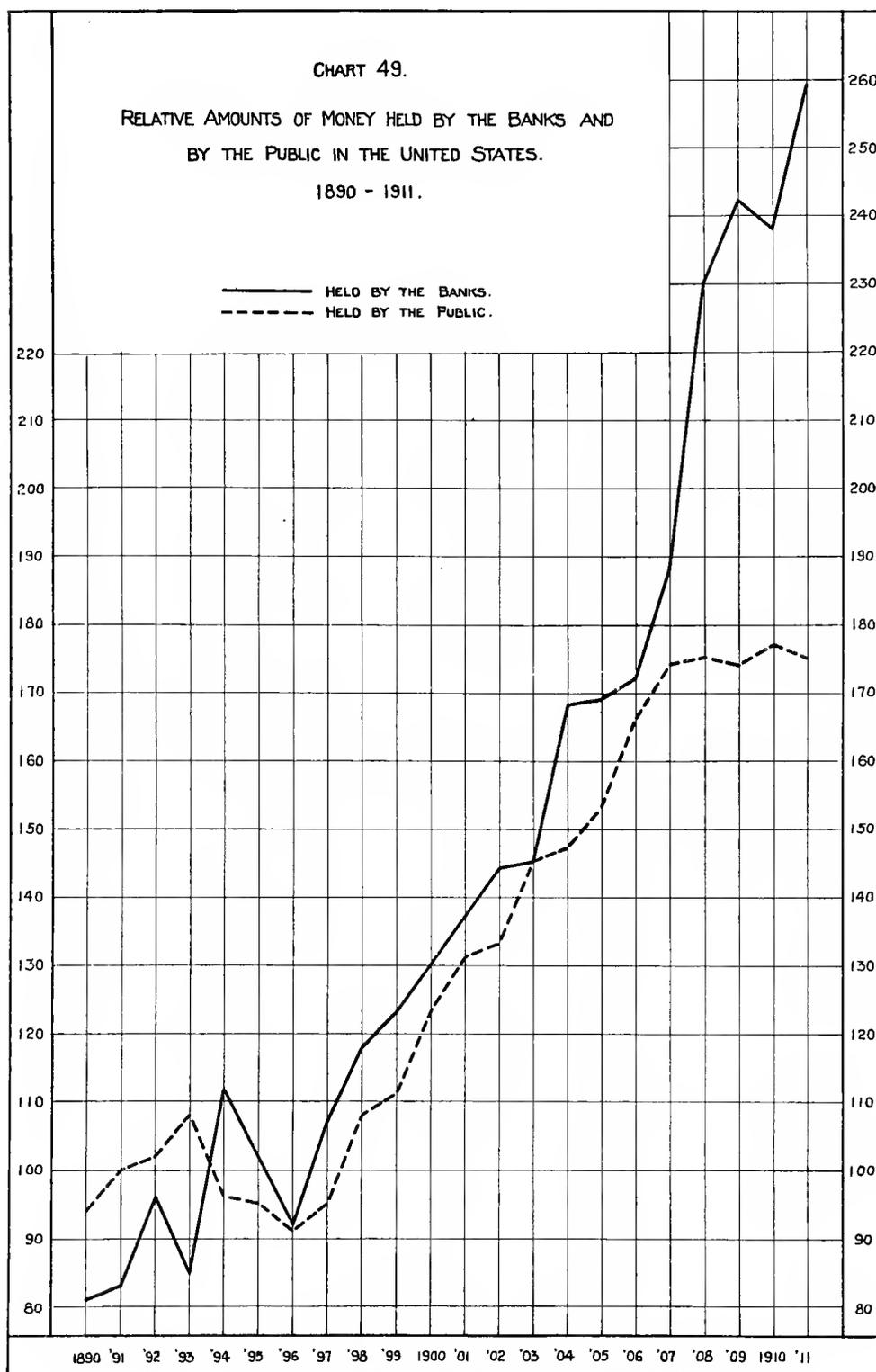
For the construction of this table see the note appended to the present chapter, "A Revised Estimate of the Amount of Money Held by the Banks of the United States."

TABLE 77—(Concluded)

DISTRIBUTION OF THE MONETARY STOCK OF THE UNITED STATES AMONG THE PUBLIC, THE BANKS, AND THE FEDERAL TREASURY ON OR ABOUT JULY 1, 1890-1911

Year	Relative amounts Average actual amounts in 1890-99 = 100				
	Total stock 92	In the treasury as assets 118	Outside of the treasury 89	Held by banks 81	Held by the public 94
1890					
1891	92	83	93	83	100
1892	96	70	100	96	102
1893	95	65	99	85	108
1894	98	66	102	112	96
1895	98	100	98	102	95
1896	97	135	92	92	91
1897	102	122	100	107	95
1898	111	109	112	118	108
1899	118	132	116	123	111
1900	126	131	125	130	123
1901	134	142	133	137	131
1902	138	145	138	144	133
1903	145	146	145	145	145
1904	152	131	155	168	147
1905	156	136	159	169	153
1906	167	153	169	172	166
1907	177	158	179	188	174
1908	192	157	197	230	175
1909	193	142	201	242	174
1910	194	146	201	238	177
1911	202	157	208	259	175
Averages					
1890-99	100	100	100	100	100
1900-09	158	144	160	172	152





mum. As soon as the crisis yields to depression, the current sets strongly in the opposite direction. Idle money accumulates in the banks and raises their quota to its maximum. When business revives and employment becomes more regular a larger proportion of the monetary stock is required for hand-to-hand use, the quota of the banks declines slowly until the climax of prosperity is reached. When the crisis which follows comes on slowly or is mild in character, the banks begin to gain again. But when the crisis degenerates into a panic, the gradual decline of the banks' quota which occurred during the prosperous phase of the cycle suddenly becomes the rapid decline with which we started.

These generalizations seem to be justified by the figures of Table 77. But if these figures were annual averages instead of figures for a single day, they would probably show a closer correlation between changes in the distribution of money and changes in business conditions. As matters stand, there seems to be a contradiction between the results for the two great panic years. But in 1893 the panic was at its height on the first of July, while in 1907 on the first of July general business was but just beginning to feel the reaction which developed into the panic of October and November. The exceptionally large holdings by the banks in 1909 may arise from the fact that the data for this year refer to April 30 instead of to July 1, though we do not know enough about seasonal variations of this character to be certain that the banks usually hold a larger proportion of the country's money in midspring than in midsummer.

No foreign data upon this subject are available, both because of the scanty materials for estimating the total monetary stock and because of the lack of detail in the bank reports concerning the amounts of money in hand.

## V. THE VOLUME OF DEPOSIT CURRENCY

That the currency used in America includes a far larger volume of checks drawn against bank deposits than of money is a matter of common knowledge. The two official efforts to measure these two elements in the currency with precision have been directed, not toward a direct comparison between the quantity of money and the quantity of deposits subject to check, but toward a comparison between the volume of business transactions settled in money and the volume settled in credit instruments. In 1896, Professor David Kinley, who superintended both investigations, concluded that about 80 per cent of all business payments were made in checks, drafts, etc., and about 20 per cent in money. In 1909 he adopted 80 to 85 per cent as the probable proportion of business done by check. Both of these conclusions were based upon a critical study of reports from the banks concerning the character of funds deposited with them upon specified days. By applying more refined methods of attack, Professor Irving

Fisher has reached somewhat different results. His ratios for the use of checks are 86 per cent in 1896 and 91 per cent in 1909.<sup>16</sup>

Important as these results are, they do not answer the present purpose. We need an estimate of the volume of deposit currency, covering every year since 1890, and comparable with the revised data concerning the monetary stock which have been presented. For such comparisons it has been customary to rely upon the statistics of the individual deposits of the banks. But an investigation by the National Monetary Commission has shown that a large proportion of these deposits are subject to conditions which prevent their free use in making payments. Accordingly, it is necessary to ascertain as nearly as may be what part of the individual deposits are actually subject to check in all the classes of banks. The next table shows the results of such an effort, and a note at the end of this chapter explains how these results were obtained.

The relative importance of bank checks and of money as constituent elements in this country's currency appears from the figures which show that since 1890 deposit currency has averaged rather more than two-thirds and money outside the treasury rather less than one-third of the total circulating medium. The deposit currency, moreover, has grown at a faster pace than the money in circulation. Between 1890 and 1911 the former increased about three and one-half times in volume, the latter about two and one-quarter times. Consequently the proportion of deposit currency to the total circulating medium has risen from 62 per cent to 72 per cent, and that of money has fallen from 38 to 28 per cent. That business habits have changed during these two decades in the direction of a freer use of banking facilities by the business public there can be no doubt.

Though this change obscures, it does not hide the fact of greatest present interest—namely, that the ratio of checks to the total volume of currency varies with the course of business cycles. For this ratio has risen fastest in periods of marked prosperity, such as 1897-1902 and 1904-06. On the other hand, the gradual growth of the ratio has ceased and even given place to a shrinkage in periods of business reaction such as 1892-93, 1902-03, and 1906-08.

Closely related to but not identical with these changes in the ratio of the deposit currency to the total circulating medium are the changes in the ratio of the money in the banks to the deposit currency. In the last section it was shown that the money in the banks has increased faster than the money outside of the treasury. Nevertheless its increase has not kept pace with that of the

<sup>16</sup> David Kinley, *The Use of Credit Instruments in Payments in the United States*, Publications of the National Monetary Commission, pp. 117 and 198-201. The results of the investigation of 1896 are summarized in this volume (pp. 28-30), and references to Kinley's earlier publications on the subject are given in the bibliography (p. 223). For Fisher's results, see his *Purchasing Power of Money* (New York, 1911), pp. 317, 318, 491, 492. An interesting English parallel is afforded by the data concerning the proportion of cash and credit instruments in the receipts of Parr's Bank. (See the National Monetary Commission's *Statistics for Great Britain, Germany, and France*, p. 144). On a "normal" day the checks made 97.45 per cent of the total receipts at the metropolitan offices and 85.70 per cent at the provincial offices. On a Saturday these percentages rose to 97.93 and 88.90, and on a stock-exchange settling day to 98.89 and 88.98 per cent respectively. All of the data refer to days in August, 1908.

TABLE 78

THE VOLUME OF MONEY AND OF DEPOSIT CURRENCY IN THE UNITED STATES ON THE 30TH OF JUNE IN THE YEARS  
1890-1911

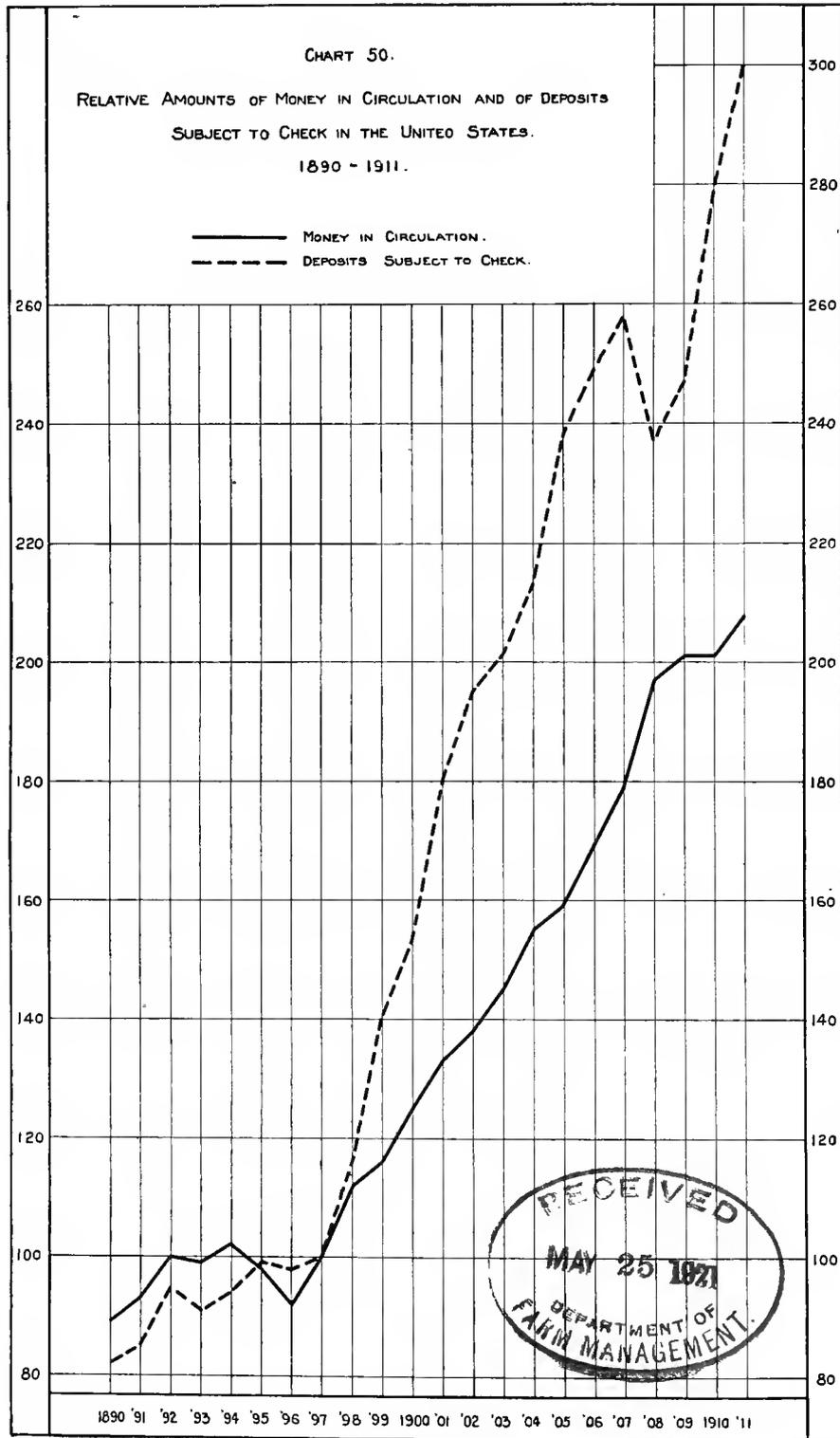
Year	Actual amounts In millions of dollars					Relative amounts Average actual amounts in 1890-99 = 100				
	Total monetary stock	Money out- side of the treasury	Money in the banks	Money held by the public	Deposit currency	Total monetary stock	Money out- side of the treasury	Money in the banks	Money held by the public	Deposit currency
1890	1,629	1,373	492	881	2,264	92	89	81	94	82
1891	1,623	1,443	504	939	2,325	92	93	83	100	85
1892	1,689	1,538	585	953	2,615	96	100	96	102	95
1893	1,673	1,531	517	1,014	2,510	95	99	85	108	91
1894	1,726	1,582	680	902	2,578	98	102	112	96	94
1895	1,726	1,509	620	889	2,731	98	98	102	95	99
1896	1,708	1,414	556	858	2,688	97	92	92	91	98
1897	1,805	1,539	649	890	2,747	102	100	107	95	100
1898	1,959	1,723	713	1,010	3,198	111	112	118	108	116
1899	2,076	1,790	748	1,042	3,865	118	116	123	111	140
1900	2,223	1,938	787	1,151	4,205	126	125	130	123	153
1901	2,362	2,054	828	1,226	4,955	134	133	137	131	180
1902	2,439	2,125	875	1,250	5,367	138	138	144	133	195
1903	2,560	2,243	881	1,362	5,540	145	145	145	145	201
1904	2,674	2,390	1,016	1,374	5,853	152	155	168	147	213
1905	2,754	2,459	1,024	1,435	6,559	156	159	169	153	238
1906	2,937	2,604	1,043	1,561	6,863	167	169	172	166	249
1907	3,115	2,772	1,139	1,633	7,109	177	179	188	174	258
1908	3,378	3,037	1,394	1,643	6,522	192	197	230	175	237
1909	3,406	3,097	1,466	1,631	6,808	193	201	242	174	247
1910	3,420	3,103	1,445	1,658	7,713	194	201	238	177	280
1911	3,556	3,214	1,573	1,641	8,242	202	208	259	175	300
Averages										
1890-99	1,761.4	1,544.2	606.4	937.8	2,752.1	100	100	100	100	100
1900-09	2,784.8	2,471.9	1,045.3	1,426.6	5,978.1	158	160	172	152	217

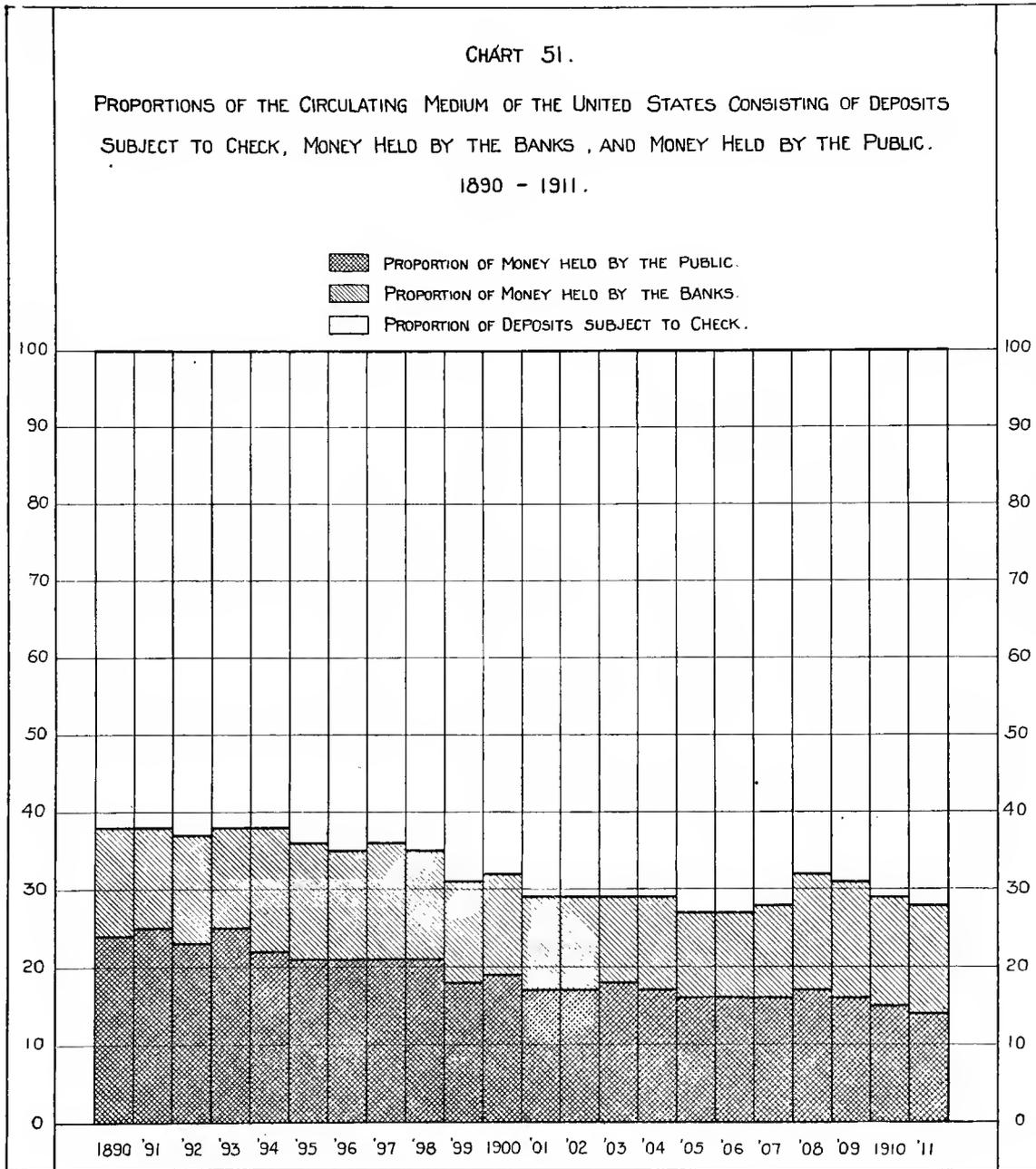
The data concerning money are from Table 77, preceding. The data concerning deposit currency give the results of a revised estimate of the bank deposits subject to check. See the note appended to the present chapter, "The Volume of Deposit Currency in the United States."

TABLE 78—(Concluded)

THE VOLUME OF MONEY AND OF DEPOSIT CURRENCY IN THE UNITED STATES ON THE 30TH OF JUNE IN THE YEARS  
1890-1911

Year	Ratios borne to the volume of deposit currency by the				Amount of money outside of the treasury plus the volume of deposit currency Millions of dollars	Ratios borne to the money outside of the treasury plus the volume of deposit currency by the			
	Total monetary stock 72%	Money out- side of the treasury 61%	Money in the banks 22%	Money held by the public 39%		Volume of deposit currency 62%	Money out- side of the treasury 38%	Money in the banks 14%	Money held by the public 24%
1890					3,637				
1891	70	62	22	40	3,768	62	38	13	25
1892	65	59	22	36	4,153	63	37	14	23
1893	67	61	21	40	4,041	62	38	13	25
1894	67	61	26	35	4,160	62	38	16	22
1895	63	55	23	33	4,240	64	36	15	21
1896	64	53	21	32	4,102	66	34	14	21
1897	66	56	24	32	4,286	64	36	15	21
1898	61	54	22	32	4,921	65	35	14	21
1899	54	46	19	27	5,655	68	32	13	18
1900	53	46	19	27	6,143	68	32	13	19
1901	48	41	17	25	7,009	71	29	12	17
1902	45	40	16	23	7,492	72	28	12	17
1903	46	41	16	25	7,783	71	29	11	18
1904	46	41	17	23	8,243	71	29	12	17
1905	42	37	16	22	9,018	73	27	11	16
1906	43	38	15	23	9,467	73	28	11	16
1907	44	39	16	23	9,881	72	28	12	17
1908	52	47	21	25	9,559	68	32	15	17
1909	50	46	22	24	9,905	69	31	15	16
1910	44	40	19	22	10,816	71	29	13	15
1911	43	39	19	20	11,456	72	28	14	14
Averages									
1890-09	65	57	22	35	4,296.3	64	36	14	22
1900-09	47	42	18	24	8,450.0	71	29	12	17





deposits against which it is held as a reserve. Hence the proportion of money held by the banks to deposits subject to check has fallen from 22 per cent in 1890-99 to 18 per cent in 1900-09. But, once more, the change has not been steady. On the contrary, it has been dominated by the ever-recurring alternations of prosperity, crisis, and depression. The highest ratio of money to checking deposits—26 per cent—came in 1894, the lowest—15 per cent—in 1906. The juxtaposition of these extreme variations shows how inaccurate is the assumption that the deposit currency may be treated as a substantially constant multiple of the quantity of money in the banks.

In Section iii of this chapter it has been shown that the American monetary stock has slight capacity for adjusting its volume to the changing condition of business. On the whole, it does increase more rapidly in good times than in bad; but it frequently fails to contract when prosperity passes over into depression. The present table shows that deposit currency is distinctly superior to money in this quality of elasticity. In prosperous times it expands more rapidly than money, and in dull times it is more likely to contract. For example, deposit currency shrank 21 per cent between 1907 and 1908, while the monetary stock increased 15 per cent.<sup>17</sup> Nevertheless, deposit currency does not have that "perfect elasticity" with which it is sometimes credited.<sup>18</sup> For among the various indices of business conditions presented in Chapter V there are several which reflect changes in the activity of trade more faithfully than does the column of relative figures for deposit currency in Table 78.

## VI. THE VELOCITY OF CIRCULATION

The only serious attempt to estimate the velocity with which both money and checks circulate has been made by Professor Irving Fisher for the United States.<sup>19</sup> It is based primarily upon the data collected by the Comptroller of the Currency concerning the sums of money and credit instruments deposited in banks on the settling day nearest July 1, 1896, and on March 16, 1909. Figures for the intervening years are interpolated.

From these two inquiries Fisher estimates that the total check transactions of the country made 97 billion dollars in 1896 and 364 billions in 1909. Since he puts the deposits subject to check at 2.68 billions in the first year and at 6.75 in the second, he finds by division that the average turnover of deposit currency in 1896 and 1909 respectively was 26.2 and 53.9 times.

<sup>17</sup> These percentages are from the columns of "relative amounts" in Table 78, and therefore represent ratios to the average actual amounts of both kinds of currency in 1890-99.

<sup>18</sup> By Professor J. Laurence Laughlin, for example. See his *Principles of Money* (New York, 1903), p. 120.

<sup>19</sup> *Purchasing Power of Money* (New York, 1911), Appendix to chapter XII, §§ 4-8.

To calculate the velocities for the years 1897-1908, Fisher uses the clearings in New York and "outside New York" as a barometer of business transactions performed by check, allowing the latter clearings five times the weight of the former. But when total check transactions are computed in this fashion for 1896 and 1909 he finds that they exceed the same transactions as estimated from the comptroller's bank inquiries of those years. The two estimates can be made to agree, however, by multiplying the barometer made from clearings by .69 in 1896 and by .88 in 1909. The ratios of correction to be applied to the barometer for intermediate years he assumes to rise at a regular rate from .69 to .88. After estimating check transactions in this fashion for each year, he computes the velocity of circulation by dividing these totals by the corresponding estimates of deposits subject to check.

A more elaborate method is required in dealing with the velocity at which money circulates. The comptroller's inquiries of 1896 and 1909 allow the total sums of actual money deposited in or withdrawn from the banks to be estimated at 9.6 billions in the course of the first year and at 20.7 billions in the course of the second. So far as these withdrawals are used in payments to enterprises or individuals having bank accounts, Fisher assumes that the money taken out of the bank is exchanged on the average just once before it is redeposited. But when money is drawn from the banks to pay people who keep no bank accounts, Fisher assumes that it changes hands twice on the average before it is returned to the banks by some depositor. The first time it is paid for labor in the typical case; the second time it is paid by the laborer for groceries, etc., and then it is deposited once more by the retail merchant. Hence the sum of wages paid in money, plus allowances for money payments to other non-depositors, must be added to the sums of money deposited in banks in estimating the total circulation of money against goods. These items are put at 5.7 and 13.1 billions in 1896 and 1909. Finally, five small items, the largest half a billion, are added to cover cases in which money received by depositors is paid out again in cash instead of being put into the banks, etc. The grand total of transactions settled by the use of money is thus raised to 16.2 billions in 1896 and to 35.1 billions in 1909. Dividing these totals by the estimated amount of money in circulation, Fisher finds that the average rate of turnover was 18.6 times in the first year and 21.5 times in the second.

It remains to interpolate figures for the intervening years. This task Fisher performs by splitting the difference between two hypotheses—one that the velocity increased at an unvarying pace each year from 18.6 in 1896 to 21.5 in 1909, the other that the changes corresponded to those already estimated for the velocity of check circulation.

The final results are as follows:

TABLE 79

FISHER'S ESTIMATES OF THE VELOCITY OF CIRCULATION OF CHECKS AND MONEY IN THE UNITED STATES, 1896-1911

Year	Checks	Money	Year	Checks	Money
1896	36.2	18.6	1904	40.2	20.7
1897	37.9	19.1	1905	43.1	21.8
1898	39.8	19.8	1906	46.8	21.7
1899	42.6	21.9	1907	44.9	21.1
1900	39.3	20.0	1908	45.7	20.0
1901	40.6	21.8	1909	53.9	21.5
1902	40.9	21.8	1910	52.8	21.0
1903	39.1	20.6	1911	49.9	20.9

Professor Fisher believes that his figures for checks are subject to a probable error of between 5 and 10 per cent, and that his figures for money are probably correct in most cases for the first two digits. But our interest lies rather in the variations between years of depression and years of prosperity than in the absolute accuracy of the figures for any one year. These variations have two sources. First, the original data derived from the comptroller's inquiries of 1896 and 1909 show a marked increase in velocities, particularly in the velocity of checks. Second, the distribution of this increase over the intervening years is rendered somewhat irregular by the use of clearings as a barometer of check transactions. The results indicate that both money and checks, but checks more than money, are gaining in velocity of circulation; but that this gain is unsteady, being rapid in years of high prosperity and being broken by a decline in years of business reaction.

The part of this conclusion of chief interest here may be tested by methods which possess slight value for estimating the actual velocity of circulation in any one year. The activity of the check circulation must be reflected, though not without distortion, by the ratio between the bank clearings of a town and its average deposits. The next table, which presents data of this character for New York, Boston, and Philadelphia, amply confirms Fisher's conclusion that the velocity of check circulation rises in prosperity and sinks in depression. In New York the ratio stood at 93 in 1890, fell to 43 in 1894, rose to 83 in 1901, fell again to 61 in 1904, rose once more to 102 in 1906, and then ran down to 61 in 1908. The Boston figures for these years are 39, 25, 33, 31, 40, 31; and the Philadelphia figures are 39, 27, 27, 24, 31, 22. The violence of the changes in these ratios suggests that Professor Fisher's results under- rather than over-rate the variations in the velocity of circulation from one year to the next. But it is difficult to test this suggestion, because certain of his data have to be interpolated for all years except 1896 and 1909 on the basis of hypotheses which themselves cannot be verified or disproved.

TABLE 80

RATIO OF THE YEARLY CLEARINGS TO THE AVERAGE BANK DEPOSITS IN NEW YORK, BOSTON, AND PHILADELPHIA

Year	New York			Boston			Philadelphia		
	Clearings Millions of dollars (1)	Av. deposits Millions of dollars (2)	Ratio (3)	Clearings Millions of dollars (4)	Av. deposits Millions of dollars (5)	Ratio (6)	Clearings Millions of dollars (7)	Av. deposits Millions of dollars (8)	Ratio (9)
1890	37,458	404.4	92.6	5,130	130.2	39.4	3,710	94.2	39.4
1891	33,749	409.4	82.4	4,753	129.2	36.8	3,296	95.9	34.4
1892	36,662	504.4	72.7	5,005	147.2	34.0	3,810	112.1	34.0
1893	31,261	433.7	72.1	4,577	135.9	33.7	3,403	98.6	34.5
1894	24,387	568.9	42.9	4,148	166.9	24.9	3,060	113.4	27.0
1895	29,841	543.3	54.9	4,757	160.0	29.7	3,556	108.3	32.8
1896	28,870	482.5	59.8	4,498	140.1	32.1	3,161	100.1	31.6
1897	33,427	602.7	55.5	5,095	173.8	29.3	3,222	119.9	26.9
1898	41,971	729.8	57.5	5,425	192.8	28.1	3,671	131.4	27.9
1899	60,761	844.7	71.9	7,086	228.8	31.0	4,811	164.8	29.2
1900	52,634	852.8	61.7	6,180	200.4	30.8	4,677	178.9	26.1
1901	79,420	957.4	83.0	7,191	216.5	33.2	5,475	204.9	26.7
1902	76,328	934.9	81.6	6,930	211.2	32.8	5,875	210.8	27.9
1903	65,970	898.6	73.4	6,717	204.2	32.9	5,841	210.7	27.7
1904	68,649	1,118.1	61.4	6,631	212.2	31.2	5,776	237.8	24.3
1905	93,822	1,120.4	83.7	7,655	223.2	34.3	6,928	256.9	27.0
1906	104,675	1,025.0	102.1	8,335	211.2	39.5	7,686	249.6	30.8
1907	87,182	1,065.2	81.8	8,135	215.0	37.8	7,161	250.4	28.6
1908	79,275	1,302.5	60.9	7,338	235.5	31.2	5,937	272.5	21.8
1909	103,588	1,347.6	76.9	8,440	262.1	32.2	7,021	314.9	22.3
1910	97,275	1,216.9	79.9	8,299	245.9	33.8	7,690	201.9	25.5
1911	92,373	1,372.8	67.3	8,340	270.7	30.8	7,692	328.4	23.4
Averages									
1890-99	35,838.7	552.38	66.23	5,047.4	160.49	31.9	3,570.0	113.87	31.77
1900-09	81,154.3	1,062.25	76.65	7,355.2	219.15	33.59	6,237.7	238.74	26.32

## SOURCES OF DATA

Columns (1), (4), and (7), A. P. Andrew, *Statistics for the United States* (Publications of the National Monetary Commission), p. 8.

Column (2), computed from data in *ibid.*, pp. 98-118.

Columns (3), (6), and (9), computed from data in the preceding columns.

Columns (5) and (8), compiled from weekly reports in the *Commercial and Financial Chronicle*. The average deposits of the New York banks in 1910 and 1911 are also from this source.

The clearings for 1910 and 1911 are taken from the *Financial Review*.

Pierre des Essars has utilized the reports of the Bank of France concerning the receipts, payments, and average balances of its current accounts to show that the average turnover reaches its maximum in years of crises and then declines sharply.<sup>20</sup> A continuation of his table to 1911 shows that his conclusions hold good of recent years, though the changes after the crisis of 1900 are veiled somewhat by the rapid rate at which the turnover has been increasing in the past decade.

<sup>20</sup> *Journal de la Société de Statistique de Paris*, April, 1895.

TABLE 81

VELOCITY OF CIRCULATION OF PRIVATE DEPOSITS IN THE BANK OF FRANCE, COMPUTED ACCORDING TO THE FORMULA  
OF P. DES ESSARS, FOR 1890-1911

Year	Sum of the "versements," and "payements" In millions of francs	"Solde moyen" multiplied by 2 In millions of francs	Velocity of circulation = amounts in 1st column ÷ amounts in 2d column
1890	108,636	804	135
1891	120,388	866	139
1892	97,430	839	116
1893	97,415	811	120
1894	113,734	890	128
1895	126,889	1,055	120
1896	107,823	1,056	102
1897	109,420	904	121
1898	118,458	896	132
1899	128,151	863	148
1900	130,263	874	149
1901	136,678	932	147
1902	142,023	887	160
1903	148,601	760	196
1904	169,327	989	171
1905	196,701	1,023	192
1906	216,443	1,014	213
1907	208,104	920	226
1908	197,102	932	211
1909	240,692	1,232	195
1910	269,507	1,096	246
1911	293,880	1,071	274
Averages			
1890-99	112,834.4	898.4	126.1
1900-09	178,593.4	956.3	186.0

Data from the *Annuaire statistique de France*, 1909, p. 68\*.

## NOTES

A REVISED ESTIMATE OF THE AMOUNT OF MONEY HELD BY THE BANKS OF  
THE UNITED STATES IN 1890-1911

Beginning in 1892, the Comptroller of the Currency has included in his annual reports an estimate of the amount of the total monetary stock held by the federal treasury, by the banks, and by the general public. In Dr. A. Piatt Andrew's *Statistics for the United States* (Publications of the National Monetary Commission), p. 155, this table is carried back from 1892 to 1867. While these figures afford a satisfactory working basis for estimating the character of the changes in the distribution of money from year to year, they require several corrections.

1. The amount of money held by the banks is computed from the bank reports secured by the Comptroller of the Currency. These reports include all of the national banks, but not all of the state and private banks and trust companies. Although the omitted institutions are doubtless small banks for the most part, their number is sufficient to make a considerable deficiency in the published figures for money in the banks.

In 1900 and 1902-1911 the comptroller estimated the number and the individual deposits of these institutions from which reports were not received. His figures were as follows:

	Number of banks	Individual deposits
1900	3,595	\$450,000,000
1902	3,732	478,600,000
1903	4,546	502,500,000
1904	3,994	448,000,000
1905	3,500	435,600,000
1906	3,491	413,200,000
1907	4,191	554,900,000
1908	3,654	486,000,000
1909	3,021	389,700,000
1910	4,168	521,600,000
1911	4,159	560,000,000

Another estimate of the number of banks operating under state laws has been made by Professor George E. Barnett in his *State Banks and Trust Companies Since the Passage of the National Bank Act* (Publications of the National Monetary Commission). Barnett's figures are based upon official state reports, where the latter are available, and elsewhere upon the various almanacs giving the names and addresses of banking institutions. The following table compares Barnett's figures for 1890-1908 with the number of banks reporting to the comptroller:

Year	Number of State banks		Number of trust companies		Number of private banks		Number of banks not reporting to the comptroller			
	Comptroller	Barnett	Comptroller	Barnett	Comptroller	Barnett	State banks	Trust companies	Private banks	Total
	1890	2,101	2,534	149	102	1,344	4,305	433	47*	2,961
1891	2,572	3,102	171	125	1,235	4,230	530	46*	2,995	3,479
1892	3,191	3,484	168	124	1,161	4,004	293	44*	2,843	3,092
1893	3,579	3,700	228	214	848	4,031	121	14*	3,183	3,290
1894	3,586	3,705	224	228	904	3,844	119	4	2,940	3,063
1895	3,774	3,818	242	241	1,070	3,924	44	1*	2,854	2,897
1896	3,708	3,917	260	257	824	3,810	209	3*	2,986	3,192
1897	3,857	3,978	251	264	759	3,806	121	13	3,047	3,181
1898	3,965	4,062	246	268	758	3,853	97	22	3,095	3,214
1899	4,191	4,253	260	276	756	4,168	62	16	3,412	3,490
1900	4,369	4,405	290	492	989	5,287	36	202	4,298	4,536
1901	4,983	4,906	334	561	917	5,060	477	227	4,143	4,293
1902	5,397	5,433	417	636	1,039	4,976	36	219	3,937	4,192
1903	5,962	6,111	531	827	1,174	5,417	149	296	4,243	4,688
1904	6,923	6,984	585	924	854	5,484	61	339	4,630	5,030
1905	7,794	7,920	683	1,041	1,028	5,291	126	358	4,263	4,747
1906	8,862	9,334	742	1,337	929	4,823	472	595	3,894	4,961
1907	9,967	10,352	794	1,485	1,141	4,947	385	695	3,806	4,882
1908	11,220	11,295	842	1,496	1,007	4,576	75	654	3,569	4,298

\* Comptroller's figures in excess of Barnett's.

Barnett points out that his figures for 1900-08 are swollen by a partial double counting of trust companies as both trust companies and state banks. To indicate the extent of this duplication, he publishes a table (p. 249) showing the numbers of trust companies given by official state reports and the numbers derived from both official and unofficial sources. In answer to an inquiry he kindly informs me that in 1906-08 the whole number of trust companies officially reported is counted twice in his tables, while in 1900-05 the double counting is probably not over 150 in any year and probably not over half the difference between the numbers reported officially and the numbers ascertained from both official and unofficial sources. On this basis I have framed a rough estimate of the deductions which should be applied to Barnett's figures. The following columns show the changes which result in the total number of omitted banks, and also compare the corrected figures with the comptroller's estimate of the non-reporting banks.

Year	Barnett's estimate of the non-reporting banks		Comptroller's estimate of the non-reporting banks
	Original	Corrected	
1900	4,536	4,446	3,595
1901	4,293	4,193	.....
1902	4,192	4,097	3,732
1903	4,688	4,558	4,546
1904	5,030	4,890	3,994
1905	4,747	4,597	3,500
1906	4,961	4,383	3,491
1907	4,882	4,204	4,191
1908	4,298	3,664	3,654

It will be noticed that Barnett's figures remain higher than the comptroller's, even after the estimated duplications in his lists have been deducted. The cause of the discrepancy is not clear for until 1908 the comptroller did not state upon what source he based his estimates. Barnett, on the other hand, explains that, where official reports are unavailable, his lists are made from *Homans' Bankers' Almanac* and its continuations—standard technical publications. Further, Barnett uses the July edition of the almanac, which makes his results conform in date to the bank reports used. I am therefore inclined to accept Barnett's results as more trustworthy for the present than the comptroller's. For 1909-11, however, I use the comptroller's figures, partly because Barnett accepts them for 1909, and partly because the preceding table shows that the differences between the two estimates had nearly disappeared by 1907 and 1908.

2. But, granted that Barnett's corrected figures show the approximate number of banks for which the comptroller obtains no reports, it remains to determine how much money these institutions probably hold.

From the preceding figures published by the comptroller for the number and aggregate deposits of the non-reporting banks it is easy to compute the average amount of deposits held by each. These figures agree with the average deposits of the private banks for which reports are obtained, as the following comparison shows:

Year	Estimated average individual deposits of non-reporting banks	Average individual deposits of the reporting private banks
1900	\$125,000	\$97,000
1901	-----	129,000
1902	128,000	127,000
1903	111,000	113,000
1904	112,000	112,000
1905	124,000	124,000
1906	118,000	118,000
1907	132,000	132,000
1908	133,000	126,000
1909	129,000	129,000
1910	125,000	133,000
1911	135,000	127,500

The practice of estimating the aggregate deposits of non-reporting banks from the average deposits of the private banks is justified (1) by the fact that the great mass of the non-reporting institutions are themselves private banks, and (2) by the probability that while the non-reporting state banks and trust companies have average deposits larger than those of private banks, the non-reporting private banks have somewhat smaller average deposits than the private banks for which reports are obtained. Indeed, the presumption in favor of the comptroller's later practice is so strong as to discredit his estimate for 1900, in which he puts the deposits of non-reporting banks at a round \$450,000,000, without noticing that this figure gives average deposits more than a quarter greater than those of the private banks for which he had returns.

3. The money holdings of the non-reporting banks may be estimated by assuming that these institutions keep cash reserves, corresponding to those of the reporting private banks.

One minor difficulty obstructs this procedure. From 1887 to 1895, the comptroller's tables for private banks do not separate "cash" from "cash items." It is therefore necessary to estimate the amount of the latter from the figures for later years in which "cash" is given under one rubric and "checks and other cash items" under another. In the five years 1896-1900 the "checks and

other cash items" made on the average 9 per cent, and "cash on hand" made 91 per cent of the sum of the two items. By applying these two percentages, the ratio of cash to individual deposits may be computed for 1890-95. The amounts are stated in millions of dollars.

## PRIVATE BANKS FOR WHICH THE COMPTROLLER PUBLISHES REPORTS

Year	Cash and cash items	Cash items	Cash	Individual deposits	Per cent of cash to individual deposits
1890	14.5	1.3	13.2	99.7	13.2%
1891	12.0	1.1	10.9	95.0	11.5
1892	12.2	1.1	11.1	93.1	11.9
1893	9.4	.8	8.6	68.6	12.5
1894	8.0	.7	7.3	66.1	11.0
1895	9.3	.8	8.5	81.8	10.4

4. We are now ready to estimate the amount of money held by banks from which the comptroller has not secured reports.

Year	Number of non-reporting banks	Average individual deposits of reporting private banks In thousands of dollars	Aggregate individual deposits of non-reporting banks In millions of dollars	Ratio of cash on hand to individual deposits in reporting private banks Per cent	Aggregate money holdings of non-reporting banks In millions of dollars
1890	3,347	74	248	13.2	33
1891	3,479	77	268	11.5	31
1892	3,092	80	247	11.9	29
1893	3,290	81	266	12.5	33
1894	3,063	73	224	11.0	25
1895	2,897	76	220	10.4	23
1896	3,192	72	230	10.5	24
1897	3,181	66	210	10.1	21
1898	3,214	82	264	9.3	25
1899	3,490	86	300	8.4	25
1900	4,446	97	431	8.6	37
1901	4,193	129	541	6.1	33
1902	4,097	127	520	7.1	37
1903	4,558	113	515	6.5	33
1904	4,890	112	548	6.1	33
1905	4,597	124	570	6.3	36
1906	4,383	118	517	6.1	32
1907	4,204	132	555	5.7	32
1908	3,664	126	462	6.7	31
1909	3,021	129	390	5.7	22
1910	4,168	133	554	5.4	30
1911	4,159	128	560	5.0	28

The first column shows the number of non-reporting banks as deduced from a comparison between Barnett's tables (corrected for the double counting of trust companies in 1900-08) and the number of banks other than national for which the comptroller publishes reports. The average individual deposits of reporting private banks are computed from the comptroller's data.<sup>21</sup> The third column is made by multiplying the figures in the first column by the corresponding figures in the second. The fourth column, like the second, is computed from the comptroller's data for private banks, but after excluding the "cash items" from the figures for "cash and cash items" in 1890-95. The fifth column is made by applying the percentages of column four to the aggregate deposits of column three.

5. A final correction remains to be made in the comptroller's figure for money in the banks. As has been said, the published reports for private banks in 1890-95 include "cash items" and "cash" under the single heading. The same is true of the comptroller's figures for state and savings banks and trust companies. To find the amount of money held by these institutions it is therefore necessary to segregate the "cash items."

The method adopted toward this end is the one already applied to the private banks. The separately stated amounts of "checks and other cash items" and of "cash on hand" in 1896-1900 were added together, the ratio of each item to the sum of the two was computed, and the average of these ratios was struck for the five-year period. It turned out that "cash items" made on the average 21 per cent of the "cash and cash items" among the state banks, 5 per cent among the trust companies, 9 per cent among the private banks, and 3 per cent among the savings banks. When these ratios are applied to the original returns for 1890-95 the following results expressed in millions of dollars are obtained.

Year	State banks			Trust companies			Private banks			Savings banks			All banks other than national		
	Cash and cash items	Cash items	Cash	Cash and cash items	Cash items	Cash	Cash and cash items	Cash items	Cash	Cash and cash items	Cash items	Cash	Cash and cash items	Cash items	Cash
1890	120.8	25.4	95.4	19.9	1.0	18.9	14.5	1.3	13.2	30.1	.9	29.2	185.3	28.6	156.7
1891	107.5	22.6	84.9	16.5	.8	15.7	12.0	1.1	10.9	29.7	.9	28.8	165.7	25.4	140.3
1892	129.7	27.2	102.5	22.6	1.1	21.5	12.2	1.1	11.1	33.2	1.0	32.2	197.7	30.4	167.3
1893	137.0	28.8	108.2	22.2	1.1	21.1	9.4	.8	8.6	37.0	1.1	35.9	205.6	31.8	173.8
1894	144.5	30.3	114.2	34.4	1.7	32.7	8.0	.7	7.3	42.4	1.3	41.1	229.3	34.0	195.3
1895	143.1	30.1	113.0	35.9	1.8	34.1	9.3	.8	8.5	39.6	1.2	38.4	227.9	33.9	194.0

6. The preceding results may now be applied to the comptroller's figures for "money in the banks." The original data for 1890 and 1891 are from Andrew's *Statistics for the United States*, p. 155, and for 1892-1910 from the *Report of the Comptroller of the Currency* for 1910, p. 58.<sup>22</sup> The changes consist in adding the estimated amount of money held by the non-reporting banks in 1890-1911, and subtracting the estimated amount of "cash items" included with cash in the reports of banks other than national in 1890-95. Money in banks of the island possessions is not included. The figures are in millions of dollars.

The first effort to revise the comptroller's figures for money in the banks was made by Professor Irving Fisher in his *Purchasing Power of Money*, appendix to Chapter XII, §§ 2 and 3. His results, which cover the years 1896-1909, run somewhat higher than mine, by amounts which

<sup>21</sup> In 1911 the comptroller's estimate of these deposits is accepted.

<sup>22</sup> P. 61 of the report for 1911.

Year	Money in the reporting banks	Money in the non-reporting banks	Cash items included with cash by the reporting banks	Revised estimate of money in the banks
1890	488	33	29	492
1891	498	31	25	504
1892	586	29	30	585
1893	516	33	32	517
1894	689	25	34	680
1895	631	23	34	620
1896	532	24	.....	556
1897	628	21	.....	649
1898	688	25	.....	713
1899	723	25	.....	748
1900	750	37	.....	787
1901	795	33	.....	828
1902	838	37	.....	875
1903	848	33	.....	881
1904	983	33	.....	1,016
1905	988	36	.....	1,024
1906	1,011	32	.....	1,043
1907	1,107	32	.....	1,139
1908	1,363	31	.....	1,394
1909	1,444	22	.....	1,466
1910	1,415	30	.....	1,445
1911	1,545	28	.....	1,573

vary from about ten to upwards of thirty millions. The chief cause of these differences is that Professor Fisher assumes that the money held by non-reporting banks bears the same ratio to the money held by the reporting banks as the unreported deposits bear to the reported deposits. But this assumption overlooks the facts that the great majority of the non-reporting institutions are private banks, and that the reporting private banks keep smaller reserves in proportion to their deposits than do the whole number of reporting banks. The differences are shown by the following figures from Andrew's *Statistics for the United States*, p. 34.

Year	Proportion of cash to individual deposits	
	In all reporting banks	In reporting private banks
1900	10.0%	8.6%
1901	9.2	6.1
1902	9.0	7.1
1903	8.8	6.5
1904	9.6	6.1
1905	8.5	6.3
1906	8.0	6.1
1907	8.3	5.7
1908	10.4	6.7
1909	9.9	5.7

Further, Professor Barnett's tables of the number of banks other than national in the United States had not been published at the time Professor Fisher made his estimate, and he was therefore compelled to rely upon the comptroller's estimates of the deposits in non-reporting banks in 1900 and 1902-09, and to supply figures for 1896-99 and for 1901 by interpolation. It is in these years when Professor Fisher had to interpolate that the greatest discrepancies occur between the two estimates. Even then the differences never reach 5 per cent of the smaller sum, and after 1899 they are always less than 1.5 per cent. The following figures compare the two estimates as closely as may be.

Year	Fisher's estimate in tens of millions of dollars	Present estimate in tens of millions of dollars	Differences in per cent of the smaller estimate
1896	58	56	3.6%
1897	68	65	4.6
1898	74	71	4.2
1899	77	75	2.7
1900	80	79	1.3
1901	84	83	1.2
1902	88	88	0.0
1903	89	88	1.1
1904	103	102	1.0
1905	103	102	1.0
1906	105	104	1.0
1907	115	114	.9
1908	141	139	1.4
1909	148	147	.7

The results presented here are composed for the years 1896-1910 of materials in which the actually reported elements make never less than 95 per cent of the total, and the estimated elements never more than 5 per cent. A considerable error in the latter elements would therefore disturb the results but a trifle. In 1890-95 the estimated elements are relatively larger; but since one set of corrections is added and the other set subtracted the net corrections applied to the original data are slight. Even an error of 300 per cent in the net corrections would not disturb the final results more than 5 per cent. Further, in the table made from these figures for use in the text the money in the banks is compared with a much larger total—namely, the monetary stock of the country—and of course the relative importance of any error contained in the figures is reduced still more. Finally, the conclusions based upon this table in the text are concerned with the changes in the distribution of the money in circulation from one year to another. Of course such conclusions are not appreciably affected by errors which run steadily in the same direction. Despite the considerable number of assumptions involved in the revision of the comptroller's incomplete figures, the results are therefore sufficiently accurate for the purpose in hand.

## THE VOLUME OF DEPOSIT CURRENCY IN THE UNITED STATES, 1890-1911

Until recently it has been customary to assume that the volume of deposit currency available for business use is best represented by the individual deposits of the commercial banks. But the *Special Report from the Banks of the United States, April 23, 1909*, obtained by the National Monetary Commission, showed that a large proportion of these individual deposits is not subject to check. At the suggestion of Professor Irving Fisher, Dr. A. P. Andrew, then assistant secretary of the treasury, caused similar investigations into the character of bank deposits to be made for the years 1896, 1899, and 1906. The results confirmed the conclusion based upon the *Special Report* of 1909—nearly half of the total individual deposits of commercial and savings banks together were found to be made on conditions which precluded their free use as deposit currency. (Andrew, *Statistics for the United States*, pp. 151, 152.) In turn, the Comptroller of the Currency included the topic in his annual report and compiled a table classifying the individual deposits of the banks in 1910. At present, therefore, definite statements of the amount of individual deposits subject to check for all banks from which the Comptroller's Office secures reports are available for the years 1896, 1899, 1906, 1910, and 1911.

## PROPORTION OF INDIVIDUAL DEPOSITS SUBJECT TO CHECK IN BANKS OF DIFFERENT CLASSES, IN 1896, 1899, 1906, 1909, 1910, AND 1911

NATIONAL BANKS				STATE BANKS			
Year	Individual deposits	Individual deposits subject to check		Year	Individual deposits	Individual deposits subject to check	
		Actual amount	Ratio Per cent			Actual amount	Ratio Per cent
1896	1,668	1,421	85.2	1896	716	563	78.6
1899	2,522	2,151	85.3	1899	1,099	858	78.1
1906	4,056	3,202	78.9	1906	2,528	1,835	72.6
1909	4,826	3,515	72.8	1909	2,467	1,423	57.7
1910	5,287	4,236	80.1	1910	2,728	1,533	56.2
1911	5,478	4,470	81.6	1911	2,778	1,586	57.1
MUTUAL SAVINGS BANKS				STOCK SAVINGS BANKS			
1896	1,740	.....	.....	1896	175	1	.9
1899	2,025	.....	.....	1899	201	3	1.5
1906	2,999	.....	.....	1906	354	45	12.7
1909	3,145	3	.1	1909	569	101	17.7
1910	3,361	.....	.....	1910	710	146	20.6
1911	3,461	2	.1	1911	752	105	14.0
LOAN AND TRUST COMPANIES				PRIVATE BANKS			
1896	606	541	89.3	1896	66	60	90.9
1899	1,149	1,013	88.2	1899	74	65	87.8
1906	2,333	1,732	74.2	1906	103	86	83.5
1909	2,836	1,834	64.7	1909	193	105	54.4
1910	3,073	1,977	64.3	1910	125	66	52.8
1911	3,296	2,069	62.8	1911	142	75	52.8

These data are assembled in the table on the preceding page. In preparing this table it has seemed desirable to readjust the original figures to remove two defects. (1) In 1896, 1899, and 1906 "time deposits" estimated at \$20,000,000 or more were included with the deposits subject to check. These sums have been distributed among the banks other than national in proportion to their quotas of deposits subject to check, and then deducted from the latter figures. (2) In 1909 and 1910 considerable amounts were reported under the caption "deposits not classified." These sums have been divided proportionately between the deposits which are and the deposits which are not subject to check. The resulting figures show as accurately as the material permits what proportion of the aggregate individual deposits may be treated as deposit currency.

The table indicates that, perhaps because of keen competition for customers, the national, state, and private banks and the trust companies have been forced since 1899 to pay interest on an increasing proportion of their deposits. The stock savings banks, on the contrary, have rapidly increased their business with non-savings depositors. Finally, the checking deposits of the mutual savings banks are so small as to be negligible.

To estimate the deposit currency of the country since 1890 it is necessary to make some assumption regarding the proportion of deposits which were subject to check in the years intervening between the dates for which definite statements have been published. The least objectionable assumption is that the changes shown by the figures have been proceeding at a uniform pace. But since the figures for 1896 and 1899 indicate that the movement toward paying interest on a larger portion of deposits scarcely began until after the latter year, the most plausible assumption regarding the years 1890-95 is that they showed the same ratio of checking deposits as 1896.

The estimate of the individual deposits subject to check is framed by applying the ratios, thus adjusted, to the aggregate individual deposits of the various classes of banks. For the national, state, and private banks and the trust companies Andrew gives the individual deposits in his *Statistics for the United States*, p. 31.<sup>23</sup> It has been necessary to compile the figures for the deposits of stock savings banks from the annual *Reports of the Comptroller of the Currency*. The individual deposits of the non-reporting banks are borrowed from the preceding note "A Revised Estimate of the Amount of Money held by the Banks in the United States." For the reasons there explained, the ratios applied to the latter figures are the ratios used for the private banks.

The sums of these estimates of deposits subject to check in the various classes of banks, however, overstate the volume of deposit currency in at least one respect. Fisher has pointed out that the exchanges for the clearing house reported by the banks on any given day are counted as deposits both in the banks in which they have been placed for collection and in the banks against which they have been drawn, but to which they will not be presented until the following day.<sup>24</sup> The amount of these exchanges is regularly reported for the national banks; but not for the banks operating under state laws. Satisfactory data for the latter class of banks are available only in the aforesaid *Special Report from the Banks of the United States, April 28, 1909*. The Comptroller of the Currency did, indeed, endeavor to secure returns upon this point for his report of 1910; but his figures for the state banks, particularly in New York, are so obviously misleading as to deprive the results of significance for present purposes. The figures for 1909 are given below. An estimate of the clearing-house exchanges held by the non-reporting banks is added to the returns. It is made by assuming that these institutions have the same proportion of exchanges to deposits as the private banks.

<sup>23</sup> Certain discrepancies appear between the individual deposits of banks other than national in 1896, 1899, and 1906, as given in the preceding and in the following table. These discrepancies are found in the source—Andrew's *Statistics for the United States*, pp. 31 and 151. The figures on the latter page appear to include returns from a larger number of institutions than the figures on p. 31.

<sup>24</sup> Irving Fisher, *The Purchasing Power of Money* (New York, 1911), pp. 436, 437.

ESTIMATE OF THE AMOUNT OF INDIVIDUAL DEPOSITS SUBJECT TO CHECK IN BANKS OF DIFFERENT CLASSES ON DATE  
OF REPORTS NEAREST TO JUNE 30, 1890-1911

Year	National banks			State banks			Stock savings banks		
	Individual deposits	Per cent subject to check	Amount subject to check	Individual deposits	Per cent subject to check	Amount subject to check	Individual deposits	Per cent subject to check	Amount subject to check
1890	1,522	85.2	1,297	553	78.6	435	.....	.....	25*
1891	1,535	85.2	1,308	557	78.6	438	.....	.....	32*
1892	1,753	85.2	1,494	649	78.6	510	.....	.....	46*
1893	1,557	85.2	1,327	707	78.6	556	.....	.....	24*
1894	1,678	85.2	1,430	658	78.6	517	.....	.....	30*
1895	1,736	85.2	1,479	712	78.6	560	.....	.....	33*
1896	1,668	85.2	1,421	696	78.6	547	.....	.....	28*
1897	1,771	85.2	1,509	724	78.5	568	.....	.....	43*
1898	2,023	85.2	1,724	912	78.3	714	.....	.....	1*
1899	2,522	85.3	2,151	1,164	78.1	909	.....	.....	3*
1900	2,458	84.4	2,075	1,267	77.3	979	.....	.....	5*
1901	2,942	83.5	2,457	1,611	76.5	1,232	.....	.....	2*
1902	3,099	82.6	2,560	1,698	75.7	1,285	270	6.3	17
1903	3,201	81.7	2,615	1,815	74.9	1,359	303	7.9	24
1904	3,312	80.8	2,676	2,073	74.1	1,536	317	9.5	30
1905	3,784	79.9	3,023	2,365	73.3	1,734	357	11.1	40
1906	4,056	78.9	3,200	2,742	72.6	1,991	391	12.7	50
1907	4,323	76.9	3,324	3,069	67.7	2,078	440	14.3	63
1908	4,375	74.9	3,277	2,937	62.7	1,841	414	16.0	66
1909	4,826	72.8	3,513	2,467	57.7	1,423	569	17.7	101
1910	5,287	80.1	4,236	2,728	56.2	1,533	710	20.6	146
1911	5,478	81.6	4,470	2,778	57.1	1,586	752	14.0	105

\*Separately stated as "deposits subject to check," etc., in *Reports of the Comptroller of the Currency*. After 1901 these separate reports of savings deposits and deposits subject to check are dropped until 1910.

ESTIMATE OF THE AMOUNT OF INDIVIDUAL DEPOSITS SUBJECT TO CHECK IN BANKS OF DIFFERENT CLASSES ON DATE  
OF REPORTS NEAREST TO JUNE 30, 1890-1911

Year	Loan and trust companies			Private banks			Non-reporting banks		
	Individual deposits	Per cent subject to check	Amount subject to check	Individual deposits	Per cent subject to check	Amount subject to check	Individual deposits	Per cent subject to check	Amount subject to check
1890	337	89.3	301	100	90.9	91	248	90.9	225
1891	355	89.3	317	95	90.9	86	268	90.9	244
1892	412	89.3	368	93	90.9	85	247	90.9	225
1893	486	89.3	434	69	90.9	63	266	90.9	242
1894	471	89.3	421	66	90.9	60	224	90.9	204
1895	547	89.3	488	82	90.9	75	220	90.9	200
1896	587	89.3	524	59	90.9	54	230	90.9	209
1897	567	89.0	505	50	89.9	45	210	89.9	189
1898	662	88.6	587	62	88.9	55	264	88.9	235
1899	836	88.2	737	65	87.8	57	300	87.8	263
1900	1,028	86.2	886	96	87.2	84	431	87.2	376
1901	1,271	84.2	1,070	119	86.6	103	541	86.6	469
1902	1,526	82.2	1,254	132	86.0	114	520	86.0	447
1903	1,589	80.2	1,274	133	85.4	114	515	85.4	440
1904	1,600	78.2	1,251	96	84.8	81	548	84.8	465
1905	1,981	76.2	1,510	128	84.2	108	570	84.2	480
1906	2,009	74.2	1,491	110	83.5	92	517	83.5	432
1907	2,062	71.1	1,466	151	73.8	111	555	73.8	410
1908	1,867	67.9	1,268	127	64.1	81	462	64.1	296
1909	2,836	64.7	1,835	193	54.4	105	390	54.4	212
1910	3,073	64.3	1,977	125	52.8	66	554	52.8	293
1911	3,296	62.8	2,069	142	52.8	75	560	52.8	296

## EXCHANGES FOR THE CLEARING HOUSE HELD BY BANKS OF DIFFERENT CLASSES ON APRIL 28, 1909

	Amount in millions of dollars	Proportion of the total
National banks .....	303.6	79.7%
State banks .....	62.3	16.3
Mutual savings banks .....	.....	.....
Stock savings banks .....	1.4	.4
Loan and trust companies .....	12.2	3.2
Private banks .....	.5	.1
Non-reporting banks .....	1.0	.3
All banks .....	381.0	100.0

These figures indicate that the clearing-house exchanges of the national banks make so large a proportion of the total that they may be accepted as a fairly satisfactory gauge of the changes in the latter. Accordingly, the deductions to be made from the total deposits subject to check are estimated by dividing the exchanges of the national banks given by the report nearest June 30 of each year by .797.

The final results of these operations are as follows:

## ESTIMATE OF THE DEPOSIT CURRENCY IN ALL THE BANKS OF THE UNITED STATES, ON OR ABOUT JUNE 30, OF THE YEARS 1890-1911

Year	Estimated individual deposits subject to check	Clearing- house exchanges of national banks	Estimated clearing-house exchanges of all banks	Estimated deposit currency of all banks
1890	2,374	88	110	2,264
1891	2,425	80	100	2,325
1892	2,728	90	113	2,615
1893	2,646	108	136	2,510
1894	2,662	67	84	2,578
1895	2,835	83	104	2,731
1896	2,783	76	95	2,688
1897	2,859	89	112	2,747
1898	3,316	94	118	3,198
1899	4,120	203	255	3,865
1900	4,405	159	200	4,205
1901	5,333	301	378	4,955
1902	5,677	247	310	5,367
1903	5,826	228	286	5,540
1904	6,039	148	186	5,853
1905	6,895	268	336	6,559
1906	7,256	313	393	6,863
1907	7,452	273	343	7,109
1908	6,829	245	307	6,522
1909	7,189	304	381	6,808
1910	8,251	429	538	7,713
1911	8,601	286	359	8,242

The methods just explained differ in several respects from those applied by Professor Irving Fisher in making his pioneer estimate of deposit currency. (1) Before April 26, 1900, the national banks were instructed to report sums due to savings banks under the caption "Due to state banks." But the Comptroller discovered that certain institutions were including savings-bank deposits with individual deposits. To check this practice the Comptroller required a separate report of sums due to savings banks, and later of sums due to savings banks and trust companies,

Professor Fisher endeavored to correct this misclassification of deposits in the years 1896-1900 by deducting from individual deposits sums ranging from 160 to 330 millions. He has kindly written me that no deduction whatever should have been made on this score in 1900, since the new rule went into effect in that year. Further, he now thinks that he over-corrected for this error in 1896-99, and that his figures probably would be more accurate had he attempted no correction upon this score. Inspection of the changes resulting in the items "Due to state banks" and "Individual deposits" from the insertion of the new item "Due to savings banks" makes me share Professor Fisher's later view. (Compare the reports for February 13 and June 29, 1900.) Accordingly, I have not made any deduction for misclassification of bank with individual deposits. (2) Professor Fisher's figures for deposits in non-reporting banks are based upon the Comptroller's estimates in 1900 and 1902-09, and upon interpolations in the remaining years which he covers. As explained in the preceding note, my figures are based on Barnett's count of the number of banks other than national. (3) Instead of working with the individual deposits of each class of banks separately, as I have done, Professor Fisher works with the total deposits of all classes together. This difference of procedure gives different results because the percentage of deposits subject to check is far from uniform among the several classes of banks, and because the amounts of deposits in the several classes have not changed at the same rate. (4) From the deposits of all banks, Professor Fisher's computer deducted the deposits in savings banks as reported in the text of the Comptroller's report—for example, 1909, p. 44. These figures are considerably larger than the deposits in savings banks reported in the appendices of the same documents—for example, 1909, p. 888. And it is these latter figures which were used by the Comptroller in making up his estimate of total bank deposits. The discrepancies between the two sets of returns average nearly 150 millions in 1901-08, and reach a maximum of 195 millions in 1907. Accordingly, Professor Fisher's figures for individual deposits in the reporting commercial banks are too small. (5) On the other hand, Professor Fisher has not included the checking deposits in stock-savings banks. The preceding tables show that these sums, actually reported or estimated, vary from 1 to 146 millions. (6) Professor Fisher's method of estimating exchanges for the clearing house as explained in his text is practically the same as mine. But for some reason, which is not clear, his computer has obtained results which differ from mine by margins of 5 to 50 millions. Finally, Professor Fisher deducts these exchanges from individual deposits *before* he applies his percentages of deposits subject to check, while I make the deduction *afterward*, on the ground that these exchanges consist chiefly of checks drawn against checking deposits. This difference in method, however, makes little difference in the results because Professor Fisher allows for exchanges in fixing his percentages of deposits subject to check.

Despite all these differences in detail, the final results of the two computations harmonize rather closely. As the following comparison shows, the differences vary within limits of .3 and 4.5 per cent of my figures. Minor corrections which Professor Fisher has made in his figures for 1900 and 1908 since the *Purchasing Power of Money* was published are embodied in the comparison.

Year	Fisher's estimate in tens of millions of dollars	Present estimate in tens of millions of dollars	Differences in percentages of the present estimate	Year	Fisher's estimate in tens of millions of dollars	Present estimate in tens of millions of dollars	Differences in percentages of the present estimate
1896	268	269	+0.4%	1903	570	554	-2.9
1897	280	275	-1.8	1904	580	585	+0.9
1898	319	320	+0.3	1905	654	656	+0.3
1899	390	387	-0.8	1906	684	686	+0.3
1900	440	421	-4.5	1907	713	711	-0.3
1901	513	496	-3.4	1908	660	652	-1.2
1902	543	537	-1.1	1909	675	681	+0.9

## CHAPTER VII

### THE CONDITION OF THE BANKS

The primary sources of information concerning the relations between business cycles and banking are the statements which show the condition of the banks at regular intervals.

Material of this character is far more abundant for the United States than for England, France, or Germany. The central banks of these three countries, indeed, publish weekly balance sheets which enable one to follow their operations in periods of prosperity, crisis, and depression in some detail. But the reports of the Bank of England, the Bank of France, and the Reichsbank do not give an adequate picture of the effects of business cycles upon banking or of banking upon business cycles. For the operations of these institutions are vastly exceeded, both in volume and variety, by the operations of joint-stock and private banks in the several countries. Concerning the latter classes of banks the National Monetary Commission has recently brought together much information hitherto unavailable.<sup>1</sup> Nevertheless, the reports remain too incomplete, too infrequent, and too lacking in detail to match the American material as a basis for investigation.

For this country, we have (1) the condensed weekly statements of the clearing-house banks in certain great cities, (2) five detailed statements each year for the national banks, and (3) one statement each year for most of the banks operating under state laws. By analyzing these statements we may find what changes in the condition of the banks usually accompany the progress of a business cycle from the moment of incipient revival of activity to the ultimate return of depression. With these results in hand we can then make the best of the scantier European material.

#### I. THE CLEARING-HOUSE BANKS OF NEW YORK

It is well to begin with the clearing-house banks of New York, both because their reports are more frequent than those of the national banks and because the phenomena of business cycles are more pronounced in financial centers than in the country as a whole.

<sup>1</sup> *Statistics for Great Britain, Germany, and France* (Senate Document, no. 578, 61st Congress, 2d session), Washington, 1910.

The New York material is presented in two tables, one of which averages the weekly reports by years, the other by phases of business cycles. Either set of averages, however, may prove misleading. For example, if circulation averages larger during a period of business depression than during the preceding period of crisis, it does not necessarily follow that the banks increased their note issue after the pressure relaxed. On the contrary, they may have withdrawn a part of the issues made during the crisis and still have left the *average* circulation for the whole period of depression higher than before. Accordingly, it is necessary to supplement the use of the tables in the text by continual references to the weekly returns from which they were made. When the following statements do not agree precisely with the indications of the tables, it is because they are based on the weekly reports.

Among all the items included in the statements of the Associated Banks, circulation is by far the smallest in actual amount, but shows by far the most rapid rate of growth from 1890 to 1910. The latter fact obscures somewhat the effect of business cycles. None the less, certain regularly recurring relations can be made out between the volume of note issue and the condition of business. (1) During minor crises the circulation increases little; but when the demand for currency becomes intense, as in 1893, 1896, and 1907, the banks take out additional notes as fast as they can buy bonds and make the necessary arrangements with the treasury. But the increase is tardy and the maximum circulation is not reached until several weeks after the strain upon the banks has begun to relax. (2) When crisis yields to depression the banks begin to contract their circulation; but the reduction in volume is even slower than the preceding increase. (3) A revival of business activity is accompanied by a slight increase of note issues, which sometimes has and sometimes has not continued as full prosperity is attained. (4) Finally, when prosperity has run its course and a major crisis approaches, circulation expands but a trifle, as in 1893, or declines, as in 1907.

The circulation of the New York banks, then, possesses a certain degree of elasticity in the sense that the volume rises when business revives after a period of depression, attains its highest points immediately after panics, and contracts slowly when depression returns. But the amount issued in New York is so small in comparison with that of deposit currency as to count for little in meeting the changing needs of business. And the degree of elasticity exhibited is less than that found under most foreign systems of note issue.<sup>2</sup>

Since about 1902, the behavior of bank loans in New York during the typical phases of business cycles has been distinctly different from what it was formerly. From 1890 to 1902 the banks were able to contract their loans slightly on the

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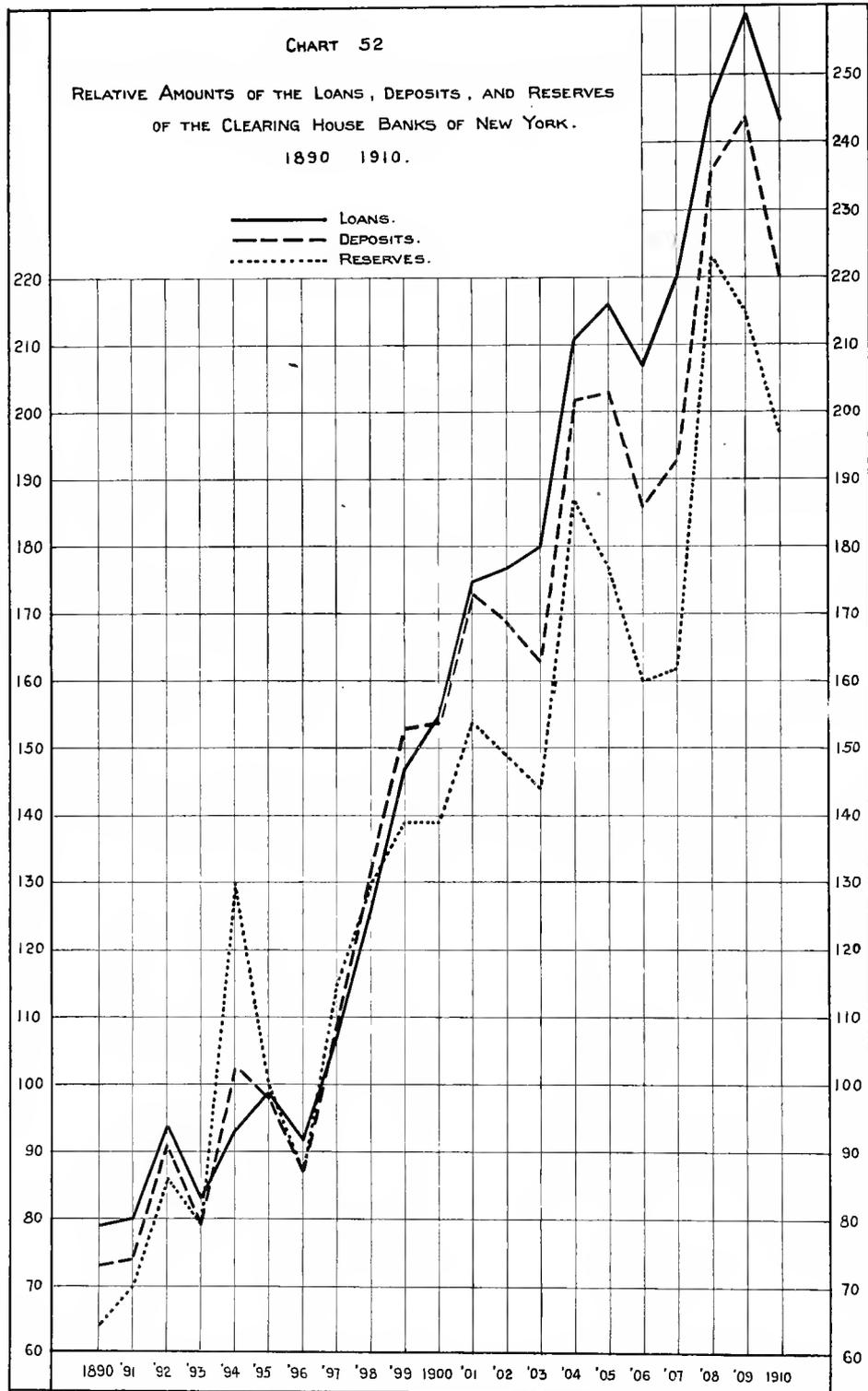
<sup>2</sup> See chapter VI, iii.

TABLE 82

ANNUAL AVERAGES OF THE WEEKLY STATEMENTS OF THE CLEARING-HOUSE BANKS OF NEW YORK CITY, 1890-1911

Year	Actual amounts In millions of dollars						Relative amounts Average actual amounts in 1890-99 = 100				
	Capital and surplus	Circulation	Net deposits	Loans	Lawful money	Per cent of reserve	Capital and surplus	Circulation	Net deposits	Loans	Lawful money
1890	120.8	3.6	404.4	399.8	104.5	25.88	92	34	73	79	64
1891	124.2	4.3	409.4	400.9	114.6	27.98	95	40	74	80	70
1892	127.5	5.5	504.4	472.9	141.7	28.00	97	51	91	94	86
1893	131.3	8.5	433.7	419.5	130.2	29.70	100	80	79	83	79
1894	132.3	10.9	568.9	471.0	213.6	37.59	101	102	103	93	130
1895	134.1	13.1	543.3	497.7	164.2	30.17	103	123	98	99	100
1896	134.3	16.2	482.5	463.9	142.1	29.38	103	152	87	92	87
1897	133.9	15.4	602.7	538.2	189.2	31.45	102	144	109	107	115
1898	133.9	14.7	729.8	637.0	213.4	29.32	102	138	132	126	130
1899	136.0	14.6	844.7	739.9	228.1	26.94	104	137	153	147	139
1900	158.7	24.3	852.8	779.5	228.8	26.82	121	228	154	155	139
1901	173.6	31.1	957.4	880.1	253.2	26.45	133	291	173	175	154
1902	201.9	34.5	934.9	894.5	244.1	26.11	154	323	169	177	149
1903	237.4	44.5	898.6	909.2	236.6	26.32	181	417	163	180	144
1904	249.7	39.8	1,118.1	1,061.2	307.0	27.43	191	373	202	211	187
1905	254.5	48.5	1,120.5	1,090.5	290.1	25.87	195	454	203	216	177
1906	267.7	49.6	1,025.0	1,044.8	263.3	25.68	205	464	186	207	160
1907	288.9	53.0	1,065.2	1,111.4	265.3	24.89	221	496	193	220	162
1908	288.0	57.5	1,302.5	1,240.4	365.4	28.04	220	538	236	246	223
1909	299.7	50.3	1,347.6	1,305.1	352.5	26.14	229	471	244	259	215
1910	319.1	48.4	1,216.9	1,223.5	322.8	26.70	244	453	220	243	197
1911	331.1	47.9	1,372.8	1,340.7	369.2	26.91	253	448	249	266	225
Averages											
1890-99	130.83	10.68	552.38	504.08	164.16	29.648	100	100	100	100	100
1900-09	242.01	43.31	1,062.26	1,031.67	280.62	26.375	185	406	192	205	171

Data for 1890-1909 compiled from A. P. Andrew, *Statistics for the United States* (Publications of the National Monetary Commission), pp. 98-118; data for 1910 and 1911 compiled from the *Financial Review*; data for capital, surplus, and circulation in 1910 and 1911 compiled from the *Commercial and Financial Chronicle*.



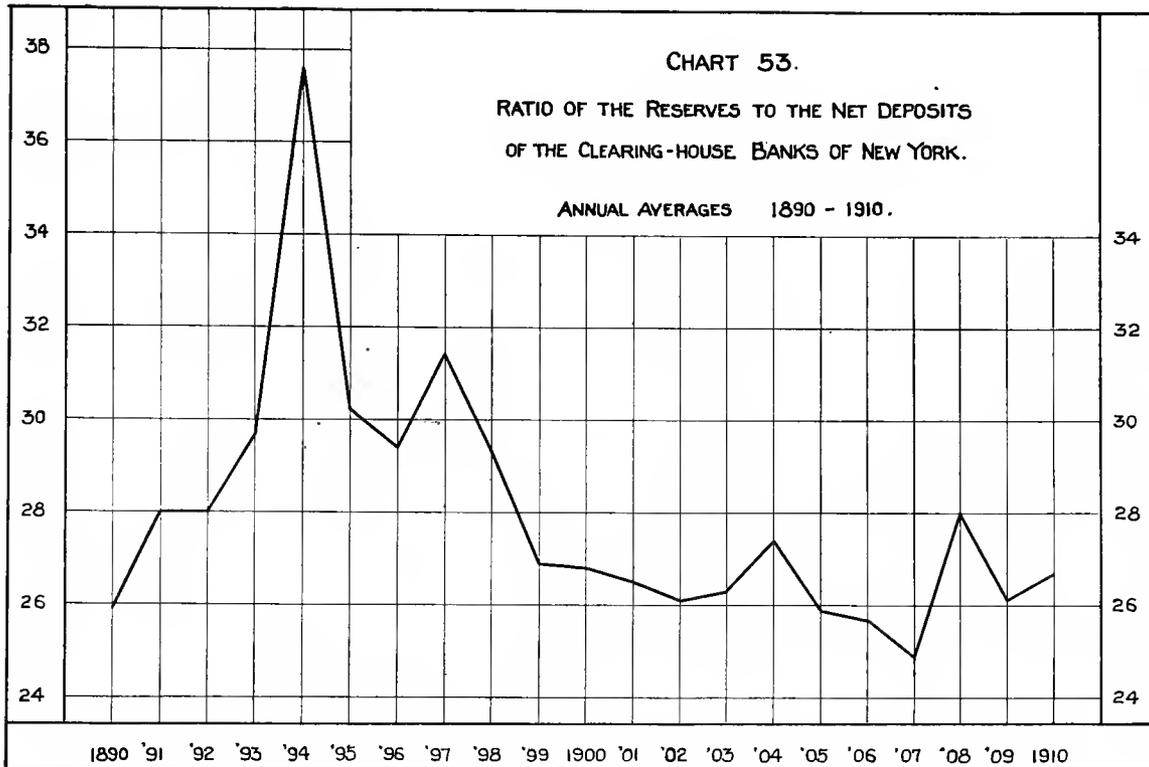


TABLE 83

CONDITION OF THE CLEARING-HOUSE BANKS OF NEW YORK CITY IN SEASONS OF BUSINESS PROSPERITY, CRISIS, AND DEPRESSION, 1890-1911

	Actual amounts in millions of dollars				Ratio of reserve
	Circulation	Loans	Net deposits	Lawful money	
January, 1890-July, 1890—Prosperity .....	3.6	402.9	413.1	107.9	26.19
August, 1890-December, 1890—Minor crisis .....	3.5	395.3	391.6	99.3	25.41
January, 1891-July, 1891—Depression .....	3.5	396.8	404.7	113.6	28.11
August, 1891-August, 1892—Prosperity .....	5.5	454.0	484.0	138.8	28.57
September, 1892-April, 1893—Approach of crisis .....	5.6	449.9	462.3	124.0	26.81
May, 1893-October, 1893—Major crisis .....	8.6	406.6	400.6	111.1	27.47
November, 1893-March, 1895—Severe depression .....	11.4	466.3	552.3	202.1	36.65
April, 1895-September, 1895—Revival .....	13.2	503.8	556.3	171.7	30.82
October, 1895-June, 1896—Renewed depression .....	14.1	475.3	502.7	147.6	29.38
July, 1896-October, 1896—Free silver campaign .....	17.4	460.8	466.1	130.9	28.07
November, 1896-June, 1897—Depression .....	16.8	510.8	553.8	182.7	32.89
July, 1897-February, 1898—Revival .....	14.7	587.0	676.2	191.6	30.08
March, 1898-April, 1898—Spanish War impending .....	13.9	595.5	678.9	203.2	29.95
May, 1898-September, 1899—Prosperity .....	14.6	706.3	814.0	229.3	28.27
October, 1899-December, 1899—Minor crisis .....	16.0	687.7	751.8	192.0	25.54
January, 1900-September, 1900—Slight depression .....	22.2	773.7	853.7	231.9	27.15
October, 1900-October, 1902—Prosperity .....	31.3	877.6	942.9	247.3	26.22
November, 1902-July, 1904—'Rich man's panic' .....	42.4	942.0	952.5	255.6	26.76
August, 1904-August, 1905—Revival .....	44.0	1,113.7	1,169.1	309.6	26.46
September, 1905-September, 1906—Prosperity .....	50.7	1,042.6	1,081.7	265.3	25.70
October, 1906-September, 1907—Approach of crisis .....	50.9	1,086.4	1,052.3	270.2	25.66
October, 1907-December, 1907—Major crisis .....	58.7	1,148.1	1,058.1	235.8	22.33
January, 1908-September, 1908—Severe depression .....	59.8	1,214.0	1,270.2	362.1	28.44
October, 1908-December, 1909—Revival .....	50.1	1,309.3	1,359.3	357.0	26.24
January, 1910-December, 1911—Reaction .....	48.2	1,282.1	1,294.9	346.0	26.81

TABLE 83—(Concluded)

CONDITION OF THE CLEARING-HOUSE BANKS OF NEW YORK CITY IN SEASONS OF BUSINESS PROSPERITY, CRISIS, AND DEPRESSION, 1890-1911

	Relative amounts. Average actual amounts in 1890-1899 = 100			
	Circulation	Loans	Net deposits	Lawful money
January, 1890-July, 1890—Prosperity .....	34	80	75	66
August, 1890-December, 1890—Minor crisis .....	33	78	71	61
January, 1891-July, 1891—Depression .....	33	79	73	69
August, 1891-August, 1892—Prosperity .....	51	90	88	85
September, 1892-April, 1893—Approach of crisis .....	52	89	84	76
May, 1893-October, 1893—Major crisis .....	81	81	73	68
November, 1893-March, 1895—Severe depression .....	107	93	100	123
April, 1895-September, 1895—Revival .....	124	100	101	105
October, 1895-June, 1896—Renewed depression .....	132	94	91	90
July, 1896-October, 1896—Free silver campaign .....	163	91	84	80
November, 1896-June, 1897—Depression .....	157	101	100	111
July, 1897-February, 1898—Revival .....	138	116	122	117
March, 1898-April, 1898—Spanish War impending .....	130	118	123	124
May, 1898-September, 1899—Prosperity .....	137	140	147	140
October, 1899-December, 1899—Minor crisis .....	150	136	136	117
January, 1900-September, 1900—Slight depression .....	208	153	155	141
October, 1900-October, 1902—Prosperity .....	293	174	171	151
November, 1902-July, 1904—'Rich man's panic' .....	397	187	172	156
August, 1904-August, 1905—Revival .....	412	221	212	189
September, 1905-September, 1906—Prosperity .....	475	207	187	162
October, 1906-September, 1907—Approach of crisis .....	477	216	191	165
October, 1907-December, 1907—Major crisis .....	550	228	192	144
January, 1908-September, 1908—Severe depression .....	560	241	230	221
October, 1908-December, 1909—Revival .....	469	260	246	217
January, 1910-December, 1911—Reaction .....	451	254	234	211

approach of crises and to contract them much more radically during crises. In the succeeding periods of depression they expanded loans, despite the inactivity of trade—a result due in large part to the accumulation of idle funds sent by the country banks to New York and to the inclusion of security holdings with discounts under the caption of loans in the weekly statements. Finally, when business revived, the banks increased their loans much faster than during depression, and continued in this course as long as prosperity reigned.<sup>3</sup>

In the "rich man's panic" of 1903-04, on the contrary, the New York banks not only failed to contract but even expanded their loans. During the prosperous years 1905 and 1906, when a further rapid expansion might have been expected, the banks were able to carry their loans only a little above the level attained at the end of 1904. When the panic of 1907 came on, they were again

<sup>3</sup> Save, of course, for the seasonal changes which recurred with considerable regularity from year to year.

forced to increase their loans under circumstances when they would fain have enforced a drastic contraction. To complete the anomaly, they made heavy extensions of loans in the face of the severe business depression of 1908. The changes of 1909-10, however, were more regular. The banks expanded loans during the short-lived revival of activity and contracted them again when business relapsed into dullness.

Save perhaps for the moderate increase of loans during periods of depression, the fluctuations of loans in 1890-1902 are what writers upon crises regard as "normal."<sup>4</sup> But certain of the fluctuations in 1903-07, particularly the expansion of loans during crises and the slight expansion during periods of abounding prosperity, are highly curious. The most plausible explanation given is that based upon the relation of the "out-of-town" banks and the New York trust companies to the money market. When interest rates become very high, particularly rates upon call loans, both sets of institutions and also certain railway, insurance, and industrial corporations which control large funds, withdraw their balances from the clearing-house banks and lend the money upon their own account to stock brokers, etc. On the contrary, when the call-loan rate falls to the neighborhood of 2 per cent these enterprises find it advantageous to redeposit their funds in the banks, content with the low rate of interest paid upon balances. Such movements help to explain both the slight expansion of loans in 1905-06 and the rapid expansion in 1908. For the withdrawal of balances reduced the ability of the clearing-house banks to lend in the years of prosperity, and the return of these balances increased their ability to lend in the years of depression. The increase of bank loans during the crisis of 1903-04 is probably due to the fact that the clearing-house institutions were forced to "carry" many important customers who had overloaded themselves with "indigestible securities." In the crisis of 1907 the primary source of difficulty was that both the out-of-town banks and the trust companies suddenly withdrew from the New York loan market. Together they exhausted the possibility of loan contraction, and to avoid widespread disaster the clearing-house banks were forced to take over some of the loans which these competitors had been carrying.<sup>5</sup>

With few exceptions, New York deposits fluctuate in the same direction as loans. But the degree of rise or fall in these two items is often far from equal. Certain of the differences appear to be characteristic of specific phases of the business cycle. (1) During crises deposits decline more than loans, or, as in 1903-04 and in 1907, rise less. (2) During periods of depression following

<sup>4</sup> However "normal" it may be for banks to contract loans during a crisis, ability to expand them is much to be preferred.

<sup>5</sup> Compare O. M. W. Sprague, *History of Crises under the National Banking System* (Publications of the National Monetary Commission), p. 300. See also chapter XII, iii, 3, below.

upon crises, deposits rise more than loans. (3) When business revives after depression deposits usually expand somewhat less rapidly than loans, though this rule, unlike the others, has been subject to exceptions within the period covered. (4) The same rule applies when a business revival develops into full prosperity—both items expand, but loans faster than deposits.

These relations stand out more clearly if the ratio of loans to deposits be computed. The next table shows that this ratio rises on the approach of a crisis, attains its maximum during the crisis, and then falls off. If the succeeding period of depression be severe, the ratio reaches its lowest point; but in such brief seasons of business contraction as that of 1891 the readjustment is not worked out until after a revival of activity has come. In either case, the return of prosperity is accompanied by a rise of the ratio, which continues until the next crisis. This ratio, indeed, forms one of the best barometers of business conditions, though it is less reliable as an indication of fair weather than as a warning of approaching storm.

TABLE 84

## RATIO OF LOANS TO NET DEPOSITS IN THE CLEARING-HOUSE BANKS OF NEW YORK

By years 1890-1911		By phases of business cycles 1890-1911	
1890	98.9	January, 1890-July, 1890—Prosperity .....	97.5
1891	97.9	August, 1890-December, 1890—Minor crisis .....	100.9
1892	93.8	January, 1891-July, 1891—Depression .....	98.1
1893	96.7	August, 1891-August, 1892—Prosperity .....	93.8
1894	82.8	September, 1892-April, 1893—Approach of crisis .....	97.3
1895	91.6	May, 1893-October, 1893—Major crisis .....	101.5
1896	96.2	November, 1893-March, 1895—Severe depression .....	84.4
1897	89.3	April, 1895-September, 1895—Revival .....	90.6
1898	87.3	October, 1895-June, 1896—Renewed depression .....	94.6
1899	87.6	July, 1896-October, 1896—Free silver campaign .....	98.9
1900	91.4	November, 1896-June, 1897—Depression .....	92.2
1901	91.9	July, 1897-February, 1898—Revival .....	86.8
1902	95.7	March, 1898-April, 1898—Spanish War impending .....	87.7
1903	101.2	May, 1898-September, 1899—Prosperity .....	86.8
1904	94.9	October, 1899-December, 1899—Minor crisis .....	91.5
1905	97.3	January, 1900-September, 1900—Slight depression .....	90.6
1906	101.9	October, 1900-October, 1902—Prosperity .....	93.1
1907	104.3	November, 1902-July, 1904—“Rich man’s panic” .....	98.9
1908	95.2	August, 1904-August, 1905—Revival .....	95.3
1909	96.9	September, 1905-September, 1906—Prosperity .....	101.1
1910	100.5	October, 1906-September, 1907—Approach of crisis .....	103.2
1911	97.6	October, 1907-December, 1907—Major crisis .....	108.5
Averages		January, 1908-September, 1908—Severe depression .....	95.6
1890-99	92.21	October, 1908-December, 1909—Revival .....	96.3
1900-09	97.07	January, 1910-December, 1911—Reaction .....	99.0



The "specie and legal tenders" held by the New York banks, that is, their cash reserves, have declined in every crisis since 1890, and at a pace roughly proportionate to the severity of the disturbance. Almost before the crises were over, however, reverse movements have set in on such a scale as within a few weeks to make the banks stronger in cash than before the troubles began. This immense accumulation of money in the bank vaults has more than once begun to decline again before business revived. In other cases the resumption of activity has been accompanied by an outflow of cash from New York. But business revivals have usually come in the autumn when currency would have been shipped west to move the crops, even though depression had continued unbroken. Finally, the periods of full-fledged prosperity have been accompanied by a moderate gain, or by a small loss of cash. In 1902, for example, the average reserves were less than in 1901; in 1906 they were less than in 1905, and in the latter year less than in 1904.

Not less significant than the actual amount of the reserves is the ratio borne by reserves to deposits. In good times the New York clearing-house banks as a group have been content to carry reserves but slightly above the minimum set for national banks in central-reserve cities—25 per cent of their net deposits. When crises have occurred, reserves have usually fallen for a time below this limit. The minimum ratios reached in the successive crises of the last two decades have been as follows: 24.13 per cent in 1890, 20.55 per cent in 1893, 26.84 per cent in 1896, 24.62 per cent in 1899, 25.06 per cent in 1903, and 19.98 per cent in 1907. During the succeeding periods of depression, reserves have risen well above 25 per cent, as the following list of maxima shows: 30.94 per cent in 1891, 45.20 per cent in 1894, 35.51 per cent in 1897, 28.87 per cent in 1900, 29.84 per cent in 1904, and 30.06 per cent in 1908. These maximum ratios have all been reached before business began to revive again. In the course of the revival the decline of the ratio has continued, and when no reaction has interrupted the movement of business expansion the figure has presently returned to the neighborhood of 26 per cent. The seasonal outflow and inflow of cash, combined with the seasonal expansion and contraction of loans, has maintained continual oscillations of the ratio; but when prosperity has been long continued the level of these oscillations has slowly declined, and toward the end of the prosperous phase of the cycle the reserves usually have dipped from time to time below the level of 25 per cent.

To summarize the results of the preceding analysis: In times of crisis the New York banks have increased their circulation, though tardily; they have contracted their loans in the earlier crises, but have been forced to expand them in 1903 and 1907; their deposits have fallen more or risen less than their loans, so that the ratio of loans to deposits has invariably increased; and they have lost cash at such a pace as to reduce the ratio of their reserves to deposits.

In times of depression the banks have slowly reduced their circulation, and increased their loans. But their deposits have risen faster than loans, so that the ratio of loans to deposits has fallen. Money has flowed into their vaults in large amounts and raised the percentage of reserve to the highest points attained at any stage of the business cycle.

When business has revived after depression, the banks have usually increased their note issues somewhat, and expanded their loans rapidly. The rise of deposits has not long kept pace with the increase of loans, so that the ratio of loans to deposits has risen presently, if not at the outset of the revival. Reserves have usually exhibited an uncertain sagging tendency; at least they have not grown as fast as deposits. In consequence, the ratio of reserves to deposits has described a descending saw-toothed curve, the decline often beginning before depression has been relieved.

As revival has developed into prosperity, the banks have seldom done more than to maintain their circulation unimpaired. On the contrary, they have continued to expand loans at a faster rate than their deposits have grown. Hence the ratio of loans to deposits has risen gradually. In some cases the actual amount of cash has increased, in others decreased; but the ratio of reserves to deposits has continued the checkered decline which marked the period of revival.

## II. THE NATIONAL BANKS

The next question is whether the changes shown by the clearing-house banks of New York during the successive phases of business cycles are peculiar to that center or are characteristic of the whole country. Since the reports for all commercial banks are available for only one date in each year, it is better to base the analysis upon the fuller data for the national banks. A condensed abstract of the resources and liabilities of these institutions, made from the *Reports of the Comptroller of the Currency*, is presented in the following table.<sup>6</sup>

<sup>6</sup> In this table "loans" include "loans and discounts" and "overdrafts"; "United States bonds" include "U. S. bonds to secure circulation," "U. S. bonds to secure U. S. deposits," "U. S. bonds on hand," and "premiums"; "other bonds, securities, etc.," include "other bonds to secure U. S. deposits," and "bonds, securities, etc."; "due from banks" includes "due from approved reserve agents," "due from national banks not reserve agents," and "due from state banks, bankers, trust companies, etc."; "checks and exchanges" include "checks and other cash items," "exchanges for the clearing house," and "bills of other national banks"; "cash" includes "fractional currency, nickels, cents," "specie," "legal tender notes," and "U. S. certificates of deposit"; "miscellaneous resources" include "banking house, furniture, and fixtures," "other real estate owned," "five per cent redemption fund," "clearing-house loan certificates, net balance," and "due from the U. S. Treasurer, other than the 5 per cent fund"; "capital, etc." includes "capital stock paid in," "surplus fund," and "undivided profits less expenses and taxes"; "circulation" includes "national bank notes outstanding"; "individual deposits" include "individual deposits" and "dividends unpaid"; "United States deposits" include "U. S. deposits," and "Deposits of U. S. disbursing officers"; "bank deposits" include "due to reserve agents," "due to national banks not reserve agents," "due to state banks and bankers," and "due to trust companies and savings banks"; "miscellaneous liabilities" include "clearing-house loan certificates," "state bank notes outstanding," "bonds borrowed," "notes and bills rediscounted," "bills payable," "reserved for taxes," and "liabilities other than those above stated."

TABLE 85

CONDENSED ABSTRACT OF THE RESOURCES AND LIABILITIES OF ALL NATIONAL BANKS AS SHOWN BY THEIR REPORTS  
TO THE COMPTROLLER OF THE CURRENCY

		Actual amounts in millions of dollars						
Date		Loans, etc.	U. S. bonds	Other bonds, securities, etc.	Due from banks	Checks and exchanges	Cash	Miscellaneous
1890	Feb. 28	1,845	195	117	331	149	278	89
	May 17	1,904	194	117	325	104	275	91
	July 18	1,934	194	116	325	123	282	87
	Oct. 2	1,986	185	116	336	142	283	93
	Dec. 19	1,932	184	117	300	123	279	112
1891	Feb. 26	1,928	186	121	321	110	303	95
	May 4	1,970	187	122	321	164	304	99
	July 9	1,964	187	122	318	118	311	94
	Sept. 25	2,005	190	125	339	155	298	101
	Dec. 2	2,001	192	128	354	146	311	105
1892	Mar. 1	2,059	195	138	420	167	355	103
	May 17	2,108	197	144	412	137	374	106
	July 12	2,128	196	151	423	129	367	100
	Sept. 30	2,171	197	155	410	143	328	106
	Dec. 9	2,167	199	154	382	148	320	111
1893	Mar. 6	2,160	203	153	357	162	315	109
	May 4	2,161	204	151	329	153	324	111
	July 12	2,020	207	150	299	145	290	103
	Oct. 3	1,844	238	149	277	144	347	110
	Dec. 19	1,872	236	160	350	107	415	103
1894	Feb. 28	1,872	248	174	387	103	435	105
	May 4	1,927	245	185	407	109	453	107
	July 18	1,944	244	191	397	98	440	108
	Oct. 2	2,007	240	193	399	123	404	108
	Dec. 19	1,992	248	197	390	112	376	108
1895	Mar. 5	1,965	264	197	366	108	367	111
	May 7	1,989	267	194	367	116	365	112
	July 11	2,017	253	194	394	116	384	113
	Sept. 28	2,059	251	195	377	86	341	114
	Dec. 13	2,042	251	193	367	117	338	115
1896	Feb. 28	1,966	283	192	333	119	338	116
	May 7	1,983	282	191	338	117	350	116
	July 14	1,972	274	190	349	107	345	117
	Oct. 6	1,893	280	189	331	109	344	117
	Dec. 17	1,901	281	190	377	117	382	118
1897	Mar. 9	1,898	280	198	425	105	421	118
	May 14	1,934	279	203	429	116	411	120
	July 23	1,978	279	205	446	122	414	119
	Oct. 5	2,067	277	209	494	148	390	120
	Dec. 15	2,100	301	218	526	152	411	120

TABLE 85—(Continued)

CONDENSED ABSTRACT OF THE RESOURCES AND LIABILITIES OF ALL NATIONAL BANKS AS SHOWN BY THEIR REPORTS  
TO THE COMPTROLLER OF THE CURRENCY

Date	Loans, etc.	Actual amounts in millions of dollars				Checks and exchanges	Cash	Miscellaneous
		U. S. bonds	Other bonds, securities, etc.	Due from banks				
1898 Feb. 18	2,152	278	230	579	145	442	120	
May 5	2,110	279	236	499	164	461	120	
July 14	2,164	304	251	524	132	472	130	
Sept. 20	2,173	358	255	525	147	422	124	
Dec. 1	2,237	383	259	609	236	465	123	
1899 Feb. 4	2,318	368	277	695	114	509	122	
Apr. 5	2,421	364	300	684	252	495	122	
June 30	2,508	346	305	687	248	493	121	
Sept. 7	2,516	348	320	686	192	468	121	
Dec. 2	2,514	351	325	604	129	431	121	
1900 Feb. 13	2,505	383	331	630	228	478	120	
Apr. 26	2,585	410	337	664	188	505	123	
June 29	2,644	418	357	691	205	504	125	
Sept. 5	2,710	419	367	736	170	522	125	
Dec. 13	2,748	427	373	736	228	503	127	
1901 Feb. 5	2,851	439	391	791	282	554	127	
Apr. 24	2,940	445	421	808	338	551	129	
July 15	2,981	451	435	788	351	542	128	
Sept. 30	3,052	454	449	785	287	541	128	
Dec. 10	3,081	453	452	784	301	538	113	
1902 Feb. 25	3,161	456	459	835	241	563	129	
Apr. 30	3,200	456	467	807	342	560	131	
July 16	3,247	460	485	819	296	571	132	
Sept. 15	3,314	469	493	820	375	509	133	
Nov. 25	3,347	492	512	801	281	535	136	
1903 Feb. 6	3,387	500	529	844	262	572	141	
Apr. 9	3,433	503	535	813	249	538	143	
June 9	3,442	527	539	802	277	554	146	
Sept. 9	3,508	537	541	820	198	556	150	
Nov. 17	3,476	543	545	834	229	522	152	
1904 Jan. 22	3,511	555	558	893	286	616	157	
Mar. 28	3,576	554	581	888	231	619	157	
June 9	3,622	554	577	880	201	660	162	
Sept. 6	3,758	556	601	962	271	663	164	
Nov. 10	3,828	565	602	993	399	644	167	
1905 Jan. 11	3,772	567	611	922	332	672	172	
Mar. 14	3,888	569	647	1,047	340	643	174	
May 29	3,929	562	677	1,007	325	651	176	
Aug. 25	4,028	566	673	1,040	317	667	180	
Nov. 9	4,071	575	666	1,043	400	624	185	

TABLE 85—(Continued)

CONDENSED ABSTRACT OF THE RESOURCES AND LIABILITIES OF ALL NATIONAL BANKS AS SHOWN BY THEIR REPORTS  
TO THE COMPTROLLER OF THE CURRENCY

		Actual amounts in millions of dollars						
Date	Loans, etc.	U. S. bonds	Other bonds, securities, etc.	Due from banks	Checks and exchanges	Cash	Miscellaneous	
1906 Jan. 29	4,118	586	660	1,065	482	670	189	
Apr. 6	4,176	593	676	1,036	377	623	189	
June 18	4,237	605	679	1,046	373	653	192	
Sept. 4	4,331	642	688	1,074	460	628	193	
Nov. 12	4,420	654	724	1,140	443	637	197	
1907 Jan. 26	4,505	660	736	1,166	186	698	204	
Mar. 22	4,573	666	745	1,121	319	658	206	
May 20	4,664	671	774	1,130	334	694	209	
Aug. 22	4,709	675	769	1,072	249	704	213	
Dec. 3	4,623	713	890	925	311	663	282	
1908 Feb. 14	4,452	743	887	1,035	259	791	230	
May 14	4,551	734	855	1,062	295	864	233	
July 15	4,640	733	840	1,104	309	852	236	
Sept. 23	4,782	733	858	1,203	340	871	240	
Nov. 27	4,879	719	855	1,251	401	847	244	
1909 Feb. 5	4,870	737	879	1,282	342	863	248	
Apr. 28	4,988	740	889	1,233	384	881	254	
June 23	5,061	744	904	1,243	373	889	257	
Sept. 1	5,158	746	916	1,227	408	857	261	
Nov. 16	5,191	746	886	1,285	411	808	265	
1910 Jan. 31	5,264	747	857	1,264	492	836	271	
Mar. 29	5,464	748	856	1,285	378	838	273	
June 30	5,456	749	863	1,202	525	824	279	
Sept. 1	5,497	751	865	1,215	366	855	278	
Nov. 10	5,498	751	867	1,317	420	819	284	
1911 Jan. 7	5,443	752	894	1,351	250	839	291	
Mar. 7	5,588	752	937	1,439	325	911	289	
June 7	5,634	755	1,008	1,377	366	949	294	
Sept. 1	5,690	775	1,034	1,306	376	899	299	
Dec. 5	5,695	781	1,052	1,405	345	866	299	
	Capital, etc.	Circulation	Individual deposits	U. S. deposits	Bank deposits	Miscellaneous	Total	
1890 Feb. 28	916	124	1,482	32	434	14	3,003	
May 17	936	126	1,482	31	414	21	3,010	
July 18	934	126	1,525	31	424	22	3,062	
Oct. 2	961	123	1,568	29	426	34	3,141	
Dec. 19	985	123	1,486	29	375	49	3,047	
1891 Feb. 26	979	123	1,484	29	423	26	3,065	
May 4	992	123	1,578	29	420	25	3,167	
July 9	987	124	1,540	26	408	28	3,113	
Sept. 25	1,009	131	1,589	20	431	33	3,213	
Dec. 2	1,013	135	1,604	18	442	26	3,238	

TABLE 85—(Continued)

CONDENSED ABSTRACT OF THE RESOURCES AND LIABILITIES OF ALL NATIONAL BANKS AS SHOWN BY THEIR REPORTS  
TO THE COMPTROLLER OF THE CURRENCY

Date	Capital, etc.	Actual amounts in millions of dollars					Total
		Circulation	Individual deposits	U. S. deposits	Bank deposits	Miscellaneous	
1892 Mar. 1	1,011	138	1,703	17	555	13	3,437
May 17	1,020	140	1,746	16	543	14	3,479
July 12	1,011	141	1,757	14	556	14	3,494
Sept. 30	1,027	143	1,769	14	531	26	3,510
Dec. 29	1,045	146	1,765	14	484	27	3,480
1893 Mar. 6	1,038	149	1,752	14	472	35	3,460
May 4	1,041	152	1,753	14	429	44	3,432
July 12	1,029	155	1,561	14	365	90	3,213
Oct. 3	1,029	183	1,454	14	349	80	3,110
Dec. 19	1,029	180	1,540	14	450	29	3,242
1894 Feb. 28	1,012	174	1,589	14	517	19	3,325
May 4	1,012	173	1,673	14	542	20	3,433
July 18	1,001	172	1,681	14	534	21	3,422
Oct. 2	1,003	172	1,731	14	527	27	3,474
Dec. 19	1,007	169	1,696	14	515	21	3,423
1895 Mar. 5	992	170	1,669	28	495	24	3,379
May 7	993	176	1,693	27	494	28	3,410
July 11	987	179	1,739	13	527	26	3,471
Sept. 28	994	182	1,704	14	495	35	3,424
Dec. 13	998	185	1,722	14	470	35	3,424
1896 Feb. 28	988	187	1,649	34	448	41	3,348
May 7	989	197	1,690	24	443	34	3,378
July 14	983	199	1,671	15	454	31	3,354
Oct. 6	985	210	1,600	15	415	39	3,264
Dec. 17	990	211	1,641	15	486	24	3,367
1897 Mar. 9	976	203	1,670	15	563	18	3,446
May 14	972	198	1,729	16	558	19	3,492
July 23	962	196	1,772	16	597	19	3,563
Oct. 5	966	199	1,855	16	646	23	3,705
Dec. 15	971	194	1,918	44	678	25	3,829
1898 Feb. 18	964	184	1,984	31	765	19	3,947
May 5	962	188	2,001	27	670	21	3,870
July 14	955	190	2,026	53	720	34	3,978
Sept. 20	962	195	2,032	75	698	41	4,004
Dec. 1	962	207	2,226	94	795	29	4,313
1899 Feb. 4	943	204	2,233	87	913	25	4,404
Apr. 5	947	204	2,439	87	932	30	4,639
June 30	947	199	2,530	76	932	24	4,709
Sept. 7	956	200	2,452	79	929	34	4,650
Dec. 2	971	205	2,382	80	796	41	4,475

TABLE 85—(Continued)

CONDENSED ABSTRACT OF THE RESOURCES AND LIABILITIES OF ALL NATIONAL BANKS AS SHOWN BY THEIR REPORTS  
TO THE COMPTROLLER OF THE CURRENCY

Date	Capital, etc.	Actual amounts in millions of dollars					Miscellaneous	Total
		Circulation	Individual deposits	U. S. deposits	Bank deposits			
1900 Feb. 13	977	205	2,483	109	856	45	4,675	
Apr. 26	1,001	236	2,450	109	975	40	4,812	
June 29	1,013	265	2,460	99	1,063	44	4,944	
Sept. 5	1,020	284	2,509	94	1,097	45	5,048	
Dec. 13	1,036	299	2,625	94	1,045	43	5,142	
1901 Feb. 5	1,035	309	2,755	95	1,205	37	5,436	
Apr. 24	1,057	317	2,895	96	1,227	39	5,631	
July 5	1,062	319	2,945	99	1,207	44	5,676	
Sept. 30	1,086	324	2,942	107	1,185	52	5,695	
Dec. 10	1,114	319	2,965	110	1,169	45	5,723	
1902 Feb. 25	1,117	314	2,983	112	1,279	37	5,843	
Apr. 30	1,132	310	3,114	120	1,249	38	5,962	
July 16	1,185	309	3,101	124	1,243	47	6,009	
Sept. 15	1,201	318	3,210	124	1,200	60	6,114	
Nov. 25	1,232	337	3,154	147	1,155	80	6,104	
1903 Feb. 6	1,249	335	3,161	148	1,272	70	6,235	
Apr. 9	1,266	335	3,169	148	1,218	76	6,213	
June 9	1,285	359	3,203	147	1,212	80	6,287	
Sept. 9	1,310	375	3,157	150	1,226	92	6,310	
Nov. 17	1,324	376	3,177	163	1,164	99	6,302	
1904 Jan. 22	1,329	381	3,303	163	1,323	78	6,577	
Mar. 28	1,341	386	3,255	160	1,383	81	6,606	
June 9	1,349	400	3,313	110	1,412	71	6,656	
Sept. 6	1,354	411	3,459	111	1,561	79	6,975	
Nov. 10	1,372	419	3,709	110	1,513	74	7,197	
1905 Jan. 11	1,368	424	3,615	106	1,535	69	7,118	
Mar. 14	1,386	431	3,778	93	1,556	64	7,308	
May 29	1,407	445	3,785	75	1,547	68	7,328	
Aug. 25	1,420	469	3,822	62	1,625	75	7,472	
Nov. 9	1,441	486	3,992	61	1,504	80	7,563	
1906 Jan. 29	1,451	498	4,090	62	1,596	72	7,770	
Apr. 6	1,470	506	3,980	74	1,557	83	7,671	
June 18	1,491	511	4,058	90	1,545	89	7,784	
Sept. 4	1,506	518	4,201	108	1,589	94	8,016	
Nov. 12	1,536	536	4,291	140	1,600	111	8,214	
1907 Jan. 26	1,552	545	4,118	157	1,677	105	8,155	
Mar. 22	1,579	543	4,271	153	1,637	104	8,288	
May 20	1,604	548	4,324	181	1,686	134	8,477	
Aug. 22	1,631	552	4,320	161	1,595	130	8,390	
Dec. 3	1,652	602	4,178	235	1,388	353	8,408	

TABLE 85—(Concluded)

CONDENSED ABSTRACT OF THE RESOURCES AND LIABILITIES OF ALL NATIONAL BANKS AS SHOWN BY THEIR REPORTS  
TO THE COMPTROLLER OF THE CURRENCY

Date	Capital, etc.	Actual amounts in millions of dollars					Total
		Circulation	Individual deposits	U. S. deposits	Bank deposits	Miscellaneous	
1908 Feb. 14	1,649	628	4,107	233	1,584	197	8,397
May 14	1,671	614	4,314	182	1,692	122	8,595
July 15	1,668	614	4,378	130	1,823	102	8,714
Sept. 23	1,689	614	4,549	126	1,942	107	9,027
Nov. 27	1,700	599	4,721	124	1,959	93	9,197
1909 Feb. 5	1,700	615	4,701	100	2,035	69	9,221
Apr. 28	1,729	636	4,827	70	2,037	69	9,369
June 23	1,744	641	4,900	74	2,035	77	9,472
Sept. 1	1,746	658	5,012	49	2,019	90	9,574
Nov. 16	1,780	668	5,122	49	1,886	86	9,591
1910 Jan. 31	1,779	668	5,194	48	1,967	75	9,731
Mar. 29	1,825	669	5,229	48	1,988	82	9,842
June 30	1,851	676	5,302	55	1,900	113	9,897
Sept. 1	1,877	675	5,147	50	1,944	134	9,826
Nov. 10	1,900	680	5,306	48	1,906	115	9,956
1911 Jan. 7	1,892	684	5,119	47	1,991	87	9,820
Mar. 7	1,910	681	5,306	46	2,224	74	10,241
June 7	1,933	682	5,480	49	2,147	92	10,383
Sept. 1	1,930	697	5,492	48	2,088	124	10,379
Dec. 5	1,958	703	5,537	53	2,085	107	10,443

The circulation of the national banks as a whole has adapted itself to changing conditions of business scarcely better than has the circulation of the New York banks. The volume has expanded tardily during crises, contracted slowly during depressions, expanded again when business revived, and continued to expand through periods of marked prosperity. In the latter respect, alone, has the total note issue of all national banks proved itself more elastic than that of the metropolitan group. But these movements have all been sluggish and generally of small amplitude. Occasionally, the circulation has even expanded when the volume of business was shrinking, as in 1895 and 1910, when premature revivals of activity were checked. Moreover, the movements which harmonize with the changing phases of business cycles appear as minor variations of long-period shiftings controlled by factors which do not grow out of the business situation. For example, as a whole 1890-96 was a time of business stress, and yet the general level of the circulation rose; as a whole 1896-98 was a time of business improvement, and yet the general level of the circulation fell; finally, the marked rise of the circulation after 1900 was due more to the

provisions of the Gold Standard Act, the policy of Secretary Shaw, and the fall in the prices of government bonds, than to the expansion of American business.<sup>7</sup>

National-bank loans behave in a more regular fashion than New York loans. They invariably fall during crises, and rise promptly in the following depressions, though a year or more sometimes elapses before they reach the ante-crisis level. When business revives, the rise continues at an accelerated pace, and, save for seasonal variations, this rise runs on through the years of prosperity until another crisis comes.

In the New York bank statements security holdings are included with loans; in the national-bank reports the two items are segregated. One might expect that in the stress of a crisis the banks would sell part of their miscellaneous stocks and bonds in order to reduce deposit liabilities, to obtain cash, or to buy

TABLE 86

ANNUAL AVERAGES OF THE CHIEF ITEMS IN THE REPORTS OF THE NATIONAL BANKS, 1890-1911

Year	Loans, etc.	Actual amounts in millions of dollars				Cash	Miscellaneous resources
		U. S. bonds	Other bonds, securities, etc.	Due from banks	Checks and exchanges		
1890	1,920	190	117	323	128	279	94
1891	1,974	188	124	331	139	305	99
1892	2,127	197	148	409	145	349	105
1893	2,011	218	153	322	142	338	107
1894	1,948	245	188	396	109	422	107
1895	2,014	257	195	374	109	359	113
1896	1,943	280	190	346	114	352	117
1897	1,995	283	207	464	129	409	119
1898	2,167	320	246	547	165	452	123
1899	2,455	355	305	671	187	479	121
1900	2,638	411	353	691	204	502	124
1901	2,981	448	430	791	312	545	125
1902	3,254	467	483	816	307	548	132
1903	3,449	522	538	823	243	548	146
1904	3,659	557	584	923	278	640	161
1905	3,940	568	655	1,026	343	651	177
1906	4,256	616	685	1,072	427	642	192
1907	4,615	677	783	1,083	280	683	223
1908	4,661	732	859	1,131	321	845	237
1909	5,054	743	895	1,254	384	860	257
1910	5,436	749	862	1,257	436	834	277
1911	5,610	763	985	1,376	332	893	294
Averages							
1890-99	2,055.4	253.3	187.3	418.3	136.7	374.4	110.5
1900-09	3,850.7	574.1	626.5	961.0	309.9	646.4	177.4

<sup>7</sup> Compare Chapter VI, iii.

TABLE 86—(Continued)

ANNUAL AVERAGES OF THE CHIEF ITEMS IN THE REPORTS OF THE NATIONAL BANKS, 1890-1911

Actual amounts in millions of dollars							
Year	Capital, etc.	Circulation	Individual deposits	U. S. deposits	Bank deposits	Miscellaneous liabilities	Total resources and liabilities
1890	946	124	1,509	30	415	28	3,053
1891	996	127	1,559	24	425	28	3,159
1892	1,023	142	1,748	15	534	19	3,480
1893	1,033	164	1,612	14	413	56	3,291
1894	1,007	172	1,674	14	527	22	3,415
1895	993	178	1,705	19	496	30	3,422
1896	987	201	1,650	21	449	34	3,342
1897	969	198	1,789	21	608	21	3,607
1898	961	193	2,054	56	730	29	4,022
1899	953	202	2,407	82	900	31	4,575
1900	1,009	258	2,505	101	1,007	43	4,924
1901	1,071	318	2,900	101	1,199	43	5,632
1902	1,173	318	3,112	125	1,225	52	6,006
1903	1,287	356	3,173	151	1,218	83	6,269
1904	1,349	399	3,408	131	1,438	77	6,802
1905	1,404	451	3,799	79	1,553	71	7,358
1906	1,491	514	4,124	95	1,577	90	7,891
1907	1,604	558	4,242	177	1,597	165	8,344
1908	1,675	614	4,414	159	1,800	124	8,786
1909	1,740	644	4,912	68	2,002	78	9,445
1910	1,846	674	5,236	50	1,941	104	9,850
1911	1,925	689	5,387	49	2,107	97	10,253
Averages							
1890-99	986.8	170.1	1,770.7	29.6	549.7	29.8	3,536.6
1900-09	1,380.3	443.0	3,658.9	118.7	1,461.6	82.6	7,145.7

TABLE 86—(Continued)

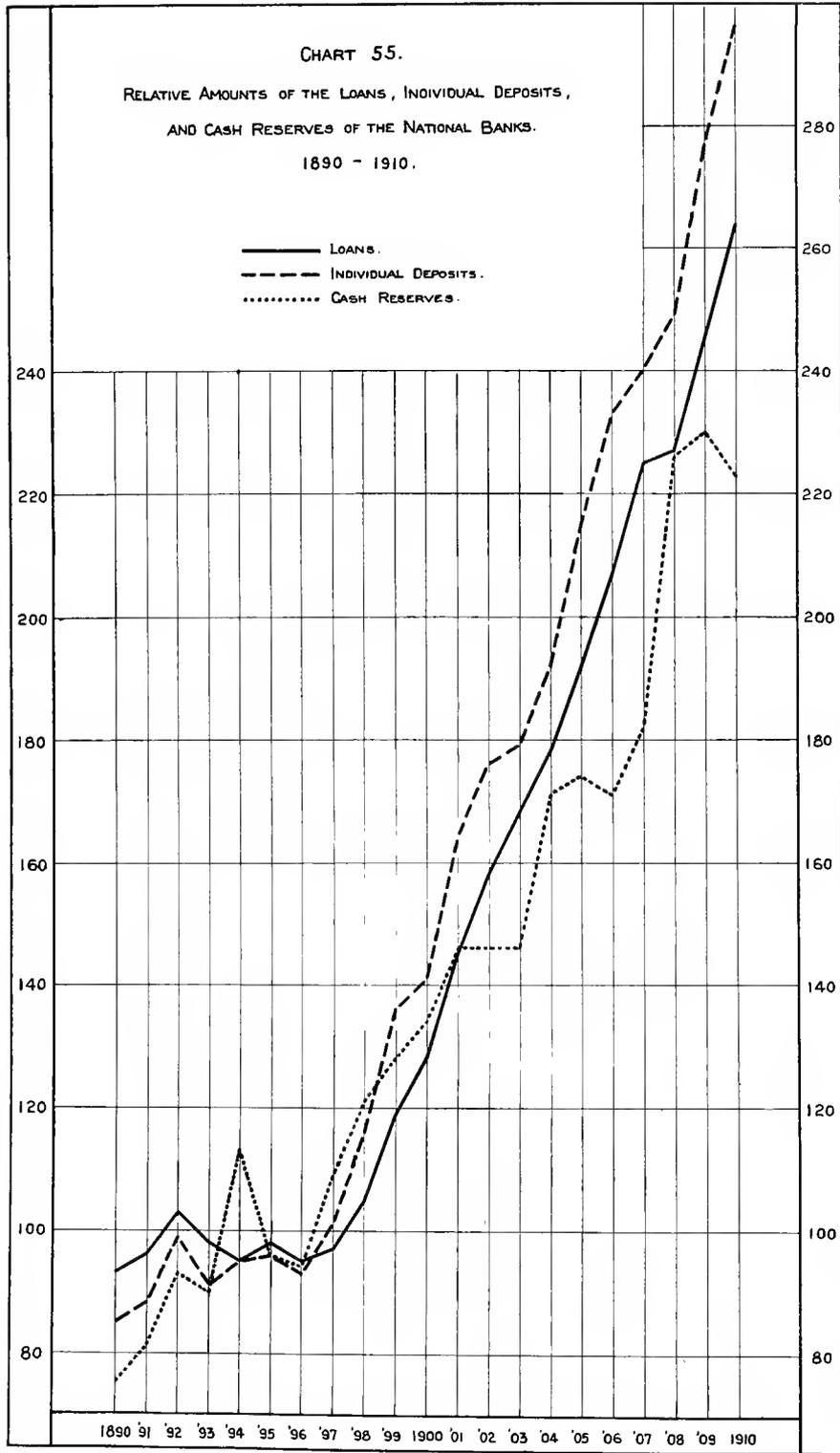
## ANNUAL AVERAGES OF THE CHIEF ITEMS IN THE REPORTS OF THE NATIONAL BANKS, 1890-1911

Year	Relative amounts. Average actual amounts in 1890-99 = 100						
	Loans, etc.	U. S. bonds	Other bonds, securities, etc.	Due from banks	Checks and exchanges	Cash	Miscellaneous resources
1890	93	75	62	77	94	75	85
1891	96	74	66	79	102	81	90
1892	103	78	79	98	106	93	95
1893	98	86	82	77	104	90	97
1894	95	97	100	95	80	113	97
1895	98	101	104	89	80	96	102
1896	95	111	101	83	83	94	106
1897	97	112	111	111	94	109	108
1898	105	126	131	131	121	121	111
1899	119	140	163	160	137	128	109
1900	128	162	188	165	149	134	112
1901	145	177	230	189	228	146	113
1902	158	184	258	195	225	146	119
1903	168	206	287	197	178	146	132
1904	178	220	312	221	203	171	146
1905	192	224	350	245	251	174	160
1906	207	243	366	256	312	171	174
1907	225	267	418	259	205	182	202
1908	227	289	459	270	235	226	214
1909	246	293	478	300	281	230	233
1910	264	296	460	301	319	223	251
1911	273	301	526	329	243	238	266
Averages							
1890-99	100	100	100	100	100	100	100
1900-09	187	227	334	230	227	173	161

TABLE 86—(Concluded)

ANNUAL AVERAGES OF THE CHIEF ITEMS IN THE REPORTS OF THE NATIONAL BANKS, 1890-1911

Year	Relative amounts. Average actual amounts in 1890-99 = 100						Total resources and liabilities
	Capital, etc.	Circulation	Individual deposits	U. S. deposits	Bank deposits	Miscellaneous liabilities	
1890	96	73	85	101	75	94	86
1891	101	75	88	81	77	94	89
1892	104	83	99	51	97	64	98
1893	105	96	91	47	75	188	93
1894	102	101	95	47	96	74	97
1895	101	105	96	64	90	101	97
1896	100	118	93	71	82	114	95
1897	98	116	101	71	111	70	102
1898	97	113	116	189	133	97	114
1899	97	119	136	277	164	104	129
1900	102	152	141	341	183	144	139
1901	109	187	164	341	218	144	159
1902	119	187	176	422	223	174	170
1903	130	209	179	510	222	279	177
1904	137	235	192	443	262	258	192
1905	142	265	215	267	283	238	208
1906	151	302	233	321	287	302	223
1907	163	328	240	598	291	554	236
1908	170	361	249	537	327	416	248
1909	176	279	277	230	364	262	267
1910	187	396	296	169	353	349	279
1911	195	405	304	166	383	325	290
Averages 1890-99	100	100	100	100	100	100	100
1900-09	140	260	207	401	266	277	202



United States bonds as a basis for additional circulation. In fact, however, they have made but little use of their "other securities" for such purposes. In the crises of 1893 and 1896 this item did fall a trifle; but in the crises of 1890, 1899, 1903, and 1907 it rose, slightly on the first three occasions, heavily on the last. Apparently the banks are unwilling to sacrifice securities at the low prices which prevail on the stock market in times of crisis, and are often compelled to take over additional stocks or bonds from embarrassed debtors. Such holdings, in America at least, cannot be regarded as an efficient "second reserve" for meeting seasons of stress. What service they render in this regard seems to be limited to their use as a basis for clearing-house loan certificates.

As soon as a crisis is over and the inflow of cash begins, the banks buy additional securities at the same time that they are expanding loans. The one exception to this rule occurred during the depression of 1908. But this exception is more apparent than real. Between August and December, 1907, the banks had been forced to take over some \$121,000,000 of additional securities other than government bonds. When the crisis was passed, they gradually disposed of part of these extraordinarily large holdings; but continued to carry some \$50,000,000 more than before the crisis.

Periods of business revival and of prosperity have usually been accompanied by further increases of security holdings, particularly when the banks have been participating actively in syndicates for underwriting new issues. Thus, in the period of company promotion between 1898 and 1902, "other securities" was the only item among national-bank resources to double its amount—and more.

It is, indeed, one of the salient features of the national-banking business since 1890 that the banks have put a gradually decreasing proportion of their funds available for productive investment into commercial loans, and an increasing proportion into stocks and bonds. The next table traces this change in detail. Whereas loans used to make about 86 per cent of the combined loans, United States bonds, and other securities, they made in 1910 but 77 per cent. Other securities meanwhile have risen from about 5 to about 12 per cent of the total, and United States bonds from 9 to 10.5 per cent. The proportion of other securities reached its maximum of 14.6 per cent and that of loans its minimum of 73.2 per cent immediately after the crisis of 1907.

Individual deposits in the national banks fall during crises, rise during depressions, and continue their upward course during periods of revival and prosperity. In all this they resemble loans; but, as in New York, the amplitude of the two sets of variations differs from phase to phase of the cycle. The fall of deposits exceeds that of loans in crises, and their rise exceeds that of loans during depressions. On the other hand, during periods of revival and prosperity the increase of deposits usually lags behind that of loans.

TABLE 87

LOANS AND SECURITY HOLDINGS OF THE NATIONAL BANKS AT THE DATE OF EACH REPORT TO THE COMPTROLLER OF  
THE CURRENCY, 1890-1911

Date	Loans and security holdings in millions of dollars	Proportion of			Date	Loans and security holdings in millions of dollars	Proportion of		
		Loans Per cent	U. S. bonds Per cent	Other bonds and securities Per cent			Loans Per cent	U. S. bonds Per cent	Other bonds and securities Per cent
1890 Feb. 28	2,157	85.6	9.0	5.4	1898 July 14	2,719	79.6	11.2	9.2
May 17	2,215	86.0	8.7	5.3	Sept. 20	2,786	78.0	12.8	9.2
July 18	2,244	86.2	8.6	5.2	Dec. 1	2,879	77.7	13.3	9.0
Oct. 2	2,287	86.8	8.1	5.1	1899 Feb. 4	2,963	78.2	12.4	9.4
Dec. 19	2,233	86.5	8.3	5.2	Apr. 5	3,085	78.5	11.8	9.7
1891 Feb. 26	2,235	86.3	8.3	5.4	June 30	3,159	79.4	10.9	9.7
May 4	2,279	86.4	8.2	5.4	Sept. 7	3,184	79.0	10.9	10.1
July 9	2,273	86.4	8.2	5.4	Dec. 2	3,190	78.8	11.0	10.2
Sept. 25	2,320	86.4	8.2	5.4	1900 Feb. 13	3,219	77.8	11.9	10.3
Dec. 2	2,321	86.2	8.3	5.5	Apr. 26	3,332	77.6	12.3	10.1
1892 Mar. 1	2,392	86.1	8.1	5.8	June 29	3,419	77.4	12.2	10.4
May 17	2,449	86.1	8.0	5.9	Sept. 5	3,496	77.5	12.0	10.5
July 12	2,475	86.0	7.9	6.1	Dec. 13	3,548	77.5	12.0	10.5
Sept. 30	2,523	86.1	7.8	6.1	1901 Feb. 5	3,681	77.5	11.9	10.6
Dec. 9	2,520	86.0	7.9	6.1	Apr. 24	3,806	77.2	11.7	11.1
1893 Mar. 6	2,516	85.8	8.1	6.1	July 15	3,867	77.1	11.7	11.2
May 4	2,516	85.9	8.1	6.0	Sept. 30	3,955	77.1	11.5	11.4
July 12	2,377	85.0	8.7	6.3	Dec. 10	3,986	77.3	11.4	11.3
Oct. 3	2,231	82.6	10.7	6.7	1902 Feb. 25	4,076	77.5	11.2	11.3
Dec. 19	2,268	82.5	10.4	7.1	Apr. 30	4,123	77.6	11.1	11.3
1894 Feb. 28	2,294	81.6	10.8	7.6	July 16	4,192	77.4	11.0	11.6
May 4	2,357	81.8	10.4	7.8	Sept. 15	4,276	77.5	11.0	11.5
July 18	2,379	81.7	10.3	8.0	Nov. 25	4,351	76.9	11.3	11.8
Oct. 2	2,440	82.3	9.8	7.9	1903 Feb. 6	4,416	76.7	11.3	12.0
Dec. 19	2,437	81.7	10.2	8.1	Apr. 9	4,471	76.8	11.2	12.0
1895 Mar. 5	2,426	81.0	10.9	8.1	June 9	4,508	76.4	11.7	11.9
May 7	2,450	81.2	10.9	7.9	Sept. 9	4,586	76.5	11.7	11.8
July 11	2,464	81.8	10.3	7.9	Nov. 17	4,564	76.2	11.9	11.9
Sept. 28	2,505	82.2	10.0	7.8	1904 Jan. 22	4,624	75.9	12.0	12.1
Dec. 13	2,486	82.1	10.1	7.8	Mar. 28	4,711	75.9	11.8	12.3
1896 Feb. 28	2,441	80.5	11.6	7.9	June 9	4,753	76.2	11.7	12.1
May 7	2,456	80.7	11.5	7.8	Sept. 6	4,915	76.5	11.3	12.2
July 14	2,436	81.0	11.2	7.8	Nov. 10	4,995	76.6	11.3	12.1
Oct. 6	2,362	80.1	11.9	8.0	1905 Jan. 11	4,950	76.2	11.5	12.3
Dec. 17	2,372	80.2	11.8	8.0	Mar. 14	5,104	76.2	11.1	12.7
1897 Mar. 9	2,376	79.9	11.8	8.3	May 29	5,168	76.0	10.9	13.1
May 14	2,416	80.1	11.5	8.4	Aug. 25	5,267	76.5	10.7	12.8
July 23	2,462	80.4	11.3	8.3	Nov. 9	5,312	76.6	10.8	12.6
Oct. 5	2,553	81.0	10.8	8.2	1906 Jan. 29	5,364	76.8	10.9	12.3
Dec. 15	2,619	80.2	11.5	8.3	Apr. 6	5,445	76.7	10.9	12.4
1898 Feb. 18	2,660	80.9	10.5	8.6	June 18	5,521	76.7	11.0	12.3
May 5	2,625	80.4	10.6	9.0	Sept. 4	5,661	76.5	11.3	12.2

TABLE 87—(Concluded)

LOANS AND SECURITY HOLDINGS OF THE NATIONAL BANKS AT THE DATE OF EACH REPORT TO THE COMPTROLLER OF THE CURRENCY, 1890-1911

Date	Loans and security holdings in millions of dollars	Proportion of			Date	Loans and security holdings in millions of dollars	Proportion of		
		Loans Per cent	U. S. bonds Per cent	Other bonds and securities Per cent			Loans Per cent	U. S. bonds Per cent	Other bonds and securities Per cent
1906 Nov. 12	5,798	76.2	11.3	12.5	1909 June 23	6,709	75.4	11.1	13.5
1907 Jan. 26	5,901	76.3	11.2	12.5	Sept. 1	6,820	75.6	11.0	13.4
Mar. 22	5,984	76.4	11.1	12.5	Nov. 16	6,823	76.1	10.9	13.0
May 20	6,109	76.3	11.0	12.7	1910 Jan. 31	6,868	76.6	10.9	12.5
Aug. 22	6,153	76.5	11.0	12.5	Mar. 29	7,068	77.3	10.6	12.1
Dec. 3	6,226	74.3	11.4	14.3	June 30	7,068	77.2	10.6	12.2
1908 Feb. 14	6,082	73.2	12.2	14.6	Sept. 1	7,113	77.3	10.5	12.2
May 14	6,140	74.1	12.0	13.9	Nov. 10	7,116	77.3	10.5	12.2
July 15	6,213	74.7	11.8	13.5	1911 Jan. 7	7,089	76.8	10.6	12.6
Sept. 23	6,373	75.0	11.5	13.5	Mar. 7	7,277	76.8	10.3	12.9
Nov. 27	6,453	75.6	11.1	13.3	June 7	7,397	76.2	10.2	13.6
1909 Feb. 5	6,486	75.1	11.4	13.5	Sept. 1	7,499	75.9	10.3	13.8
Apr. 28	6,617	75.4	11.2	13.4	Dec. 5	7,528	75.6	10.4	14.0

Consequently, the ratio of loans to deposits always rises during crises, and always sinks during depression. (See Table 88.) With less regularity the ratio rises again on the revival of activity, or at least when the revival develops into prosperity. The latter movement, however, is sometimes obscured, as in 1897-99, by the change pointed out below in the relation between capital and total liabilities. The national bank reports are not made at sufficiently brief intervals to establish the priority of the changes in deposits and loans; but when a difference does appear, deposits are the first to fall in crises and the first to rise in depressions.

Deposits made by banks follow in general the same course as individual deposits. Their changes are almost always greater in proportion and sometimes greater in actual amount than those of individual deposits—for example, in the crisis of 1907 and the depression of 1908. The bank deposits have also made much the more rapid growth over the whole period covered by the tables.

Cash, like deposits, invariably declines in crises and rises early in depressions. During periods of revival and prosperity its fluctuations are less regular. The reviving activity of trade leads to considerable withdrawals of cash, particularly when this revival coincides, as frequently happens, with the regular autumnal demand for money to move the crops. But sometimes an inflowing current of gold enables the banks to maintain their reserves unimpaired, or even to increase them, despite a rapid expansion in the amount of money carried in the pockets of individuals and the tills of business enterprises.

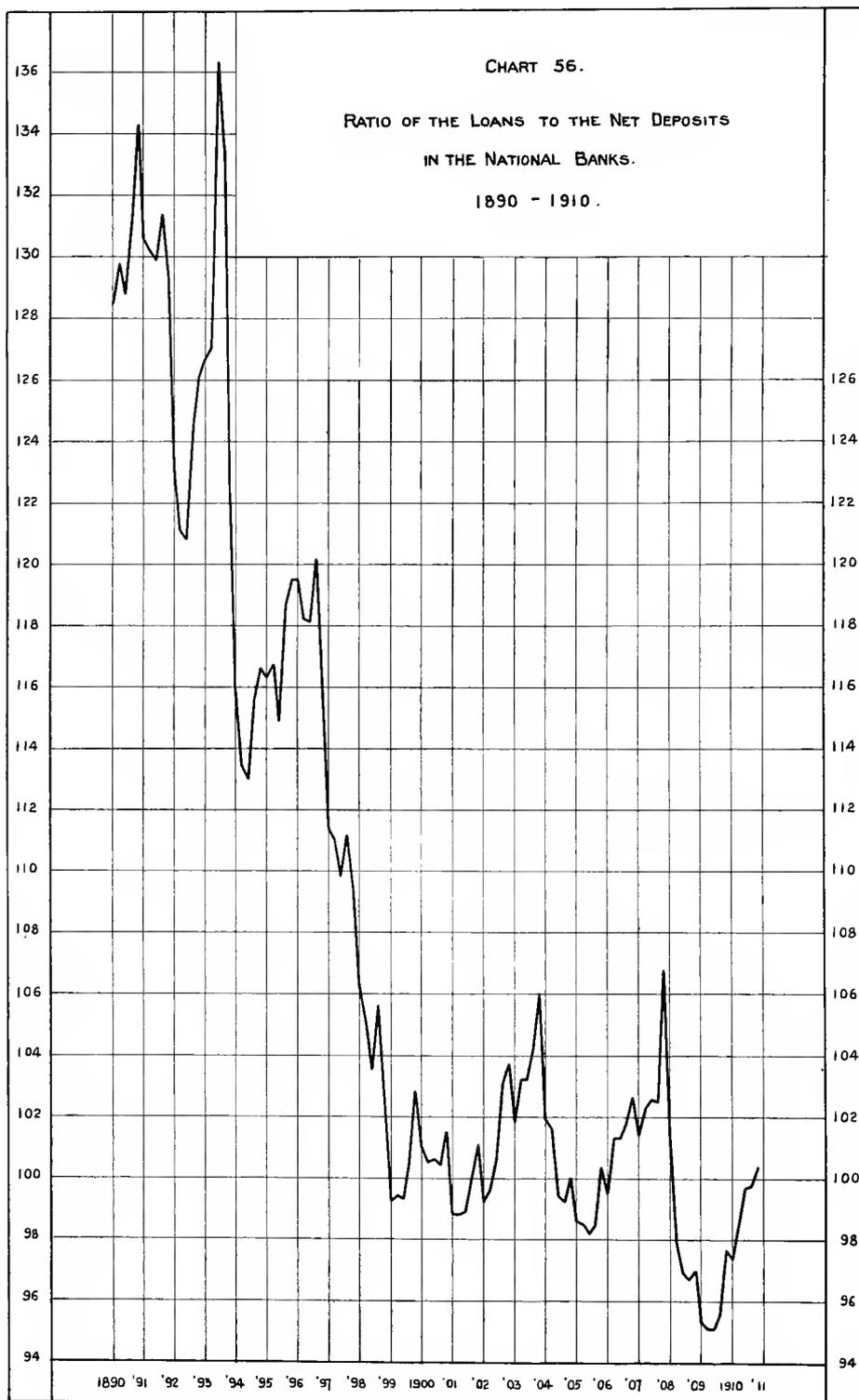


TABLE 88

RATIO TO THE NET DEPOSITS OF NATIONAL BANKS OF THEIR LOANS AND OF THEIR LOANS PLUS SECURITY HOLDINGS  
AT THE DATE OF EACH REPORT TO THE COMPTROLLER OF THE CURRENCY, 1890-1911

Date	Ratio to net deposits of		Date	Ratio to net deposits of	
	Loans	Loans and securities		Loans	Loans and securities
1890 Feb. 28	128.5	150.2	1898 July 14	103.5	130.1
May 17	129.8	151.0	Sept. 20	105.6	135.3
July 18	128.8	149.5	Dec. 1	102.8	132.3
Oct. 2	131.0	150.8	1899 Feb. 4	99.2	126.8
Dec. 19	134.3	155.3	Apr. 5	99.4	126.7
1891 Feb. 26	130.6	151.4	June 30	99.3	125.0
May 4	130.2	150.6	Sept. 7	100.5	127.2
July 9	129.9	150.3	Dec. 2	102.8	130.5
Sept. 25	131.4	152.0	1900 Feb. 13	101.0	129.7
Dec. 2	129.4	150.1	Apr. 26	100.5	129.5
1892 Mar. 1	123.2	143.1	June 29	100.6	130.1
May 17	121.1	140.7	Sept. 5	100.4	129.5
July 12	120.8	140.5	Dec. 13	101.5	131.1
Sept. 30	124.3	144.4	1901 Feb. 5	98.8	127.5
Dec. 9	126.1	146.6	Apr. 24	98.8	127.9
1893 Mar. 6	126.7	147.5	July 15	98.9	128.3
May 4	127.1	148.0	Sept. 30	99.9	129.5
July 12	136.3	160.4	Dec. 10	101.0	130.7
Oct. 3	133.4	161.4	1902 Feb. 25	99.2	127.9
Dec. 19	122.1	147.9	Apr. 30	99.6	128.3
1894 Feb. 28	115.8	141.9	July 16	100.6	129.8
May 4	113.4	138.7	Sept. 15	103.1	133.0
July 18	113.0	138.3	Nov. 25	103.7	134.8
Oct. 2	115.6	140.5	1903 Feb. 6	101.8	132.7
Dec. 19	116.6	142.6	Apr. 9	103.2	134.5
1895 Mar. 5	116.3	143.5	June 9	103.2	135.1
May 7	116.7	143.8	Sept. 9	104.2	136.3
July 11	114.9	140.3	Nov. 17	106.0	139.2
Sept. 28	118.6	144.3	1904 Jan. 22	101.9	134.2
Dec. 13	119.5	145.5	Mar. 28	101.6	133.9
1896 Feb. 28	119.5	148.4	June 9	99.4	130.4
May 7	118.2	146.4	Sept. 6	99.2	129.8
July 14	118.1	145.9	Nov. 10	100.0	130.4
Oct. 6	120.2	150.0	1905 Jan. 11	98.6	129.4
Dec. 17	116.4	145.2	Mar. 14	98.5	129.3
1897 Mar. 9	111.4	139.5	May 29	98.2	129.2
May 14	111.0	138.7	Aug. 25	98.5	128.8
July 23	109.8	136.7	Nov. 9	100.4	131.1
Oct. 5	111.2	137.3	1906 Jan. 29	99.5	129.6
Dec. 15	109.5	136.5	Apr. 6	101.3	132.0
1898 Feb. 18	106.3	131.4	June 18	101.3	131.9
May 5	105.1	130.7	Sept. 4	101.8	133.0

TABLE 88—(Concluded)

RATIO TO THE NET DEPOSITS OF NATIONAL BANKS OF THEIR LOANS AND OF THEIR LOANS PLUS SECURITY HOLDINGS  
AT THE DATE OF EACH REPORT TO THE COMPTROLLER OF THE CURRENCY, 1890-1911

Date	Ratio to net deposits of		Date	Ratio to net deposits of	
	Loans	Loans and securities		Loans	Loans and securities
1906 Nov. 12	102.6	134.6	1909 June 23	95.1	126.1
1907 Jan. 26	101.4	132.8	Sept. 1	95.6	126.4
Mar. 22	102.3	133.9	Nov. 16	97.7	128.4
May 20	102.6	134.4	1910 Jan. 31	97.4	127.1
Aug. 22	102.5	133.9	Mar. 29	98.4	127.2
Dec. 3	106.8	143.8	June 30	99.7	129.1
1908 Feb. 14	101.2	138.3	Sept. 1	99.8	129.1
May 14	97.9	132.1	Nov. 10	100.4	129.9
July 15	96.9	129.8	1911 Jan. 7	98.8	128.7
Sept. 23	96.7	128.8	Mar. 7	96.9	126.2
Nov. 27	97.0	128.3	June 7	95.7	125.7
1909 Feb. 5	95.3	126.9	Sept. 1	96.5	127.1
Apr. 28	95.1	126.1	Dec. 5	97.0	128.2

NOTE.—Net deposits = individual deposits plus dividends unpaid and sums due to banks, minus sums due from banks, exchanges for the clearing house, cash items, and bills of other banks. Loans = loans and discounts plus overdrafts. Security holdings = all U. S. bonds held, plus premiums, "other bonds to secure U. S. deposits," and "bonds, securities, etc."

Unlike the New York banks, the national banks as a whole have usually kept their ratio of reserves to net deposits unimpaired during crises, and sometimes they have even increased the ratio a trifle (see Table 89). But the data from the regular reports do not necessarily show the situation at the time of most intense strain, and perhaps weekly statements covering the whole period of crises would give different results. It is clear, however, that the national banks have been even more timid than the clearing-house institutions of New York in using their reserves to restore confidence in times of panic. The prompt increase in the ratio as soon as the crisis begins to merge into depression is unmistakable. So also is the declining tendency of the ratio in times of business revival and business prosperity. Indeed, the ratio has usually been lower at the culmination of the "boom" times than during the crisis itself, if the available data may be trusted. But the dwindling of the ratio during prosperous times is somewhat exaggerated by the decline of the general level about which it has fluctuated. This change occurred chiefly between the beginning of 1899 and the end of 1902.

Liabilities to stockholders, including capital, surplus, and undivided profits, have shown no close connection with business cycles. These items were expanding from 1890 until 1893. Bank failures during the panic of that year caused a decline, which continued not only through the period of depression but also

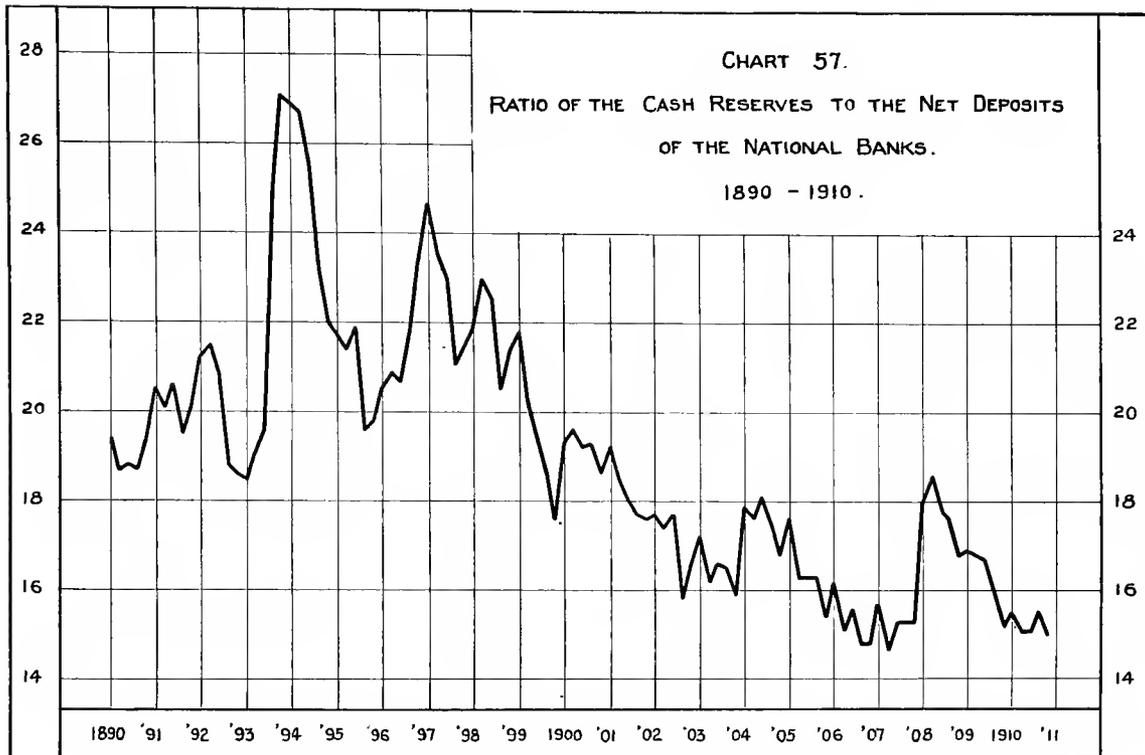


TABLE 89

RATIO OF THE CASH RESERVE OF THE NATIONAL BANKS TO THEIR NET DEPOSITS AT THE DATE OF EACH REPORT TO THE COMPTROLLER OF THE CURRENCY, 1890-1911

Date	Cash reserve Millions of dollars	Net deposits Millions of dollars	Ratio Per cent	Date	Cash reserve Millions of dollars	Net deposits Millions of dollars	Ratio Per cent
1890 Feb. 28	278	1,436	19.4	1893 Oct. 3	347	1,382	25.1
May 17	275	1,467	18.7	Dec. 19	415	1,533	27.1
July 18	282	1,501	18.8	1894 Feb. 28	435	1,616	26.9
Oct. 2	283	1,516	18.7	May 4	453	1,699	26.7
Dec. 19	279	1,438	19.4	July 18	440	1,720	25.6
1891 Feb. 26	303	1,476	20.5	Oct. 2	404	1,736	23.3
May 4	304	1,513	20.1	Dec. 19	376	1,709	22.0
July 9	311	1,512	20.6	1895 Mar. 5	367	1,690	21.7
Sept. 25	298	1,526	19.5	May 7	365	1,704	21.4
Dec. 2	311	1,546	20.1	July 11	384	1,756	21.9
1892 Mar. 1	355	1,671	21.2	Sept. 28	341	1,736	19.6
May 17	374	1,740	21.5	Dec. 13	338	1,708	19.8
July 12	367	1,761	20.8	1896 Feb. 28	338	1,645	20.5
Sept. 30	328	1,747	18.8	May 7	350	1,678	20.9
Dec. 9	320	1,719	18.6	July 14	345	1,669	20.7
1893 Mar. 6	315	1,705	18.5	Oct. 6	344	1,575	21.8
May 4	324	1,700	19.1	Dec. 17	382	1,633	23.4
July 12	290	1,482	19.6	1897 Mar. 9	421	1,703	24.7

TABLE 89—(Concluded)

RATIO OF THE CASH RESERVE OF THE NATIONAL BANKS TO THEIR NET DEPOSITS AT THE DATE OF EACH REPORT TO  
THE COMPTROLLER OF THE CURRENCY, 1890-1911

Date	Cash reserve Millions of dollars	Net deposits Millions of dollars	Ratio Per cent	Date	Cash reserve Millions of dollars	Net deposits Millions of dollars	Ratio Per cent
1897 May 14	411	1,742	23.6	1904 Sept. 6	663	3,787	17.5
July 23	414	1,801	23.0	Nov. 10	644	3,830	16.8
Oct. 5	390	1,859	21.0	1905 Jan. 11	672	3,826	17.6
Dec. 15	411	1,918	21.4	Mar. 14	643	3,947	16.3
1898 Feb. 18	442	2,025	21.8	May 29	651	4,000	16.3
May 5	461	2,008	23.0	Aug. 25	667	4,090	16.3
July 14	472	2,090	22.6	Nov. 9	624	4,053	15.4
Sept. 20	422	2,058	20.5	1906 Jan. 29	670	4,139	16.2
Dec. 1	465	2,176	21.4	Apr. 6	623	4,124	15.1
1899 Feb. 4	509	2,337	21.8	June 18	653	4,184	15.6
Apr. 5	495	2,435	20.3	Sept. 4	628	4,256	14.8
June 30	493	2,527	19.5	Nov. 12	637	4,308	14.8
Sept. 7	468	2,503	18.7	1907 Jan. 26	698	4,443	15.7
Dec. 2	431	2,445	17.6	Mar. 22	658	4,468	14.7
1900 Feb. 13	478	2,481	19.3	May 20	694	4,546	15.3
Apr. 26	505	2,573	19.6	Aug. 22	704	4,594	15.3
June 29	504	2,627	19.2	Dec. 3	663	4,330	15.3
Sept. 5	522	2,700	19.3	1908 Feb. 14	791	4,397	18.0
Dec. 13	503	2,706	18.6	May 14	864	4,649	18.6
1901 Feb. 5	554	2,887	19.2	July 15	852	4,788	17.8
Apr. 24	551	2,976	18.5	Sept. 23	871	4,948	17.6
July 15	542	3,014	18.0	Nov. 27	847	5,028	16.8
Sept. 30	541	3,055	17.7	1909 Feb. 5	863	5,112	16.9
Dec. 10	538	3,049	17.6	Apr. 28	881	5,247	16.8
1902 Feb. 25	563	3,186	17.7	June 23	889	5,319	16.7
Apr. 30	560	3,214	17.4	Sept. 1	857	5,396	15.9
July 16	571	3,229	17.7	Nov. 16	808	5,312	15.2
Sept. 15	509	3,215	15.8	1910 Jan. 31	836	5,405	15.5
Nov. 25	535	3,227	16.6	Mar. 29	838	5,554	15.1
1903 Feb. 6	572	3,327	17.2	June 30	824	5,475	15.1
Apr. 9	538	3,325	16.2	Sept. 1	855	5,510	15.5
June 9	554	3,336	16.6	Nov. 10	819	5,476	15.0
Sept. 9	556	3,365	16.5	1911 Jan. 7	839	5,509	15.2
Nov. 17	522	3,278	15.9	Mar. 7	911	5,766	15.8
1904 Jan. 22	616	3,447	17.9	June 7	949	5,884	16.1
Mar. 28	619	3,519	17.6	Sept. 1	899	5,898	15.2
June 9	660	3,644	18.1	Dec. 5	866	5,872	14.7

NOTE.—Net deposits = individual deposits plus dividends unpaid and sums due to banks, minus sums due from banks, exchanges in the clearing house, cash items, and bills of other banks.

through the revival of activity and into the good times. Then the tide turned, and since February, 1899, capital liabilities have risen with scarcely a setback through crises, bad times and good.

There is, however, one little-known fact concerning the ratio between capital liabilities and total liabilities, of considerable moment for the theory of business cycles. This ratio remains remarkably stable during periods of established prosperity, crisis, and depression; but it declines to a permanently lower level when business is recovering from a prolonged period of contraction. The next table shows that the maximum variation in this ratio was from 32.3 to 28.4 per cent in 1890-96, and from 21.0 to 18.2 per cent in 1900-10. But during the interval between these two periods, when business was recovering from the troubles of 1893-96, the ratio dropped from about 30 to about 20 per cent. The extreme range of the fluctuations about the 30 per cent level in 1890-96 was only 3.9 per cent, and the extreme range of the fluctuations about the 20 per cent level in 1900 to 1910 was only 2.8 per cent, much less in both cases than the 10 per cent drop from the earlier to the later level. Moreover, the lowest ratio in 1890-96—28.4 per cent—was much higher than the highest ratio in 1900-10—21.0 per cent.

The cause of this striking change in the condition of the national banks can be found by analyzing the statements for, say, October, 1896, and June, 1899. Between these dates the resources of the banks increased by more than a billion dollars. Whence did the banks get these additional funds? Not from the stockholders, for capital, surplus, and undivided profits fell 38 millions. Not from the issue of notes, for circulation declined 11 millions. Not from the sale of bonds and stocks, for the banks bought more than they sold. Not from miscellaneous sources, for these items fell 15 millions. Solely from depositors. Individual deposits increased 930 millions, net bank deposits 161 millions, and United States deposits 61 millions—a total of 1152 millions. Of course, a large part of the increase in individual deposits was caused by an increase of loans; but the more ample reserves which enabled the banks to extend their loans and security holdings were provided by customers and not by stockholders. What happened was that, as business began to improve the public deposited enormous sums with the banks. The latter made profitable use of these funds to increase their commercial discounts (thus augmenting deposits still further), to buy more interest-bearing securities, and even to return part of the former capital, surplus, and profits to stockholders. This reduction of capital liabilities is explained by the relatively low profits made by the national banks from 1893 to 1899.<sup>8</sup> When the public had provided the funds which made an extension of business possible, despite a lower capitalization, profits increased again, and then investors began putting more capital

<sup>8</sup> Compare Chapter IX, i, below.

TABLE 90

RATIO OF THE CAPITAL LIABILITIES TO THE TOTAL LIABILITIES OF THE NATIONAL BANKS AT THE DATE OF EACH  
REPORT TO THE COMPTROLLER OF THE CURRENCY, 1890-1910

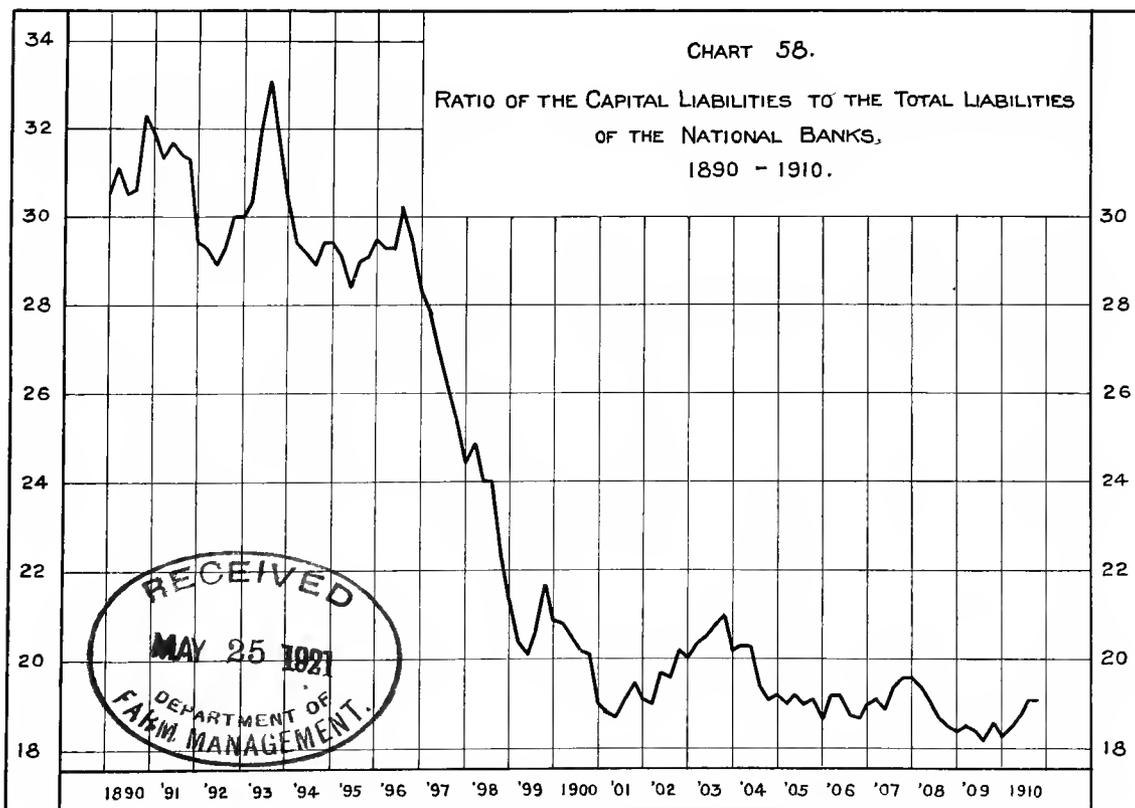
Date	Ratio at date of report	Average for the year	Date	Ratio at date of report	Average for the year
1890 Feb. 28	30.5		1898 July 14	24.0	23.9
May 17	31.1		Sept. 20	24.0	
July 18	30.5	31.0	Dec. 1	22.3	
Oct. 2	30.6		1899 Feb. 4	21.4	
Dec. 19	32.3		Apr. 5	20.4	
1891 Feb. 26	31.9		June 30	20.1	20.8
May 4	31.3		Sept. 7	20.6	
July 9	31.7	31.5	Dec. 2	21.7	
Sept. 25	31.4		1900 Feb. 13	20.9	
Dec. 2	31.3		Apr. 26	20.8	
1892 Mar. 1	29.4		June 29	20.5	20.5
May 17	29.3		Sept. 5	20.2	
July 12	28.9	29.4	Dec. 13	20.1	
Sept. 30	29.3		1901 Feb. 5	19.0	
Dec. 9	30.0		Apr. 24	18.8	
1893 Mar. 6	30.0		July 15	18.7	19.0
May 4	30.4		Sept. 30	19.1	
July 12	32.0	31.4	Dec. 10	19.5	
Oct. 3	33.1		1902 Feb. 25	19.1	
Dec. 19	31.7		Apr. 30	19.0	
1894 Feb. 28	30.4		July 16	19.7	19.5
May 4	29.4		Sept. 15	19.6	
July 18	29.2	29.5	Nov. 25	20.2	
Oct. 2	28.9		1903 Feb. 6	20.0	
Dec. 19	29.4		Apr. 9	20.4	
1895 Mar. 5	29.4		June 9	20.5	20.5
May 7	29.1		Sept. 9	20.8	
July 11	28.4	29.0	Nov. 17	21.0	
Sept. 28	29.0		1904 Jan. 22	20.2	
Dec. 13	29.1		Mar. 28	20.3	
1896 Feb. 28	29.5		June 9	20.3	19.9
May 7	29.3		Sept. 6	19.4	
July 14	29.3	29.5	Nov. 10	19.1	
Oct. 6	30.2		1905 Jan. 11	19.2	
Dec. 17	29.4		Mar. 14	19.0	
1897 Mar. 9	28.3		May 29	19.2	19.1
May 14	27.8		Aug. 25	19.0	
July 23	27.0	26.9	Nov. 9	19.1	
Oct. 5	26.1		1906 Jan. 29	18.7	
Dec. 15	25.4		Apr. 6	19.2	
1898 Feb. 18	24.4		June 18	19.2	18.9
May 5	24.9		Sept. 4	18.8	

TABLE 90—(Concluded)

RATIO OF THE CAPITAL LIABILITIES TO THE TOTAL LIABILITIES OF THE NATIONAL BANKS AT THE DATE OF EACH REPORT TO THE COMPTROLLER OF THE CURRENCY, 1890-1910

Date	Ratio at date of report	Average for the year	Date	Ratio at date of report	Average for the year
1906 Nov. 12	18.7		1909 June 23	18.4	18.4
1907 Jan. 26	19.0		Sept. 1	18.2	
Mar. 22	19.1		Nov. 16	18.6	
May 20	18.9	19.2	1910 Jan. 31	18.3	
Aug. 22	19.4		Mar. 29	18.5	
Dec. 3	19.6		June 30	18.7	18.7
1908 Feb. 14	19.6		Sept. 1	19.1	
May 14	19.4		Nov. 10	19.1	
July 15	19.1	19.1	1911 Jan. 7	19.3	
Sept. 23	18.7		Mar. 7	18.6	
Nov. 27	18.5		June 7	18.6	18.8
1909 Feb. 5	18.4		Sept. 1	18.6	
Apr. 28	18.5		Dec. 5	18.8	

NOTE.—Capital liabilities includes capital, surplus, and undivided profits.



into bank stocks. But, as the preceding ratios show, the increase of capital was only fast enough in 1900-10 to maintain the lower level of capital to total liabilities which had been reached by 1899.<sup>9</sup>

The differences brought out by the preceding analysis between the effect of business cycles upon the condition of the national and the New York banks are few. (1) The national banks always contract loans during crises, while the clearing-house banks of New York expanded loans in 1903 and still more in 1907. (2) The national banks seem to hoard their cash during crises more than the metropolitan institutions. (3) During periods of prosperity, the national banks expand their circulation, and (4) also their loans and deposits with greater regularity. The reason for the last-mentioned difference is that the national banks as a whole have no such intermittent competition to meet in the loan market as the New York clearing-house banks face from the out-of-town institutions, the trust companies, and the great insurance, railway, and industrial corporations.

Besides these differences, the present section brings out additional information about items not adequately reported in the New York bank statements. (1) Securities other than United States bonds contract less than loans in crises and sometimes rise—on occasion rise with extreme rapidity. This advance usually continues through periods of depression, revival, and prosperity. (2) Bank deposits follow the same general course as individual deposits, but undergo fluctuations of greater relative amplitude. (3) The ratio of capital liabilities to total liabilities remains nearly constant during periods of prosperity, crisis, and depression; but drops to a permanently lower level when business is recovering from a prolonged and serious period of contraction. (4) Finally, the decline in this ratio diminishes the sums banks can lend out of resources of given amount,<sup>10</sup> and therefore reduces the level about which the ratio of loans to deposits fluctuates.

### III. THE NATIONAL BANKS IN RESERVE CITIES AND IN RURAL DISTRICTS

Of the five sets of reports received annually from the national banks, the Comptroller of the Currency publishes the fourth set in a form which shows the condition of the banks in central-reserve cities, reserve cities, and country towns. Statements for but one day in each year are, of course, too meagre a

<sup>9</sup> See Wesley C. Mitchell, "The Decline in the Ratio of Banking Capital to Liabilities," *Quarterly Journal of Economics*, August, 1909, vol. 23, pp. 697-713. This paper shows that recovery from a prolonged depression is usually, if not invariably, accompanied by a fall in the otherwise stable level about which the ratio of capital liabilities to total liabilities fluctuates. Such changes occurred among the national banks in 1878-80, as well as in 1896-99; among the state banks at the same dates; among the Canadian banks in 1868-70, 1878-81, 1887-93, and in 1896-1900; among the English joint-stock banks in 1887-88, 1894-96, and 1905-06. Concerning the recent experiences of the last group see the end of section iv, below.

<sup>10</sup> A bank with a reserve of \$100,000 provided wholly by stockholders can clearly lend larger sums than one with an equal reserve provided half by depositors, other conditions being the same. For the latter institution must keep larger sums of cash on hand against the extra \$50,000 of deposits.

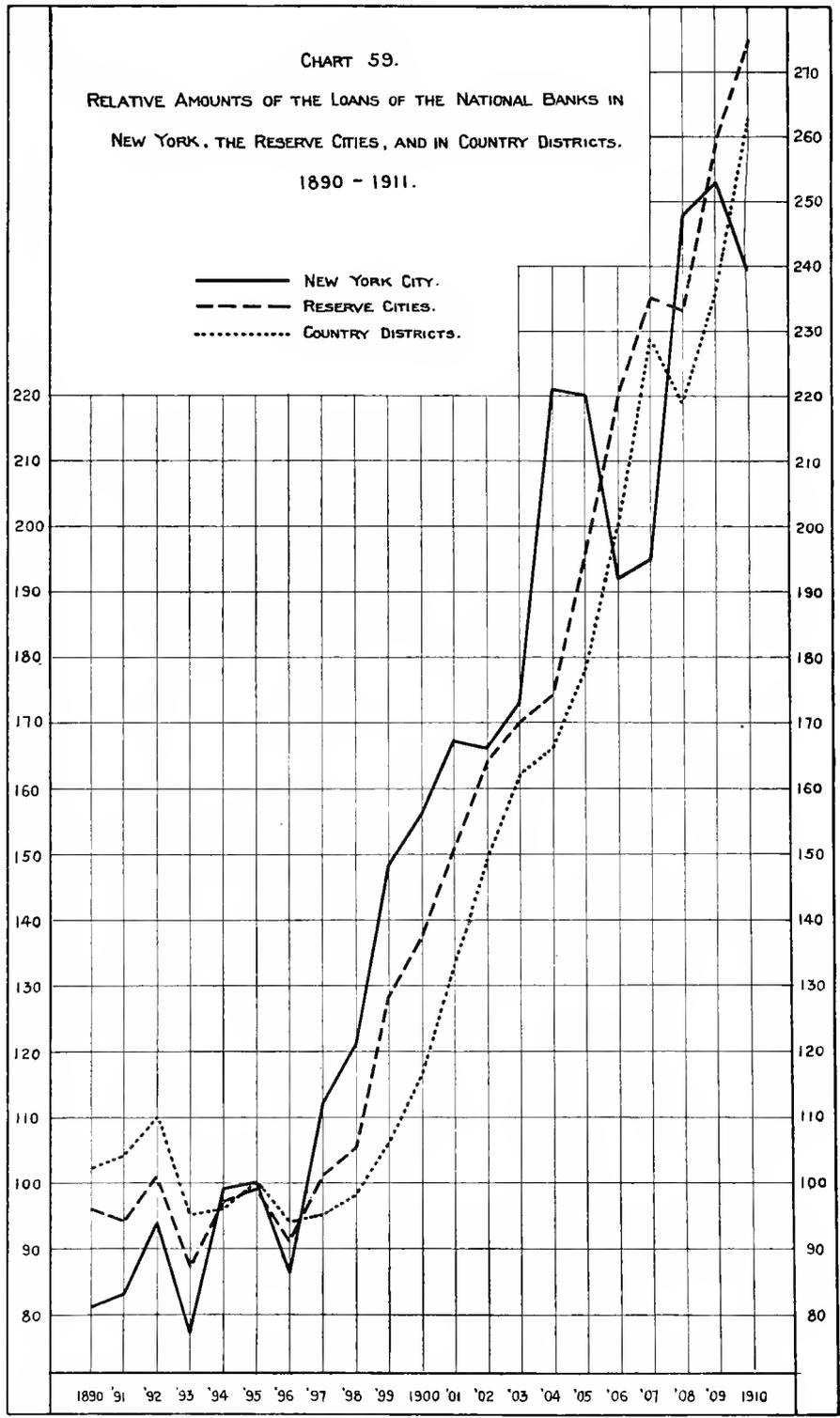
basis for investigating the influence of each phase of business cycles upon these three groups of institutions. For example, the relation of the national banks in urban and rural districts to the panic of 1907 cannot be made out by comparing the reports for September 4, 1906, August 22, 1907, and September 23, 1908. But these reports do throw additional light upon a few matters of significance for the history of American business since 1890.

Loans in the central-reserve cities—New York, Chicago, and St. Louis—exhibit the influence of business cycles in a more striking degree than do loans in country districts. Table 91 brings out this fact by means of relative figures. For example, the rural banks contracted their loans less than the city banks in 1893, expanded them less in 1894, and again contracted them less between

TABLE 91

RELATIVE FLUCTUATIONS IN THE LOANS OF NATIONAL BANKS IN NEW YORK, THE CENTRAL RESERVE CITIES, THE RESERVE CITIES, AND IN OTHER PLACES, ACCORDING TO THE FOURTH REPORT MADE TO THE COMPTROLLER OF THE CURRENCY IN THE YEARS 1890-1911

		Average actual amounts in 1890-99 = 100				
Average actual amounts in 1890-99		New York 365.6	Central reserve cities 490.8	Reserve cities 531.0	Country districts 1,050.2	All national banks 2,072.1
1890 Oct.	2	81	83	96	102	96
1891 Sept.	25	83	85	94	104	97
1892 Sept.	30	94	98	101	110	105
1893 Oct.	3	77	77	87	95	89
1894 Oct.	2	99	98	97	96	97
1895 Sept.	28	100	99	99	100	99
1896 Oct.	6	86	86	91	94	91
1897 Oct.	5	112	108	101	95	100
1898 Sept.	20	121	119	105	98	105
1899 Sept.	7	148	148	128	106	121
1900 Sept.	5	156	156	137	116	131
1901 Sept.	30	167	174	151	133	147
1902 Sept.	15	166	179	164	149	160
1903 Sept.	9	173	184	170	162	169
1904 Sept.	6	221	222	174	166	181
1905 Aug.	25	220	228	195	178	194
1906 Sept.	4	192	207	220	204	209
1907 Aug.	22	195	216	235	229	227
1908 Sept.	23	248	253	233	219	231
1909 Sept.	1	253	266	259	236	249
1910 Sept.	1	239	260	275	263	265
1911 Sept.	1	242	269	288	271	275
Averages						
1890-99		100	100	100	100	100
1900-09		199	209	194	179	190



1895 and 1896. The revival of the autumn of 1904 was far less pronounced in the country than in the large cities, and so also was the business reaction of 1910. Again, the country banks were slower than the city institutions in recovering from the effects of the panic of 1907.

The policy of investing a decreasing proportion of funds in commercial loans and discounts and an increasing proportion in stocks and bonds has been hardly less marked among the country than among the city banks. Table 92, which justifies this conclusion, also indicates that business depression accelerates and business prosperity retards this change in the case of banks in reserve cities and country districts. The same can hardly be said for the institutions in New York. And even outside of New York the rule was broken in 1898-1901, when the national banks joined in the movement towards company promotion on a grand scale.

TABLE 92

LOANS AND SECURITIES OF THE NATIONAL BANKS IN NEW YORK CITY, THE CENTRAL RESERVE CITIES, THE RESERVE CITIES, AND COUNTRY DISTRICTS AT THE DATE OF THE REPORT NEAREST OCTOBER 1, IN EACH YEAR, 1890-1911

Date	New York City				Central reserve cities			
	Loans and securities in millions of dollars	Loans Per cent	U. S. bonds Per cent	Other bonds and securities Per cent	Loans and securities in millions of dollars	Loans Per cent	U. S. bonds Per cent	Other bonds and securities Per cent
1890 Oct. 2	329	90.3	2.7	7.0	445	91.0	2.7	6.3
1891 Sept. 25	337	89.6	3.0	7.4	461	90.5	2.8	6.7
1892 Sept. 30	384	89.9	2.3	7.8	532	90.4	2.4	7.2
1893 Oct. 3	329	85.4	6.1	8.5	436	86.7	5.3	8.0
1894 Oct. 2	421	85.7	5.0	9.3	554	86.8	4.5	8.7
1895 Sept. 28	424	85.9	5.4	8.7	559	87.3	4.8	7.9
1896 Oct. 6	379	82.8	7.7	9.5	498	85.0	6.6	8.4
1897 Oct. 5	476	85.7	5.7	8.6	609	86.7	5.3	8.0
1898 Sept. 20	568	77.8	12.2	10.0	727	80.2	10.4	9.4
1899 Sept. 7	649	83.5	7.4	9.1	856	84.6	6.3	9.1
1900 Sept. 5	715	79.7	9.5	10.8	943	81.0	9.1	9.9
1901 Sept. 30	769	79.5	9.2	11.3	1,052	81.1	9.0	9.9
1902 Sept. 15	778	78.0	10.2	11.8	1,091	80.5	9.1	10.4
1903 Sept. 9	829	76.2	9.9	13.9	1,139	79.3	8.9	11.8
1904 Sept. 6	1,016	79.5	7.1	13.4	1,344	81.2	7.0	11.8
1905 Aug. 25	1,021	78.9	6.8	14.3	1,378	81.2	6.5	12.3
1906 Sept. 4	897	78.2	6.6	15.2	1,266	80.3	6.9	12.8
1907 Aug. 22	934	76.3	6.2	17.5	1,338	79.4	6.3	14.3
1908 Sept. 23	1,144	79.2	5.6	15.2	1,551	80.2	6.3	13.5
1909 Sept. 1	1,164	79.6	5.2	15.2	1,618	80.8	6.0	13.2
1910 Sept. 1	1,082	80.8	5.1	14.1	1,561	81.8	6.0	12.2
1911 Sept. 1	1,153	76.8	5.2	18.0	1,661	79.5	5.6	14.9
Averages								
1890-99	429.6	85.66	5.75	8.59	567.7	86.92	5.11	7.97
1900-09	926.7	78.51	7.63	13.86	1,272.0	80.50	7.51	11.99

TABLE 92—(Concluded)

LOANS AND SECURITIES OF THE NATIONAL BANKS IN NEW YORK CITY, THE CENTRAL RESERVE CITIES, THE RESERVE CITIES, AND COUNTRY DISTRICTS AT THE DATE OF THE REPORT NEAREST OCTOBER 1, IN EACH YEAR, 1890-1911

Date	Reserve cities				Country districts			
	Loans and securities in millions of dollars	Loans Per cent	U. S. bonds Per cent	Other bonds and securities Per cent	Loans and securities in millions of dollars	Loans Per cent	U. S. bonds Per cent	Other bonds and securities Per cent
1890 Oct. 2	556	91.4	4.8	3.8	1,286	83.4	11.4	5.2
1891 Sept. 25	549	90.9	5.1	4.0	1,310	83.1	11.4	5.5
1892 Sept. 30	599	89.8	5.2	5.0	1,392	82.7	11.1	6.2
1893 Oct. 3	536	86.6	8.4	5.0	1,258	79.7	13.5	6.8
1894 Oct. 2	593	86.5	7.3	6.2	1,293	78.3	13.3	8.4
1895 Sept. 28	610	86.4	7.7	5.9	1,338	78.1	13.3	8.6
1896 Oct. 6	576	84.2	9.4	6.4	1,288	76.5	15.0	8.5
1897 Oct. 5	631	85.3	8.4	6.3	1,312	76.3	14.6	9.1
1898 Sept. 20	682	82.1	10.0	7.9	1,377	74.8	15.5	9.7
1899 Sept. 7	828	81.9	8.9	9.2	1,500	74.3	14.7	11.0
1900 Sept. 5	905	80.1	9.8	10.1	1,647	74.1	14.8	11.1
1901 Sept. 30	1,020	78.8	9.7	11.5	1,882	74.1	13.8	12.1
1902 Sept. 15	1,095	79.4	9.5	11.1	2,091	74.9	12.7	12.4
1903 Sept. 9	1,163	77.7	10.8	11.5	2,286	74.4	13.6	12.0
1904 Sept. 6	1,194	77.3	11.0	11.7	2,378	73.3	14.0	12.7
1905 Aug. 25	1,324	78.2	9.8	12.0	2,566	73.0	13.5	13.5
1906 Sept. 4	1,486	78.5	10.4	11.1	2,909	73.8	13.8	12.4
1907 Aug. 22	1,590	78.4	10.2	11.4	3,225	74.4	13.3	12.3
1908 Sept. 23	1,607	76.9	10.8	12.3	3,214	71.6	14.4	14.0
1909 Sept. 1	1,764	78.1	10.1	11.8	3,437	72.0	13.6	14.4
1910 Sept. 1	1,829	79.8	9.9	10.3	3,725	74.1	12.8	13.1
1911 Sept. 1	1,945	78.6	9.7	11.7	3,893	73.0	12.6	14.4
Averages								
1890-99	616.0	86.51	7.52	5.97	1,335.4	78.72	13.38	7.90
1900-09	1,314.8	78.34	10.21	11.45	2,563.5	73.56	13.75	12.69

The differences between the fluctuations of deposits in rural and urban districts are similar to those between the fluctuations of loans in the same districts (see Table 93). But when the figures are averaged by decades, it appears that the net growth of deposits has been faster in the country, while that of loans has been faster in the cities. Coupled with the peculiarly rapid growth of the item "due to banks," in the accounts of institutions in reserve and central-reserve cities, these figures suggest the conclusion that in an increas-

TABLE 93

RELATIVE FLUCTUATIONS IN THE INDIVIDUAL DEPOSITS OF THE NATIONAL BANKS IN NEW YORK, THE CENTRAL RESERVE CITIES, THE RESERVE CITIES, AND IN OTHER PLACES, ACCORDING TO THE FOURTH REPORT MADE TO THE COMPTROLLER OF THE CURRENCY IN EACH YEAR, 1890-1911

		Average actual amounts in 1890-99 = 100				
Average actual amounts in 1890-99		New York 313.0	Central reserve cities 406.6	Reserve cities 443.0	Country districts 925.5	All national banks 1,775.4
1890 Oct.	2	81	82	88	91	88
1891 Sept.	25	88	88	87	92	90
1892 Sept.	30	88	92	97	104	100
1893 Oct.	3	80	81	80	83	82
1894 Oct.	2	109	106	97	94	98
1895 Sept.	28	96	95	96	96	96
1896 Oct.	6	88	87	91	91	90
1897 Oct.	5	109	107	107	102	104
1898 Sept.	20	118	117	117	112	114
1899 Sept.	7	144	145	141	133	138
1900 Sept.	5	135	136	145	142	141
1901 Sept.	30	181	179	161	162	166
1902 Sept.	15	193	192	170	181	181
1903 Sept.	9	144	153	169	193	178
1904 Sept.	6	186	190	182	203	195
1905 Aug.	25	210	212	199	224	215
1906 Sept.	4	211	213	223	254	237
1907 Aug.	22	170	182	229	277	243
1908 Sept.	23	238	237	241	272	256
1909 Sept.	1	249	256	275	298	282
1910 Sept.	1	223	236	280	318	290
1911 Sept.	1	245	257	299	337	309
Averages						
1890-99		100	100	100	100	100
1900-09		192	195	199	221	209

ing degree the great central money markets are supplied with funds drawn from the country districts. The national banks in agricultural sections seem unable to find enough local borrowers to use the funds which local depositors provide—a situation for which the clause prohibiting national banks from lending upon real estate security is doubtless responsible in part.<sup>11</sup> They therefore find it advantageous to send sums far in excess of what is needed for operations in exchange, plus what can be counted as part of their lawful reserves, to banks in the great business centers. The latter have long encouraged this practice by paying interest, generally at the rate of 2 per cent, on country-bank balances. In recent years out-of-town institutions have often realized a substantially higher return by lending money in the cities on their own account. Hence it happens that the items due to country banks from other banks increased 209 per cent between the autumns of 1890 and 1910, while their loans increased only 157 per cent. And doubtless this moderate increase of loans would be reduced still further if we could exclude the investments in the commercial paper of city firms, which country banks have come to buy in large amounts through brokers.<sup>12</sup>

Despite the infrequency of the statements, the next table indicates that the ratio of loans to deposits behaves in much the same fashion in the country as in the cities—that is, the ratio rises before and during crises, falls during depressions, and recovers again in prosperity, if not early in the course of business revival. The chief differences among the fluctuations shown by the three groups of banks are that the movement in country districts lags somewhat behind that in the cities, and that the decline in the level of fluctuations has been greater among the country than among the reserve-city banks, and greater among the latter than among the banks of the central-reserve cities.

This second difference is accounted for, not only by the above-mentioned difficulties met by country banks in finding satisfactory local borrowers, but also by the unequal decline in the ratio of capital to total liabilities. It has already been pointed out that in proportion as a bank depends less on its stockholders and more on its depositors for funds, the ratio of its loans to deposits must decline. Now Table 95 shows that the drop in the proportion of the capital, surplus, and undivided profits to total liabilities has been most rapid among the country banks. Then in order come the banks of reserve cities, central-reserve cities and New York. The table also shows that the stability of the ratio from 1890-96 and from 1900-10 has been less remarkable among the several groups of banks taken singly than it was found to be among the national banks taken as a whole.

<sup>11</sup> Compare O. M. W. Sprague, *Banking Reform in the United States* (Cambridge, 1911), chapter ii. See also what is said in section i of the present chapter about the loans of out-of-town banks in New York.

<sup>12</sup> Perhaps the desire of country banks to maintain their relatively high rates of interest upon local loans is a more potent factor than the unwillingness of their customers to borrow.

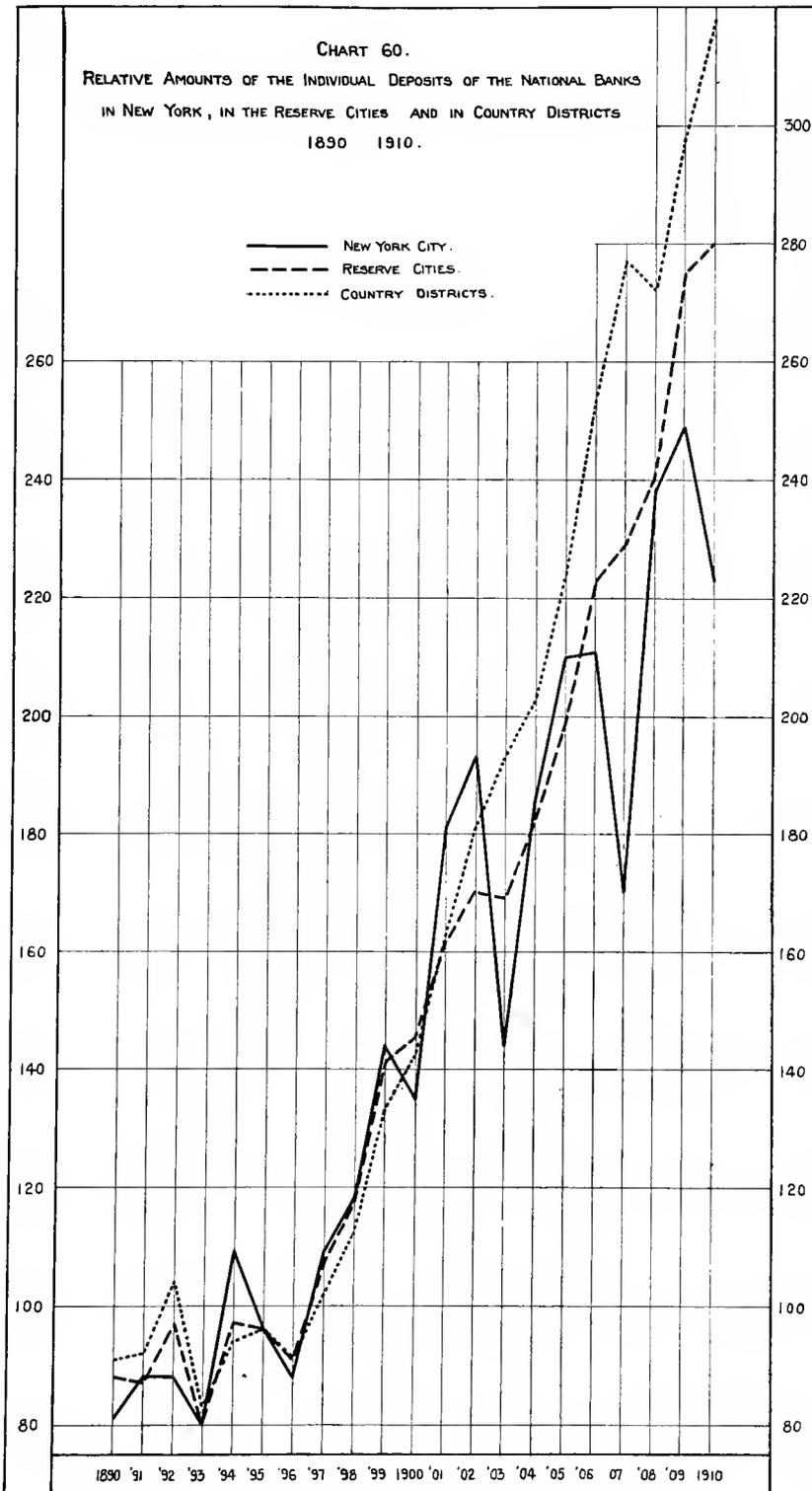


TABLE 94

RATIO TO THE NET DEPOSITS OF THE LOANS AND OF THE LOANS PLUS SECURITIES HELD BY THE NATIONAL BANKS OF NEW YORK CITY, THE CENTRAL RESERVE CITIES, THE RESERVE CITIES AND THE COUNTRY DISTRICTS, AT THE DATE OF THE REPORT NEAREST OCTOBER 1, IN EACH YEAR, 1890-1911

Date	New York City Ratio to deposits of		Central reserve cities Ratio to deposits of		Reserve cities Ratio to deposits of		Country districts Ratio to deposits of	
	Loans Per cent	Loans and securities Per cent	Loans Per cent	Loans and securities Per cent	Loans Per cent	Loans and securities Per cent	Loans Per cent	Loans and securities Per cent
1890 Oct. 2	91.1	100.9	93.5	102.8	131.9	144.4	154.2	184.8
1891 Sept. 25	93.2	104.0	94.6	104.5	130.3	143.3	154.9	186.4
1892 Sept. 30	89.1	99.2	92.0	101.7	122.8	136.8	146.4	177.1
1893 Oct. 3	91.8	107.5	92.4	106.6	139.8	161.4	156.8	196.9
1894 Oct. 2	74.1	86.5	78.5	90.4	119.0	137.6	146.7	186.3
1895 Sept. 28	82.9	96.6	86.8	99.5	122.0	141.2	140.8	180.3
1896 Oct. 6	84.9	102.4	88.9	104.6	123.7	146.9	139.3	182.2
1897 Oct. 5	81.1	94.6	82.5	95.2	114.0	133.7	134.4	176.1
1898 Sept. 20	79.9	102.7	81.4	101.5	106.5	129.6	126.1	168.6
1899 Sept. 7	79.9	95.7	81.7	96.6	100.6	122.8	118.1	159.1
1900 Sept. 5	77.8	97.6	79.8	98.5	100.4	125.3	119.5	161.2
1901 Sept. 30	79.4	99.9	81.8	100.9	99.5	126.2	115.8	156.3
1902 Sept. 15	85.5	109.6	88.6	110.1	101.9	128.2	114.3	152.6
1903 Sept. 9	85.5	112.2	88.6	111.8	104.9	134.9	114.6	153.9
1904 Sept. 6	78.5	98.7	81.7	100.6	100.8	130.4	113.6	154.9
1905 Aug. 25	81.2	102.9	83.6	102.9	99.2	126.9	109.8	150.4
1906 Sept. 4	85.7	109.5	87.3	108.7	101.8	129.7	110.4	149.6
1907 Aug. 22	87.4	114.5	88.8	111.9	102.4	130.6	110.0	147.8
1908 Sept. 23	76.6	96.8	79.3	98.9	97.4	126.7	109.0	152.2
1909 Sept. 1	79.2	99.6	80.9	100.2	95.7	122.6	105.6	146.7
1910 Sept. 1	82.3	101.9	84.7	103.5	101.0	126.6	108.1	145.8
1911 Sept. 1	77.4	100.8	80.8	101.6	97.3	123.9	105.5	144.6
Averages								
1890-99	84.80	99.01	87.23	100.34	121.06	139.77	141.77	179.78
1900-09	81.68	104.13	84.04	104.45	100.40	128.15	112.26	152.56

NOTE.—Net deposits = individual deposits plus dividends unpaid and sums due to banks, minus sums due from banks, exchanges for the clearing house, cash items, and bills of other banks. Loans = loans and discounts plus overdrafts. Securities = all U. S. bonds held, plus premiums, "other bonds to secure U. S. deposits," and "bonds, securities, etc."

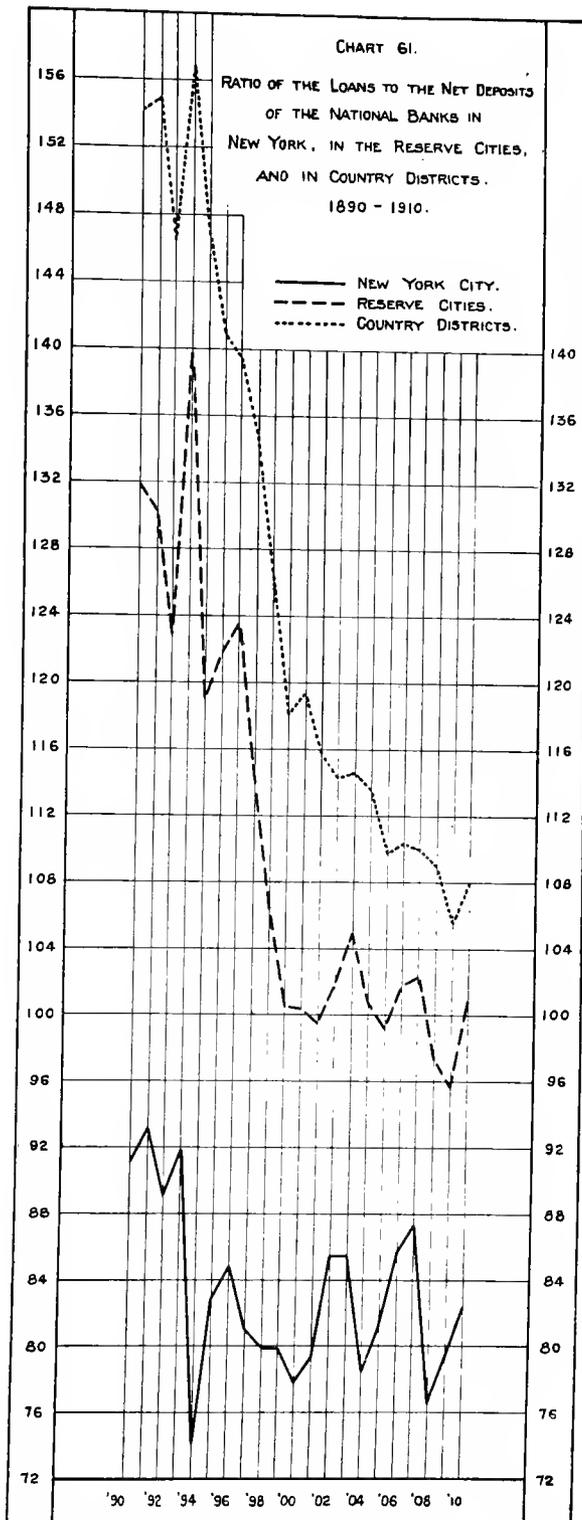


TABLE 95

RATIO OF CAPITAL LIABILITIES TO TOTAL LIABILITIES OF THE NATIONAL BANKS IN NEW YORK, THE CENTRAL RESERVE CITIES, OTHER RESERVE CITIES, AND IN COUNTRY TOWNS, ACCORDING TO THE REPORTS MADE NEAREST THE 1ST OF OCTOBER IN EACH YEAR, 1890-1911

Date	New York City Per cent	Central reserve cities Per cent	Reserve cities Per cent	Country towns Per cent	All national banks Per cent
1890 Oct. 2	18.9	19.5	29.3	36.0	30.6
1891 Sept. 25	19.0	20.1	30.4	36.9	31.4
1892 Sept. 30	17.8	19.1	27.6	34.8	29.3
1893 Oct. 3	20.6	22.0	31.3	38.8	33.1
1894 Oct. 2	15.8	17.2	27.1	36.0	28.9
1895 Sept. 28	17.5	18.7	27.7	34.7	29.0
1896 Oct. 6	19.0	20.5	28.6	35.4	30.2
1897 Oct. 5	14.9	15.5	24.3	32.8	26.1
1898 Sept. 20	13.0	13.8	22.8	30.7	24.0
1899 Sept. 7	11.4	12.1	18.3	27.2	20.6
1900 Sept. 5	12.8	13.0	18.1	26.1	20.2
1901 Sept. 30	12.6	12.6	17.3	24.4	19.1
1902 Sept. 15	14.8	14.7	17.8	23.9	19.6
1903 Sept. 9	17.8	17.4	19.2	23.6	20.8
1904 Sept. 6	14.5	14.6	17.7	23.5	19.4
1905 Aug. 25	14.7	14.4	17.4	22.8	19.0
1906 Sept. 4	16.1	15.4	17.1	21.6	18.8
1907 Aug. 22	18.7	17.5	17.7	21.3	19.4
1908 Sept. 23	14.2	14.2	17.0	22.3	18.7
1909 Sept. 1	14.8	14.4	16.1	21.7	18.2
1910 Sept. 1	17.2	16.6	17.3	21.4	19.1
1911 Sept. 1	16.3	15.7	16.7	21.1	18.6
Averages					
1890-99	16.79	17.85	26.74	34.33	28.32
1900-09	15.10	14.82	17.54	23.12	19.32

The next two tables deal with cash reserves, one giving relative fluctuations in the amounts of cash held, the other giving percentages of cash to net deposits. Despite the fact that deposits have increased faster, reserves have increased less fast in the country than in the cities. Hence the second table shows that the decline in the percentage of reserves, which all the groups have permitted to occur, has been least marked in New York, and most marked in the small towns, while the reserve cities rank between these two extremes. So decided is this decline that no group of banks has a reserve ratio in any years since 1900 equal to its average ratio in 1890-99. Years of prosperity show the heaviest declines, while years of depression show moderate upward reactions. These divergencies from the average trend of the fluctuations are less wide among the country than among the city banks.

Finally, it is interesting to note that the growth of the banking business as conducted under federal charters has been fairly uniform in city and country. Perhaps the best gauge of this growth is the increase in the aggregate resources of the national banks. From 1890 until 1901 the country banks lost ground relatively to the banks of New York, Chicago, and St. Louis, while those of the reserve cities a little more than held their own. But since that time the rate of expansion has been faster in the country districts than in the central-reserve cities, while the reserve-city banks have scored another slight gain. In 1910, however, the country banks had not wholly made up for their earlier loss in relative importance, New York stood almost exactly in the same position as in 1890, while the other central-reserve cities, and the reserve cities had

TABLE 96

RELATIVE FLUCTUATIONS IN THE CASH RESERVES OF NATIONAL BANKS IN NEW YORK, THE CENTRAL RESERVE CITIES, THE RESERVE CITIES, AND IN OTHER PLACES, ACCORDING TO THE FOURTH REPORT MADE TO THE COMPTROLLER OF THE CURRENCY IN EACH YEAR, 1890-1911

Average actual amounts in 1890-99 = 100						
Average actual amounts in 1890-99	New York City	Central reserve cities	Reserve cities	Country towns	All national banks	
	126.2	166.5	86.2	109.7	362.4	
1890 Oct. 2	73	74	79	84	78	
1891 Sept. 25	68	74	89	89	82	
1892 Sept. 30	82	84	95	97	91	
1893 Oct. 3	86	92	89	108	96	
1894 Oct. 2	136	127	97	98	111	
1895 Sept. 28	99	96	90	94	94	
1896 Oct. 6	86	85	96	109	95	
1897 Oct. 5	109	110	110	102	108	
1898 Sept. 20	121	121	121	107	116	
1899 Sept. 7	141	138	132	113	129	
1900 Sept. 5	170	165	144	112	144	
1901 Sept. 30	171	170	147	119	149	
1902 Sept. 15	146	149	145	124	140	
1903 Sept. 9	161	161	158	139	153	
1904 Sept. 6	228	218	172	139	183	
1905 Aug. 25	200	204	187	151	184	
1906 Sept. 4	158	169	194	163	173	
1907 Aug. 22	174	187	222	183	194	
1908 Sept. 23	267	260	255	199	240	
1909 Sept. 1	239	246	262	202	236	
1910 Sept. 1	231	240	258	211	236	
1911 Sept. 1	240	254	277	216	248	
Averages						
1890-99	100	100	100	100	100	
1900-09	191	193	189	153	180	

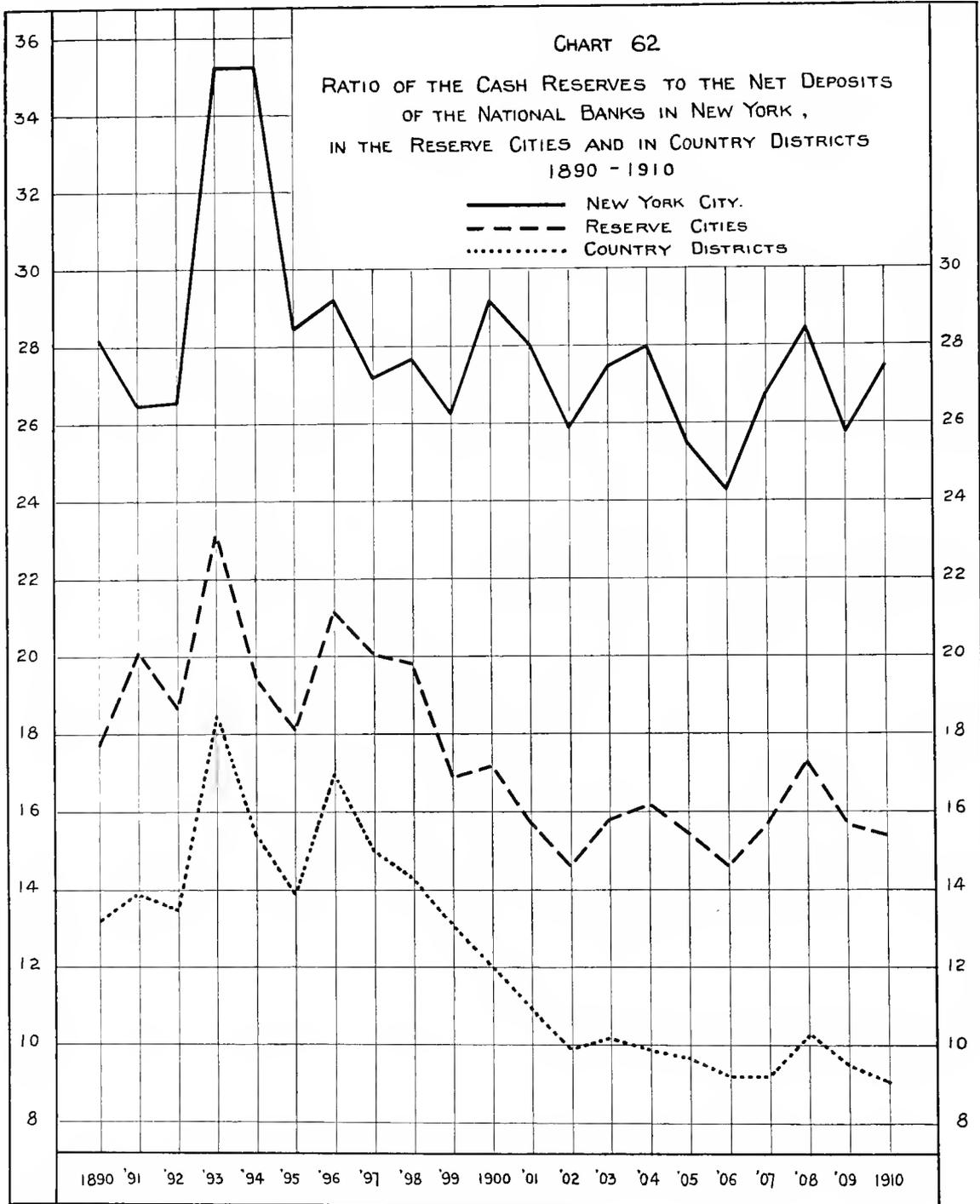


TABLE 97

RATIO OF THE CASH RESERVES TO THE NET DEPOSITS HELD BY THE NATIONAL BANKS IN NEW YORK, THE CENTRAL RESERVE CITIES, THE RESERVE CITIES, AND IN COUNTRY DISTRICTS AT THE DATE OF THE FOURTH REPORT TO THE COMPTROLLER OF THE CURRENCY IN THE YEARS 1890-1911

Date	New York City Per cent	New York, Chicago, and St. Louis Per cent	Reserve cities Per cent	Country districts Per cent	All national banks Per cent
1890 Oct. 2	28.2	28.4	17.7	13.2	18.7
1891 Sept. 25	26.5	27.9	20.1	13.9	19.5
1892 Sept. 30	26.6	26.8	18.7	13.5	18.8
1893 Oct. 3	35.3	37.4	23.2	18.5	25.1
1894 Oct. 2	35.3	34.6	19.5	15.4	23.3
1895 Sept. 28	28.5	28.5	18.1	13.9	19.7
1896 Oct. 6	29.2	29.6	21.2	17.0	21.9
1897 Oct. 5	27.2	28.6	20.1	15.0	21.0
1898 Sept. 20	27.7	28.1	19.8	14.3	20.5
1899 Sept. 7	26.3	25.8	16.9	13.1	18.7
1900 Sept. 5	29.2	28.6	17.2	12.0	19.3
1901 Sept. 30	28.1	27.1	15.7	10.9	17.7
1902 Sept. 15	25.9	25.0	14.6	9.9	15.8
1903 Sept. 9	27.5	26.3	15.8	10.2	16.5
1904 Sept. 6	28.0	27.2	16.2	9.9	17.5
1905 Aug. 25	25.5	25.4	15.4	9.7	16.3
1906 Sept. 4	24.3	24.2	14.6	9.2	14.8
1907 Aug. 22	26.8	26.1	15.7	9.2	15.3
1908 Sept. 23	28.5	27.6	17.3	10.3	17.6
1909 Sept. 1	25.8	25.3	15.7	9.5	15.9
1910 Sept. 1	27.5	26.5	15.4	9.1	15.5
1911 Sept. 1	26.6	25.9	15.2	8.8	15.2
Averages					
1890-99	29.08	29.57	19.53	14.78	20.72
1900-09	26.96	26.28	15.82	10.08	16.67

NOTE.—Net deposits = individual deposits plus dividends unpaid and sums due to banks, minus sums due from banks, exchanges for the clearing house, cash items, and bills of other banks.

absorbed what the small towns had lost. On the average the country banks, though vastly greater in number, have but about half of the total resources, the New York banks about one-sixth, and the other reserve-city banks, including Chicago and St. Louis, a little more than one-third.

The conclusion which stands out most clearly from the tables of this section as a whole is that the development of banking has been strikingly similar in the cities and in the country. Differences are numerous, but they are differences of degree, and mostly of small degree. Moreover, most of these differences appear in the shifting of the level of fluctuations from one decade to the next rather than in sudden changes from year to year under the influence of business

TABLE 98

RELATIVE GROWTH OF THE NATIONAL BANKS IN NEW YORK CITY, THE CENTRAL RESERVE CITIES, THE RESERVE CITIES, AND COUNTRY DISTRICTS, AS MEASURED BY THEIR RESPECTIVE SHARES IN THE AGGREGATE RESOURCES OF ALL NATIONAL BANKS, ACCORDING TO THE REPORTS MADE NEAREST THE 1ST OF OCTOBER IN EACH YEAR, 1890-1911

Date	Aggregate resources of all national banks in millions of dollars	Proportions of the aggregate resources held by the national banks in				
		New York City Per cent	Chicago and St. Louis Per cent	Reserve cities Per cent	Country districts Per cent	All national banks Per cent
1890 Oct. 2	3,141	17.0	5.6	25.0	52.4	100.0
1891 Sept. 25	3,213	17.4	6.0	24.4	52.2	100.0
1892 Sept. 30	3,510	17.2	6.3	24.6	51.9	100.0
1893 Oct. 3	3,110	17.5	5.8	24.8	51.9	100.0
1894 Oct. 2	3,474	19.9	6.2	24.9	49.0	100.0
1895 Sept. 28	3,424	18.5	5.9	25.0	50.6	100.0
1896 Oct. 6	3,264	17.7	5.7	25.3	51.3	100.0
1897 Oct. 5	3,705	19.8	6.3	25.9	48.0	100.0
1898 Sept. 20	4,004	21.1	6.6	25.5	46.8	100.0
1899 Sept. 7	4,650	21.2	7.2	26.7	44.9	100.0
1900 Sept. 5	5,048	21.1	7.4	27.1	44.4	100.0
1901 Sept. 30	5,695	21.5	7.7	26.7	44.1	100.0
1902 Sept. 15	6,114	21.2	7.6	26.3	44.9	100.0
1903 Sept. 9	6,310	19.1	7.5	26.6	46.8	100.0
1904 Sept. 6	6,975	21.9	7.4	26.1	44.6	100.0
1905 Aug. 25	7,472	20.8	7.4	26.6	45.2	100.0
1906 Sept. 4	8,016	18.4	7.1	27.3	47.2	100.0
1907 Aug. 22	8,390	16.3	7.0	27.4	49.3	100.0
1908 Sept. 23	9,327	19.7	7.0	27.0	46.3	100.0
1909 Sept. 1	9,574	18.7	7.3	27.7	46.3	100.0
1910 Sept. 1	9,826	16.9	7.3	27.7	48.1	100.0
1911 Sept. 1	10,379	17.0	7.4	27.8	47.8	100.0
Averages						
1890-99	3,549.5	18.73	6.16	25.21	49.90	100.0
1900-09	7,262.1	19.87	7.34	26.88	45.91	100.0

cycles. Such is the case, for example, with the dissimilar rates at which loans and deposits have grown in city and in country, and also with the more rapid decline in the country districts of the ratio of loans to individual deposits, of capital liabilities to total liabilities, and of reserves to net deposits. The remaining differences which bear directly upon the subject of business cycles may be summed up in a sentence: the changes experienced or initiated by banks are less prompt and less considerable in the country than in the urban centers.

## IV. THE JOINT-STOCK BANKS OF ENGLAND AND WALES

The reports of the great deposit banks of France and Germany have not been compiled in such form for the whole period since 1890 as to be available for analysis here. But the *Economist's* half-yearly summaries for the joint-stock banks of England and Wales make possible a brief comparison between the effect of business cycles upon American and upon foreign banks.

The most striking difference between the preceding tables for the national banks and the following tables for the English banks is the relative stability of conditions shown by the latter. Not only is the expansion of business from one decade to the next smaller in England, but so also are the changes from year to year caused by prosperity, crisis, and depression. Indeed, the fluctuations of the leading items during successive phases of the business cycles since 1890 are often confined to slight differences in the rate of growth.

Whereas the national banks contracted their loans during the crises of 1890, 1893, 1903-04, and 1907, the English joint-stock banks were able to expand their loans slightly during the crises of 1890, 1900, and 1907. In periods of depression the changes in English loans have been slight; but steady growth has marked the periods of prosperity.

The fluctuations in the amount of investments in consols, bonds, stocks, etc., consist of a moderate expansion from year to year, interrupted by a slight contraction in periods of tension—1893, 1900, 1904, and 1907-08. The ratio of these securities to commercial loans also pursues an even course, exhibiting a slight decline toward the climax of prosperity, and a compensating increase after the crisis. The general level of these fluctuations declined a trifle between the first and the second decade in England, whereas it rose decidedly in America. By the close of the period the national banks still held fewer securities in proportion to their loans than the English banks had held for twenty years.

Deposits rise a trifle during crises in England and change little during depression, whereas they fall sharply during crises in America and rise again during depressions. During prosperity they increase, of course, in both countries. This increase in England seems to precede the increase in loans.

The ratio of loans to deposits has gradually declined in England from 74 per cent in 1890 to 64 per cent in 1910, and in America from about 130 per cent in the first to about 100 per cent in the last year. Interruptions of this decline occur in England as in America at the climax of prosperity or during the crisis; but the ratio does not have the same value as a barometer of business in London that it has in New York.

The "reserves" credited to the national banks in the preceding tables consist wholly of lawful money actually in the vaults; in England the reserves consist of "cash in hand, and money at call, and short notice." What proportion is cash, what deposits in the Bank of England, and what loans on call or short

TABLE 99

SUMMARY OF THE STATEMENTS OF THE JOINT-STOCK BANKS OF ENGLAND AND WALES, AS COMPILED SEMI-ANNUALLY  
BY THE *London Economist*, 1890-1911

		Actual amounts in millions of dollars							
Date	Capital paid up, reserve funds, and undivided profits	Acceptance liabilities where stated	Deposit and current accounts	Miscellaneous liabilities	Discounts, advances, loans, bills, etc.	Investments in consols, bonds, stocks, etc.	Buildings and sundries	Cash in hand and money at call and short notice	Total assets and liabilities
1890 May	311	93	1,716	13	1,272	366	113	387	4,275
Nov.	312	93	1,735	12	1,289	368	117	383	4,315
1891 May	330	111	1,794	17	1,312	400	137	409	4,515
Nov.	339	77	1,853	21	1,349	422	105	420	4,592
1892 May	345	76	1,907	30	1,370	439	111	443	4,727
Nov.	345	68	1,927	20	1,357	457	102	450	4,731
1893 May	350	99	1,930	26	1,375	466	121	455	4,823
Nov.	349	87	1,913	19	1,361	464	113	435	4,746
1894 May	352	93	1,916	21	1,380	460	119	428	4,773
Nov.	348	74	1,956	16	1,376	467	99	456	4,797
1895 May	350	98	2,039	23	1,397	477	123	518	5,031
Nov.	348	89	2,136	18	1,470	499	110	517	5,193
1896 May	352	115	2,217	30	1,517	523	138	541	5,438
Nov.	362	106	2,429	22	1,617	574	126	607	5,848
1897 May	366	106	2,410	31	1,645	572	137	564	5,835
Nov.	361	78	2,474	27	1,659	576	105	603	5,888
1898 May	373	107	2,566	24	1,719	604	139	613	6,149
Nov.	374	88	2,634	18	1,750	603	125	640	6,235
1899 May	385	102	2,670	23	1,769	607	144	665	6,369
Nov.	384	98	2,779	14	1,847	616	135	682	6,559
1900 May	391	107	2,754	24	1,857	619	146	659	6,561
Nov.	392	91	2,782	17	1,882	612	128	662	6,569
1901 May	403	105	2,855	34	1,924	622	152	703	6,801
Nov.	403	93	2,830	17	1,868	623	134	723	6,695
1902 May	408	116	2,846	23	1,857	633	159	749	6,795
Nov.	404	78	2,842	20	1,863	624	123	738	6,696
1903 May	418	122	2,921	29	1,885	637	170	801	6,986
Nov.	417	101	2,887	23	1,910	636	142	743	6,862
1904 May	417	133	2,864	29	1,929	612	179	726	6,891
Nov.	411	99	2,837	17	1,892	611	143	720	6,732
1905 May	415	142	2,932	27	1,906	625	180	807	7,036
Nov.	413	129	2,984	16	1,915	640	162	828	7,087
1906 May	418	191	3,054	28	1,954	641	223	874	7,384
Nov.	415	152	3,055	14	2,004	641	179	816	7,277
1907 May	420	203	3,153	29	2,071	637	229	870	7,615
Nov.	416	141	3,190	21	2,140	629	171	828	7,537
1908 May	417	216	3,156	19	2,098	612	251	849	7,619
Nov.	415	157	3,192	17	2,077	628	183	895	7,567
1909 May	420	205	3,283	16	2,081	666	230	948	7,852
Nov.	413	180	3,303	18	2,069	682	197	970	7,836
1910 May	415	201	3,334	20	2,110	668	220	972	7,940
Nov.	411	185	3,440	17	2,206	675	197	976	8,107
1911 May	413	254	3,507	20	2,277	670	276	972	8,389
Nov.	405	191	3,571	26	2,318	663	207	1,005	8,386
Averages									
1890-99	351.7	92.9	2,150.0	21.3	1,491.5	498.0	121.0	510.7	5,241.9
1900-09	411.2	138.0	2,986.1	21.8	1,959.1	631.5	174.0	795.4	7,119.8

Compiled from the "Banking Supplements" of the *Economist*. The data do not include the Bank of England.

TABLE 99—(Concluded)

SUMMARY OF THE STATEMENTS OF THE JOINT-STOCK BANKS OF ENGLAND AND WALES, AS COMPILED SEMI-ANNUALLY  
BY THE *London Economist*, 1890-1911

Date	Relative amounts. Average actual amounts in 1890-99 = 100								
	Capital paid up, reserve funds, and undivided profits	Acceptance liabilities where stated	Deposit and current accounts	Miscellaneous liabilities	Discounts, advances, loans, bills, etc.	Investments in consols, bonds, stocks, etc.	Buildings and sundries	Cash in hand and money at call and short notice	Total assets and liabilities
1890 May	88	100	80	60	85	73	93	76	82
Nov.	89	101	81	57	86	74	97	75	82
1891 May	94	119	83	80	88	80	113	80	86
Nov.	96	83	86	98	90	85	87	82	88
1892 May	98	82	89	142	92	88	92	87	90
Nov.	98	73	90	96	91	92	84	88	90
1893 May	100	107	90	121	92	94	100	89	92
Nov.	99	93	89	89	91	93	93	85	91
1894 May	100	100	89	100	93	92	98	84	91
Nov.	99	80	91	76	92	94	82	89	92
1895 May	99	105	95	110	94	96	102	101	96
Nov.	99	96	99	82	99	100	91	101	99
1896 May	100	124	103	142	102	105	114	106	104
Nov.	103	114	113	103	108	115	104	119	112
1897 May	104	114	112	146	110	115	113	110	111
Nov.	103	84	115	126	111	116	87	118	112
1898 May	106	115	119	114	115	121	115	120	117
Nov.	106	94	123	82	117	121	103	125	119
1899 May	109	110	124	110	119	122	119	130	122
Nov.	109	106	129	66	124	124	111	133	125
1900 May	111	115	128	112	124	124	121	129	125
Nov.	111	97	129	77	126	123	105	130	125
1901 May	114	113	133	160	129	125	126	138	130
Nov.	115	100	132	77	125	125	111	142	128
1902 May	116	125	132	110	124	127	131	147	130
Nov.	115	84	132	96	125	125	102	144	128
1903 May	119	131	136	137	126	128	141	157	133
Nov.	118	109	134	108	128	128	117	145	131
1904 May	119	143	133	135	129	123	148	142	132
Nov.	117	107	132	77	127	123	118	141	128
1905 May	118	153	136	126	128	126	148	158	134
Nov.	117	138	139	76	128	128	134	162	135
1906 May	119	205	142	130	131	129	185	171	141
Nov.	118	164	142	66	134	129	148	160	139
1907 May	119	218	147	137	139	128	189	170	145
Nov.	118	151	148	100	144	126	142	162	144
1908 May	118	233	147	89	141	123	207	166	145
Nov.	118	169	148	80	139	126	151	175	144
1909 May	119	221	153	76	140	134	190	186	150
Nov.	117	193	154	82	139	137	163	190	149
1910 May	118	216	155	94	141	134	182	190	151
Nov.	117	199	160	80	148	136	163	191	155
1911 May	117	273	163	94	153	135	228	190	160
Nov.	115	206	166	122	155	133	171	197	160
Averages									
1890-99	100	100	100	100	100	100	100	100	100
1900-09	117	149	139	102	131	127	144	156	136

Compiled from the "Banking Supplements" of the *Economist*. The data do not include the Bank of England.

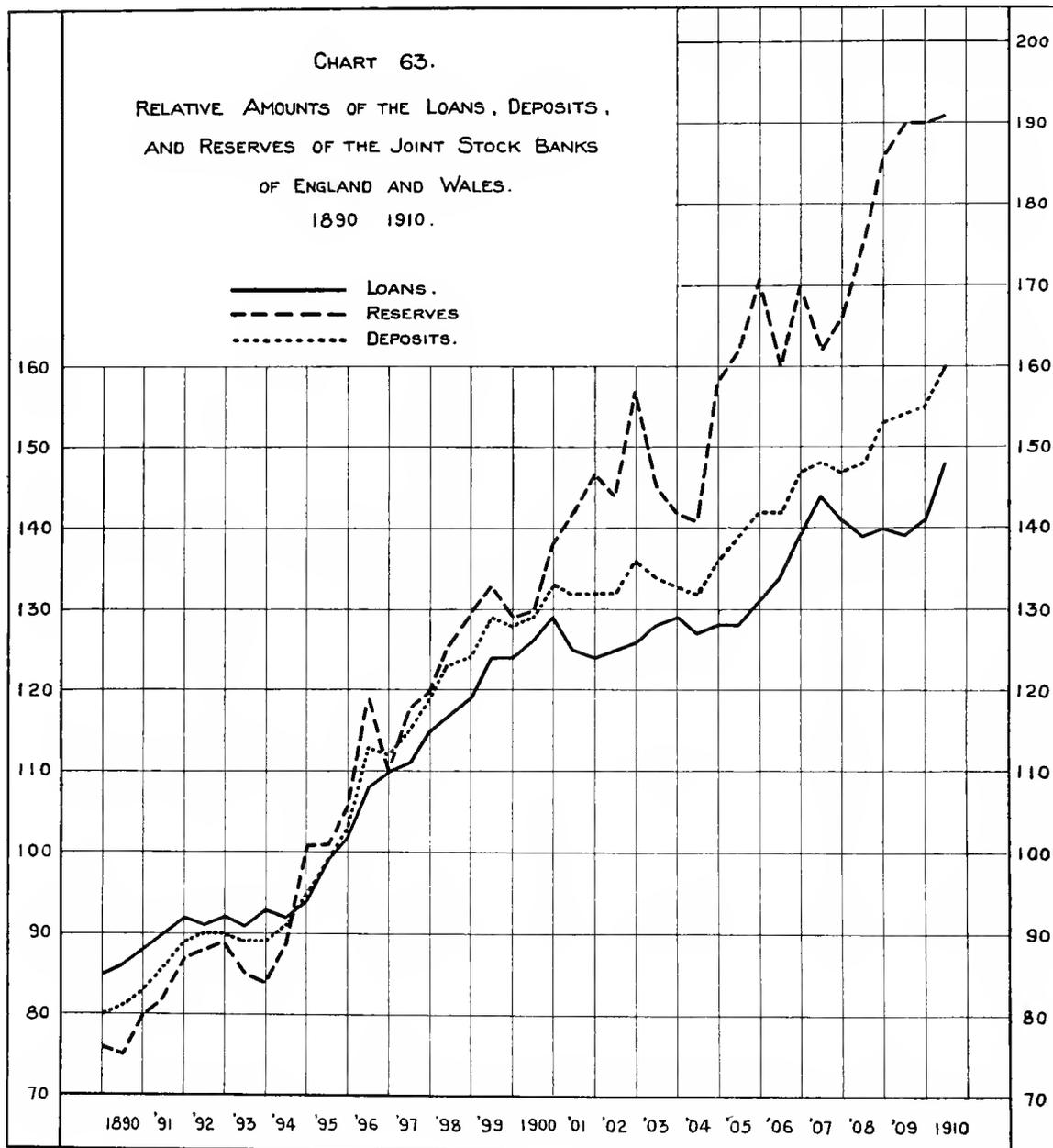


TABLE 100

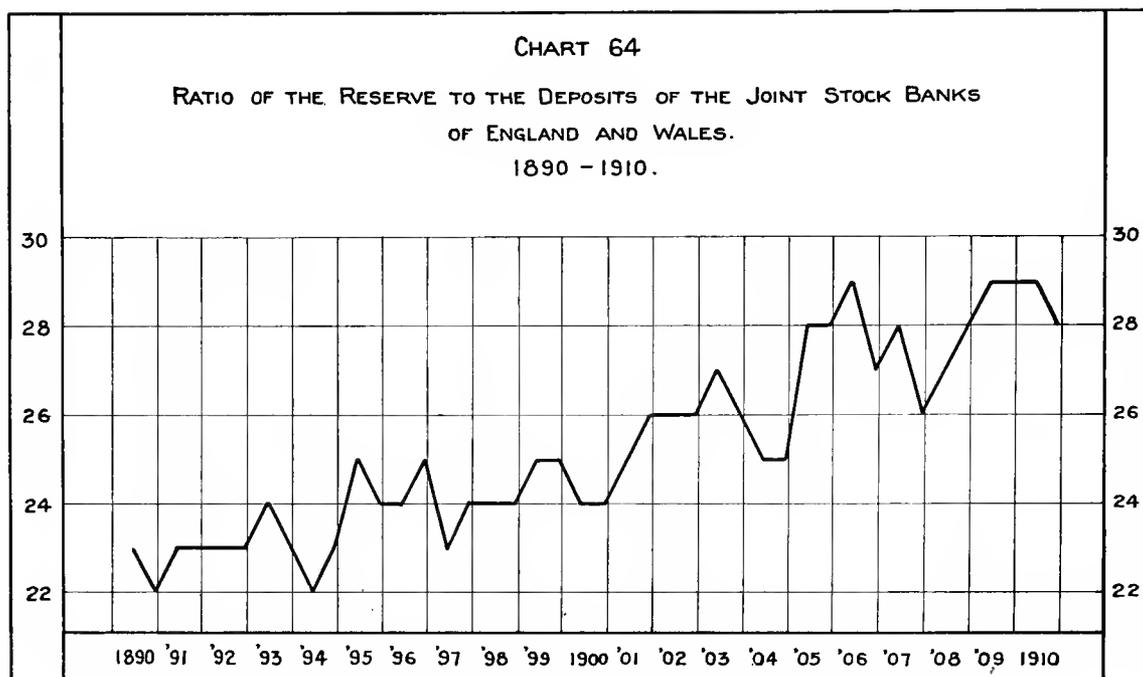
VARIOUS RATIOS BETWEEN ITEMS IN THE STATEMENTS OF THE JOINT-STOCK BANKS OF ENGLAND AND WALES,  
OTHER THAN THE BANK OF ENGLAND

Date	Loans to deposits Per cent	Reserves to deposits Per cent	Securities to loans Per cent	Capital to total liabilities Per cent	Date	Loans to deposits Per cent	Reserves to deposits Per cent	Securities to loans Per cent	Capital to total liabilities Per cent
1890 May	74%	23%	29%	15%	1902 May	65%	26%	34%	12%
Nov.	74	22	29	14	Nov.	66	26	33	12
1891 May	73	23	30	15	1903 May	65	27	34	12
Nov.	73	23	31	15	Nov.	66	26	33	12
1892 May	72	23	32	15	1904 May	67	25	32	12
Nov.	70	23	34	15	Nov.	67	25	32	12
1893 May	71	24	34	15	1905 May	65	28	33	12
Nov.	71	23	34	15	Nov.	64	28	33	12
1894 May	72	22	33	15	1906 May	64	29	33	11
Nov.	70	23	34	15	Nov.	66	27	32	11
1895 May	69	25	34	14	1907 May	66	28	31	11
Nov.	69	24	34	13	Nov.	67	26	29	11
1896 May	68	24	34	13	1908 May	66	27	29	11
Nov.	67	25	35	12	Nov.	65	28	30	11
1897 May	68	23	35	13	1909 May	63	29	32	11
Nov.	67	24	35	12	Nov.	63	29	33	11
1898 May	67	24	35	12	1910 May	63	29	32	10
Nov.	66	24	34	12	Nov.	64	28	31	10
1899 May	66	25	34	12	1911 May	65	28	29	10
Nov.	66	25	33	12	Nov.	65	28	29	10
1900 May	67	24	33	12					
Nov.	68	24	33	12					
1901 May	67	25	32	12	Averages				
Nov.	66	26	33	12	1890-99	69.7	23.6	33.2	13.7
					1900-09	65.7	26.7	32.2	11.6

Computed from the data in Table 99. Loans include "Discounts, advances, loans, bills, etc." Deposits include "Deposit and current accounts." Securities include "Investments in consols, bonds, stocks, etc." Capital includes "Capital paid up, reserve funds, and undivided profits." Reserve includes "Cash on hand, and money at call and short notice."

notice, is not definitely known, but British bankers admit that they carry relatively small sums of "till money." On the other hand, it must be remembered that, during the period under review, the English banks have never been driven to limit their payments of cash, while American banks have resorted to that expedient twice.

In actual amount the English reserves have risen year by year with few checks. A slight falling off occurred in the crises of 1890, 1900, and 1907. The remaining cases of decline are distributed among periods of depression (1893-



94 and 1903-04), periods of revival (1896-97), and periods of high prosperity (1906). More significant is the ratio of reserve to deposits. The crises have brought a slight decline; depression and revival a somewhat greater gain; the climaxes of prosperity stability or a trifling loss. All these changes are moderate in degree compared with the corresponding American movements. But the most noteworthy contrast between English and American developments is that the national banks have allowed their average reserves to decline from about 20 per cent in the early nineties to about 15 per cent in 1910, while the English banks have increased their ratios from about 23 to about 28 per cent. However, the difference in the character of the funds held as reserves must be remembered.

Finally, the decline in the ratio of capital liabilities to total liabilities appears in England as well as in America. During the revival of business activity in the later nineties, this ratio sank from a level of 15 to one of 12 per cent. Again in the revival of 1905-06 it sank from the 12 per cent level to that of 11 per cent; and when business revived from the depression of 1908 it sank once more to a level of 10 per cent.

## V. THE CENTRAL BANKS OF ENGLAND, FRANCE, AND GERMANY

The data presented in the following tables concerning the central banks of England, France, and Germany consist of annual averages of weekly statements. They are limited to a few of the most important items in the accounts of the banks.

In none of these institutions do the fluctuations of circulation betray a close connection with the course of business cycles. As pointed out in the chapter on the currency, the elasticity of the foreign systems of note issue is confined to providing for the changing requirements of business at different seasons of a given year.<sup>13</sup>

Loans contract in times of depression and expand in times of prosperity. Their behavior during crises is veiled in these tables by the use of annual averages. But in sharp contrast to the American banks, it is known from other sources that all three of the central banks under discussion have proved their ability to expand their accommodations to the business public whenever need arises.

Deposits in these banks vary in a rather irregular fashion, for they consist largely of government funds and deposits made by other banks. Except in the Bank of England, the ratio of loans to deposits is extremely high judged by American standards, because a large proportion of the borrowers prefer to take the proceeds of their loans in notes. But in all three banks the fluctuations of this ratio follow the same course as in New York—that is, the ratio falls during depression and rises during prosperity.

In central banks reserves run very high in proportion to demand liabilities. Both the English and the German bank, however, have contented themselves in the second decade with somewhat lower ratios than those held in 1890-99. On the contrary, the Bank of France has raised its extremely high ratio higher still. In all three institutions the ratios have risen in periods of depression and fallen in periods of prosperity. The maximum variations are 41 and 64 per cent in England, 67 and 77 per cent in France, and 46 and 66 per cent in Germany. The lowest ratios all occur in years of crisis and the highest ratios in years of deep depression or of business revival.

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<sup>13</sup> Chapter VI, iii.

TABLE 101

## PRINCIPAL ITEMS AMONG THE RESOURCES AND LIABILITIES OF THE BANK OF ENGLAND

Year	Annual averages of the weekly statements, 1890-1911 In millions of dollars						
	Capital and Reserve	Government securities of the banking department	Other securities of the banking department	Reserve: notes and specie of the banking department	Notes of the issue department	Deposits: public and other deposits plus 7-day bills	Per cent of reserve: ÷ by deposits 41%
1890	87	70	114	67	181	163	41%
1891	87	53	144	76	194	186	41
1892	87	58	128	78	198	177	44
1893	87	56	124	83	200	176	47
1894	87	56	104	126	237	198	64
1895	87	69	108	145	259	235	62
1896	87	72	138	169	286	292	58
1897	87	67	140	122	243	243	50
1898	87	63	155	112	234	243	46
1899	87	66	160	103	229	242	43
1900	87	83	143	104	240	243	43
1901	87	77	140	117	251	246	48
1902	87	79	144	118	250	254	46
1903	87	80	136	116	246	244	48
1904	87	83	128	120	248	243	49
1905	87	81	146	123	255	264	47
1906	87	77	159	114	248	263	43
1907	88	74	156	119	253	262	45
1908	87	72	144	130	263	260	50
1909	87	75	146	130	265	264	49
1910	87	75	147	132	264	267	49
1911	87	72	148	136	270	270	51
Averages 1890-99	87.0	63.0	131.5	108.1	226.1	215.5	49.6
1900-09	87.1	78.1	144.2	119.1	251.9	254.3	46.8

Compiled from Palgrave's tables in the National Monetary Commission's *Statistics for Great Britain, Germany, and France*, pp. 80 and 83. Data for 1910 and 1911 compiled from the *Bankers' Magazine* (London).

TABLE 101—(Concluded)

## PRINCIPAL ITEMS AMONG THE RESOURCES AND LIABILITIES OF THE BANK OF ENGLAND

Year	Relative amounts. Average actual amounts in 1890-99 = 100					
	Capital and Rest	Government securities of the banking department	Other securities of the banking department	Reserve: notes and specie of the banking department	Notes of the issue department	Deposits: public and other deposits plus 7-day bills
1890	100	111	87	62	80	76
1891	100	84	110	70	86	86
1892	100	92	97	72	88	82
1893	100	89	94	77	88	82
1894	100	89	79	117	105	92
1895	100	110	82	134	115	109
1896	100	114	105	156	126	135
1897	100	106	106	113	107	113
1898	100	100	118	104	103	113
1899	100	105	122	95	101	112
1900	100	132	109	96	106	113
1901	100	122	106	108	111	114
1902	100	125	110	109	111	118
1903	100	127	103	107	109	113
1904	100	132	97	111	110	113
1905	100	129	111	114	113	123
1906	100	122	121	105	110	122
1907	101	117	119	110	112	122
1908	100	114	110	120	116	121
1909	100	119	111	120	117	123
1910	100	119	112	122	117	124
1911	100	114	113	126	119	125
Averages						
1890-99	100	100	100	100	100	100
1900-09	100	124	110	110	112	118

TABLE 102

## PRINCIPAL ITEMS AMONG THE RESOURCES AND LIABILITIES OF THE BANK OF FRANCE

Annual averages of the weekly statements, 1890-1911

In millions of dollars

Year	Discounts and loans on securities	Reserve gold and silver	Circulation	Accounts current		Per cent of reserve	
				Treasury	Private	to circulation 82%	to circulation and accounts current 69%
1890	177	485	591	34	78		
1891	204	493	595	47	84	83	68
1892	164	546	608	56	81	90	73
1893	170	571	665	25	78	86	74
1894	165	595	671	31	86	89	76
1895	165	635	681	39	102	93	77
1896	204	622	696	46	102	89	74
1897	210	615	712	43	87	86	73
1898	229	598	713	49	86	84	71
1899	246	591	737	40	83	80	69
1900	264	625	779	49	84	80	69
1901	209	679	794	26	90	86	75
1902	193	706	803	30	86	88	77
1903	221	695	832	32	73	84	74
1904	232	710	827	39	95	86	74
1905	217	764	851	48	99	90	77
1906	273	759	899	50	98	84	73
1907	329	709	926	41	89	77	67
1908	275	764	937	33	90	82	72
1909	246	873	980	35	119	89	77
1910	295	823	1,003	26	106	82	73
1911	356	779	1,012	39	103	77	68
Averages							
1890-99	193.4	575.1	666.9	41.0	86.7	86.2	72.4
1900-09	245.9	728.4	862.8	38.3	92.3	84.6	73.5

Compiled from the *Annuaire Statistique de France*.

TABLE 102—(Concluded)

## PRINCIPAL ITEMS AMONG THE RESOURCES AND LIABILITIES OF THE BANK OF FRANCE

Year	Relative amounts. Average actual amounts in 1890-99 = 100				
	Discounts and loans on securities 92	Reserve gold and silver 84	Circulation 89	Accounts current	
1890				Treasury 83	Private 90
1891	105	86	89	115	97
1892	85	95	91	137	93
1893	88	99	100	61	90
1894	85	103	101	76	99
1895	85	110	102	95	118
1896	105	108	104	112	118
1897	109	107	107	105	100
1898	118	104	107	120	99
1899	127	103	111	98	96
1900	137	109	117	120	97
1901	108	118	119	63	104
1902	100	123	120	73	99
1903	114	121	125	78	84
1904	120	123	124	95	110
1905	112	133	128	117	114
1906	141	132	135	122	113
1907	170	123	139	100	103
1908	142	133	141	80	104
1909	127	152	147	85	137
1910	153	143	150	63	122
1911	184	135	152	95	119
Averages					
1890-99	100	100	100	100	100
1900-09	127	127	129	93	107

TABLE 103

## PRINCIPAL ITEMS AMONG THE RESOURCES AND LIABILITIES OF THE REICHSBANK OF GERMANY

Annual averages of the weekly statements, 1890-1911  
In millions of dollars

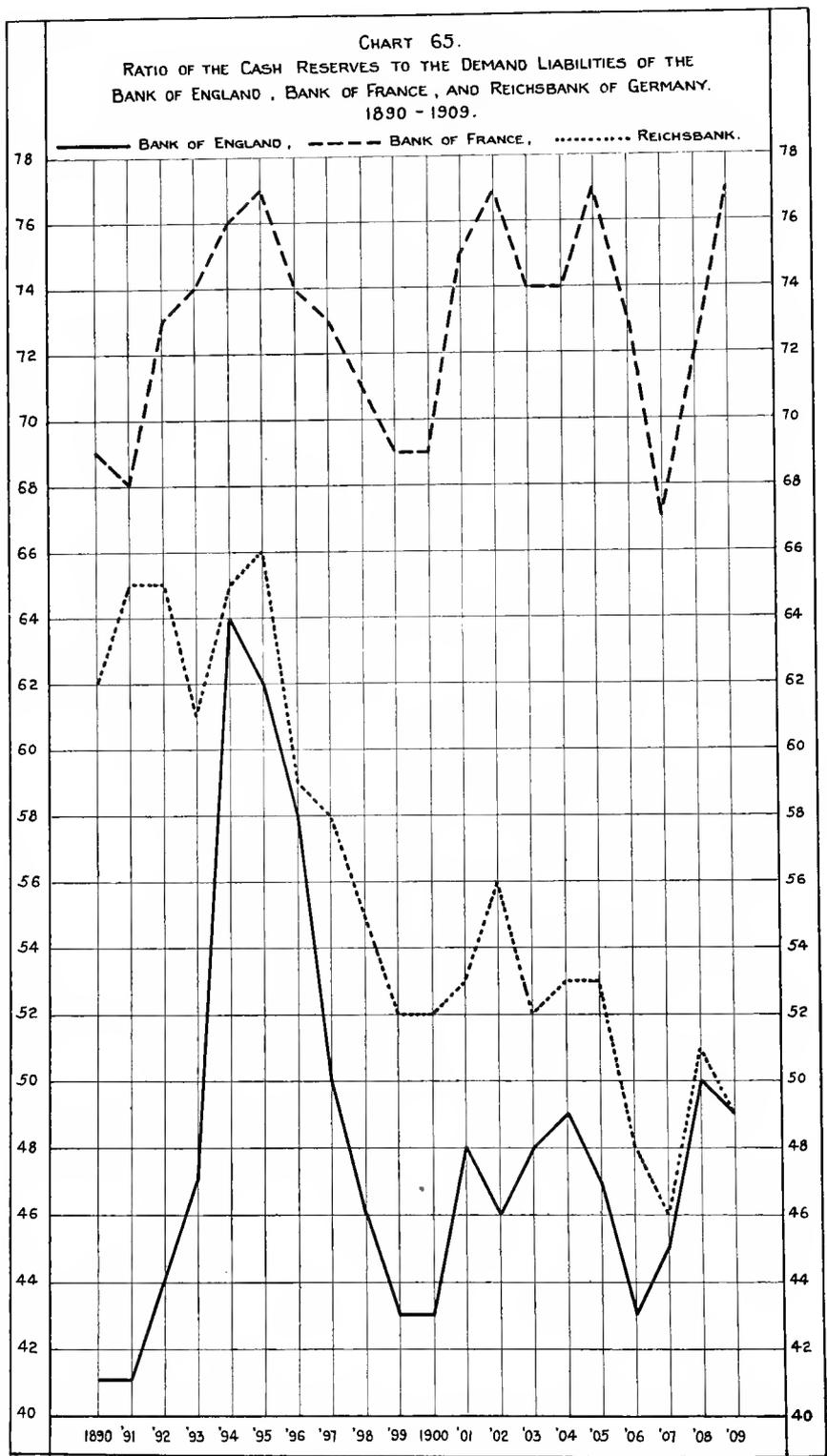
Year	Capital and surplus	Securities	Discounts and loans on collateral	Reserve	Circulation	Deposits: all demand liabilities except notes	Per cent of reserves	
							to circulation	to total demand liabilities
1890	35	3	148	198	234	86	85%	62%
1891	35	3	149	220	231	110	95	65
1892	36	1	152	232	234	122	99	65
1893	36	2	161	208	234	108	89	61
1894	36	1	150	231	238	117	97	65
1895	36	2	156	249	261	119	95	66
1896	36	2	179	220	258	115	85	59
1897	36	2	179	215	258	112	83	58
1898	36	3	193	211	268	113	79	55
1899	36	3	214	205	272	125	75	52
1900	36	5	209	203	271	122	75	52
1901	45	13	219	225	283	142	80	53
1902	46	17	202	242	293	137	83	56
1903	47	19	219	224	297	132	75	52
1904	48	22	214	231	307	127	75	53
1905	58	25	233	243	318	139	76	53
1906	58	28	256	226	330	137	68	48
1907	58	24	286	226	352	138	64	46
1908	58	36	252	264	363	155	73	51
1909	58	66	240	270	375	172	72	49
1910	58	28	260	272	382	154	71	51
1911	58	11	275	288	396	155	73	52
Averages								
1890-99	35.8	2.2	168.1	218.9	248.8	112.7	88.2	60.8
1900-09	51.2	25.5	233.0	235.4	318.9	140.1	74.1	51.3

Compiled from the National Monetary Commission's *Statistics for Great Britain, Germany, and France*, p. 173. Completed from the bank's annual report of 1911, as published in the *Bankers' Magazine* (London), August, 1912, pp. 277, 278.

TABLE 103—(Concluded)

## PRINCIPAL ITEMS AMONG THE RESOURCES AND LIABILITIES OF THE REICHSBANK OF GERMANY

Year	Relative amounts. Average actual amounts in 1890-99 = 100					
	Capital and surplus	Securities	Discounts and loans on collateral	Reserve	Circulation	Deposits: all demand liabilities except notes
1890	98	136	88	90	94	76
1891	98	136	89	101	93	98
1892	101	45	90	106	94	108
1893	101	91	96	95	94	96
1894	101	45	89	106	96	104
1895	101	91	93	114	105	106
1896	101	91	106	101	104	102
1897	101	91	106	98	104	99
1898	101	136	115	96	108	100
1899	101	136	127	94	109	111
1900	101	227	124	93	109	108
1901	126	591	130	103	114	126
1902	128	773	120	111	118	122
1903	131	864	130	102	119	117
1904	134	1,000	127	106	123	113
1905	162	1,136	139	111	128	123
1906	162	1,273	152	103	133	122
1907	162	1,091	170	103	141	122
1908	162	1,636	150	121	146	138
1909	162	3,000	143	123	151	153
1910	162	1,273	155	124	154	137
1911	162	500	164	132	159	138
Averages 1890-99	100	100	100	100	100	100
1900-09	143	1,159	139	108	128	124



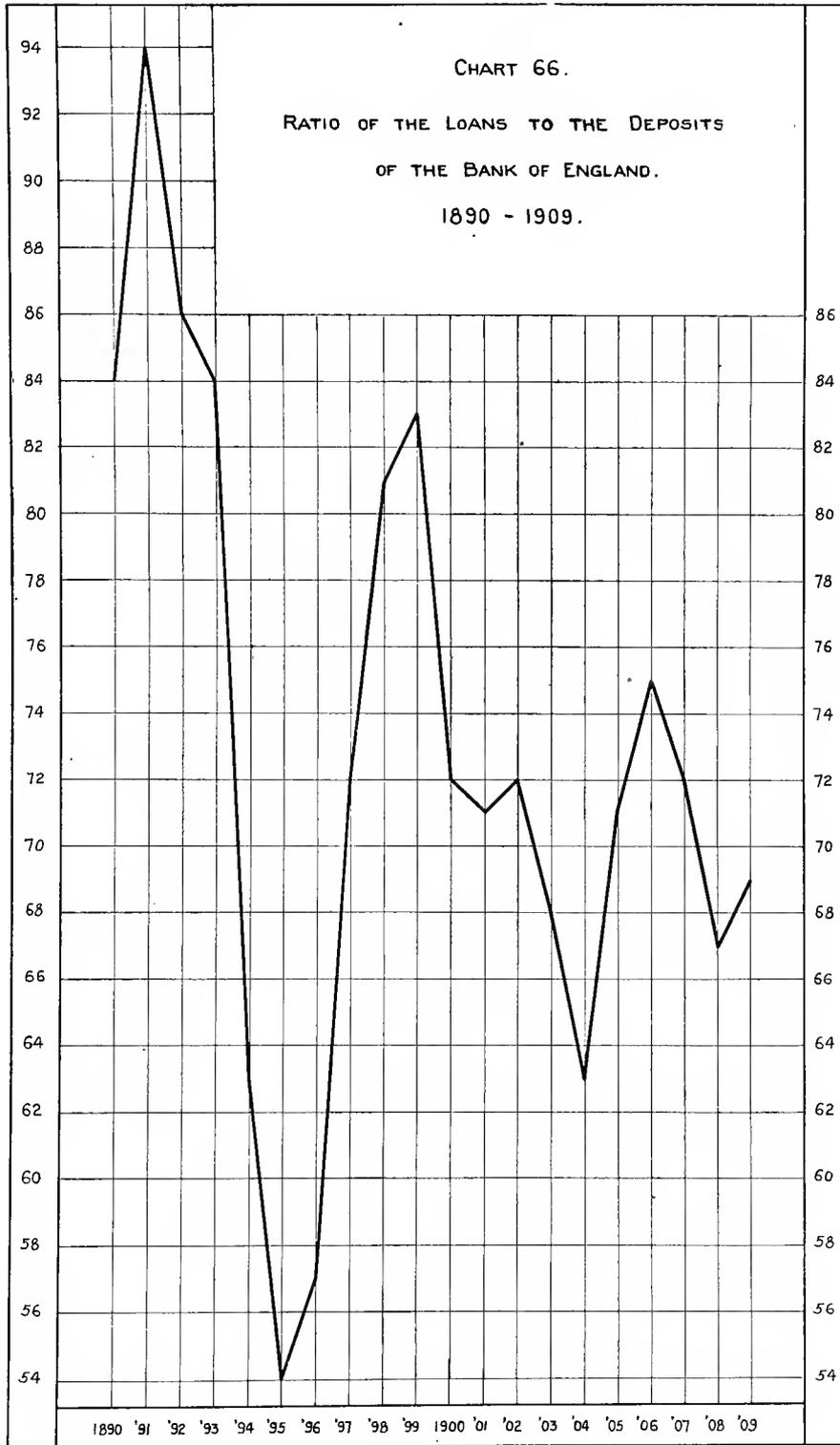


TABLE 104

RATIOS OF CASH RESERVES TO DEMAND LIABILITIES AND OF LOANS TO DEPOSITS IN THE BANK OF ENGLAND, BANK OF FRANCE, AND REICHSBANK OF GERMANY

	Ratio of cash to demand liabilities			Ratio of loans to deposits		
	Bank of England banking department Per cent	Bank of France Per cent	Reichs-bank of Germany Per cent	Bank of England banking department Per cent	Bank of France Per cent	Reichs-bank of Germany Per cent
1890	41%	69%	62%	84%	167%	148%
1891	41	68	65	94	176	113
1892	44	73	65	86	131	106
1893	47	74	61	84	143	129
1894	64	76	65	63	127	111
1895	62	77	66	54	103	115
1896	58	74	59	57	131	133
1897	50	73	58	72	162	137
1898	46	71	55	81	178	150
1899	43	69	52	83	192	156
1900	43	69	52	72	200	156
1901	48	75	53	71	127	142
1902	46	77	56	72	123	135
1903	48	74	52	68	181	153
1904	49	74	53	63	141	154
1905	47	77	53	71	125	155
1906	43	73	48	75	177	172
1907	45	67	46	72	245	191
1908	50	72	51	67	193	149
1909	49	77	49	69	124	127
1910	49	73	51	72	178	154
1911	51	68	52	72	225	165
Averages						
1890-99	49.6	72.4	60.8	75.8	151.0	129.8
1900-09	46.8	73.5	51.3	70.0	163.6	153.4

The ratios of cash to demand liabilities are from the preceding tables. The ratios of loans to deposits are computed for the Bank of England by dividing "other securities" by "other deposits plus seven-day bills"; for the Bank of France by dividing "discounts" by "accounts current of individuals"; and for the Reichsbank of Germany by dividing "bills of exchange" by "other demand liabilities."

## CHAPTER VIII

### SAVING, INVESTMENT, ENTERPRISE, AND SPECULATION

#### I. SAVING

A quantitative analysis of saving cannot be made at present, because the sums saved do not come under observation until they are deposited in savings banks, put into life insurance, invested in income-bearing securities, etc. Our knowledge of how much money the people of any country put by in any year is therefore most indefinite. Even the simple question whether the volume of savings declines with business depression and rises with business prosperity cannot be answered with complete assurance. Schmoller conjectures that in Germany the increase of capital by savings averages about  $1\frac{1}{2}$  per cent per annum, but that in good years the ratio probably rises above 2 per cent, and falls proportionately in bad years.<sup>1</sup> On the other hand, certain writers upon the theory of crises assume that depression does not check saving in an appreciable degree, though it does make people timid about investing their new accumulations. On this view, the phase of depression in a business cycle is characterized by the piling up of enormous sums of idle funds, and the phase of prosperity by their rapid investment.<sup>2</sup> To determine which of these opinions is correct, we have no recourse other than the drawing of inferences from certain opposing tendencies, the relative magnitude of which is not accurately known.

Business depression favors saving in that it discourages extravagance and usually reduces the cost of living. The classes whose money incomes are not diminished—salaried people who keep their positions and their old rates of pay, landlords who keep their tenants on the old leases, bondholders whose securities prove sound, etc.—these classes have a better opportunity to save when times are dull than when times are brisk. But there are larger classes whose money incomes decline more rapidly than living expenses, whose curtailment of extravagance is compulsory. Workingmen are exposed to reductions of wages when times are bad, and suffer still more from irregularity of employment. Professional men working on their own account find less demand for their

<sup>1</sup> *Grundriss der Allgemeinen Volkswirtschaftslehre*, Erste bis sechste Auflage, p. 642.

<sup>2</sup> Such seems to be Spiethoff's view, though he does not state it explicitly. See "Die Krisentheorien von M. v. Tugan-Baranowski und L. Pohle," *Jahrbuch für Gesetzgebung*, 1903, pp. 679-708, especially pp. 699-701.

services, if like lawyers and engineers they cater to business needs, or difficulty in collecting their bills, if like physicians they cater to imperious personal needs. Business men bear even heavier losses, for profit is the type of income which is most sensitive to changes in business conditions. Capitalists whose property consists in stocks usually suffer loss of income through reduction of dividends. And business enterprises, which often save up large surplus funds in periods of good trade, are more likely to encroach upon their old savings than to accumulate new when trade is bad.

Thus, while depression may inculcate the virtue of thrift, it narrows the margin of income available for saving in the case of the great majority of families and business enterprises. The net effect is probably to reduce the volume of saving, particularly in countries where the distribution of wealth is most unequal. Schmoller hazards the guess that three-fifths of German savings are made by the rich and the large business men.<sup>3</sup> The bulk of French savings, on the contrary, is represented by those conversant with the situation as coming from the agglomeration of millions of small sums put aside by people in humble or modest circumstances.<sup>4</sup> Since the incomes of great business men and of large capitalists (aside from bondholders) are peculiarly susceptible to the influence of depression and prosperity, it follows that German savings probably fluctuate more violently than French savings from one phase of a business cycle to the next. And since both the distribution of wealth and the diffusion of thrift in America and England are more like the German than the French model, it follows that savings in these two countries probably vary widely from prosperity to depression.

Moreover, the tacit assumption that enormous sums saved in periods of depression are kept idle until the next wave of prosperity sweeps their owners back to the investments markets runs counter to much that we know about the financial habits of Anglo-Saxon communities at least. The hoarding of money through a period of years is certainly less common among thrifty Americans and English now than it was before the advantages of investment in savings banks, life insurance, and securities had become well known. While much hoarding of this kind may go on in France and Germany, it is probably declining even among the peasantry of those countries. What does happen demonstrably is that the character of investment changes from prosperous to dull times. After a crisis risky investments fall into disfavor, and the highest grade of bonds are bought more freely.<sup>5</sup> But of course this change does not mean that the volume of savings has increased.

<sup>3</sup> *Op. cit.*, p. 635.

<sup>4</sup> For example, see A. Neymarek, "French Savings and Their Influence," in the Publications of the National Monetary Commission (Senate Document, no. 494, 61st Congress, 2d session), pp. 165-181.

<sup>5</sup> See the next section.

Finally, the flood of money which is often poured into the investment market in the early years of a period of prosperity need not be likened to the outflow from a reservoir in which the exceptionally large savings of several years of depression have been impounded. Part of the funds are merely transferred from the bond market to the stock exchange. On the latter market a given sum becomes the basis of transactions which are nominally much greater in volume than the same sum employed on the former market. For a much larger proportion of bonds are bought outright, paid for in full, and held for months or years than in the case of stocks, where the bulk of the purchases are made on margins with the intention of selling again at the first favorable turn. Moreover, if the preceding conclusions be sound, the increase of funds pouring into the investment markets results partly from an increase in the actual volume of current savings. When depression yields to prosperity, money incomes—especially profits—rise faster than the cost of living, and the thrift inculcated by hard times yields but slowly to the extravagance encouraged by flush times. Finally, a considerable portion of the savings made during a period of depression goes to meet obligations incurred before the preceding crisis.<sup>6</sup> When these old debts have been paid off, and the debit accounts run up during the dull times themselves have been squared, savers are free to invest their fresh accumulations as they see fit.

In short, there is small room for doubt that saving, like most of the activities of economic life, is subject to the rhythm of business cycles, slowing down in depression, speeding up in prosperity. But, after all, the volume of saving is important chiefly for its influence upon the volume of investment. Fortunately, on this subject we have relatively full and reliable information in quantitative form.

## II. INVESTMENT, ENTERPRISE, AND SPECULATION

As types of economic activity, investment, enterprise, and speculation may be clearly distinguished. In many cases the three types are even represented by three sets of men—for example, the trustee seeking to “place” funds safely for the sake of interest, the merchant actively managing a business enterprise for profit, and the operator in the wheat-pit dealing in “futures.” But in a larger number of cases the distinction is blurred; for not only is the same man often investor, enterpriser, and speculator in one, but one type of his activity also merges into the others. Thus when the investor buys stocks the act assimilates him to the enterpriser, and when he buys real estate trusting to a rise of prices the act assimilates him to the speculator. Similarly the business man is an investor in so far as he puts his own capital into his enterprise, and

<sup>6</sup> Compare N. Johannsen, *A Neglected Point in Connection with Crises* (New York, 1908).

a speculator in so far as every venture involves the assumption of risk. So, also, the speculator invests some funds of his own, at least a narrow "margin" upon the purchase price of his stocks, and he may take an active part in the management of a business enterprise in order to promote his campaign upon the stock market.

The intimacy of these connections among the three types of activity makes it difficult to find statistical records which show the volume of investment apart from the volume of speculation, or the activity of business enterprise apart from both speculation and investment. Stock-exchange transactions, for example, are predominantly speculative in character; but the investment factor is not unimportant, though it cannot be separated from the speculative factor in the records. Bond purchases, on the other hand, are made chiefly by investors; but speculation in the price of bonds is by no means unknown. Similarly with the tables of "capital applications," "flotations," "listings" on the stock exchange, etc. The figures may be intended to show the fluctuations in the sums invested in business ventures; but they also show the varying activity of business enterprise in seeking loans for new undertakings or for the extension of old, and often they reflect the intensity of interest in speculative ventures.

For this reason it is inexpedient to attempt to separate the statistical investigations into investment, enterprise, and speculation. Certain indices are available which apply almost wholly to one type of activity to the exclusion of the other types; but most of the recorded transactions are those in which two or even all three of the types are joined together.

### 1. *Savings-bank Deposits*

The deposit of funds in savings banks approximates closely to an act of pure investment. Fortunately, the obvious propriety of exercising close supervision over the conduct of fiduciary enterprises entrusted with the savings of people unskilled in business has led to the compilation and publication of relatively full statistics on the subject. The figures of most significance for the present purpose are brought together in the next table.

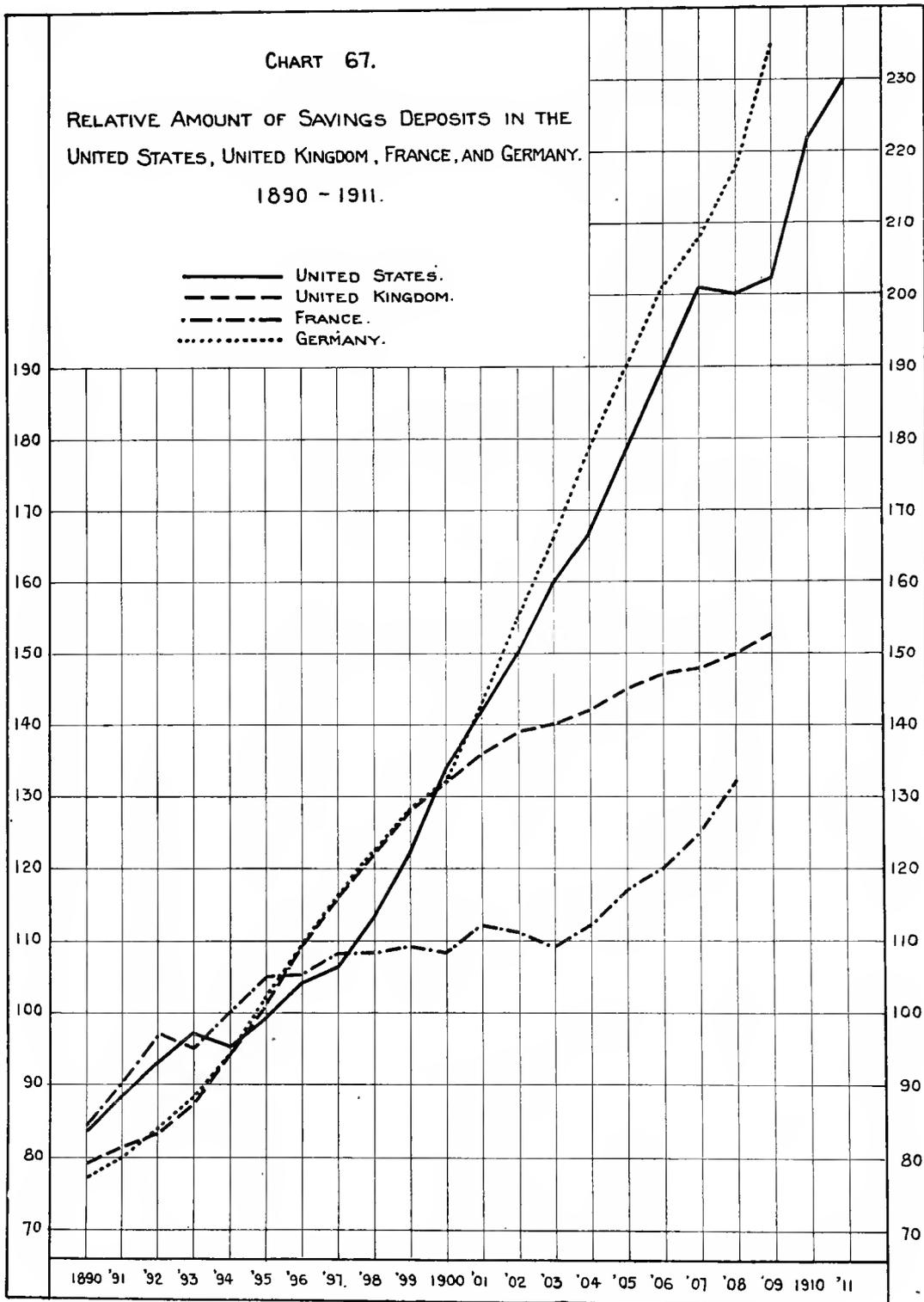
In the United States, the increase or decrease of savings-bank deposits is clearly correlated with the prosperity or depression of business. In the years immediately following the major crises of 1893 and 1907 depositors drew out more money than they paid in. Every other year since 1890 shows a net gain in deposits. However, the maximum ratios of gain occur in years of widely diffused prosperity, or in years when a mild reaction interrupts a period of business expansion, as in 1900 and 1910. Under the latter circumstances people seem to put into the savings banks funds which they would have kept

TABLE 105

DEPOSITS IN THE SAVINGS BANKS OF THE UNITED STATES, UNITED KINGDOM, FRANCE, AND GERMANY  
By Years, 1890-1911

Year	Actual amounts In millions of dollars				Relative amounts Average actual amounts in 1890-99 = 100				Rates of increase (+) or decrease (-) during the year			
	United States	United Kingdom	France	Germany	United States	United Kingdom	France	Germany	United States	United Kingdom	France	Germany
1890	1,525	542	642	1,223	83	79	84	77	+7.0%	+2.9%	+10.2%	+5.5%
1891	1,623	557	687	1,272	88	81	90	80	+6.4	+2.8	+ 7.0	+4.1
1892	1,713	575	742	1,331	93	83	97	84	+5.5	+3.2	+ 8.0	+4.6
1893	1,785	598	724	1,404	97	87	95	88	+4.2	+4.0	- 2.4	+5.5
1894	1,748	646	768	1,492	95	94	100	94	-2.1	+8.0	+ 6.1	+6.3
1895	1,811	697	801	1,617	99	101	105	102	+3.6	+7.9	+ 4.3	+8.4
1896	1,907	753	804	1,726	104	109	105	109	+5.3	+8.0	+ .4	+6.7
1897	1,939	800	824	1,836	106	116	108	116	+1.7	+6.2	+ 2.5	+6.3
1898	2,066	843	825	1,944	113	122	108	122	+6.5	+5.4	+ .1	+5.9
1899	2,230	883	837	2,040	122	128	109	128	+7.9	+4.7	+ 1.5	+4.9
1900	2,450	910	825	2,102	134	132	108	132	+9.8	+3.1	- 1.4	+3.0
1901	2,597	936	855	2,276	142	136	112	143	+6.0	+2.9	+ 3.6	+8.3
1902	2,750	959	847	2,458	150	139	111	155	+5.9	+2.4	- .9	+8.0
1903	2,935	967	831	2,644	160	140	109	166	+6.7	+0.8	- 1.9	+7.5
1904	3,060	976	856	2,836	167	142	112	179	+4.2	+0.9	+ 3.0	+8.3
1905	3,261	997	898	3,023	178	145	117	190	+6.5	+2.1	+ 4.9	+6.6
1906	3,482	1,017	921	3,187	190	147	120	201	+6.8	+2.0	+ 2.6	+5.5
1907	3,690	1,020	960	3,306	201	148	125	208	+6.0	+0.3	+ 4.2	+3.7
1908	3,661	1,033	1,009	3,464	200	150	132	218	-0.8	+1.3	+ 5.1	+4.8
1909	3,713	1,055	1,056	3,731	202	153	138	235	+1.4	+2.1	+ 4.7	+7.7
1910	4,070	1,076	.....	3,994	222	156	.....	251	+9.6	+2.0	.....	+7.0
1911	4,213	1,117	.....	.....	230	162	.....	.....	+3.5	+3.8	.....	.....
Averages												
1890-99	1,834.7	689.4	765.4	1,588.5	100	100	100	100	+4.6	+5.3	+ 3.8	+5.8
1900-09	3,159.9	987.0	905.8	2,902.7	172	143	118	183	+5.3	+1.8	+ 2.4	+6.3

Data from the *Report of the Comptroller of the Currency*, the National Monetary Commission's *Statistics for Great Britain, Germany, and France*, pp. 42, 229, 230, and 340, and from the statistical abstracts of the respective countries. All kinds of savings banks making returns are included in all of the countries.



in hand or in checking deposits if trade had remained active. In Great Britain no year shows a decline; but the rate of gain is slight when times are dull. Returning prosperity at first stimulates deposits; but at the height of a business "boom" the British saver turns to investments which promise a higher rate of interest than the savings banks pay. It is also noticeable that the decennial average of growth in savings deposits was much lower in 1900-09 than in 1890-99. For once the French figures are less regular than the American and British. The main conclusion which they suggest is that some factor other than the shifting of business conditions must exercise a strong influence over the clients of the savings banks. In Germany, as in Great Britain, every year shows a gain upon its predecessor, but the ratio of gain varies, declining when times are hard, rising when times improve, and then shading off again when prosperity reaches its apex. The one exception to this rule—the rapid gain of deposits during the dull years 1901 and 1902—probably results from a transference of funds from commercial and mortgage to savings banks after confidence in the solvency of the former had been shaken by the fall of the Leipziger Bank, the Dresdener Kreditanstalt, and four mortgage banks.

## 2. *Purchases of Bonds and of Stocks*

As has been said, there is certainly more or less speculation in bonds, and much investment in stocks.<sup>7</sup> Nevertheless, the sales of bonds and of stocks upon the New York Stock Exchange may be taken as rough gauges respectively of the fluctuations in the volume of investment and of speculation. Since the figures are published monthly, it is feasible to present them not only by years but also by periods which correspond to the successive phases of business cycles. The use of par values makes the tables reflect changes in the number of securities sold, rather than changes in the pecuniary volume of transactions. Were similar figures based upon market values available, the differences shown by the present tables between the fluctuations in bond and stocks sales would be still more strongly accentuated. For the differences between the fluctuations in the relative prices of bonds and stocks brought out in Chapter IV run roughly parallel with the differences between the fluctuations of sales.

In periods of severe depression investment in bonds increases, while speculation in stocks declines or rises but little in comparison with bond sales. When business begins to revive, both bond and stock sales increase, but bond sales at a much faster pace. Before prosperity has reached its culmination bond sales decline, while stock sales continue to follow an ascending saw-tooth curve. As a crisis approaches bond sales decline rapidly, while stock sales decline

<sup>7</sup> Speculation in bonds has been increased in late years by the large issues of income, debenture, and convertible bonds. Compare W. Z. Ripley, "Railway Speculation," *Quarterly Journal of Economics*, February, 1911, pp. 191, 192.

TABLE 106

PAR VALUES OF THE RAILWAY AND MISCELLANEOUS BONDS AND STOCKS SOLD ON THE NEW YORK STOCK EXCHANGE  
BY YEARS, 1890-1911

Year	Actual amounts In millions of dollars		Relative amounts Av. actual amounts in 1890-99 = 100		Ratio of bond sales to stock sales
	Bonds	Stocks	Bonds	Stocks	
1890	402	6,612	79	83	1:16.4
1891	384	6,676	76	83	1:17.4
1892	486	7,670	96	96	1:15.8
1893	352	7,550	69	94	1:21.4
1894	340	4,822	67	60	1:14.2
1895	500	6,313	99	79	1:12.6
1896	363	5,111	72	64	1:14.1
1897	530	7,426	104	93	1:14.0
1898	889	10,833	175	135	1:12.2
1899	828	17,094	163	213	1:20.6
1900	569	13,372	112	167	1:23.5
1901	994	25,850	196	323	1:26.0
1902	880	17,789	173	222	1:20.2
1903	684	15,028	135	188	1:22.0
1904	1,015	17,394	200	217	1:17.1
1905	816	24,400	161	305	1:29.9
1906	606	24,843	119	310	1:41.0
1907	456	17,006	90	212	1:37.3
1908	999	17,694	197	221	1:17.7
1909	1,279	19,634	252	245	1:15.4
1910	592	14,730	117	184	1:24.9
1911	795	11,489	157	143	1:14.5
Averages					
1890-99	507.4	8,010.7	100	100	1:15.9
1900-09	829.8	19,301.0	164	241	1:25.0

Data compiled from the *Commercial and Financial Chronicle* and from its "Quotation Supplement."

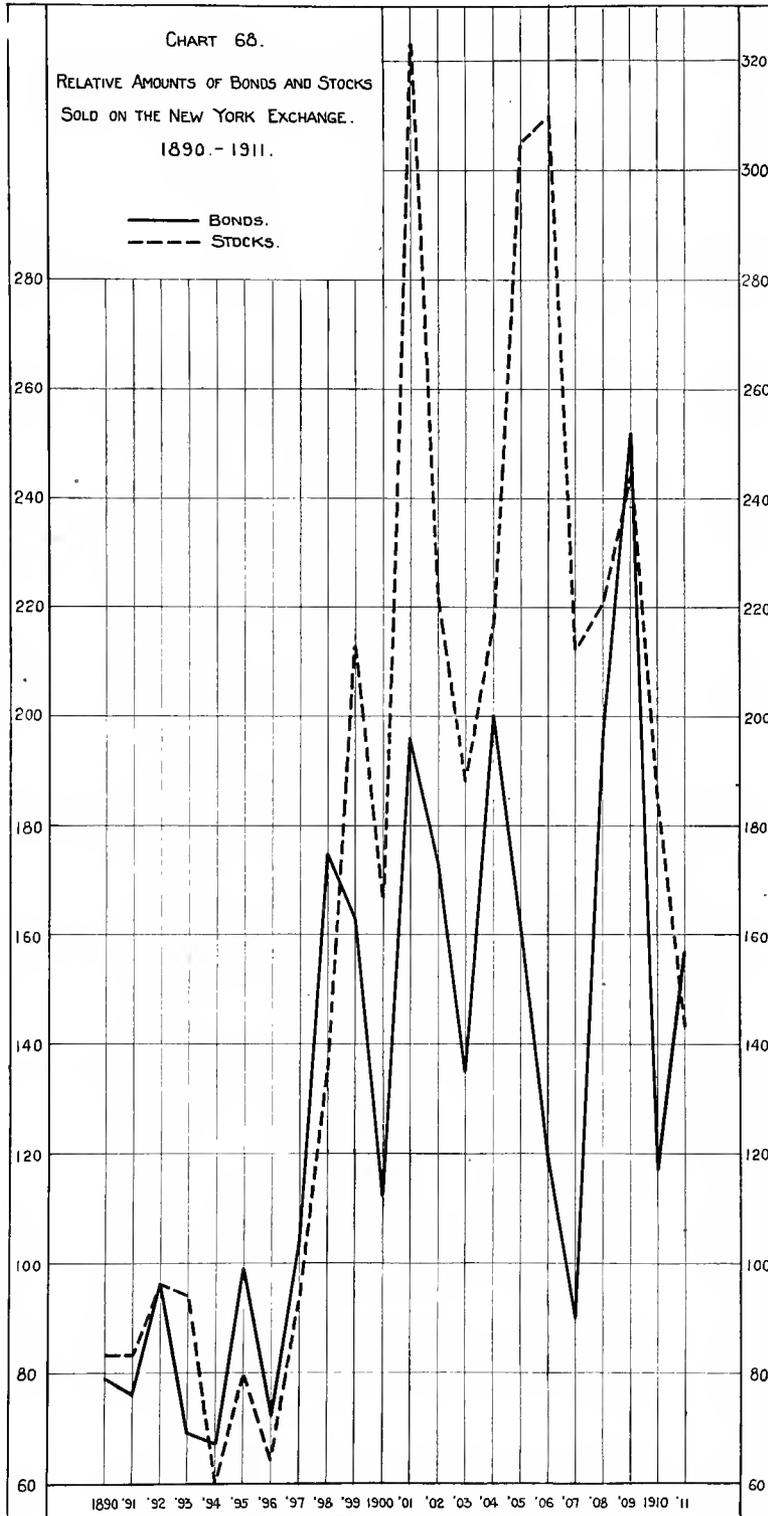
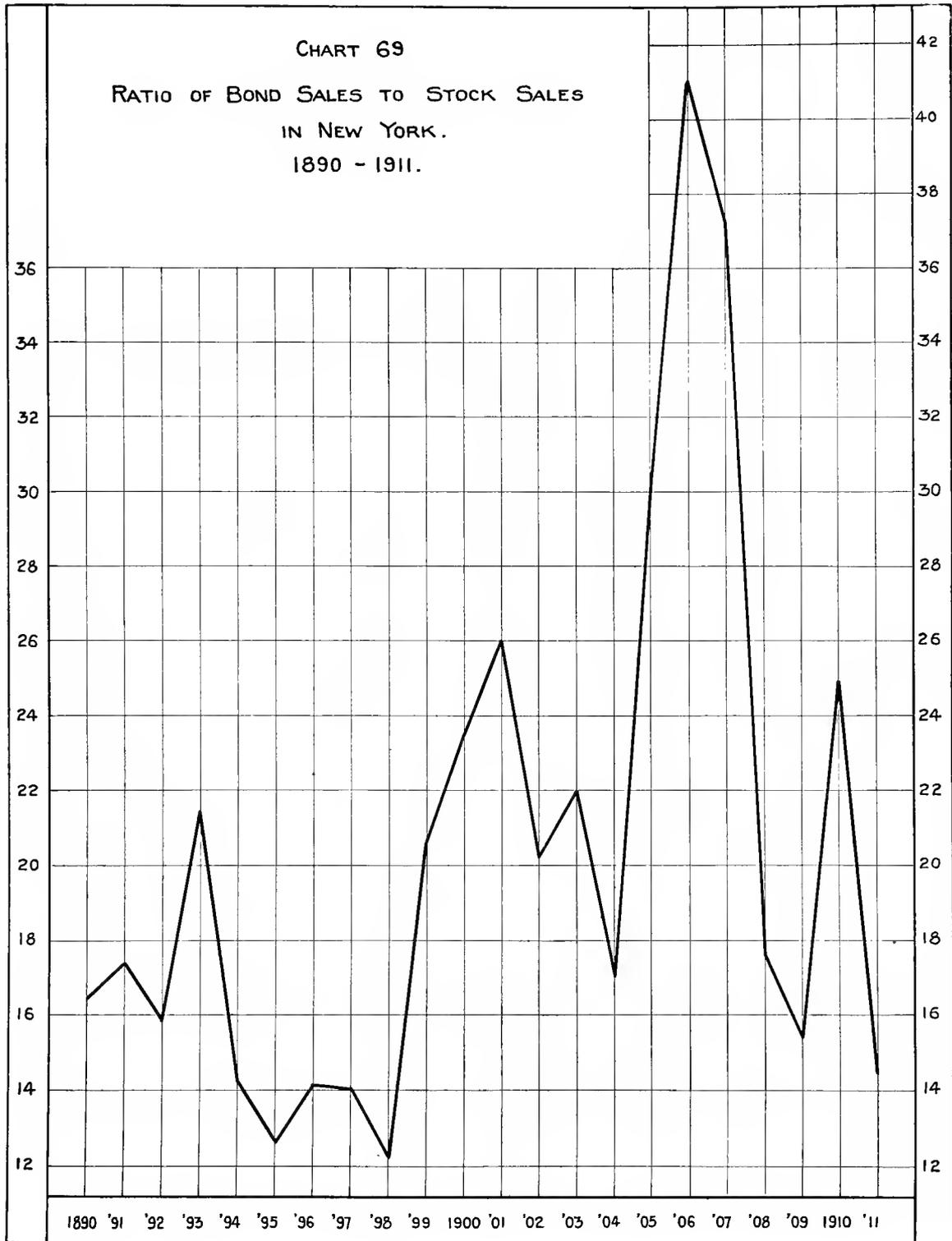


TABLE 107

AVERAGE MONTHLY PAR VALUE OF RAILWAY AND MISCELLANEOUS BONDS AND STOCKS SOLD ON THE NEW YORK STOCK EXCHANGE IN SEASONS OF BUSINESS PROSPERITY, CRISIS, AND DEPRESSION, 1890-1911

	Av. actual amounts In millions of dollars		Av. relative amounts Av. actual amounts in 1890-99 = 100		Ratio of bond sales to stock sales
	Bonds	Stocks	Bonds	Stocks	
January, 1890-July, 1890—Prosperity .....	39	531	92	80	1:13.6
August, 1890-December, 1890—Minor crisis .....	25	579	59	87	1:23.2
January, 1891-July, 1891—Depression .....	25	460	59	69	1:18.4
August, 1891-August, 1892—Prosperity .....	45	659	106	99	1:14.6
September, 1892-April, 1893—Approach of crisis .....	34	708	80	106	1:20.8
May, 1893-October, 1893—Major crisis .....	24	572	57	86	1:23.8
November, 1893-March, 1895—Severe depression .....	28	409	66	61	1:14.6
April, 1895-September, 1895—Revival .....	52	600	123	90	1:11.5
October, 1895-June, 1896—Renewed depression .....	34	438	80	66	1:12.9
July, 1896-October, 1896—Free-silver campaign .....	23	458	54	69	1:19.9
November, 1896-June, 1897—Depression .....	36	411	85	62	1:11.4
July, 1897-February, 1898—Revival .....	64	858	151	129	1:13.4
March, 1898-April, 1898—Spanish war impending .....	39	775	92	116	1:19.9
May, 1898-September, 1899—Prosperity .....	77	1,209	182	181	1:15.7
October, 1899-December, 1899—Minor crisis .....	47	1,347	111	202	1:28.7
January, 1900-September, 1900—Slight depression .....	38	874	90	131	1:23.0
October, 1900-October, 1902—Prosperity .....	79	1,843	187	276	1:23.3
November, 1902-July, 1904—“Rich man’s panic” .....	56	1,142	132	171	1:20.4
August, 1904-August, 1905—Revival .....	95	2,104	225	315	1:22.1
September, 1905-September, 1906—Prosperity .....	53	2,166	125	324	1:40.9
October, 1906-September, 1907—Approach of crisis .....	35	1,564	83	234	1:44.7
October, 1907-December, 1907—Major crisis .....	58	1,157	137	173	1:19.9
January, 1908-September, 1908—Severe depression .....	69	1,318	163	197	1:19.1
October, 1908-December, 1909—Revival .....	111	1,698	262	254	1:15.3
January, 1910-December, 1911—Reaction .....	58	1,092	137	164	1:18.8



more slowly or even increase. During the crisis bond sales usually shrink to a small volume; but in 1907 they increased. In other words, investment in bonds increases under depression and reaches its climax early in the following period of returning prosperity, while speculation in stocks continues to expand until the season of prosperity has reached or even passed its culmination. Hence the volume of investment is largest in comparison with the volume of speculation when a prosperous period is just beginning, and smallest when a crisis is approaching or is even at hand. Probably the present data minimize rather than exaggerate this difference, because the proportion of bonds bought by investors as opposed to speculators swells in periods of depression and shrinks in periods of prosperity.<sup>8</sup>

### 3. Applications for Investment Loans

Since 1871 the *Moniteur des intérêts matériels* of Brussels has compiled a table showing the "public emissions" of each year. M. de Laveye, for many years the editor, explained in 1892 that the aim of his efforts was to ascertain as nearly as might be the sum of money really invested in long-time loans. Stillborn projects were rejected and loans listed on more than one market were counted but once. All the available sources of information were used; but of course the bulk of small privately negotiated loans did not come to the knowledge of the compiler.<sup>9</sup> While the figures cannot be regarded as complete, they are made on a uniform plan, and provide the best available gauge of the changes from one year to the next in the volume of investment loans negotiated in Europe. The geographical classification is based on the country applying for the loan. Hence, while the totals for all countries show fluctuations in the sums presumably invested by Europeans, the figures for Great Britain, France, and Germany show fluctuations in the amount of loans which their governments and business enterprises sought to secure—not the sums which their investors

<sup>8</sup> The volume of real-estate transactions is currently believed to be an excellent gauge of speculative activity. But I know of no systematic record of this character except that compiled since 1867 by Messrs. Thomas Magee & Sons of San Francisco, and published in their *San Francisco Real Estate Circular*. The fluctuations are large in volume and for the most part run parallel with the course of American business cycles.

#### ANNUAL SALES OF REAL ESTATE IN SAN FRANCISCO

1890.....	\$36.5 millions	1901.....	\$29.1 millions
1891.....	27.5 millions	1902.....	47.4 millions
1892.....	20.6 millions	1903.....	47.7 millions
1893.....	13.6 millions	1904.....	45.8 millions
1894.....	14.2 millions	1905.....	74.9 millions
1895.....	15.9 millions	1906.....	67.5 millions
1896.....	11.5 millions	1907.....	31.8 millions
1897.....	12.9 millions	1908.....	31.1 millions
1898.....	10.7 millions	1909.....	33.9 millions
1899.....	14.6 millions	1910.....	31.3 millions
1900.....	18.5 millions	1911.....	35.3 millions

My attention was called to these figures by Mr. Edwin A. Fisher.

<sup>9</sup> Compare the *Bulletin de statistique et de législation comparée*, vol. 46, p. 84, and vol. 47, p. 170.

TABLE 108

AGGREGATE PUBLIC APPLICATIONS FOR INVESTMENT LOANS, ACCORDING TO THE *Moniteur des intérêts matériels*  
BY YEARS, 1890-1911

Year	Actual amounts In millions of dollars					Relative amounts Average actual amounts in 1890-99 = 100				
	Governments, states, and cities	Credit establish- ments	Railways and industrial companies	Conver- sions	Total	Governments, states, and cities	Credit establish- ments	Railways and industrial companies	Conver- sions	Total
1890	340	118	764	351	1,572	.75	75	110	63	84
1891	632	254	463	109	1,459	140	161	66	19	78
1892	177	13	277	17	484	39	8	40	3	26
1893	403	111	252	394	1,160	89	70	36	70	62
1894	566	65	368	2,440	3,439	125	41	53	436	184
1895	383	137	490	251	1,260	85	87	70	45	68
1896	725	149	888	1,465	3,227	160	94	127	262	173
1897	418	171	1,131	132	1,852	93	108	162	24	99
1898	394	272	1,051	317	2,035	87	172	151	57	109
1899	481	291	1,283	121	2,176	106	184	184	22	117
1900	926	271	1,092	.....	2,290	205	171	157	.....	123
1901	1,001	135	782	.....	1,918	222	85	112	.....	103
1902	1,146	153	659	1,640	3,598	254	97	95	293	193
1903	567	257	1,023	1,688	3,534	125	163	147	302	189
1904	1,113	259	1,060	353	2,785	246	164	152	63	149
1905	1,392	358	1,615	323	3,688	308	226	232	58	198
1906	1,185	445	1,504	1,992	5,126	262	281	216	356	275
1907	1,061	294	1,562	44	2,961	235	186	224	8	159
1908	1,398	265	2,365	64	4,092	309	168	339	11	219
1909	1,643	441	2,185	474	4,743	364	279	314	85	254
1910	1,746	523	2,152	688	5,109	386	331	309	123	274
1911	1,114	646	1,915	143	3,818	247	409	275	26	205
<b>Averages</b>										
1890-99	451.9	158.1	696.7	559.7	1,866.4	100	100	100	100	100
1900-09	1,143.2	287.8	1,384.7	657.8	3,473.5	253	182	199	118	186

Compiled from the *Bulletin de statistique et de législation comparée*.

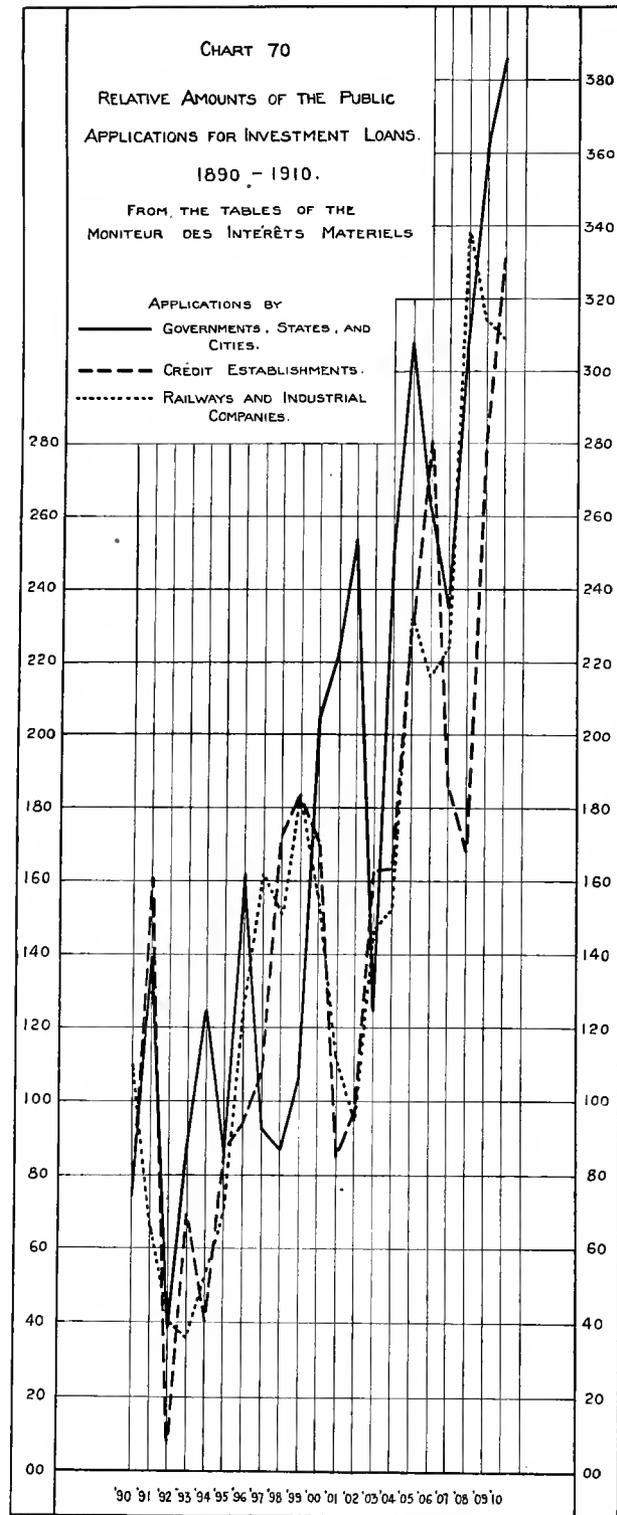


TABLE 109

BRITISH PUBLIC APPLICATIONS FOR INVESTMENT LOANS, ACCORDING TO THE *Moniteur des intérêts matériels*  
 BY YEARS, 1890-1911

Year	Actual amounts In millions of dollars					Relative amounts Average actual amounts in 1890-99 = 100				
	Governments states, and cities	Credit establish- ments	Railways and industrial companies	Conver- sions	Total	Governments, states, and cities	Credit establish- ments	Railways and industrial companies	Conver- sions	Total
1890	69	19	283	.....	372	84	128	94	.....	92
1891	69	14	196	.....	279	84	95	65	.....	69
1892	57	8	136	1	201	70	54	45	14	50
1893	99	.....	81	2	183	121	.....	27	29	45
1894	119	24	153	56	351	145	162	51	800	86
1895	89	14	214	9	326	109	95	71	129	80
1896	55	15	534	2	607	67	101	177	29	150
1897	105	6	552	.....	664	128	41	183	.....	164
1898	91	8	436	.....	536	111	54	144	.....	132
1899	66	40	434	.....	540	81	270	144	.....	133
1900	317	27	419	.....	763	387	182	139	.....	188
1901	476	9	240	.....	725	581	61	79	.....	179
1902	332	19	251	.....	603	405	128	83	.....	149
1903	230	35	198	.....	464	281	236	66	.....	114
1904	202	23	191	.....	416	247	155	63	.....	102
1905	208	37	298	.....	543	254	250	99	.....	134
1906	77	59	240	30	406	94	399	79	429	100
1907	150	57	277	.....	484	183	385	92	.....	119
1908	177	32	482	2	692	216	216	160	29	170
1909	250	36	323	.....	609	305	243	107	.....	150
1910	229	31	483	.....	743	280	209	160	.....	183
1911	91	64	271	.....	426	111	432	90	.....	105
Averages										
1890-99	81.9	14.8	301.9	7.0	405.9	100	100	100	100	100
1900-09	241.9	33.4	291.9	3.2	570.5	295	226	97	46	141

TABLE 110

FRENCH PUBLIC APPLICATIONS FOR INVESTMENT LOANS, ACCORDING TO THE *Moniteur des intérêts matériels*  
BY YEARS, 1890-1911

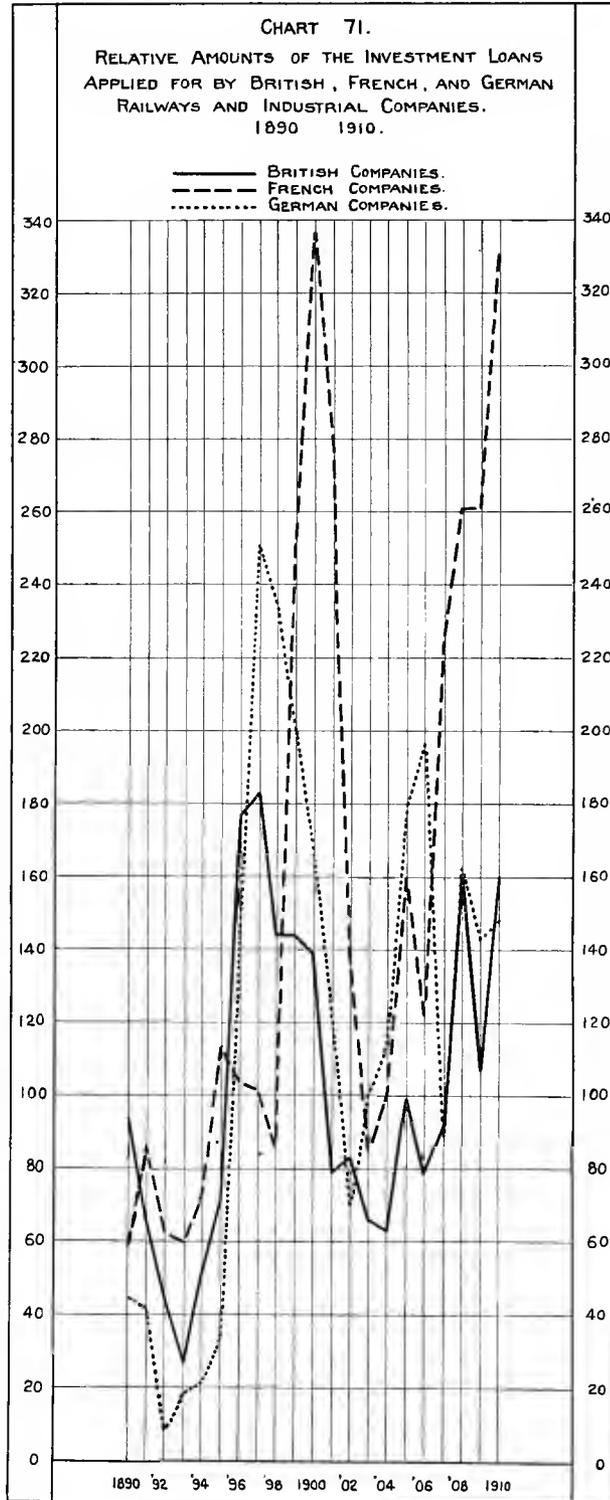
Year	Actual amounts In millions of dollars					Relative amounts Average actual amounts in 1890-99 = 100				
	Governments, states, and cities	Credit estab- lish- ments	Railways and industrial companies	Conver- sions	Total	Governments, states, and cities	Credit estab- lish- ments	Railways and industrial companies	Conver- sions	Total
1890	23	4	40	.....	67	62	18	59	.....	22
1891	168	77	59	.....	305	455	352	86	.....	99
1892	3	.....	43	13	59	8	.....	63	7	19
1893	8	.....	41	3	52	22	.....	60	2	17
1894	47	.....	50	1,456	1,553	127	.....	73	812	507
1895	1	54	78	46	179	3	247	114	26	58
1896	64	15	71	36	186	173	69	104	20	61
1897	3	4	70	83	159	8	18	102	46	52
1898	2	.....	59	157	219	5	.....	86	88	71
1899	50	65	172	.....	287	136	297	252	.....	94
1900	1	62	230	.....	294	3	283	337	.....	96
1901	53	8	189	.....	251	144	37	277	.....	82
1902	106	4	93	1,313	1,515	287	18	136	732	494
1903	16	63	58	.....	138	43	288	85	.....	45
1904	41	4	68	1	114	111	18	100	.....*	37
1905	34	20	109	.....	163	92	91	160	.....	53
1906	6	82	83	79	250	16	374	122	44	82
1907	47	16	154	.....	217	127	73	225	.....	71
1908	75	21	178	.....	274	203	96	261	.....	89
1909	33	122	178	.....	333	89	557	261	.....	109
1910	75	37	226	.....	338	203	169	331	.....	110
1911	17	41	199	.....	257	46	187	291	.....	84
Averages										
1890-99	36.9	21.9	68.3	179.4	306.6	100	100	100	100	100
1900-09	41.2	40.2	134.0	139.3	354.9	112	184	196	78	116

\* Less than ½ per cent.

TABLE 111

GERMAN PUBLIC APPLICATIONS FOR INVESTMENT LOANS, ACCORDING TO THE *Moniteur des intérêts matériels*  
BY YEARS, 1890-1911

Year	Actual amounts In millions of dollars					Relative amounts Average actual amounts in 1890-99 = 100				
	Governments, states, and cities	Credit estab- lish- ments	Railways and industrial companies	Conver- sions	Total	Governments, states, and cities	Credit estab- lish- ments	Railways and industrial companies	Conver- sions	Total
1890	98	74	51	10	233	113	111	45	8	59
1891	133	17	47	.....	197	153	26	42	.....	50
1892	103	3	10	.....	116	118	5	9	.....	29
1893	99	23	22	.....	144	114	35	19	.....	36
1894	66	24	25	75	190	76	36	22	58	48
1895	11	28	38	.....	76	13	42	34	.....	19
1896	44	76	163	1,208	1,491	51	114	144	932	377
1897	88	83	284	3	458	101	125	251	2	116
1898	83	216	266	.....	565	96	325	235	.....	143
1899	144	120	226	.....	489	166	181	200	.....	124
1900	101	93	188	.....	382	116	140	166	.....	96
1901	207	95	138	.....	440	238	143	122	.....	111
1902	229	105	79	.....	413	264	158	70	.....	104
1903	165	110	113	.....	388	190	166	100	.....	98
1904	121	159	129	.....	409	139	239	114	.....	103
1905	211	167	201	11	590	243	252	178	8	149
1906	265	150	223	.....	638	305	226	197	.....	161
1907	251	79	101	.....	430	289	119	89	.....	109
1908	407	137	183	.....	726	468	206	162	.....	183
1909	386	176	162	.....	723	444	265	143	.....	183
1910	243	167	168	.....	578	280	252	148	.....	146
1911	160	195	180	.....	535	184	294	159	.....	135
Averages										
1890-99	86.9	66.4	113.2	129.6	395.9	100	100	100	100	100
1900-09	234.3	127.1	151.7	1.1	513.9	270	191	134	1	130



provided. The data for the United States are too incomplete to possess much significance, particularly in the earlier years. Indeed, the gradual inclusion of an increasing proportion of the loans negotiated in America is probably the most serious defect in the table for purposes of comparing one year with another. But this defect appears only in the figures for all countries, not in the figures for Great Britain, France, and Germany. The latter figures, however, as well as the totals, are affected by any changes which take place in the proportions of investment loans which are publicly advertised and privately negotiated. The use to which the tables may be safely put is therefore limited. Nothing beyond rough conclusions as to the general trend in the amount and in the character of the successful applications for investment loans can be drawn with confidence.

As might be expected, the loans applied for by governments show but a slight degree of coördination with business cycles. Municipalities and states often take the condition of the money market into account when determining upon the feasibility of making improvements to be paid for by the sale of bonds, and so also may national governments in borrowing to finance public works. But even local governments are less concerned with the rate of interest they must pay than are business enterprises, and national governments in raising money for wars or armaments are often compelled to accept whatever terms are offered at the moment they need the money. Thus the exigencies of public finance are often a "disturbing factor" in the business situation, not only in the countries which are borrowing but also in the countries which are lending. In some years these government loans are greater than the public applications for long-time business loans; for example, in the dull years 1901 and 1902, when Great Britain was adding the Boer War debt to heavy borrowings by other powers. But in the long run, the sums borrowed by governments are much less than the sums borrowed by business enterprises. The real disparity is probably greater than the present table indicates, because a larger proportion of the public than of the private loans is publicly advertised.

Investment loans to business enterprises, on the other hand, show a close coördination with business cycles. The amount falls off heavily in a long period of depression, and increases rapidly when prosperity returns. But the figures indicate that this increase does not continue unabated until the culmination of prosperity is attained. If the actual amount of the business loans does not decline, at least the rate of increase shrinks from large to small proportions. Difficulty in securing the ever-growing amount of loan capital for fixed investment required by the ever-growing volume of business characterizes the high tide of prosperity. The first year or two of depression, on the contrary, may be marked by very heavy loans to business enterprises. But most of these loans represent the funding of floating debts incurred in the later stages of prosperity, rather than the extension of business enterprises.

Roughly speaking, conversions vary inversely as loans to business enterprises. They are undertaken for the sake of reducing interest charges, and are therefore made only when the investment market is ready to absorb large blocks of glit-edged securities bringing in a low return. It has been shown in Section iii of Chapter IV that interest rates are low when business is depressed, or just beginning to recover from depression. Hence the great bulk of the conversions entered in the table occur in 1894-96 and 1902-03. The one apparent exception occurs in 1906. Four-fifths of the conversions of that year, however, were due to a single operation—the refunding of a large Italian loan, which, after having been deferred more than once for a better opportunity, had finally to be carried out under unfavorable conditions.

Comment on the figures for Great Britain, France, and Germany is unnecessary, because what has been said of the general table applies substantially to the special tables. The large rôle played by credit companies in continental as compared with British finance may be pointed out, however. The fact that the British are represented as borrowing so much more capital than the Germans or the French is due largely to the greater extent and higher development of British colonies. The French, it may be added, appear to be less embarrassed than the other nations by scarcity of capital at the height of a prosperous period. This conclusion, suggested by the figures, is fortified by our knowledge of the comparative moderation of French “booms,” and the extraordinary development of thrift in comparison with business enterprise as economic characteristics of the people.

The *Economist's* estimates of the annual applications for capital in London, summarized in the next table, regularly exceed the British figures taken from the *Moniteur des intérêts matériels* by many millions. But these differences arise chiefly from the fact that the *Economist* records every public application for British capital from whatever land it comes, while the *Moniteur* classifies as British only the applications from British sources.

For our purposes the chief value of these figures is that they confirm the conclusions based upon the former compilation. Again, government loans are found to have the irregularity which results from the exigencies of public finance. But this irregularity does not altogether hide the effort of local and perhaps even of national governments to place their loans when the money market is most favorable to borrowers—that is, when business is depressed, or just beginning to revive. Business loans, on the contrary, rise and fall with the expansion and contraction of activity. The high rates for money at a time of abounding prosperity, however, cause would-be borrowers to defer their least imperative demands for fresh capital to the more favorable opportunities afforded by the first year of the succeeding depression. It is interesting to

TABLE 112  
 CAPITAL APPLICATIONS IN LONDON, ACCORDING TO THE *Economist*  
 BY YEARS, 1890-1911

Year	Actual amounts In millions of dollars					Grand total	Relative amounts Average actual amounts in 1890-99 = 100					Grand total
	Loans to central and local govern- ments	Loans to railways	Loans to mining companies	Loans to other business enter- prises	Total loans to business enter- prises		Loans to central and local govern- ments	Loans to railways	Loans to mining companies	Loans to other business enter- prises	Total loans to business enter- prises	
1890	117	151	33	393	577	694	69	154	85	151	145	122
1891	219	78	16	196	290	509	128	79	41	75	73	90
1892	187	102	9	97	208	395	110	104	23	37	52	70
1893	119	59	6	55	120	239	70	60	16	21	30	42
1894	227	77	24	119	220	447	133	78	62	46	55	79
1895	180	83	72	174	329	509	106	84	186	67	83	90
1896	168	86	74	416	576	744	99	87	191	160	145	131
1897	158	85	62	461	608	766	93	86	160	177	153	135
1898	214	127	35	355	517	731	126	129	90	136	130	129
1899	116	135	56	341	532	648	68	137	145	131	134	114
1900	334	86	36	349	471	805	196	87	93	134	118	142
1901	492	90	22	172	284	776	289	92	57	66	71	137
1902	407	105	50	187	342	749	239	107	129	72	86	132
1903	281	70	13	164	247	528	165	71	34	63	62	93
1904	359	86	16	138	240	599	211	87	41	53	60	105
1905	376	205	46	187	438	814	221	209	119	72	110	143
1906	196	144	36	210	390	585	115	146	93	81	98	103
1907	218	145	14	224	383	601	128	148	36	86	96	106
1908	318	363	25	229	617	935	187	369	65	88	155	165
1909	376	206	39	266	511	887	221	210	101	102	128	156
1910	446	310	36	509	855	1,301	262	315	93	195	215	229
1911	217	337	41	338	716	933	127	343	106	130	180	164
Averages												
1890-99	170.5	98.3	38.7	260.7	397.7	568.2	100	100	100	100	100	100
1900-09	335.7	150.0	29.7	212.6	392.3	727.9	197	153	77	82	99	128

Compiled from the London *Economist's* annual "Commercial History and Review."

notice that the *Economist* and the *Moniteur* agree in making the British loans to business enterprises slightly smaller in the second than in the first decade covered by the tables.

The best American substitute for the European statistics which have just been discussed is afforded by the amount of bonds and stocks listed each year on the New York Stock Exchange. These figures afford a rough gauge of the new opportunities offered for investment in large corporate enterprises.

Most significance attaches to the listings of new securities. The new stocks put on the market respond with considerable regularity to changes in business conditions, falling when business is depressed and rising when business recovers, but not attaining large proportions until prosperity is fully established. The bond listings, on the contrary, show a tendency to fall comparatively little or even to increase heavily when business is dull, and to decline in the later stages of prosperity. This contrast between the amount of stocks and bonds listed agrees with the contrast brought out above between the amount of the stocks and bonds sold upon the same market.

TABLE 113  
LISTINGS OF STOCKS AND BONDS ON THE NEW YORK STOCK EXCHANGE  
BY YEARS, 1890-1911

Actual amounts in millions of dollars

Year	Stocks				Bonds			
	New issues	Old issues newly listed	Replacing old securities	Total	New issues	Old issues newly listed	Replacing old securities	Total
1890	161	10	263	435	198	105	382	685
1891	97	2	91	189	191	16	80	288
1892	100	48	89	237	175	12	130	318
1893	94	49	56	198	139	42	107	289
1894	37	5	210	251	185	32	93	310
1895	77	35	31	143	167	16	75	257
1896	77	.....	514	591	147	8	427	582
1897	53	24	425	503	88	16	254	357
1898	70	53	406	528	245	26	429	700
1899	311	.....	393	704	156	23	346	525
1900	297	130	194	621	148	6	290	444
1901	430	76	1,136	1,642	220	21	682	923
1902	251	11	522	784	198	3	333	534
1903	173	39	215	427	192	13	377	581
1904	121	.....	55	176	430	.....	105	535
1905	125	100	308	533	569	20	391	980
1906	237	16	409	663	303	12	256	572
1907	159	321	96	576	247	72	102	421
1908	124	249	141	514	649	96	128	873
1909	297	364	665	1,326	713	8	378	1,099
1910	305	467	468	1,240	572	52	185	808
1911	256	38	350	644	398	35	148	581
Averages								
1890-99	107.7	28.25	247.8	377.9	169.1	29.6	232.3	431.1
1900-09	221.4	145.1	374.1	726.2	366.9	27.9	304.2	696.2

Compiled from the *Financial Review*.

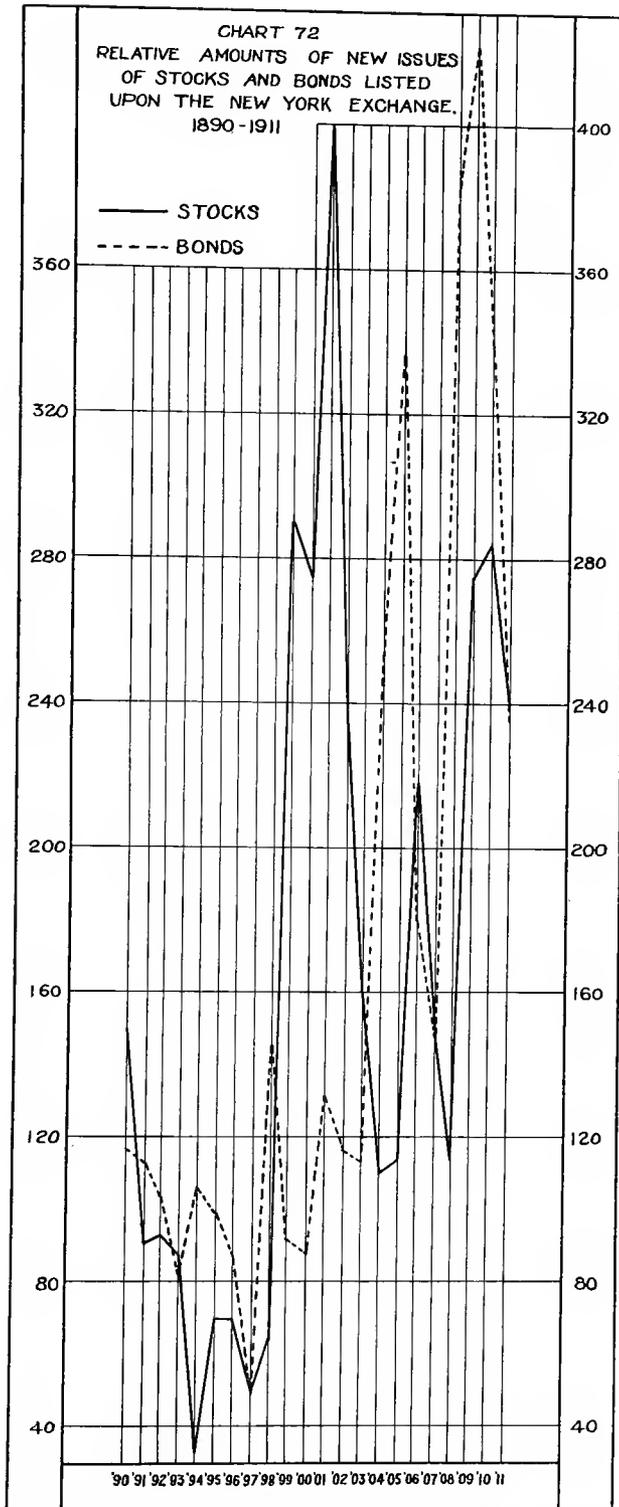


TABLE 113—(Concluded)

LISTINGS OF STOCKS AND BONDS ON THE NEW YORK STOCK EXCHANGE  
BY YEARS, 1890-1911

Relative amounts. Average actual amounts in 1890-99 = 100

Year	Stocks				Bonds			
	New issues	Old issues newly listed	Replacing old securities	Total	New issues	Old issues newly listed	Replacing old securities	Total
1890	150	35	106	115	117	355	164	159
1891	90	1	37	50	113	54	34	67
1892	93	170	36	63	103	41	56	74
1893	87	173	23	52	82	142	46	67
1894	34	18	85	66	109	108	40	72
1895	71	124	13	38	99	54	32	60
1896	71	.....	207	156	87	27	184	135
1897	49	85	172	133	52	54	109	83
1898	65	188	164	140	145	88	185	162
1899	289	.....	159	186	92	78	149	122
1900	276	459	78	164	88	20	125	103
1901	399	269	458	435	130	71	294	214
1902	233	39	211	207	117	10	143	124
1903	161	138	87	113	114	44	162	135
1904	112	.....	22	47	254	.....	45	124
1905	116	353	124	141	336	68	168	227
1906	220	57	165	175	179	41	110	133
1907	148	1,134	39	152	146	243	44	98
1908	115	880	57	136	384	324	55	203
1909	276	1,288	268	351	422	27	163	255
1910	283	1,653	189	328	338	176	80	187
1911	238	135	141	170	235	118	64	135
Averages								
1890-99	100	100	100	100	100	100	100	100
1900-09	206	513	151	192	217	94	131	161

4. *The Establishment of Joint-Stock Companies*

Another piece of evidence relating to investment, enterprise, and speculation—all three in one—is supplied by the British, French, and German statistics of the number and nominal capital of the joint-stock companies established. These data obviously include enterprises of different size and character in the three countries, so that the actual figures for any given year cannot properly be compared with each other.<sup>10</sup> But in each country the changes from year to year have much the same significance.

<sup>10</sup> The British figures, taken from the *Statistical Abstract of the United Kingdom*, refer to companies registered under the companies act of 1862. Railways and municipal tramways are excluded. The bulk of the joint-stock banks and the majority of private tramway companies, but not all of either class, are included. The French figures, taken from the *Annuaire Statistique*, include, besides joint-stock companies proper, companies "en nom collectif ou en commandité simple." The German figures for 1890-1907 are from the *Deutsche Oekonomist*, and for 1908-11 from the *Statistisches Jahrbuch für das Deutsche Reich*. They include "Aktiengesellschaften" and "Kommanditgesellschaften auf Aktien."

The correlation between the number and capital of the new "flotations" on the one hand and the course of business cycles on the other hand is most marked and most regular in Germany. The French figures plainly show the influence exercised by the exposition held at Paris in 1900. An unusual number of companies with extraordinarily large capitals were formed both to prepare for the fair and to operate concessions connected with it. Except for the years 1898-1901 the French figures follow a relatively even course. The British figures are more like the German, the chief difference being that the scale of capitalization in the second decade was much smaller than in the first. More stringent legislation respecting the obligations of promoters and underwriters

TABLE 114

NUMBER AND NOMINAL CAPITAL OF THE JOINT-STOCK COMPANIES ESTABLISHED IN THE UNITED KINGDOM, FRANCE, AND GERMANY

By YEARS, 1890-1911

Year	Actual amounts						Relative amounts Average actual amounts in 1890-99 = 100					
	Number			Nominal capital <sup>1</sup>			Number			Nominal capital		
	United Kingdom	France	Germany	United Kingdom	France	Germany	United Kingdom	France	Germany	United Kingdom	France	Germany
1890	2,789	4,470	236	1,162	83	64	74	90	118	117	54	107
1891	2,686	4,713	160	654	103	21	71	95	80	66	68	35
1892	2,607	4,699	127	503	117	19	69	94	64	51	77	32
1893	2,617	4,586	95	470	63	18	69	92	48	47	41	30
1894	2,970	4,834	92	576	89	21	79	97	46	58	58	35
1895	3,892	4,800	161	1,126	96	60	103	96	81	113	63	100
1896	4,735	4,953	182	1,506	76	64	126	100	91	152	50	107
1897	5,229	5,206	254	1,417	104	91	139	105	127	143	68	152
1898	5,182	5,602	329	1,325	276	110	138	113	164	133	181	184
1899	4,975	5,912	364	1,197	516	130	132	119	182	120	339	217
1900	4,966	5,605	261	1,079	192	81	132	113	130	109	126	135
1901	3,433	5,485	158	705	244	38	91	110	79	71	160	64
1902	3,933	5,491	87	763	108	28	104	110	44	77	71	47
1903	4,075	5,689	84	614	68	71	108	114	42	62	45	119
1904	3,831	5,814	104	450	88	33	102	117	52	45	58	55
1905	4,358	6,034	192	580	125	92	116	121	96	58	82	154
1906	4,840	6,028	212	665	122	113	128	121	106	67	80	189
1907	5,265	6,842	212	671	209	60	140	138	106	68	137	100
1908	5,024	.....	151	508	.....	39	133	.....	76	51	.....	65
1909	6,373	.....	179	689	.....	55	169	.....	90	69	.....	92
1910	7,184	.....	186	1,037	.....	57	191	.....	93	104	.....	95
1911	6,444	.....	169	766	.....	56	171	.....	85	77	.....	94
Averages												
1890-99	3,768.2	4,977.5	200.0	993.6	152.3	59.8	100	100	100	100	100	100
1900-09	4,609.8	.....	164.0	672.4	.....	61.0	122	.....	82	68	.....	102

<sup>1</sup> In millions of dollars.

For sources and limitations of data see note on preceding page.

may be largely responsible for this falling off in the volume of nominal capital. At all events, the present figures agree with the indications afforded by the tables of capital applications in London compiled by the *Economist* and of British borrowings compiled by the *Moniteur des intérêts matériels*.

The next table derives its chief interest from the emphasis laid by certain German writers upon the peculiar position with reference to business cycles held by industries making industrial equipment. Among these industries, those manufacturing machinery hold perhaps the first place. Accordingly, if the activity of a period of prosperity is really most marked among the *Betriebsmittelindustrien*, a table showing the number and capital of machine-building companies should exhibit the influence of business cycles even more clearly than the preceding table for companies of all kinds. Werner's admirable study of "Die finanzielle Ergebnisse der deutschen Maschinenbau-aktiengesellschaften"<sup>11</sup> provides material for such a comparison.

TABLE 115

NUMBER AND ORIGINAL CAPITAL OF THE JOINT-STOCK COMPANIES ESTABLISHED IN GERMANY FOR THE MANUFACTURE OF MACHINERY

BY YEARS, 1890-1907

	Actual amounts		Relative amounts Av. actual amounts in 1890-99 = 100	
	Number	Original capital in thousands of dollars	Number	Original capital
1890	8	2,694	79	83
1891	6	1,919	59	59
1892	4	750	40	23
1893	2	309	20	9
1894	3	983	30	30
1895	8	2,404	79	74
1896	8	2,375	79	73
1897	16	4,297	158	132
1898	22	7,629	218	234
1899	24	9,288	238	284
1900	16	4,527	158	139
1901	5	1,195	50	37
1902	2	512	20	16
1903	7	5,310	69	163
1904	6	1,585	59	49
1905	5	1,457	50	45
1906	16	4,548	158	139
1907	5	1,571	50	48
Averages 1890-99	10.1	3,264.8	100	100

Ernst Werner, "Die finanzielle Ergebnisse der deutschen Maschinenbau-Aktiengesellschaften," *Thünen-Archiv*, vol. 2, p. 666.

<sup>11</sup> *Thünen-Archiv*, vol. 2, p. 666.

The number of the companies established in this single industry within any one year is too small to possess much importance; but significance does attach to the data for the capital. A comparison between the relative amounts of this capital, as shown in Table 115, and the relative amounts of capital for all the German joint-stock companies, as shown in the preceding table, indicates that the machine-building trades really are more subject to alternations of depression and prosperity than the other trades exploited by joint-stock companies. This evidence may fairly be quoted in favor of such a theory of business cycles as that propounded by Spiethoff.<sup>12</sup>

No American records corresponding accurately to the foregoing statistics of joint-stock companies are available. But Mr. Luther Conant, Jr., has provided a cognate table covering the years 1887-1900 in his article upon "Industrial Consolidations in the United States."<sup>13</sup> His figures exclude companies having less than \$1,000,000 of capital, and all companies concerned with railways, street-car systems, gas, electric lighting, etc. The capital represented is the amount of bonds and stocks authorized in the charters, not the amount

TABLE 116  
NUMBER AND AVERAGE CAPITALIZATION OF INDUSTRIAL COMBINATIONS FORMED IN THE UNITED STATES, TOGETHER  
WITH THE INCREASE IN THE AUTHORIZED CAPITALIZATION OF SUCH COMBINATIONS  
BY YEARS, 1887-1900

Year	Actual amounts			Relative amounts Average actual amounts in 1890-99 = 100		
	Number of combinations formed	Increase in authorized capitalization Millions of dollars	Av. capitalization of newly formed combinations Millions of dollars	Number of combinations formed	Increase in authorized capitalization	Average capitalization of newly formed combinations
1887	8	216	27.0	47	54	137
1888	3	24	7.9	18	6	40
1889	12	152	12.7	71	38	65
1890	13	155	11.9	76	39	61
1891	17	166	9.1	100	42	46
1892	10	193	16.8	59	49	85
1893	6	239	39.6	35	60	202
1894	2	30	13.7	12	8	70
1895	6	107	17.5	35	27	89
1896	5	50	9.0	29	13	46
1897	4	81	20.3	24	20	103
1898	20	709	34.7	118	178	177
1899	37	2,244	23.9	512	565	122
1900	42	831	19.5	247	209	99
Averages 1890-99	17.0	397.4	19.65	100	100	100

From Luther Conant, Jr., "Industrial Consolidations in the United States," *Quarterly Publications of the American Statistical Association*, vol. 7, pp. 207-236, March, 1901.

<sup>12</sup> Compare chapter I, ii, 7.

<sup>13</sup> *Quarterly Publications of the American Statistical Association*, vol. 7, pp. 207-236, March, 1901.

issued. Further, increases in the capital of the combinations previously established are entered in each year, as well as the original capital of the newly organized companies.

Prior to 1887, Mr. Conant finds only six industrial consolidations in the United States, with an aggregate capitalization of \$170,500,000. Of these the first was formed in 1860, the next two in 1872, and one each in 1882, 1884, and 1885. The large scale of the combinations among manufacturing establishments in the later eighties and early nineties was therefore without precedent. The temporary check in 1888 Mr. Conant ascribes to the presidential election of that year. The crisis of 1890 was not severe enough and the depression of 1891 not long enough to administer another check. But the crisis of 1893 brought the movement almost to a standstill. The combinations of that year were almost almost all effected before the panic broke out; but one or two arrangements which had reached an advanced stage were carried through in the latter part of 1893 or in 1894. In 1895 six good sized companies were launched upon the wave of business confidence which swept over the country after President Cleveland had made his bargain for the protection of the gold reserve with the Morgan-Belmont syndicate. But when business slid from the crest of this wave into the trough of depression which accompanied the Venezuela episode and the free-silver campaign the movement halted once more. The revival of 1897 did not have so dramatic an influence as the revival of 1895; but the movement rapidly increased its momentum in 1898, and in 1899 "developed into a craze on the part of greedy promoters and vendors to unload properties on the public at enormous prices. The figures for 1899 . . ." Mr. Conant continues, "do not fully measure the proportions of industrial consolidations in that year. In addition to the companies shown, other projects amounting roughly in proposed capitalization to over one billion dollars were undertaken and carried to advanced stages, later, however, to be abandoned. . . . The stock market was so overloaded with new industrial securities in 1899 that promoters found great difficulty in the latter part of that year and in 1900 in inducing either bankers or the public to take up new flotations. The recurrence of another presidential election may also be . . . cited as a factor, but the chief influence was the difficulty in securing financial assistance for such schemes."

##### *5. The Savings and Investments Made by Business Enterprises Out of Current Income*

Ordinarily, discussions of savings and investment deal solely with the saving of money out of individual incomes and the investment of funds by natural persons. But it is a grave mistake to overlook the large sums which are saved out of current profits and put back into the business by business enterprises. A portion of the gross receipts of a prosperous firm or corporation is often

spent upon "betterments" of its plant or equipment, before the net profits are computed. And out of these net profits a part is frequently carried to surplus account and invested in securities, used as working capital, or otherwise disposed of for the benefit of the enterprise. In so far as an enterprise improves its physical property by the expenditure of income, or accumulates a surplus, the amount of capital it needs to raise by borrowing or by selling new issues of securities is proportionately reduced. Saving and investment have been performed directly by the business enterprise itself.

The statistics available upon this subject are so meager that they must be regarded as illustrations of the practice rather than as measures of the amounts involved. The data for the national banks, derived from the *Reports of the Comptroller of the Currency*, are limited to an exhibit of the excess of net earnings over dividends. There is such an excess in every year except 1894;

TABLE 117

SAVINGS MADE BY THE NATIONAL BANKS OUT OF CURRENT INCOME  
BY YEARS BEGINNING MARCH 1, 1890-1906, AND BY YEARS ENDING JUNE 30, 1907-11

Years beginning March 1, 1890-1906, and ending June 30, 1907-11	Actual amounts In millions of dollars			Relative amounts Average actual amounts in 1890-99 = 100		
	Dividends	Net earnings	Excess of net earnings (+) or of dividends (-)	Dividends	Net earnings	Excess of net earnings (+) or of dividends (-)
1890	50.7	77.0	+26.3	108	134	+250
1891	50.6	70.0	+19.4	108	122	+185
1892	51.3	68.4	+17.1	109	119	+163
1893	46.4	52.4	+ 6.0	99	91	+ 57
1894	46.3	45.6	— .7	99	79	— 7
1895	45.6	48.6	+ 3.0	97	84	+ 29
1896	43.2	48.6	+ 5.4	92	84	+ 51
1897	43.8	45.6	+ 1.8	93	79	+ 17
1898	44.9	49.3	+ 4.4	96	86	+ 42
1899	47.4	70.0	+22.6	101	122	+215
1900	50.2	87.7	+37.5	107	152	+357
1901	64.8	99.1	+34.3	138	172	+327
1902	60.1	102.7	+42.6	128	178	+406
1903	73.6	116.5	+42.9	157	202	+409
1904	71.0	105.2	+34.2	151	183	+326
1905	80.8	113.7	+32.9	172	197	+313
{ 1906	{ 120.1	{ 180.8	{ +60.7	{ 256	{ 314	{ +578
{ 1907	{ 122.1	{ 185.7	{ +63.6	{ 260	{ 322	{ +606
1908	98.1	132.3	+34.2	209	230	+326
1909	93.0	131.2	+38.2	198	228	+364
1910	105.9	154.2	+48.3	225	268	+460
1911	114.7	157.0	+42.3	244	273	+403
Averages						
1890-99	47.0	57.6	+10.5	100	100	100
1900-09	82.0	122.8	+40.9	174	213	+390

Compiled from the *Report of the Comptroller of the Currency*, 1911, p. 324. The figures for 1906 and 1907 include March 1906, to March 1, 1907, and June 30, 1906, to June 30, 1907.

but it is trifling during the whole period of depression in the middle nineties, rises rapidly after 1898 to a maximum of nearly \$43,000,000 in 1903, then falls off in 1904-05 by about 25 per cent, rises again in the succeeding period of prosperity to about \$64,000,000 in 1906-07, declines upwards of 50 per cent in 1908, and finally begins to recover once more in 1909-10. For the banks, at least, these figures are representative. They indicate that the savings and investments of this class of business enterprises are peculiarly sensitive to changing business conditions.

The railway figures, taken from the *Reports on the Statistics of Railways in the United States* prepared by the statistician of the Interstate Commerce Commission, are more complete, in that they show not only the surplus or deficit of annual income after the deduction of dividends from net income, but also the sums spent upon permanent improvements and charged to the income account before the net income is computed.<sup>14</sup>

The latter savings and investments remained small, \$5,000,000 or less each year, until the period of business prosperity in the later nineties was well under way. Then they increased rapidly to thirty or forty millions, declined somewhat in the "rich man's panic," and rose again to nearly \$50,000,000 in 1906. The difficulties of securing adequate funds to finance growing traffic then caused the railways to reduce such expenditures in 1907, a reduction which the dull times of 1908-09 carried still further.

The annual surpluses or deficits of the railways have undergone much greater changes, both absolutely and relatively, than the corresponding sums in the accounts of the national banks. In the fiscal years 1894 and 1895 huge deficits resulted from the bad state of trade and the effort to buoy up the price of stocks by maintaining dividends whether they were earned or not. In the next two years, 1896 and 1897, accounts came out nearly even. But when the return of prosperity increased earnings, the railways pursued a rather conservative dividend policy and saved large sums which they might have distributed among stockholders. For more than a decade after 1898 these savings were never less than \$44,000,000 a year, and rose with fluctuations which reflect closely the varying fortunes of trade to a maximum of \$141,000,000 in 1907. The panic of that year, combined with heavy dividend disbursements, reduced the surplus to a trifling sum in 1907-08, but in the very next year the railways resumed their former policy on a liberal scale.

<sup>14</sup> "Net income" in the following table is net income from operation and from other sources as computed by the commission up to 1907 inclusive. "Permanent improvements charged to income account" were among the items deducted before striking net income. Hence the sums saved and kept in the business each year include both these improvements and the surplus, if any. Indeed, in 1908-10 the savings were larger than the table shows, since the railways made "appropriations to reserves and miscellaneous items" out of net corporate income amounting respectively to 22, 21, and 5 million dollars. How such items were accounted for before 1908 is not clear. The "surplus or deficit" in the table is found by subtracting "total dividends" from "net income."

Since the commission adopted an improved form of income account in 1908, it has been necessary to rearrange the items so as to correspond as nearly as may be with the figures for 1890-1907. Both operating and leased roads are included. In computing the "surplus or deficit," dividends declared from surplus, as well as dividends declared from income, are deducted from the net corporate income of the current year.

TABLE 118  
 INVESTMENTS AND SAVINGS MADE BY THE INTERSTATE RAILWAYS OUT OF CURRENT INCOME  
 BY YEARS ENDING JUNE 30, 1890-1910

Years ending June 30	Actual amounts In millions of dollars			Relative amounts Average actual amounts in 1890-99 = 100	
	Net income	Permanent improvements charged to income account	Surplus (+) or deficit (-)	Permanent improvements charged to income account	Surplus (+) or deficit (-)
1890	102	5	+ 12	91	+ 185
1891	110	5	+ 14	91	+ 215
1892	116	4	+ 14	73	+ 215
1893	111	3	+ 8	55	+ 123
1894	56	4	- 46	73	- 708
1895	56	4	- 30	73	- 462
1896	90	5	+ 2	91	+ 31
1897	81	5	- 6	91	- 92
1898	140	7	+ 44	127	+ 677
1899	164	13	+ 53	236	+ 816
1900	227	26	+ 88	473	+1,354
1901	242	32	+ 85	582	+1,308
1902	280	35	+ 95	636	+1,461
1903	296	42	+ 99	764	+1,523
1904	279	39	+ 57	709	+ 877
1905	327	38	+ 89	691	+1,369
1906	385	49	+112	891	+1,723
1907	449	39	+141	709	+2,169
1908	393	29	+ 3	527	+ 54
1909	395	25	+ 74	455	+1,138
1910	523	58	+117	1,054	+1,295
Averages					
1890-99	102.6	5.5	+ 6.5	100	+ 100
1900-09	327.3	35.4	+ 84.3	644	+1,295

Compiled from the statistical reports of the Interstate Commerce Commission. See note on preceding page.

Probably the sums saved and invested by business enterprises in the United States vary from a maximum of several hundreds of millions to a minus quantity during the periods of deepest depression. Thus the sums involved are considerable, even when compared with the enormous aggregates of individual savings. And for a theory of business cycles they derive added importance from their peculiar degree of dependence upon the alternations of prosperity and depression.

#### 6. *Investments in Railway Construction and in the Erection of Buildings*

The subject of investment may be approached from still another side—that of the amount of work done or sums spent in extending the nation's physical equipment for industrial or personal use.

Best known among statistics of this character are the figures for railway building. Although the general lines of the American system had been laid down before 1890, and although the relative importance of this branch of construction is much less now than it was in earlier decades, still the figures possess significance, both for the actual amount of investment which they represent directly and indirectly and as a symptom of the activity in other fields. The most trustworthy data for the present purpose are the Interstate Commerce Commission's statements of the total length of line operated by the companies, including second, third, and fourth tracks, as well as yard tracks and sidings. The differences between the figures for successive years represent roughly the new construction finished, and while the lines formerly built which pass out of operation within any given time reduce the amount of new construction indicated by the figures somewhat below the truth, this item is not large enough to affect the conclusions materially. Another objection is that in 1908 the mileage of switching and terminal companies was segregated and excluded for the first time. But the commission has stated the mileage for these companies separately in that year, and constructed its data for 1909 on the same plan as the revised data for 1908. The figures for the increase of mileage in 1909 are therefore comparable with the figures for earlier years, save that the small amount of new construction by switching and terminal companies is not included.

The results, given in Table 119, show that construction has been more extensive in good than in bad times. But it also appears that a year or two is required for a change in the business situation to exercise its full influence upon railway building. When plans for an extension of tracks have been matured, the work is likely to be carried out, even though a crisis intervenes. On the other hand, a railway may plan extensions when the first signs of returning prosperity appear upon the business horizon; but time is required to execute the work so that the new tracks can be operated. Further, the table

TABLE 119  
 INCREASE IN THE TOTAL LENGTH OF LINE OPERATED BY THE INTERSTATE RAILWAYS OF THE UNITED STATES,  
 INCLUDING SINGLE TRACK, SECOND, THIRD, AND FOURTH TRACKS AND YARD TRACKS AND SIDINGS  
 BY YEARS ENDING JUNE 30, 1890-1910

Years ending June 30	Hundreds of miles of line operated	Annual increase in mileage	
		Actual amounts in hundreds of miles	Relative amts. Av. actual amounts in 1891-99 = 100
1890	1,999	.....	.....
1891	2,074	75	134
1892	2,111	37	66
1893	2,219	108	194
1894	2,298	79	142
1895	2,333	35	63
1896	2,391	58	104
1897	2,420	29	52
1898	2,453	33	59
1899	2,501	48	86
1900	2,588	87	156
1901	2,654	66	118
1902	2,742	88	158
1903	2,838	96	172
1904	2,971	133	238
1905	3,068	97	174
1906	3,171	103	185
1907	3,280	109	195
1908	3,378 <sup>1</sup>	98	176
1908	3,336 <sup>2</sup>	.....	.....
1909	3,424 <sup>2</sup>	88	158
1910	3,518 <sup>2</sup>	94	168
Averages			
1890-99	2,279.9	55.8	100
1900-09	3,011.4	96.5	173

From the Reports of the Interstate Commerce Commission on the Statistics of Railways in the United States.

<sup>1</sup> Mileage of switching and terminal companies included.

<sup>2</sup> Mileage of switching and terminal companies excluded.

shows that the extension of the railway network has not stopped altogether even in the midst of the most serious depression. The smallest net gain in any year of the whole period was nearly 3,000 miles of track.

Another bit of evidence is afforded by the figures showing the cost of the buildings erected in forty-five American cities, as reported by the United States Geological Survey for the years 1902-11.<sup>15</sup>

<sup>15</sup> The forty-five American cities included in the report of building operations are as follows: Allegheny (united with Pittsburgh, Pa., February 1, 1908); Atlanta, Ga.; Boston, Mass.; Brooklyn, N. Y.; Buffalo, N. Y.; Cambridge, Mass.; Chicago, Ill.; Cincinnati, O.; Cleveland, O.; Columbus, O.; Dayton, O.; Denver, Colo.; Detroit, Mich.; Fall River, Mass.; Grand Rapids, Mich.; Hartford, Conn.; Indianapolis, Ind.; Jersey City, N. J.; Kansas City, Mo.; Los Angeles, Cal.; Louisville, Ky.; Memphis, Tenn.; Milwaukee, Wis.; Minneapolis, Minn.; Nashville, Tenn.; Newark, N. J.; New Haven, Conn.; New Orleans, La.; New York, N. Y. (data for the boroughs of Manhattan and Bronx only); Omaha, Neb.; Philadelphia, Pa.; Pittsburgh, Pa.; Providence, R. I.; Reading, Pa.; Richmond, Va.; Rochester, N. Y.; St. Joseph, Mo.; St. Louis, Mo.; St. Paul, Minn.; San Francisco, Cal.; Scranton, Pa.; Seattle, Wash.; Syracuse, N. Y.; Washington, D. C.; Worcester, Mass.

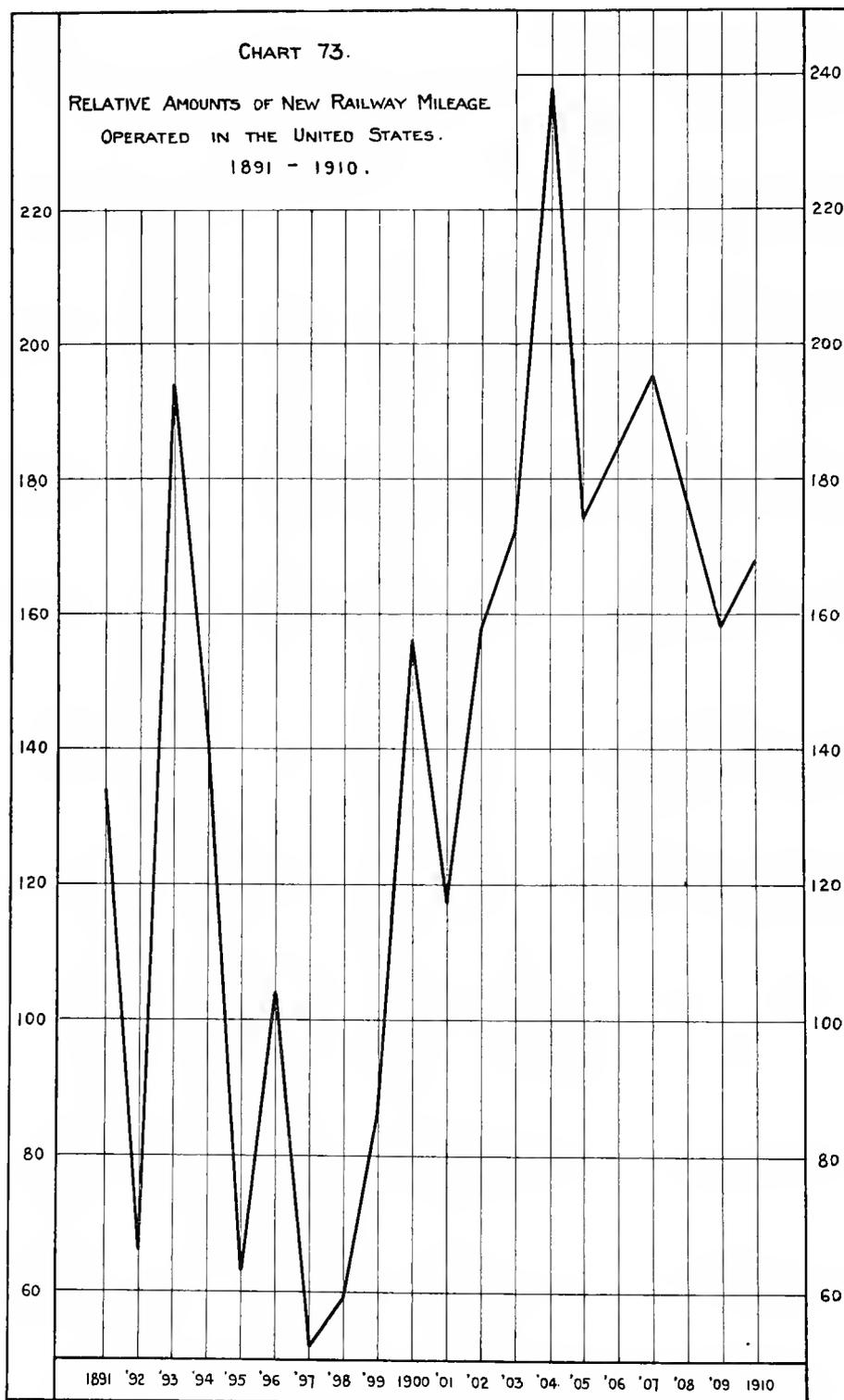


TABLE 120

COST OF BUILDINGS FOR WHICH PERMITS WERE GRANTED IN 45 AMERICAN CITIES  
BY YEARS, 1902-1911

1902.....	\$368,000,000
1903.....	397,000,000
1904.....	460,000,000
1905.....	623,000,000
1906.....	657,000,000
1907.....	612,000,000
1908.....	535,000,000
1909.....	733,000,000
1910.....	675,000,000
1911.....	658,000,000

Like the data for railway mileage, these figures indicate that new construction never ceases, but that it is decisively stimulated by prosperity and retarded by depression. This retardation is felt, indeed, before the depression comes, if the later stages of prosperity are marked by difficulty in raising capital.

## CHAPTER IX

### PROFITS AND BANKRUPTCIES

#### I. PROFITS

Statistics both trustworthy and significant concerning profits are scarce. Most business enterprises not organized as joint-stock companies, and many which are so organized, seek to keep their profits from becoming public. Such accounts as are published are difficult to use because of the many different methods of reckoning profits. It is only after expert scrutiny that the published statements can be accepted, and the chief result of such scrutiny is often the discovery that information of crucial importance for determining the actual rate of profits has been skilfully withheld. When the details are furnished, it is difficult to find a workable definition of profits uniformly applicable to all industries. Further, it is only by collecting figures made by uniform methods for a considerable number of enterprises that representative results can be attained. The profits of a single enterprise can no more be accepted as an index of prevailing conditions than the price of pig-iron can be accepted as an index of fluctuations in the general level of prices.

For the United States at least, these considerations practically restrict the available material covering the years 1890-1911 to industries in which the different enterprises are legally compelled to keep their accounts in a standard form, and to report the results to some official who publishes a digest of the whole. Much of the most important body of such data is that contained in the Interstate Commerce Commission's *Annual Reports on the Statistics of Railways in the United States*.

#### 1. *American Railways*

The leading items in the income accounts of all the interstate railways, considered as a single system, are presented in the following table.<sup>1</sup> The gross earnings from operation have been affected by every passing phase of the

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<sup>1</sup> In compiling the figures from the annual reports it has been necessary to follow the form of income account used until 1907, inclusive, although the new form, introduced in 1908, is more logical in certain respects. The meaning of the most important headings is sufficiently indicated by the following schedule of items included under each. As a rough gauge of the relative importance of each item, its aggregate amount in the year ending June 30, 1907, is given in millions of dollars.

business cycles which have occurred since 1890. The activity of general business from the middle of 1889 to the middle of 1893, barring the first seven months of 1891, caused a moderate increase in traffic receipts. Then the industrial depression brought an abrupt loss of about 12 per cent of the total; the year 1894-95 made but a slight improvement; and the short-lived revival of trade in 1895, which swelled the earnings of 1895-96, was succeeded by renewed depression, which caused another decline in railway earnings. The definite turn of the tide came for the railways, as for other lines of business, in the summer of 1897—that is, at the beginning of the fiscal year 1898. Thereafter gross earnings increased each year until the next major crisis came in 1907; for the depression of 1903-04 did no more than to reduce the rate of gain. But the depression which followed the panic of 1907 caused a decline of revenue reaching \$149,000,000—absolutely more, but relatively much less than the decline in 1893-94. Thus the dependence of railway earnings upon the prosperity of business enterprises in other industries is patent.

Operating expenses, which include the upkeep of the right of way and rolling stock as well as the cost of moving trains, follow the fluctuations of gross earnings very closely. The slight divergencies indicate that railway managers find difficulty in curtailing expenses immediately when traffic falls off. But once their new plans are laid they may be able to prune expenses even in the face of slightly increasing traffic, or at least to prevent expenses from growing at the same pace as traffic. There are also indications that toward the culmination of a period of high prosperity the increasing prices of labor and supplies may make their expenses grow a trifle faster than their

	Amount in 1907	
Gross earnings from operation .....	\$2,589	millions
Passenger revenue .....	565	
Mail .....	50	
Express .....	57	
Freight .....	1,824	
Miscellaneous .....	93	
Operating expenses .....	1,749	
Maintenance of way .....	344	
Maintenance of equipment .....	368	
Conducting transportation .....	971	
General expenses .....	65	
Income from other sources .....	287	
Lease of road .....	125	
Stocks .....	89	
Bonds .....	24	
Miscellaneous .....	49	
Fixed charges .....	678	
Interest on funded debt .....	344	
Rents paid for lease of road .....	129	
Taxes .....	80	
Investments charged to income .....	39	
Miscellaneous .....	86	

receipts. But over a considerable period of time it seems feasible to keep the cost of operating railways in close adjustment to the earnings of operation.

Owing to this close adjustment, net earnings from operations agree rather closely with gross earnings. Net earnings fall a trifle more than gross earnings in periods of depression, rise a trifle faster in the earlier stages of prosperity, and a trifle slower than gross earnings when prosperity approaches its climax. These deviations result, of course, from the slight deviations which have been pointed out between the fluctuations of gross earnings and operating expenses.

To ascertain the total income of the railways, the income from other sources must be added to the net income from operation. This additional income shows exactly the same gain in decennial averages as the items which have been discussed. But from one year to the next it pursues a decidedly different course, responding to changed business conditions much more slowly than does net income from operations. The cause of this tardy response becomes clear when it is noted that the chief items of "income from other sources" are rents for

TABLE 121  
CONDENSED INCOME ACCOUNT FOR THE INTER-STATE RAILWAYS OF THE UNITED STATES  
BY YEARS ENDING JUNE 30, 1890-1910  
Actual amounts in millions of dollars

Years ending June 30	Gross earnings from operation	Operating expenses	Net income from operation	Income from other sources	Total income	Fixed charges	Net income	Dividends	Surplus (+) or deficit (-)
1890	1,052	692	360	127	487	385	102	90	+ 12
1891	1,097	732	365	134	499	389	110	96	+ 14
1892	1,171	781	390	142	532	416	116	102	+ 14
1893	1,221	828	393	150	542	431	111	103	+ 8
1894	1,073	731	342	143	485	429	56	102	- 46
1895	1,075	726	350	132	482	426	56	86	- 30
1896	1,150	773	377	129	506	417	90	88	+ 2
1897	1,122	753	370	125	495	413	81	87	- 6
1898	1,247	818	429	138	568	427	140	96	+ 44
1899	1,314	857	457	149	605	441	164	111	+ 53
1900	1,487	961	526	163	689	461	227	140	+ 88
1901	1,589	1,030	558	180	738	496	242	157	+ 85
1902	1,726	1,116	610	196	806	526	280	185	+ 95
1903	1,901	1,258	643	206	849	553	296	197	+ 99
1904	1,975	1,339	636	213	849	570	279	222	+ 57
1905	2,082	1,391	692	232	924	597	327	238	+ 89
1906	2,326	1,537	789	257	1,046	660	385	273	+112
1907	2,589	1,749	841	287	1,127	678	449	308	+141
1908	2,440	1,710	730	391	1,121	728	393	391	+ 3
1909	2,473	1,650	823	319	1,142	747	395	321	+ 74
1910	2,812	1,882	930	387	1,317	794	523	406	+117
Averages:									
1890-99	1,152.2	769.1	383.3	136.9	520.1	417.4	102.6	96.1	+ 6.5
1900-09	2,058.8	1,374.1	684.8	244.4	929.1	601.6	327.3	243.2	+ 84.3

Compiled from the Interstate Commerce Commission's *Reports on the Statistics of Railways in the United States*. In 1908 the Commission adopted a new form of income accounts. The above figures for 1908 to 1910 were obtained by rearranging the various items for both operating and leased roads so as to conform as nearly as possible to the tables for 1890-1907.

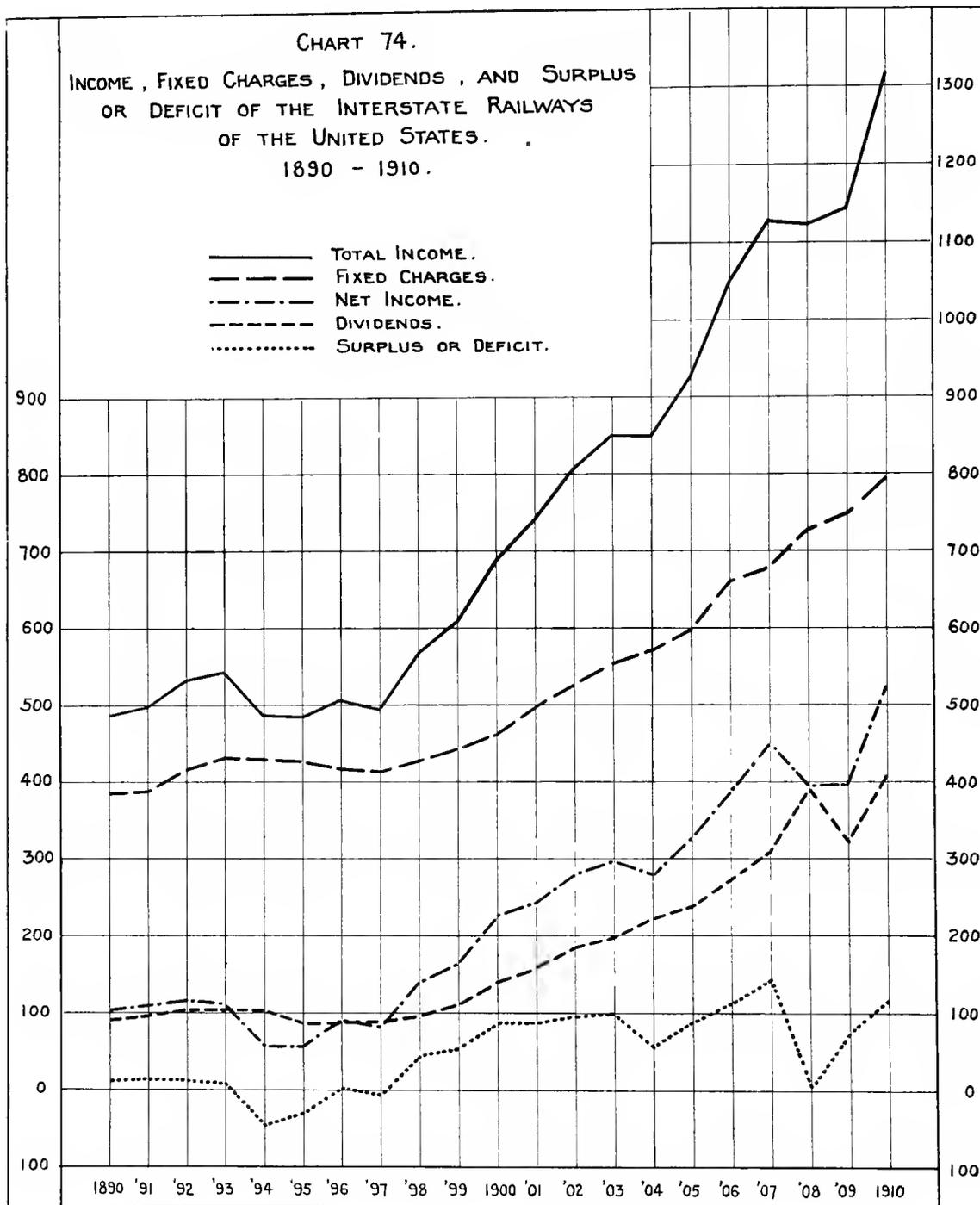
TABLE 121—(Concluded)

CONDENSED INCOME ACCOUNT FOR THE INTER-STATE RAILWAYS OF THE UNITED STATES  
Relative amounts. Average actual amounts in 1890-99 = 100

Years ending June 30	Gross earnings from operation	Operating expenses	Net income from operation	Income from other sources	Total income	Fixed charges	Net income	Dividends	Surplus (+) or deficit (—)
	91	90	94	93	94	92	99	94	
1890									+ 185
1891	95	95	95	98	96	93	107	100	+ 215
1892	102	102	102	104	102	100	113	106	+ 215
1893	106	108	103	110	104	103	108	107	+ 123
1894	93	95	89	104	93	103	55	106	— 708
1895	93	94	91	96	93	102	55	89	— 462
1896	100	101	98	94	97	100	88	92	+ 31
1897	97	98	97	91	95	99	79	91	— 92
1898	108	106	112	101	109	102	136	100	+ 677
1899	114	111	119	109	116	106	160	115	+ 816
1900	129	125	137	119	132	110	221	146	+1,354
1901	138	134	146	131	142	119	236	163	+1,308
1902	150	145	159	143	155	126	273	193	+1,461
1903	165	164	168	150	163	132	289	205	+1,523
1904	171	174	166	156	163	137	272	231	+ 877
1905	181	181	181	169	178	143	319	248	+1,369
1906	202	200	206	188	201	158	375	284	+1,723
1907	225	227	219	210	217	162	438	320	+2,169
1908	212	222	190	286	216	174	383	407	+ 54
1909	215	215	215	233	220	179	385	334	+1,138
1910	244	245	243	283	253	190	510	422	+1,800
Averages:									
1890-99	100	100	100	100	100	100	100	100	+ 100
1900-09	179	179	179	179	179	144	319	253	+1,295

the use of leased lines, interest upon bonds and dividends upon stocks owned by the railway corporations. The amount of the first and second items is usually determined by contracts running for several or for many years, so that the receipts are not diminished promptly by business depression, unless the debtor companies are forced to compromise with their creditors, or become bankrupt. Even dividends, as a later column shows, are not promptly reduced to the same extent as traffic earnings when business becomes dull, or increased so rapidly when business revives.

Because of the steadiness of this "income from other sources," the total income of railways follows the course of business cycles less closely than does net income from operation. Since the former income averages rather more than one-third of the latter, the influence of this factor in steadying total income is considerable. Indeed, the large increase in income from other sources, due almost wholly to bigger dividends upon stocks, almost offsets the loss of earnings from operation in 1907-08.



From the total income it is next necessary to deduct the fixed charges, among which payments for interest on funded and floating debt and for the use of leased lines make up between two-thirds and three-fourths of the total. Of course such items are far more constant in amount than are the operating expenses. How difficult it is to retrench fixed charges was shown after the panic of 1893. Despite their desperate straits and their numerous bankruptcies, the interstate railways were able to reduce fixed charges less than one-half per cent between 1892-93 and 1893-94. After the panic of 1907, these charges even increased in the face of declining traffic. On the other hand, fixed charges grow less rapidly than receipts when business is brisk, and may even be reduced by careful management in the face of slowly recuperating business as in 1894-97.

The deduction of these relatively stable amounts from the total income has the effect of making net income far more variable than any of its component elements. That is, prosperity and depression raise and reduce profits proportionately far more than they raise and reduce gross earnings or operating expenses.

The income of stockholders from railway shares, however, has been kept more stable than the profits of the railways. So anxious have been the financial managers of the companies to keep up dividends, that they have been ready to incur heavy deficits in current income by paying out more in dividends than they have received in profits. When prosperity has returned, they have pursued the opposite policy of paying dividends substantially less than the current profits, thereby accumulating handsome surpluses to increase the future earning capacity of the properties.

## 2. *The National Banks*

The data published by the Comptroller of the Currency concerning the profits made by the national banks are much less detailed than the Interstate Commerce Commission's data concerning railway profits. But the former possess one advantage. Unlike the railway figures, they can be computed with confidence in the form of percentages of the capital and surplus employed. These percentages are not averages obtained by adding the percentages for the separate banks, and dividing by their numbers; but the quotients obtained by dividing the total earnings and dividends by the total capital and surplus of all the national banks.

While railway profits were rather more than holding their own in 1890-93, bank profits were distinctly declining, at a slow pace. The panic did not at once cause a heavy loss of earnings; but its sequel was more serious. In the half-year September 1, 1893, to March 1, 1894, the losses on account of bad

TABLE 122

ABSTRACT OF REPORTS OF EARNINGS AND DIVIDENDS OF THE NATIONAL BANKS  
BY HALF YEARS, 1890-1911

Actual amounts in millions of dollars

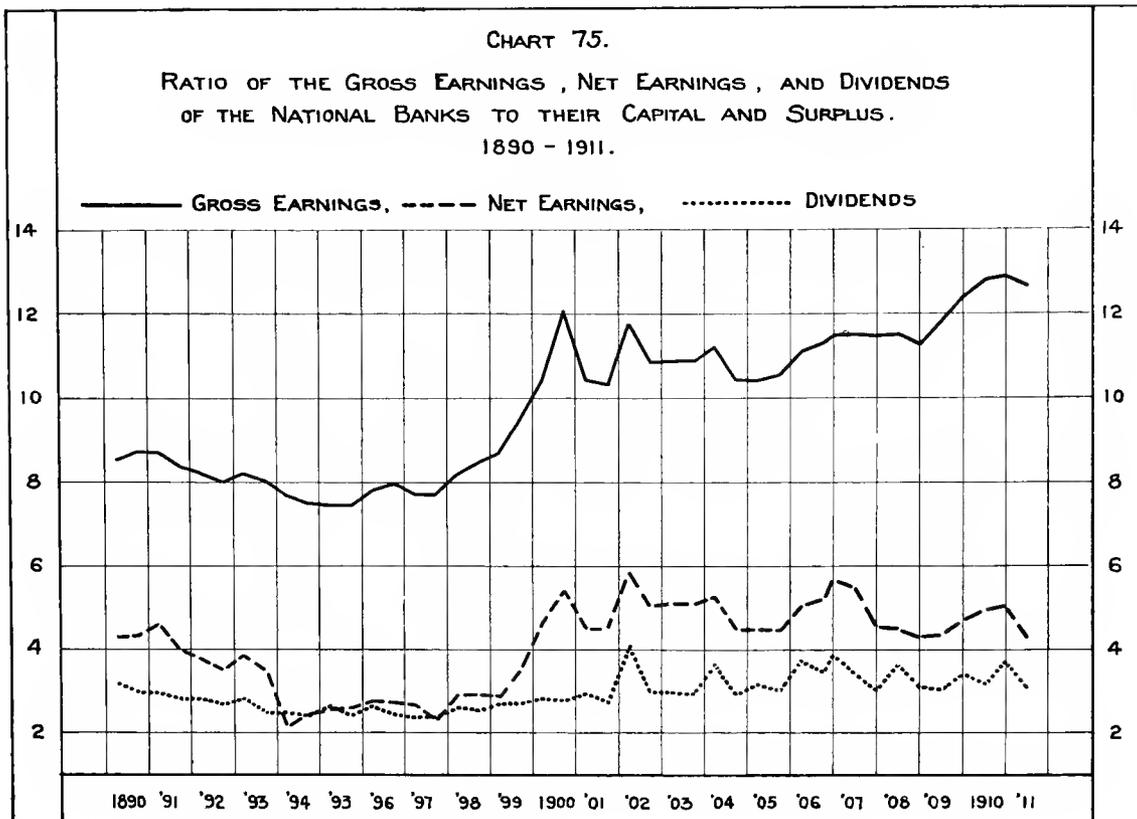
	Capital and surplus	Gross earnings	Charged off		Net earnings	Dividends
			Losses and premiums	Expenses and taxes		
Sep. 1, 1889-Mar. 1, 1890	820	70.4	9.8	25.4	35.2	26.2
Mar. 1, 1890-Sep. 1, 1890	847	74.2	11.5	25.8	36.8	24.9
Sep. 1, 1890-Mar. 1, 1891	872	76.1	8.8	27.2	40.1	25.8
Mar. 1, 1891-Sep. 1, 1891	894	75.2	11.8	27.9	35.6	25.0
Sep. 1, 1891-Mar. 1, 1892	910	75.1	11.8	29.0	34.4	25.5
Mar. 1, 1892-Sep. 1, 1892	917	73.4	11.4	29.7	32.3	24.9
Sep. 1, 1892-Mar. 1, 1893	933	76.9	10.3	30.4	36.1	26.5
Mar. 1, 1893-Sep. 1, 1893	930	74.8	11.7	30.5	32.7	23.2
Sep. 1, 1893-Mar. 1, 1894	928	71.5	21.5	30.2	19.8	23.2
Mar. 1, 1894-Sep. 1, 1894	910	68.2	16.5	29.5	22.2	22.1
Sep. 1, 1894-Mar. 1, 1895	911	68.0	14.4	30.2	23.4	24.2
Mar. 1, 1895-Sep. 1, 1895	905	67.5	14.2	29.8	23.5	21.8
Sep. 1, 1895-Mar. 1, 1896	903	70.9	15.4	30.4	25.1	23.7
Mar. 1, 1896-Sep. 1, 1896	899	71.6	16.3	30.6	24.7	21.8
Sep. 1, 1896-Mar. 1, 1897	895	69.3	14.5	30.9	23.9	21.4
Mar. 1, 1897-Sep. 1, 1897	880	68.4	17.8	30.3	20.3	21.0
Sep. 1, 1897-Mar. 1, 1898	874	71.7	15.3	31.2	25.2	22.8
Mar. 1, 1898-Sep. 1, 1898	846	71.7	15.9	31.0	24.8	21.4
Sep. 1, 1898-Mar. 1, 1899	864	75.3	16.5	34.4	24.5	23.5
Mar. 1, 1899-Sep. 1, 1899	850	81.2	17.2	34.1	29.8	23.2
Sep. 1, 1899-Mar. 1, 1900	858	89.6	13.3	36.1	40.2	24.2
Mar. 1, 1900-Sep. 1, 1900	863	104.1	20.3	36.6	47.1	23.8
Sep. 1, 1900-Mar. 1, 1901	897	93.8	14.5	38.8	40.5	26.4
Mar. 1, 1901-Sep. 1, 1901	910	94.4	14.2	38.9	41.3	25.3
Sep. 1, 1901-Mar. 1, 1902	980	115.4	15.1	42.5	57.8	39.5
Mar. 1, 1902-Sep. 1, 1902	973	105.9	14.4	42.7	48.8	28.7
Sep. 1, 1902-Mar. 1, 1903	1,054	114.8	15.7	45.1	54.0	31.4
Mar. 1, 1903-Sep. 1, 1903	1,098	119.8	15.8	48.0	55.9	32.1
Sep. 1, 1903-Mar. 1, 1904	1,140	128.1	17.1	50.4	60.6	41.5
Mar. 1, 1904-Sep. 1, 1904	1,164	121.3	16.3	52.6	52.4	34.1
Sep. 1, 1904-Mar. 1, 1905	1,177	122.5	14.4	55.3	52.8	36.9
Mar. 1, 1905-Sep. 1, 1905	1,191	126.1	16.0	56.9	53.1	36.2
Sep. 1, 1905-Mar. 1, 1906	1,198	133.7	15.2	57.9	60.6	44.6
Mar. 1, 1906-Sep. 1, 1906	1,286	145.6	16.1	62.6	67.0	44.6
Sep. 1, 1906-Jan. 1, 1907	1,323	152.1	15.0	61.7	75.4	51.3
Jan. 1, 1907-July 1, 1907	1,407	162.6	15.9	69.9	76.9	48.4
July 1, 1907-Jan. 1, 1908	1,425	163.7	25.3	73.3	65.1	43.9
Jan. 1, 1908-July 1, 1908	1,460	168.7	25.3	77.2	66.2	53.5
July 1, 1908-Jan. 1, 1909	1,499	169.2	21.1	82.9	65.1	47.1
Jan. 1, 1909-July 1, 1909	1,510	179.5	19.3	94.1	66.1	45.9
July 1, 1909-Jan. 1, 1910	1,566	194.7	20.5	100.5	73.7	53.7
Jan. 1, 1910-July 1, 1910	1,621	207.9	18.2	109.3	80.5	52.2
July 1, 1910-Jan. 1, 1911	1,668	215.2	18.8	111.9	84.5	62.4
Jan. 1, 1911-July 1, 1911	1,688	213.8	21.2	120.1	72.5	52.3
Averages						
1890-99	889	72.6	14.1	29.9	28.5	23.6
1900-09	1,189	133.6	17.2	58.3	58.1	38.7

TABLE 122—(Concluded)

ABSTRACT OF REPORTS OF EARNINGS AND DIVIDENDS OF THE NATIONAL BANKS  
 BY HALF YEARS, 1890-1911

	Ratios			
	Gross earnings to capital and surplus	Net earnings to capital and surplus	Dividends to capital and surplus	Dividends to capital
Sep. 1, 1889-Mar. 1, 1890	8.59%	4.30%	3.20%	4.27%
Mar. 1, 1890-Sep. 1, 1890	8.76	4.35	2.94	3.92
Sep. 1, 1890-Mar. 1, 1891	8.73	4.61	2.96	3.95
Mar. 1, 1891-Sep. 1, 1891	8.41	3.99	2.80	3.75
Sep. 1, 1891-Mar. 1, 1892	8.25	3.78	2.81	3.78
Mar. 1, 1892-Sep. 1, 1892	8.00	3.52	2.71	3.66
Sep. 1, 1892-Mar. 1, 1893	8.24	3.87	2.84	3.85
Mar. 1, 1893-Sep. 1, 1893	8.04	3.51	2.49	3.40
Sep. 1, 1893-Mar. 1, 1894	7.70	2.13	2.50	3.41
Mar. 1, 1894-Sep. 1, 1894	7.49	2.44	2.43	3.32
Sep. 1, 1894-Mar. 1, 1895	7.46	2.57	2.65	3.64
Mar. 1, 1895-Sep. 1, 1895	7.46	2.60	2.41	3.32
Sep. 1, 1895-Mar. 1, 1896	7.85	2.78	2.63	3.62
Mar. 1, 1896-Sep. 1, 1896	7.96	2.75	2.43	3.35
Sep. 1, 1896-Mar. 1, 1897	7.74	2.68	2.39	3.32
Mar. 1, 1897-Sep. 1, 1897	7.77	2.31	2.38	3.32
Sep. 1, 1897-Mar. 1, 1898	8.20	2.89	2.61	3.65
Mar. 1, 1898-Sep. 1, 1898	8.48	2.93	2.54	3.54
Sep. 1, 1898-Mar. 1, 1899	8.72	2.84	2.72	3.82
Mar. 1, 1899-Sep. 1, 1899	9.55	3.51	2.73	3.85
Sep. 1, 1899-Mar. 1, 1900	10.44	4.68	2.82	4.01
Mar. 1, 1900-Sep. 1, 1900	12.06	5.46	2.76	3.88
Sep. 1, 1900-Mar. 1, 1901	10.46	4.52	2.94	4.18
Mar. 1, 1901-Sep. 1, 1901	10.37	4.54	2.73	3.96
Sep. 1, 1901-Mar. 1, 1902	11.78	5.90	4.03	5.81
Mar. 1, 1902-Sep. 1, 1902	10.88	5.02	2.95	4.30
Sep. 1, 1902-Mar. 1, 1903	10.89	5.12	2.98	4.43
Mar. 1, 1903-Sep. 1, 1903	10.91	5.09	2.93	4.37
Sep. 1, 1903-Mar. 1, 1904	11.24	5.31	3.64	5.48
Mar. 1, 1904-Sep. 1, 1904	10.42	4.50	2.93	4.45
Sep. 1, 1904-Mar. 1, 1905	10.41	4.49	3.14	4.79
Mar. 1, 1905-Sep. 1, 1905	10.59	4.46	3.04	4.63
Sep. 1, 1905-Mar. 1, 1906	11.16	5.06	3.73	5.74
Mar. 1, 1906-Sep. 1, 1906	11.32	5.21	3.47	5.41
Sep. 1, 1906-Jan. 1, 1907	11.50	5.70	3.88	6.28
Jan. 1, 1907-July 1, 1907	11.56	5.46	3.44	5.58
July 1, 1907-Jan. 1, 1908	11.49	4.57	3.08	4.95
Jan. 1, 1908-July 1, 1908	11.55	4.54	3.66	5.93
July 1, 1908-Jan. 1, 1909	11.29	4.34	3.14	5.12
Jan. 1, 1909-July 1, 1909	11.89	4.38	3.04	4.99
July 1, 1909-Jan. 1, 1910	12.43	4.71	3.43	5.65
Jan. 1, 1910-July 1, 1910	12.82	4.96	3.21	5.35
July 1, 1910-Jan. 1, 1911	12.90	5.07	3.74	6.20
Jan. 1, 1911-July 1, 1911	12.67	4.29	3.10	5.18
Averages				
1890-99	8.17	3.22	2.66	3.64
1900-09	11.17	4.91	3.23	4.95

Compiled from the annual Reports of the Comptroller of the Currency.



debts were \$10,000,000 above the average prevailing theretofore. And during the dull years which followed the banks were unable to maintain their gross earnings at the accustomed ratio. On the contrary, their losses continued heavy during the whole period of depression, and they could not reduce expenses and taxes below the level of the years before the panic. Hence net earnings suffered a loss much more severe than did gross earnings. This reduction in net profits, indeed, was so severe as not only to stop the investment of fresh capital in national banks, but also to cause a withdrawal of many millions of capital formerly invested. Nevertheless, the losses suffered by the banks in the period of depression were by no means equal to the losses suffered by the railways.

This greater stability of banking as compared with railway profits showed itself again when prosperity returned; but this time to the disadvantage of the banks. After 1897 both gross and net earnings began to increase, but it was not until the half-year September 1, 1899, to March 1, 1900, that the ratio of net earnings to capital and surplus equalled the record set in 1890-91. From this time forward, however, the level of fluctuation in banking profits was decidedly higher than it had been in the preceding decade. The "rich man's

panic" gave the banks a period of keen anxiety and reduced their earnings for a time, and the crisis of 1907 increased their losses through bad debts. But the lowest level of profits touched in these lean years was well above the figures of 1893-97, and the large profits made in the fat years 1901-03 and 1905-07 set records much above the figures of 1890-91. And these larger profits attracted a rapidly increasing volume of capital into the business of banking under the national law.<sup>2</sup>

### 3. German Corporations

Although close comparisons between the foregoing figures for the railways and the national banks are precluded by the dissimilarity between the two sets of data, it seems certain that bank profits and railway profits feel the effect of changes from prosperity to depression in unequal measure. To decide which set of figures gives the truer index of the relationship between profits and business cycles for the purposes of a general discussion, or to determine whether the situation in different industries can safely be represented by any average or type, would be impossible if we were confined to the scanty American data. It is therefore fortunate that the efforts of certain German students to construct uniform statistics of profits for many industries afford a wider basis for conclusions.<sup>3</sup>

Among these contributions, Wagon's book on the financial development of German corporations in 1870-1900 is most serviceable for the present purpose.<sup>4</sup> It is based primarily upon the annual reports of the joint-stock companies listed on the Berlin exchange, and covers nearly forty industries. The tables for most of these industries show (1) the number of companies for which reports are used, (2) their share-capital, (3) loans, (4) reserves, (5) net profits, (6) losses, and (7) dividends. Of these data, only the rate of net profits left after the deduction of losses, and the rate of dividends are reproduced in the next table for the years 1890-1900. As a rough gauge of the scope of the data for each industry, the average number of companies and the average capital

<sup>2</sup> Another interesting bit of evidence has been supplied by Professor E. S. Meade. He has computed the net earnings from operations of twenty-nine industrial "trusts" in the United States, and reduced the data to an index number on the basis, profits of 1902=100. The results are as follows:

1902.....	100.0	1907.....	134.8
1903.....	103.5	1908.....	111.8
1904.....	92.2	1909.....	122.7
1905.....	104.6	1910.....	137.7
1906.....	124.1		

He adds that the figures for 1911 are not yet available, but that they will undoubtedly show a considerable decline. "The Economies of Combination," *Journal of Political Economy*, April, 1912.

<sup>3</sup> The German literature upon the subject is reviewed by Professor W. J. Ashley, in "The Statistical Measurement of Profit," *Economic Journal*, December, 1910. J. von Körösi's statistical investigations into the profits of joint-stock companies domiciled in Buda-Pesth gave the impetus to and set the model for the subsequent workers.

<sup>4</sup> Eduard Wagon, *Die finanzielle Entwicklung deutscher Aktiengesellschaften von 1870-1900*. (Sammlung nationalökonomischer und statistischer Abhandlungen des Staatswissenschaftlichen Seminars zu Halle.) Jena, 1903.

TABLE 123

RATIOS OF NET PROFITS AND OF DIVIDENDS TO SHARE CAPITAL IN THIRTY-SEVEN GERMAN INDUSTRIES, ACCORDING TO WAGON

BY YEARS, 1890-1900

## NET PROFITS

	Coal mining 1	Iron mining and smelting 2	Metal industries 3	Machinery 4	Building materials 5	Salt works 6	Glass 7	Porcelain 8	Chemicals 9	Electricity 10
Average number of enterprises	34	51	30	46	21	6	3	4	19	10
Average aggregate capital <sup>1</sup>	64.4	98.0	18.2	28.6	12.8	8.1	4.3	1.3	27.5	33.6
1890	17.85	9.10	10.52	12.40	11.04	10.41	12.53	14.82	17.49	10.51
1891	16.38	7.74	8.05	12.06	7.93	5.92	9.53	15.28	16.17	9.82
1892	8.55	5.06	7.89	10.04	5.90	3.93	9.74	13.07	16.93	8.88
1893	5.66	4.84	7.24	7.95	6.10	10.64	9.94	14.24	17.71	8.51
1894	4.99	3.57	12.62	8.91	8.43	11.18	9.60	12.85	16.49	9.29
1895	7.00	4.99	14.99	10.97	10.12	9.85	11.18	13.07	14.58	12.29
1896	9.07	7.45	12.66	12.75	11.78	10.56	12.77	20.41	14.60	12.45
1897	11.28	11.24	15.56	14.73	12.73	11.34	12.56	18.93	12.56	13.09
1898	11.66	12.17	15.56	13.94	12.39	12.29	12.95	19.77	14.92	10.50
1899	12.40	15.14	13.72	15.42	17.47	12.43	14.79	14.26	15.33	11.85
1900	17.74	13.62	9.86	12.91	14.13	13.26	17.91	15.44	14.44	11.25
DIVIDENDS										
1890	13.82	7.17	8.48	9.06	8.70	8.60	10.50	14.00	13.04	8.09
1891	13.40	6.76	7.32	9.48	6.51	5.17	8.26	12.50	11.91	7.78
1892	7.29	4.75	7.25	8.28	4.83	5.38	8.35	11.00	12.59	7.41
1893	4.52	4.04	6.51	7.47	4.77	7.03	8.26	10.90	12.21	8.42
1894	4.36	4.19	9.15	6.67	6.66	8.53	8.38	10.34	11.99	9.08
1895	6.27	4.31	10.55	8.48	7.88	5.73	9.37	12.71	1.48	9.16
1896	7.93	6.13	12.70	9.33	9.63	7.33	10.71	13.98	10.77	8.38
1897	9.94	9.03	11.64	10.29	10.21	8.49	10.74	13.10	10.76	9.87
1898	10.22	9.95	11.38	10.25	8.35	9.04	11.12	13.36	11.33	7.70
1899	10.79	11.97	10.58	11.48	13.17	9.16	12.05	10.50	12.27	9.06
1900	14.62	10.97	7.30	10.96	9.21	10.19	14.08	10.55	11.14	8.64

<sup>1</sup> In millions of dollars.

TABLE 123—(Continued)

RATIOS OF NET PROFITS AND OF DIVIDENDS TO SHARE CAPITAL IN THIRTY-SEVEN GERMAN INDUSTRIES, ACCORDING TO WAGON

BY YEARS, 1890-1900

	NET PROFITS									
	Paper 11	Rubber 12	Lumber 13	Milling 14	Building 15	Printing 16	Miscellaneous 17	Gas 18	Water 19	
Average number of enterprises	10	8	2	8	30	2	9	4	3	
Average aggregate capital <sup>1</sup>	4.4	3.3	1.7	4.2	25.1	0.6	5.5	6.3	3.3	
1890	22.83	20.44	7.72	7.85	5.16	7.86	10.40	11.34	9.30	
1891	10.88	14.38	7.95	15.92	7.54	3.55	8.36	10.16	8.94	
1892	13.37	17.18	4.83	5.98	5.74	5.28	2.87	9.80	9.35	
1893	15.88	17.45	4.91	5.88	4.22	1.56	5.86	10.81	7.34	
1894	16.01	14.04	6.67	4.29	3.92	6.66	8.68	11.79	9.78	
1895	14.24	14.95	7.72	6.48	4.36	8.23	11.65	13.00	11.38	
1896	19.30	19.50	8.34	8.25	3.60	3.36	43.94	13.48	12.25	
1897	18.49	18.37	8.33	7.89	4.18	4.51	39.00	15.02	12.81	
1898	15.80	12.58	8.32	7.50	4.62	8.34	20.81	13.11	14.10	
1899	19.69	7.28	6.51	3.86	5.38	7.60	19.25	14.17	12.19	
1900	13.65	14.52	5.43	5.06	4.45	9.38	13.77	14.45	12.67	
	DIVIDENDS									
1890	10.36	17.04	6.50	6.61	2.95	6.67	7.42	8.25	8.50	
1891	7.45	11.70	6.50	11.75	4.76	4.74	6.27	8.19	7.50	
1892	7.32	13.93	4.00	6.08	3.93	4.44	4.55	8.15	8.20	
1893	10.07	14.64	4.00	4.17	3.58	2.44	4.62	8.18	5.94	
1894	9.31	11.57	5.50	4.16	3.34	4.99	6.02	8.18	8.61	
1895	8.87	12.24	6.00	5.63	3.35	6.64	8.35	8.27	10.04	
1896	11.90	14.98	6.43	6.85	2.97	2.57	17.87	9.05	11.08	
1897	12.68	14.17	6.52	6.32	3.43	5.50	12.92	8.88	11.55	
1898	11.26	11.37	6.39	5.67	3.49	6.34	16.05	8.55	11.33	
1899	10.67	7.37	5.35	5.46	4.49	6.21	14.36	9.41	11.10	
1900	10.16	11.77	4.45	4.30	4.22	8.50	13.46	9.65	11.02	

<sup>1</sup> In millions of dollars.

TABLE 123—(Continued)

RATIOS OF NET PROFITS AND OF DIVIDENDS TO SHARE CAPITAL IN THIRTY-SEVEN GERMAN INDUSTRIES, ACCORDING TO WAGON

BY YEARS, 1890-1900

		NET PROFITS								
		Cloth 20	Spinning and weaving 21	Sugar 22	Brewing 23	Distilling 24	Foods 25	Baths 26	Railways 27	Land transport without rails 28
Average number of enterprises Average aggregate capital <sup>1</sup>		11	22	7	49	2	4	2	24	5
		5.2	14.0	4.7	25.3	1.3	1.9	0.1	66.7	2.0
	1890	4.14	8.00	7.00	8.42	4.67	8.86	4.57	6.80	10.08
	1891	3.07	5.20	8.39	6.87	4.67	5.48	4.88	6.33	9.89
	1892	4.31	4.60	8.29	7.71	4.73	3.00	5.58	6.07	11.27
	1893	8.58	8.53	8.63	9.49	6.44	3.41	5.61	11.25	13.31
	1894	5.80	5.38	7.45	9.35	11.87	3.80	6.45	6.10	13.32
	1895	10.23	10.55	5.14	11.54	16.39	9.97	5.85	5.99	13.36
	1896	10.82	11.86	12.06	12.38	16.46	14.24	5.62	7.79	12.03
	1897	6.35	8.52	14.35	12.96	17.38	12.84	3.97	7.42	6.59
	1898	7.39	8.68	11.57	10.90	16.20	14.76	5.03	7.15	11.59
	1899	21.45	9.04	16.11	11.12	8.97	15.56	4.16	6.48	12.09
	1900	-15.63	7.29	17.05	11.21	16.41	12.42	6.41	6.68	5.15
		DIVIDENDS								
	1890	5.04	6.54	5.65	6.95	4.00	5.02	3.90	3.77	7.80
	1891	1.40	4.98	6.99	6.17	4.00	4.49	4.22	3.46	7.89
	1892	3.33	5.10	5.58	6.41	4.00	2.67	4.49	3.23	9.35
	1893	5.87	6.72	5.78	7.95	5.00	2.67	4.92	4.48	10.81
	1894	4.63	4.98	4.91	7.43	7.00	3.26	3.14	4.20	11.07
	1895	7.41	8.09	5.34	8.62	10.93	6.99	4.81	4.98	11.09
	1896	7.97	8.04	8.55	9.75	10.90	9.14	4.41	4.52	9.98
	1897	4.97	6.20	8.51	9.67	11.36	8.81	3.39	4.76	8.49
	1898	6.61	6.42	8.87	9.42	9.41	12.10	3.67	4.60	7.46
	1899	11.04	6.73	11.45	9.11	4.64	10.19	3.67	4.80	9.83
	1900	2.65	6.34	13.12	9.76	13.64	8.52	5.00	4.58	6.22

<sup>1</sup> In millions of dollars.

TABLE 123—(Concluded)  
 RATIOS OF NET PROFITS AND OF DIVIDENDS TO SHARE CAPITAL IN THIRTY-SEVEN GERMAN INDUSTRIES, ACCORDING  
 TO WAGON  
 BY YEARS, 1890-1900

	NET PROFITS								
	Land transport on rails 29	Inland navigation 30	Marine navigation 31	Insurance				Trans- portation 36	Banking 37
				Life 32	Fire 33	Hail 34	Re-insurance 35		
Average number of enterprises	19	3	5	23	29	5	33	46	145
Average aggregate capital <sup>1</sup>	23.8	2.4	25.3	6.5	9.6	1.6	4.5	4.4	478.6
1890	9.09	5.42	8.39	45.36	32.89	10.80	19.37	21.88	11.06
1891	9.67	1.75	2.28	50.26	30.29	-44.43	21.89	15.78	8.82
1892	8.72	0.96	0.94	55.26	20.75	47.76	8.62	25.41	8.24
1893	7.66	2.30	1.98	59.20	16.46	70.57	9.21	22.03	8.48
1894	9.49	4.68	-2.36	71.26	33.31	41.96	26.13	23.74	8.28
1895	11.50	6.48	5.26	78.35	22.89	32.21	16.14	15.54	10.32
1896	13.14	3.12	11.99	73.75	36.84	-17.83	29.27	12.94	10.27
1897	10.22	4.71	16.23	87.34	34.17	23.79	29.56	19.43	9.90
1898	7.95	5.58	10.01	86.29	33.56	- 4.62	22.70	18.48	10.54
1899	7.62	7.38	10.35	94.54	15.24	2.45	4.06	11.92	11.27
1900	6.58	5.69	13.81	104.60	23.91	10.10	6.44	18.18	9.14
	DIVIDENDS								
1890	7.96	4.30	7.16	15.69	21.26	6.64	13.25	16.22	7.60
1891	7.08	2.39	2.20	14.02	20.48	1.18	13.45	15.24	6.50
1892	6.40	0.78	0.94	13.02	18.13	12.69	11.45	16.52	6.20
1893	6.58	1.75	1.83	12.93	15.92	20.56	8.00	16.50	6.25
1894	6.65	3.38	0.18	13.68	21.65	18.67	13.03	16.09	6.74
1895	8.12	4.97	2.47	12.81	17.48	15.23	12.24	13.96	7.38
1896	9.28	2.64	4.05	12.81	22.32	4.31	14.58	13.44	7.63
1897	8.49	3.86	5.58	13.02	21.97	12.70	14.34	13.69	7.66
1898	6.73	4.51	7.47	12.79	22.48	8.67	14.19	12.64	7.89
1899	6.08	6.07	7.92	12.79	17.42	6.77	12.39	12.89	8.21
1900	6.21	4.71	9.43	12.96	19.32	8.70	10.46	13.09	7.49

<sup>1</sup> In millions of dollars.

for this eleven-year period are shown in the headings. The percentages of net profits and of dividends are computed by dividing the sums of the actual profits and dividends for all the companies included by the sums of their share capitals. But in the case of the insurance companies the divisor is the sums of the paid-up capitals. The practice prevalent in Germany of issuing shares at a premium makes the capital actually invested somewhat larger as a rule than the nominal share-capital on the basis of which profits and dividends are computed. Hence the figures overstate the profitableness of the actual investments. But this fact invalidates the following comparisons between the profits made in years of depression and in years of prosperity in relatively slight degree. On the other hand, the dividend rates understate the gains derived by shareholders, because they omit the gains from the privilege of subscribing to new issues of stock on terms more advantageous than those open to the general public. Finally, Wagon can offer no assurance of substantial uniformity in the methods of accounting followed by his different companies. Hence it is unsafe to base upon the figures any but broad and general conclusions concerning the trend of profits from one phase of the business cycle to the next.

To compute the average rate of profits for the thirty-seven industries which are represented in Table 123 would be easy; but the value of the results would be highly problematical. The general trend and the numerous divergencies are both indicated by the following statement of the number of industries which showed their highest and lowest rates of profits during each year of the business cycle which began with depression in 1891 and culminated in the crisis of 1900.

	Number of industries showing their	
	lowest rate of profits in the corresponding years	highest rate of profits in the corresponding years
1891	6	2
1892	9	1
1893	5	3
1894	4	1
1895	2	1
1896	1	7
1897	2	7
1898	0	1
1899	5	8
1900	3	6
	—	—
	37	37

Except 1898, every year of the whole cycle was both the year of the lowest profits for one or more industries and also the year of the highest profits of one or more other industries. The variety of the fortunes enjoyed by different

industries could hardly be shown more strikingly than by this fact. It is therefore clear that no single industry could safely be taken as typical of all. And yet the same figures unmistakably show a general trend. The early years of the decade were much less profitable for most industries than the years beginning in 1896. They also show that the early stages of business revival mark the highest level of profits for quite as many industries as the years when the movement culminates, and that as the crisis approaches an increasing number of industries find their profits falling to a low ebb.

Concerning Wagon's data for dividends, it is sufficient to remark that they follow the rate of profits, but at a distance. Like the American railways and banks, the German industries of all kinds keep their dividends much more stable than their net profits—reducing the rates less than profits fall in unfavorable seasons and raising them less than profits rise when times are good. Incidentally these figures show that in Germany as in America the business enterprises save large sums out of their current incomes and reinvest the money in their undertakings.

One other piece of German evidence may be added—a table compiled by Dermietzel to show the general trend of dividends declared by joint-stock companies engaged in a number of industries. Here the capital of the companies is classified according to the rate of dividends paid, and close attention is necessary to understand the figures. During the depression of 1891-94 the

TABLE 124

NOMINAL CAPITAL OF GERMAN JOINT-STOCK COMPANIES CLASSIFIED ACCORDING TO THE RATE OF DIVIDENDS  
DECLARED  
BY YEARS, 1890-1902

	Rate of dividends declared							
	0%	0-5%	5-10%	10-15%	15-20%	20-25%	25-30%	30-35%
	Percent of aggregate capital paying each rate of dividend							
1890	1.6	5.4	54.8	31.4	4.9	1.9	....	....
1891	4.4	10.9	69.1	10.3	3.5	1.1	.7	....
1892	3.5	19.5	66.2	8.5	1.6	....	.7	....
1893	4.1	25.1	62.4	7.7	....	....	.7	....
1894	7.5	13.3	65.9	12.6	....	....	.7	....
1895	5.2	9.8	62.9	20.3	1.1	....	.7	....
1896	3.2	5.0	66.9	21.2	3.1	....	.6	....
1897	.8	2.3	65.3	25.9	5.2	....	.5	....
1898	.7	2.0	61.1	29.8	5.7	.7	....	....
1899	....	.4	59.8	31.5	6.1	....	2.2	....
1900	1.4	8.0	62.1	22.4	3.3	2.3	....	.5
1901	10.1	21.8	47.8	17.4	.8	1.3	.5	.3
1902	9.4	16.9	54.9	15.1	2.0	.9	.5	.3

Compiled from Otto Dermietzel, *Statistische Untersuchungen über die Kapitalrente der grösseren deutschen Aktiengesellschaften (mit Ausschluss der Eisenbahnen) von 1876-1902* (Göttingen, 1906) pp. 61-3. Includes no companies with nominal capitals of less than ten million marks. Banks are more fully represented than any other class of enterprises.

proportion of capital paying no dividends or low dividends is high. But when prosperity returned the proportion paying 10 per cent or more increased rapidly until 1899. The recession of prosperity in 1900 appears in a moderate falling off of the percentages of capital in the columns for the higher rates; but it is not until 1901 that a severe depression is again indicated.

## II. BANKRUPTCIES

### 1. *The United States*

Two great commercial agencies, Bradstreet's and Dun's, regularly report the number and the liabilities of commercial enterprises which fail in the United States. That there are considerable discrepancies between their figures appears from the following table, in which the data compiled by the two agencies are arranged in parallel columns. As a rule, the number of failures reported by Dun is greater than the number reported by Bradstreet; but the contrary is true in 1891, 1893, and 1899. The liabilities differ more widely than the number of failures, and Bradstreet's figures are greater than Dun's about half the time. The cause of these discrepancies—apart from the difficulty of securing accurate information—is not altogether clear. *Bradstreet's* explains that its figures do not include failures of banks, professional men, farmers, stock-brokers, or real estate dealers, and that they do not include cases of "failure to succeed" which involve no loss to creditors. Whether Dun's figures do include these classes is not known, because the figures are published without explanation of their scope.

For the present purpose, however, these discrepancies are of little moment; for the general conclusions suggested by the two sets of data are the same. (1) The number of failures declines in the earlier stages of prosperity, rises slowly as a crisis approaches, reaches its maximum during the months of the crisis, and, though declining, remains large during the period of depression. (2) The aggregate and the average liabilities of bankrupt firms show similar but more violent fluctuations. During years of prosperity, mismanagement and lack of capital account for the great bulk of business failures, and these difficulties are far commoner among small than among large firms. On the other hand, catastrophes resulting from business conditions beyond the control of the firms affected are relatively much commoner at times of crisis, and these difficulties affect both large and small enterprises without distinction. Hence the average liabilities of the firms which go to the wall always increase during a crisis. (3) Despite the larger number of firms in business during the second decade, both the number and the liabilities of the firms which failed were smaller than in 1890-99. The "business mortality rate" has dropped, unless

TABLE 125  
 STATISTICS OF COMMERCIAL FAILURES IN THE UNITED STATES, COMPILED BY BRADSTREET'S AND BY DUN'S  
 COMMERCIAL AGENCIES

	Number of failures		Liabilities of firms which failed. In millions of dollars		Actual amounts		Number of firms in business. In thousands		% of firms in business which failed	
	Bradstreet	Dun	Bradstreet	Dun	Bradstreet	Dun	Bradstreet	Dun	Bradstreet	Dun
			\$175	\$190	\$16,400	\$17,400				
1890	10,700	10,900					989	1,111	1.07	.98
1891	12,400	12,300	193	190	15,600	15,500	1,018	1,143	1.21	1.07
1892	10,300	10,300	109	114	10,600	11,000	1,036	1,173	.99	.88
1893	15,500	15,200	382	347	24,600	22,800	1,059	1,193	1.46	1.28
1894	12,700	13,900	152	173	11,900	12,500	1,048	1,114	1.21	1.25
1895	13,000	13,200	159	173	12,200	13,100	1,054	1,209	1.23	1.09
1896	15,100	15,100	247	226	16,400	15,000	1,079	1,152	1.40	1.31
1897	13,100	13,400	159	154	12,100	11,600	1,086	1,059	1.20	1.26
1898	11,600	12,200	142	131	12,200	10,700	1,093	1,106	1.06	1.10
1899	9,600	9,300	120	91	12,400	9,700	1,126	1,148	.85	.81
1900	9,900	10,800	127	138	12,800	12,900	1,162	1,174	.85	.92
1901	10,600	11,000	130	113	12,200	10,300	1,202	1,219	.88	.90
1902	10,000	11,600	106	117	10,600	10,100	1,239	1,253	.80	.93
1903	9,800	12,100	154	155	15,800	12,900	1,273	1,281	.76	1.12
1904	10,400	12,200	144	144	13,800	11,800	1,308	1,320	.79	.92
1905	10,000	11,500	122	103	12,200	8,900	1,353	1,357	.73	.85
1906	9,400	10,700	127	119	13,600	11,200	1,401	1,393	.66	.77
1907	10,300	11,700	384	197	37,400	16,800	1,448	1,418	.70	.82
1908	14,000	15,700	296	222	21,100	14,200	1,488	1,448	.94	1.08
1909	11,800	12,900	141	155	11,900	12,000	1,543	1,486	.76	.80
1910	11,600	12,700	189	202	16,300	16,000	1,593	1,515	.72	.80
1911	12,600	13,400	188	191	14,900	14,200	1,638	1,525	.77	.81
Averages:										
1890-99	12,400	12,580	183.8	178.9	14,440	13,930	1,058.8	1,140.8	1.168	1.103
1900-09	10,640	12,020	173.1	146.3	16,140	12,110	1,341.7	1,334.9	.787	.911

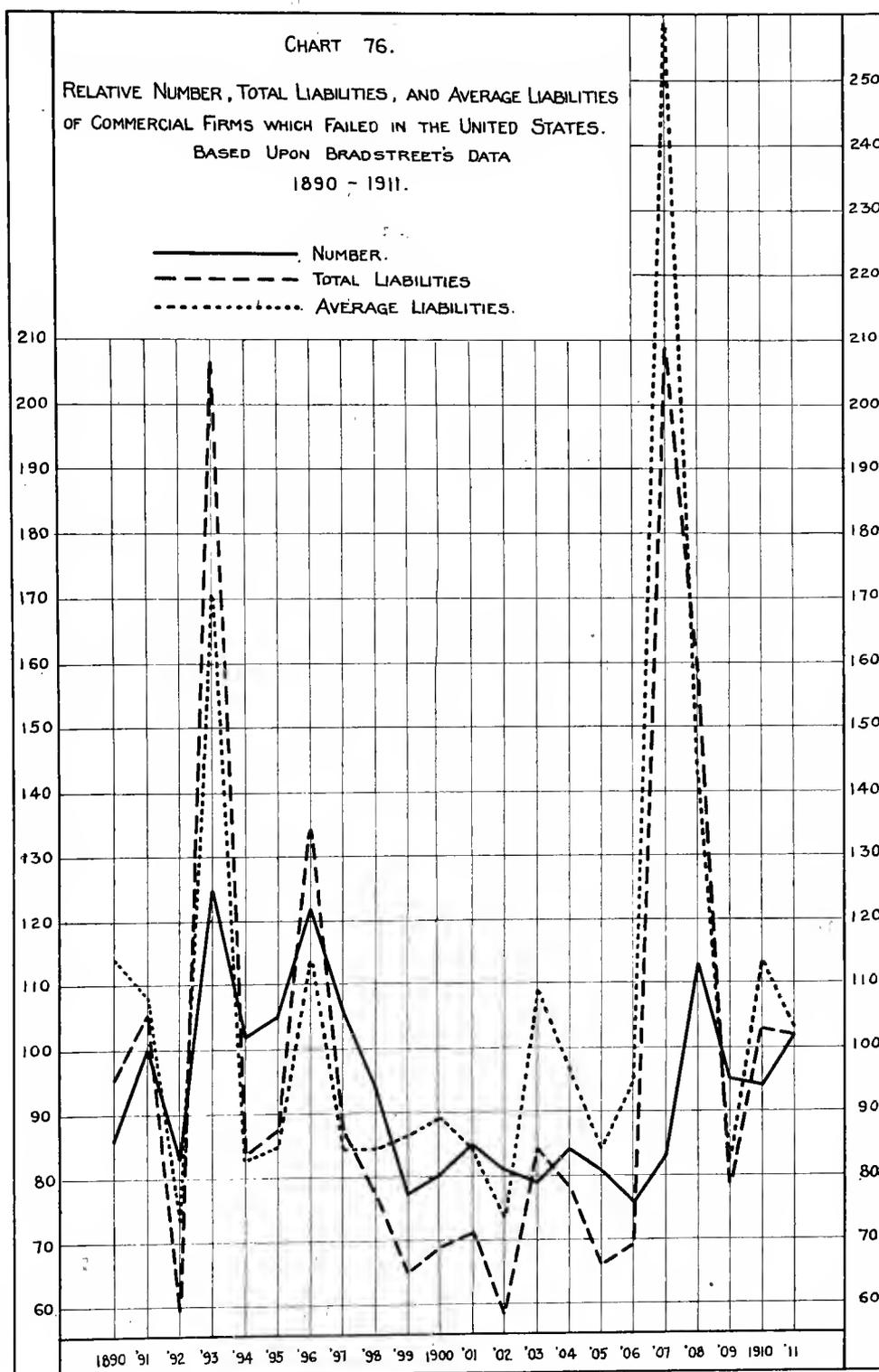
TABLE 125—(Concluded)

STATISTICS OF COMMERCIAL FAILURES IN THE UNITED STATES, COMPILED BY BRADSTREET'S AND BY DUN'S  
COMMERCIAL AGENCIES

BY YEARS 1890-1911

Relative amounts. Average actual amounts in 1890-99 = 100

	Number of failures		Liabilities of firms which failed		Average liabilities of firms which failed		Number of firms in business	
	Bradstreet	Dun	Bradstreet	Dun	Bradstreet	Dun	Bradstreet	Dun
	86	87	95	106	114	125	93	97
1890								
1891	100	98	105	106	108	111	96	100
1892	83	82	59	64	73	79	98	103
1893	125	121	208	194	170	164	100	105
1894	102	110	83	97	82	90	99	98
1895	105	105	87	97	84	94	100	106
1896	122	120	134	126	114	108	102	101
1897	106	107	87	86	84	83	103	93
1898	94	97	77	73	84	77	103	97
1899	77	74	65	51	86	70	106	101
1900	80	86	69	77	89	93	110	103
1901	85	87	71	63	84	74	114	107
1902	81	92	58	65	73	72	117	110
1903	79	96	84	87	109	93	120	112
1904	84	97	78	80	96	85	124	116
1905	81	91	66	58	84	64	128	119
1906	76	85	69	67	95	80	132	122
1907	83	93	209	110	259	121	137	124
1908	113	125	161	124	146	102	141	127
1909	95	103	77	87	82	86	146	130
1910	94	101	103	113	113	115	150	133
1911	102	107	102	107	103	102	155	134
Averages:								
1890-99	100	100	100	100	100	100	100	100
1900-09	86	96	94	82	112	87	127	117



the figures are in error by a large margin. Even the rates for 1908, which show most clearly the influence of the crisis which came late in 1907, are less than the average for the first decade.

To supplement the above statistics of commercial failures, there are available figures which show the disasters met by banks and by railways. The national-bank data, compiled by the Comptroller of the Currency, may be accepted without reservation; but the data for other banks are supplied by Bradstreet's

TABLE 126

BANK FAILURES IN THE UNITED STATES, COMPILED BY THE COMPTROLLER OF THE CURRENCY AND BY BRADSTREET'S COMMERCIAL AGENCY

	Actual figures				Relative figures Average actual figures in 1890-99 or 1892-99=100			
	Number of failures		Capital of insolvent National banks in thousands of dollars	Liabilities of insolvent banks other than National in thousands of dollars	Number of failures		Capital of insolvent National banks	Liabilities of insolvent banks other than National
	National banks	Other than National banks			National banks	Other than National banks		
1890	9	No data	\$ 750	No data	35	No data	20	No data
1891	25	No data	3,622	No data	97	No data	97	No data
1892	17	69	2,450	\$11,025	66	73	65	50
1893	65	414	10,935	97,193	253	439	292	442
1894	21	65	2,770	44,901	82	69	74	204
1895	36	85	5,235	15,912	140	90	140	72
1896	27	110	3,805	9,174	105	117	102	42
1897	38	122	5,852	24,091	148	129	156	110
1898	7	53	1,200	7,080	27	56	32	32
1899	12	26	850	10,447	47	28	23	48
1900	6	32	1,800	11,421	23	34	48	52
1901	11	56	1,760	13,335	43	59	47	61
1902	2	43	450	10,333	8	46	12	47
1903	12	26	3,480	4,006	47	28	93	18
1904	20	102	1,535	31,775	78	108	41	145
1905	22	57	2,035	10,273	86	60	54	47
1906	8	37	680	7,188	31	39	18	33
1907	7	34	775	22,165	27	36	21	101
1908	24	132	5,560	209,836	93	140	148	955
1909	9	60	769	25,190	35	64	21	115
1910	6	28	875	18,182	23	30	23	83
1911	3	56	275	18,547	12	59	7	84
Averages:								
1890 or 92-99	25.7	94.4	3,746.9	21,982.3	100	100	100	100
1900-1909	12.1	57.9	1,884.4	34,552.2	47	61	50	157

From the Reports of the Comptroller of the Currency.

Commercial Agency, and are subject to an uncertain margin of error, particularly with reference to the liabilities. In all essential respects, this table for the banks supports the conclusions based upon the table for commercial failures. One exception may be noted—the liabilities of the banks other than national which failed in the second decade exceed the corresponding liabilities for 1890-99. But this exception results almost wholly from the catastrophe of one great institution which collapsed in the panic of 1907—the Knickerbocker Trust Company. The number of bank failures in 1893 was much greater than the number in the later panics; but in 1893 the failures were mainly among the small banks of the South and West, while in 1907 several large banks in New York City went to the wall.

TABLE 127  
RAILWAY RECEIVERSHIPS AND FORECLOSURES  
According to the *Railway Age*  
BY YEARS, 1890-1911

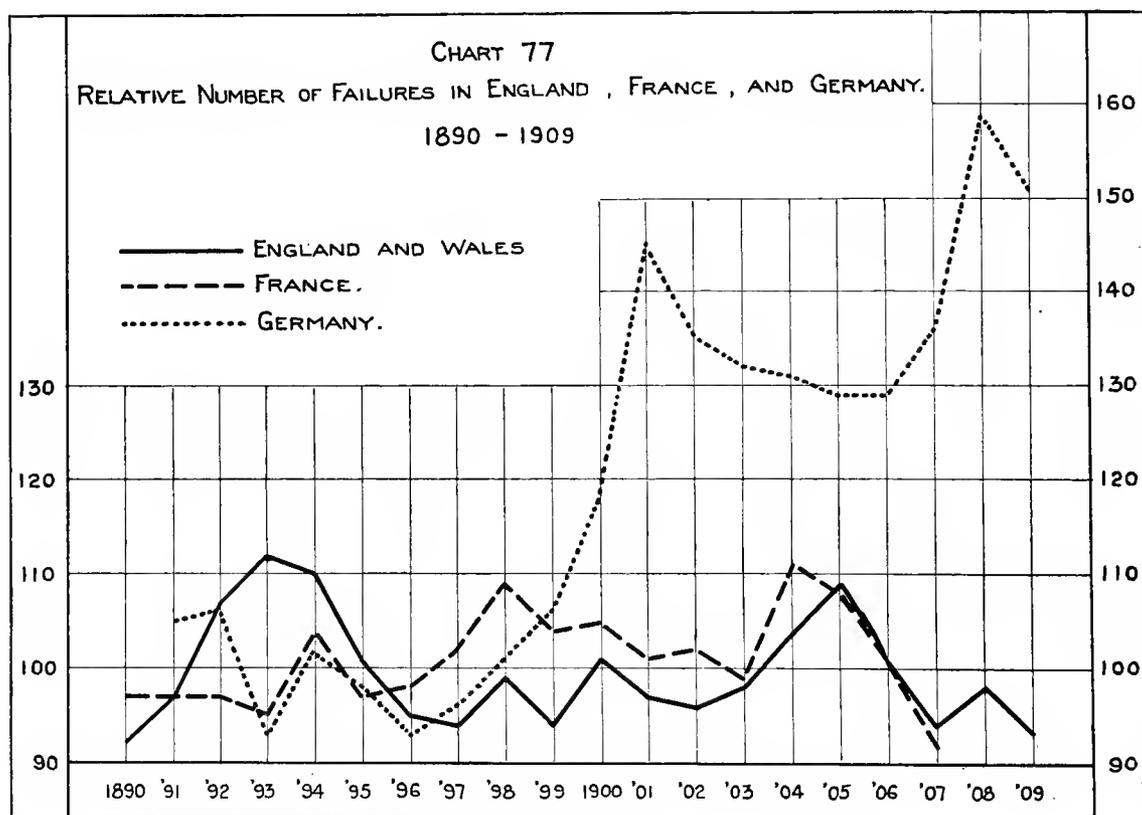
	Actual figures						Relative figures Average actual figures in 1890-99=100					
	Placed under receivership			Sold under foreclosure			Placed under receivership			Sold under foreclosure		
	Number of roads	Miles	Stocks and bonds <sup>1</sup>	Number of roads	Miles	Stocks and bonds <sup>1</sup>	Number of roads	Miles	Stocks and bonds	Number of roads	Miles	Stocks and bonds
1890	26	2,963	105	29	3,825	182	84	45	29	77	64	48
1891	26	2,159	84	21	3,223	169	84	33	23	56	54	45
1892	36	10,508	358	28	1,922	96	116	159	98	74	32	25
1893	74	29,340	1,781	25	1,613	80	238	444	488	66	27	21
1894	38	7,025	396	42	5,643	319	122	106	108	112	94	84
1895	31	4,089	369	52	12,831	762	100	62	101	138	215	201
1896	34	5,441	276	58	13,730	1,150	109	82	76	154	230	303
1897	18	1,537	93	42	6,675	518	58	23	26	112	112	136
1898	18	2,069	139	47	6,054	253	58	31	38	125	101	67
1899	10	1,019	52	32	4,294	268	32	15	14	85	72	71
1900	16	1,165	78	24	3,477	190	51	18	21	64	58	50
1901	4	73	2	17	1,139	86	13	1	1	45	19	23
1902	5	278	6	20	693	40	16	4	2	53	12	11
1903	9	229	19	13	555	16	29	3	5	35	9	4
1904	8	744	36	13	524	28	26	11	10	35	9	7
1905	10	3,593	176	6	679	20	32	54	48	16	11	5
1906	6	204	55	8	262	10	19	3	15	21	4	3
1907	7	317	14	6	114	14	23	5	4	16	2	4
1908	24	8,009	596	3	138	3	77	121	163	8	2	1
1909	5	859	78	12	2,629	250	16	13	21	32	44	66
1910	7	735	51	17	1,100	94	23	11	14	45	18	25
1911	5	2,606	211	13	1,386	41	16	39	58	35	23	11
Averages												
1890-99	31.1	6,615.0	365.3	37.6	5,981.0	379.7	100	100	100	100	100	100
1900-09	9.4	1,547.1	106.0	12.2	1,021.0	65.7	30	23	29	32	17	17

<sup>1</sup> In millions of dollars.

Railway receiverships follow the same rules as commercial and bank failures, except that they lag a little further behind the change in business conditions. A railway is not taken out of the hands of its owners quite so promptly as a commercial firm or a bank when its inability to meet its creditors is made apparent. The months following a crisis accordingly show the largest numbers of railway failures, while proportionately more banks are closed and commercial firms declared bankrupt during the crisis itself. Foreclosure sales of railways, which do not occur until the inability of the stockholders to reorganize a railway already in the hands of a receiver has been demonstrated, of course lag still further behind crises.

### 2. *England, France, and Germany*

The European statistics of failures are meager in comparison with the American. For England and Wales there is shown the number of debtors adjudicated bankrupt, of schemes of arrangement and of compositions with creditors under the acts of 1883 and 1890, and of orders for the administration of deceased debtors' estates. Since the statistics thus refer to cases of which the courts have taken cognizance, their accuracy is open to little doubt so far



as they go, but there may be many more cases of failures settled out of court. The French data used include both the "judicial liquidations" and the "failures" so called. Finally, the German figures are described simply as showing the number of "new bankruptcies occurring each year." In England only are the liabilities shown. The actual numbers of failures occurring during any given time in the three countries cannot properly be compared with each other, because of differences in the bankruptcy laws; but there seems to be no reason why general comparisons should not be made between the fluctuations in the numbers from one year to the next.

TABLE 128  
STATISTICS OF COMMERCIAL FAILURES IN ENGLAND, FRANCE, AND GERMANY  
BY YEARS, 1890-1911

	Number of failures						Liabilities of firms which failed in England and Wales	
	Actual numbers			Relative numbers Average actual numbers in 1890-99=100			Actual amounts <sup>2</sup>	Relative amounts <sup>3</sup>
	England and Wales	France	Germany	England and Wales	France	Germany <sup>1</sup>		
1890	4,040	8,570	No data	92	97	No data	30.1	89
1891	4,240	8,580	7,620	97	97	105	41.9	124
1892	4,660	8,590	7,680	107	97	106	43.3	128
1893	4,900	8,420	6,730	112	95	93	36.7	109
1894	4,790	9,170	7,410	110	104	102	34.2	101
1895	4,415	8,550	7,110	101	97	98	31.9	95
1896	4,170	8,620	6,760	95	98	93	28.8	85
1897	4,098	8,970	7,000	94	102	96	28.1	83
1898	4,310	9,580	7,360	99	109	101	33.2	99
1899	4,111	9,180	7,740	94	104	106	28.8	85
1900	4,410	9,290	8,560	101	105	118	31.5	93
1901	4,244	8,930	10,570	97	101	145	33.1	98
1902	4,202	8,990	9,830	96	102	135	27.1	80
1903	4,286	8,710	9,630	98	99	132	25.9	77
1904	4,546	9,760	9,510	104	111	131	33.9	101
1905	4,764	9,500	9,360	109	108	129	28.8	85
1906	4,436	8,930	9,400	101	101	129	28.0	83
1907	4,111	8,106	9,860	94	92	136	27.6	82
1908	4,306	.....	11,570	98	.....	159	26.8	80
1909	4,070	.....	11,005	93	.....	151	28.2	84
1910	3,880	.....	10,783	89	.....	148	40.0	119
1911	3,742	.....	.....	86	.....	.....	33.3	99
Averages								
1890-99	4,373	8,823	7,268	100	100	100	33.7	100
1900-09	4,338	.....	9,930	99	.....	137	29.1	86

<sup>1</sup> Average actual amounts in 1891-99 = 100.

<sup>2</sup> In millions of dollars.

<sup>3</sup> Average actual amounts in 1890-99=100.

Compiled from the Statistical Abstracts of the several countries.

These fluctuations are much more marked in Germany than in England or France. As several of the previous tables have indicated, German business shows most of the phenomena of business cycles in more accentuated form than French and English business. In the present case Germany equals, if she does not surpass, the United States in instability. The chief differences between these two countries with respect to the fluctuations in number of failures grow out of the dissimilarity in the chronology of their business cycles. 1893 did not bring a severe crisis in Germany, 1900 did not bring one in the United States. Even the higher level of the German fluctuations in the second decade and of the American fluctuations in the first decade may be traced to this difference in business history.

The English figures are peculiar in that they make the largest number of failures occur toward the end of a period of depression, instead of during a crisis like the American and German figures. It may be that the judicial source of the English data has some bearing upon this difference; but the known promptness of the British courts disposes one to regard this suggestion as of slight moment. A more important cause of difference is the relative conservatism of British business and the ability of British banks to provide adequate accommodation for their borrowers in seasons of stress. But no banker can ward off business failure which results from inability to secure sufficient trade to make profits. Of course failures from this latter cause are most numerous at the end of several years of depression, when a firm's powers of resistance to bankruptcy have been gradually exhausted.

Finally, the French statistics for failures, like most of the other gauges of economic activity which have been examined hertofore, are less influenced by business cycles than the American, German, or British statistics. Indeed, one who studied the present table only would go quite astray in dating the crises which have occurred in France since 1890. For some reason, which a fuller knowledge of the scope of the data might disclose, the largest number of failures occurred in 1898, a highly prosperous year, and in 1904, when business was on the eve of a revival of activity. But the most remarkable and most characteristic feature of the French figures is their evenness. If business "booms" are less intense in France than elsewhere, epidemics of bankruptcy are less severe.

**PART III**

**THE RHYTHM OF BUSINESS ACTIVITY**



## THE FRAMEWORK OF PART III

The review of recent theories concerning business cycles in Part I of this book and the statistical study of the phenomena of recent cycles in Part II have a common purpose—to provide suggestions and materials for attacking the problem of Part III. This problem is to account for the rhythmical alternations of prosperity, crisis, and depression which occur in the modern business world.

Now the recurrent phases presented by economic activity, wherever it is dominated by the quest of profits, grow out of and grow into each other. An incipient revival of activity, for example, develops into full prosperity, prosperity gradually breeds a crisis, the crisis merges into depression, depression becomes deeper for a while, but ultimately engenders a fresh revival of activity, which is the beginning of another cycle. A theory of business cycles must therefore be a descriptive analysis of the cumulative changes by which one set of business conditions transforms itself into another set.

The deepest-seated difficulty in the way of framing such a theory arises from the fact that while business cycles recur decade after decade each new cycle presents points of novelty. Business history repeats itself, but always with a difference. This is precisely what is implied by saying that the process of economic activity within which business cycles occur is a process of *cumulative* change.

It follows that a thoroughly adequate theory of business cycles, applicable to all cases, is unattainable. Even if some one cycle could be fully accounted for, the account would necessarily be inaccurate with reference to cycles which were the outgrowth of earlier or of later conditions. Nor are all the differences between the successive cycles of one country and between the contemporary cycles of several countries differences in minor detail. Even such an elementary matter as the order in which the phases of a business cycle succeed one another is not invariable. A revival of business activity does not always develop into prosperity—sometimes it relapses into depression. Such deviations from the usual course of events occurred in the United States in 1892, 1895, and 1910. A situation of intense strain, presenting the phenomena of crises, sometimes follows a period of depression, instead of following a period of prosperity; for example, the American stringency of 1896. It is needless to labor the point, however, for random references to the preceding chapters will

show that the points of difference between any two periods of prosperity, of crisis, or of depression are scarcely less numerous than the points of similarity. Every business cycle, strictly speaking, is a unique series of events and has a unique explanation, because it is the outgrowth of a preceding series of events, likewise unique.<sup>1</sup>

The theory of business cycles, however, need not be given up in despair because it cannot satisfy ideal requirements. The purposes which scientific theory serves are met by explanations which stop far short of radical thoroughness. Much would be gained for the conduct of individual affairs and the guidance of legislation could we single out from the maze of sequences among business phenomena a few which are substantially uniform. For these sequences could be used with a degree of confidence depending upon the regularity with which they recur as guides in forecasting the immediate business future. They could also serve as centers for organizing our knowledge concerning the variable sequences, and as points of departure in search for new uniformities. Such regular sequences would help us to break up the tangled mass of facts presented by direct observation into coherent clusters. The latter would stimulate the imagination to unravel various lines of casual connection which are jumbled together in the annals of business and in the tables of statistics. Then it might be found that the irregularity of other sequences arises from varying combinations among sequences themselves regular.

The first aim of the descriptive analysis of business cycles, then, must be to look for the sequences which occur in every period of revival, of prosperity, of crisis, or of depression. But the search need not be confined to the phenomena revealed by the preceding chapters. The various lines of thought suggested by what lies on the surface may be followed boldly in the hope of discovering further uniformities which are obscured by being tangled together. These speculations, however, must be submitted to the pragmatic test. That is, they must be used in attempting to interpret the known phenomena of business cycles, and judged by the aid which they render the mind in its effort to create order amidst the confused facts of observation.

As Chapter II provided the framework into which the statistical chapters of Part II were fitted, so it provides also the framework for the descriptive analysis of Part III.

Since the quest of money profits by business enterprises is the controlling factor among the economic activities of men who live in a money economy, the whole discussion must center about the prospects of profits. On occasion,

<sup>1</sup> If theory is to be taken seriously as seeking to give really adequate understanding, it must be admitted that even this unique explanation of any single cycle cannot be completely worked out. For, obviously, analysis can never be carried back to the beginning of the chain of events which eventuated in any cycle, and concerning even the proximate events it is obviously impossible to collect all the relevant information. Further, the intellectual instruments of analysis are unequal to the complex problem of handling simultaneous variations among a large number of inter-related functions.

indeed, this central interest is eclipsed by a yet more vital issue—the avoidance of bankruptcy. But to make profits and to avoid bankruptcy are merely two sides of a single issue—one side concerns the well-being of business enterprises under ordinary circumstances, the other side concerns the life or death of the same enterprises under circumstances of acute strain.

Whatever affects profits and solvency, then, comes within the sweep of the analysis. And we already know the factors of chief significance: the prices which constitute business receipts and the prices which constitute business expenses, the volume of sales effected at the prevailing margins of profit, the need of having currency to make payments, and the need of securing loans in adequate amount from banks and investors. But to know what these factors are, and even to know what fluctuations they undergo in severalty, is but half of the battle. The other and the harder half is to follow the interactions of these factors through all the permutations which brighten or darken the prospects of profits and make easy or difficult the maintenance of solvency.

Since the processes of a nation's business life never cease or begin afresh, there exists no natural starting-point for the descriptive analysis to which we are committed. It is necessary to plunge *in medias res* by breaking into the unceasing processes at some arbitrarily chosen point. The grave disadvantage of this procedure is that the whole situation from which we start must be taken for granted. But, by following the interlacing processes forward through their successive phases we can work round again to our point of departure, and account for our original assumptions in the only way in which we can account for any of the intermediate phenomena—that is, by tracing the processes of cumulative change by which one set of business conditions gradually evolves into quite a different set.

The starting-point chosen is that stage of the business cycle in which activity begins to quicken after a period of depression. How the characteristic features of this stage are evolved by the depression itself is the topic which will be treated last of all.

## CHAPTER X

### THE CUMULATION OF PROSPERITY

#### I. THE BEGINNINGS OF REVIVALS IN BUSINESS ACTIVITY

Since 1890 the United States has had five seasons of business revival following upon periods of business depression: the midsummer of 1891, the spring of 1895, the midsummer of 1897, the autumn of 1904, and the winter of 1908-09.<sup>1</sup> In England, France, and Germany similar revivals occurred in 1895, 1904-05, and 1909.<sup>2</sup>

✓ The conspicuous agent in rousing business from its partial lethargy has often been some propitious event. For example, highly profitable crops of grain served as occasions for the American revivals of 1891 and 1897; President Cleveland's contract with the Morgan-Belmont syndicate for the defense of the gold reserve started the revival of 1895; an increase in the export demand for British commodities stimulated English trade in 1905 and 1909; and the extraordinary development of the electro-technical and chemical industries led the way in the German revival of 1895.<sup>3</sup>

✓ But, with one striking exception, these propitious events did no more than to hasten a process of business recuperation already under way. To show how the very conditions of business depression beget a revival of activity is a task reserved for Chapter XIII; but certain results of this later investigation may be anticipated. Among the ultimate effects of a period of hard  
✓ times, then, are the following: a lessening in the prime and supplementary costs of manufacturing commodities, a reduction in the stocks of goods held by wholesale and retail merchants, a liquidation of business debts, low rates of interest, a banking position which favors an increase of loans, and an increasing demand among investors for corporate securities. Now all of these conditions are conducive to a resumption of business activity, either because (like the settling of old accounts) they remove obstacles, or because (like the reduction of mercantile stocks) they promise a larger demand for wares, or because (like low interest and low manufacturing costs) they widen the margin of profit,

<sup>1</sup> The quickening of activity in the autumn of 1900 hardly deserves to be included in this list, because the preceding slackening of activity had been so mild, so restricted, and so brief.

<sup>2</sup> See the sections of Chapter III relating to these years.

<sup>3</sup> Again see the relevant sections of Chapter III.

or because (like the position of the banks and the attitude of investors) they facilitate the borrowing of capital. Fundamentally, the revivals of business must be ascribed to the processes which beget these favorable conditions.

The one exception to this rule which has occurred in the history of our four countries within a period of more than twenty years is afforded by the harvest episode of 1891. Exceptionally large American crops of grain, sold at exceptionally high prices, cut short what promised to be an extended period of liquidation after the crisis of 1890 and suddenly set the tide of business rising. But in this single case the revival proved both partial in its scope and brief in its duration, partly at least because the stresses which had led to the crisis were not relaxed in the period of depression.<sup>4</sup> Over against this single instance are set several instances in which revival began quietly without the occurrence of any propitious event sufficiently striking to impress itself upon the attention of contemporary chroniclers. Such was the case, for example, with the German revival in 1904-05, and with all the French revivals since 1890. The attempt to account for business revivals as the results of happy accidents therefore deserves no more credence than the abandoned theory that crises are "pathological" phenomena due to some "abnormal" cause. The quiet processes of business recuperation during dull times are quite competent to develop into revival without the adventitious help of any "disturbing circumstance."

## II. THE DIFFUSION OF BUSINESS ACTIVITY

### 1. *The Increase in the Demand for Commodities*

Once started, a revival of activity spreads rapidly over a large part, if not over the whole, of the field of business. For, even when the first impulse toward expansion is sharply confined to a single industry or a single locality, its effects in the restricted field stimulate activity elsewhere.

In part this diffusion of activity proceeds along the lines of interconnection among business enterprises which were traced in Chapter II. One line leads back from the industries first stimulated to the industries which provide raw materials and supplementary supplies. Another line leads forward to the chain of enterprises which handle the increased output of commodities. Still other lines, of less importance for the transmission of the stimulus, radiate to the industries which deal in complementary or substitution goods. Of course the particular trades which receive an early share in the revival are those which stand in the most intimate relations with the trade which happens to be the first center of business expansion. But, since every important industry requires transportation and bank accommodation, the railways and the banks which

<sup>4</sup> See Chapter III, iii, 1 and 5.

serve the locality affected are always among the early beneficiaries. Among other trades coal mining has the best chance of profiting promptly.

As the industries which cater to the business needs of the enterprises from which activity radiates receive a stimulus, so also do the industries which cater to the personal needs of the families interested in the flourishing enterprises. Larger earnings for the employes and higher profits for the proprietors enable both classes to pay such debit accounts as they may have run up during the period of depression and to enlarge their current purchases. The statistics of consumption are too fragmentary to give much aid in following this process;<sup>5</sup> but current trade reports justify the belief that even the staple articles of food find a somewhat larger sale when business improves, and that better qualities are freely substituted for the poorer which were bought so long as severe economy was compulsory. The demands for clothing, furniture, amusements, and luxuries of all kinds are doubtless affected in larger degree than the demand for food, because purchases of such goods can be given up, diminished, or deferred in seasons of depression with less discomfort.

While retail shopkeepers are the first beneficiaries of the increasing consumers' demand, they are compelled to place fresh orders promptly with wholesale merchants, because they have let their stocks run low during the dull times. Since the wholesale merchants have pursued the same policy, they are likewise prompt in placing fresh orders with the manufacturers. Thus the whole chain of trades engaged in furnishing consumers' goods soon feels the stimulating effect of a revival of business, no matter in what locality or industry it starts. And each enterprise which finds its own trade increasing becomes an agency in extending activity to still other enterprises—those from which it buys producers' goods, and those which supply consumers' goods to its own personnel.

At first the impetus toward business expansion grows weaker as it spreads out from its original center to the branches of business which furnish it with producers' and consumers' goods. For the latter classes of enterprises have customers engaged in several or in many industries, or customers living in many sections of the country, so that an increase of say 5 per cent in the sales to one set of customers means an increase of much less than 5 per cent in the total volume of sales. But, on the other hand, the impetus is cumulative. If the steel trade makes more business for the railway, the railway presently increases its orders for steel, and thus sets the process working afresh at a higher pitch of intensity. Thus the revival gathers momentum as the industries which receive a mild stimulus one after the other begin to react upon those in which the movement started.

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<sup>5</sup> Compare Chapter V, section vi.

## 2. *The Development of Business Optimism*

The diffusion of activity is not confined to these definite lines of interconnection among business enterprises. It also proceeds by engendering an optimistic bias in the calculations of all folk who are concerned with the active direction of business enterprises and with the providing of loans.

Practically all business problems involve elements which are not precisely known, but must be approximately estimated even for the present, and forecast still more roughly for the future. Probabilities take the place of certainties, both among the data upon which reasoning proceeds and among the conclusions at which it arrives. This fact gives hopeful or despondent moods a large share in shaping business decisions. A mathematician's mood exercises no influence upon his solution of an algebraic equation; but it does affect his opinion about the advisability of buying the bonds which are offered him.

While these emotional states are largely the product of strictly individual conditions—such as the state of digestion—they are also in part the product of suggestions received from the demeanor, the talk, and the actions of associates. Most men find their spirits raised by being in optimistic company. Therefore, when the first beneficiaries of a trade revival develop a cheerful frame of mind about the business outlook, they become centers of infection, and start an epidemic of optimism. Perhaps the buoyancy of a grocer gives a lumber dealer no adequate reason for altering his conservative attitude toward the business projects upon which he must pass. Yet, in despite of logic, he will be the readier to buy if his acquaintances in any line of trade have become aggressively confident of the future. The fundamental conditions affecting his own business may remain the same; but his conduct is altered because he sees the old facts in a new emotional perspective.

As it spreads, the epidemic of optimism helps to breed conditions which both justify and intensify it. The mere fact that a growing number of business men are gaining confidence in the outlook becomes a valid reason why each member of the group and outsiders also should feel confident. For the hopeful mood means greater readiness to make new purchases, enter into new contracts, etc.—in fine, means that the incipient revival of activity will be supported and extended. There is the stronger reason for relying upon the feeling in that its growth—like the growth in the volume of goods ordered—is cumulative. As new groups of business men become infected with optimism, their demeanor, talk, and actions confirm the faith of those who converted them. Thus the feeling of confidence becomes stronger as it spreads; that is, it becomes an increasingly powerful factor in supporting the movement out of which it grew, and in justifying itself.

### 3. *The Laggards in Business Revivals*

Just as there are often certain industries or localities which stand out as conspicuous leaders in a revival of activity, so there are often other industries or localities which stand out as conspicuous laggards. Bad weather, tariff changes, technical inventions, the discovery of new sources of supply, the development of new trade routes, alterations in popular taste, etc., may prevent particular enterprises from sharing the general improvement. Every industry or locality which languishes from any cause retards the growth of activity and of confidence among other industries or localities. But such cases seem more and more exceptional, and count for less and less as the revival progresses. For the cumulative character of the processes which we have been tracing results in making the general movement toward prosperity more dominant as it proceeds.

Quite apart from the victims of special misfortunes, however, certain trades and localities have a late or a minor share in the benefits of a business revival. Such is the case on the whole with the agricultural and grazing sections in contrast with the centers of industry, commerce, and finance.<sup>6</sup> Even in those notable cases when the revival has begun with profitable crops for the farmers in certain sections, it has reached the other farming sections and the world of handicraft, small trade, and the professions, not by direct transmission, but indirectly by its effect upon the more highly organized world of business. Not until the lumber companies, mines, and quarries are working full time, the factories buying materials and employing men freely, the railways reporting few idle cars, and the mercantile houses busy—not until this stage has been reached is the impetus toward activity carried out from the centers to all corners of the land. And not until this time are all the classes which form the fringe of modern industry in cities and towns alike swept into the movement.

### 4. *The Statistical Signs of Business Revivals*

A business revival is a composite made up of many elements. It is not to be defined in terms of any single change for the better, and not to be sharply marked off from the state of depression out of which it emerges. Indeed, the only safe way of dating a revival is to accept the concensus of opinion among men intimately familiar with business conditions at the time.

Among all the "business barometers" there is not one which always rises or falls when these skilled observers agree that revivals occurred. This fact merits attention because of its bearing on the practical problem of forecasting changes in the business weather.

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<sup>6</sup> Compare Chapter II, ii, 1.

An increase in the physical volume of business, indeed, seems to be an invariable concomitant of revivals; but this increase usually sets in months, even a year or more, before depression has relaxed.<sup>7</sup> A prophet who pinned his faith to this sign would therefore publish cheerful bulletins prematurely. The course of wholesale prices is an even less reliable guide. For, contrary to a widely accepted opinion, prices do not always rise in the early stages of revival, and they do sometimes turn upward during depression.<sup>8</sup> As for the money market, its changes during periods of business revival are irregular in part, and in part indistinguishable continuations of changes already under way before the revival began. For example, discount rates sometimes rise and sometimes fall when the change for the better occurs; bank loans expand, but the expansion antedates the revival; the ratio of reserves to deposits may move in either direction; the ratio of loans to deposits usually, but not invariably, rises; applications for investment loans may increase before the revival or not until it has come; the purchases of bonds and stocks are similarly erratic in their behavior, etc.<sup>9</sup> The statistics of unemployment, monetary circulation, savings, profits, and bankruptcies are no safer guides than those which have been mentioned.

Thus there is no certain way of predicting when business will begin to recover from a prevailing depression. Only by compiling a composite record of numerous factors, and endeavoring to establish their general trend, can an intelligent guess be made. The whole business situation is so full of cross-currents and uncertainties at this stage of the cycle that forecasts are subject to a much wider margin of error than after the cumulation of prosperity has begun.

### III. THE RISE OF PRICES

#### 1. *The Prices of Commodities*

##### A. WHY PRICES RISE

While the level of wholesale prices often remains substantially unchanged or even recedes a trifle in the early stages of a business revival, it always advances in the later stages.

This advance is not the simple matter of course it is often assumed to be. True, the growing activity of business means an increasing demand for com-

<sup>7</sup> This statement is based upon a comparison between the leading indices of the volume of business presented in Chapter V and the upward turning-points in business cycles pointed out in Chapter III. For further discussion of the increase in the volume of business during depression see Chapter XIII, ii, 3.

<sup>8</sup> Though the recovery of business from the depression which followed the crisis of 1890 is dated from the year 1895 in England and France, the English and French index numbers presented in Table 11 indicate not only that prices failed to rise in 1895 but that they continued to decline in 1896, and advanced but a little in 1897. On the contrary, English index numbers show a slight rise in 1904, though the revival of business can scarcely be said to have begun before 1905. Therefore the failure of index numbers to rise does not justify the inference that no improvement has occurred in business, and the occurrence of a rise does not justify the inference that depression is past.

<sup>9</sup> See the tables in Part II relating to these various subjects and note the fluctuations in the years of revival and the years immediately preceding.

modities; but it also means an increasing supply. On this basis there is as much reason for expecting prices to fall as for expecting them to rise. The fact that business men presently become ready both to pay progressively higher prices for goods and to buy progressively larger quantities therefore constitutes a problem.

This problem is the more difficult because several business conditions prevailing when a revival begins are distinctly unfavorable to a rise of prices. The effect of depression in reducing the costs of doing business has already been pointed out as among the factors which favor resumption of activity.<sup>10</sup> But it does not favor an advance in the price level. On the contrary, it means that profits can be made without restoring prices to the level which prevailed before the depression set in. Second, at this stage of the business cycle, business enterprises are anxiously soliciting orders. The advantage in strategic position as bargainers is on the side of the buyers—much more so than later, when factories, railways, and shops already have all the business they can readily handle. Third, a prolonged period of depression often wracks to pieces certain combinations to maintain prices, and leaves the field over which free competition rules wider at its close than at its beginning. Fourth, every increase in the volume of business obtained in the early stages of revival makes a more than proportionate addition to profits, even though it be taken at unchanged prices. For until the existing equipment of standard efficiency for handling business is already busy, new orders can be filled without an increase in prime costs, and at a reduction of supplementary costs per unit of output.

These conditions explain why prices often fail to rise promptly at the beginning of a trade revival, and why in other cases the initial rise is slow. But presently these conditions are turned into their opposites and become incentives for raising prices.

The magic which works this transformation is the further expansion in the physical volume of business. Beginning sometimes two years or even more before the revival, this expansion is accompanied for months by falling and then by nearly stationary prices. But there is a critical point beyond which the expansion cannot go without producing an advance of prices, even in keenly competitive trades. This critical point is reached in the affairs of any enterprise when it has already secured sufficient orders to keep busy its standard equipment and its regular staff of employes. To execute additional orders then requires overtime work, the hiring of new and presumably less efficient hands, the starting of old-fashioned machines, the installation of new equipment, or some similar change. Such measures involve higher prime costs, and often new supplementary charges as well. Hence additional orders no longer make a more than proportionate addition to profits, and may well make a less

<sup>10</sup> See section I above, and for a more thorough analysis Chapter XIII, ii, 1 and 2.

than proportionate addition—unless higher prices are asked. Fear of checking the revival of trade may make enterprises slow in putting up their prices; but every delay encourages a further expansion in the volume of business and strengthens the conditions favoring an ultimate advance of the price level.

At the same time, the expansion of trade facilitates the re-establishment of those combinations to maintain or advance prices which have broken down during the preceding period of depression and encourages the formation of new combinations. It also reduces the strategic advantage which buyers recently enjoyed over sellers in bargaining. As sellers become less eager to accept orders at the old level of prices, buyers generally become more eager to place orders. But this statement requires further analysis.

#### B. HOW THE RISE OF PRICES REACTS UPON THE DEMAND FOR COMMODITIES

There is always danger that sellers may over-reach themselves by advancing prices more rapidly than the market conditions will support. For the expansion in the volume of business, upon which rests the whole movement toward prosperity, may be checked by an ill-timed or excessive advance. Frequently one or more branches of trade receive a setback while others are reviving, because mistakes of this kind are made by leading enterprises. More rarely, the whole revival is retarded or even stopped by an over-rapid rise of the price level. There is evidence, for example, that this cause helped to blight the promising American revival of 1909.<sup>11</sup>

But when the advance of prices is gradual and well balanced as between different goods it promotes rather than retards the growing demand for commodities. For nothing stimulates the volume of present orders more powerfully than a moderate increase of quotations, which is thought to be the earnest of further increases in the near future. Provided they are not charged more for goods than their competitors, buyers count on being able to raise their own selling prices at least enough to defend their margins of profit. And they become eager to lay in large stocks or to make long contracts while quotations are still moderate and terms are still easy. Thus the anticipation of future

<sup>11</sup> Certainly the advance of prices in this country was more rapid than in foreign countries where the revival was sustained. See the index numbers for identical lists of commodities in the United States and other countries, Table 12, and the confirmatory evidence borne by Table 11.

A. D. Noyes, "Forty Years of American Finance," New York, 1909, pp. 245, 246, expresses the opinion that an over-rapid advance of prices contributed also to checking the revival of 1895. While the above mentioned tables do not show a marked difference between the course of prices in America, where the revival was short lived, and in Europe, where it developed into full-blown prosperity, the following detailed comparisons by months lends a rather equivocal support to Noyes's opinion.

RELATIVE PRICES AT WHOLESALE IN THE UNITED STATES, ENGLAND, AND GERMANY, BY MONTHS, 1895-96

	United States		England	Germany
	Falkner	Bradstreet	Sauerbeck	Schmitz
1895—April	84.7	5.97	61.7	83.47
July	85.2	6.42	62.8	84.30
October	86.3	6.52	63.3	84.70
1896—January	85.2	6.31	61.4	83.82

advances in prices not only prevents present advances from reducing demand, but actually makes demand grow in the face of a rising level of prices.

### C. HOW THE RISE OF PRICES SPREADS AND CUMULATES

Once set going, the rise of prices rapidly spreads over the whole system of prices in much the same manner that the activity of trade out of which it grew spreads over the whole field of business. When the price of a commodity has been advanced at any stage of its journey from original producer to ultimate consumer, that advance represents an increase of cost to every subsequent purchaser, and becomes a reason for increasing its price at later stages. At the same time, those who first put up the price have a stronger business incentive for securing larger supplies to sell at their wider margins of profit. Their eager bidding offers the persons from whom they buy an opportunity to exact higher prices. Thus the advance travels backward to antecedent prices, as well as forward to subsequent prices. In less measure, the impulse toward higher prices is imparted to complementary and to competing goods. From the latter it extends to their materials, products, complements, and competitors, and so on from one class of commodities to the next. The great raw staples of commerce, which are sure to be touched comparatively early in this process, play an especially prominent role in spreading the rise; because an advance in their prices, caused by an increasing demand from any quarter, is promptly felt in all the hundreds of uses to which they are put and becomes a reason for advancing the prices of all their manifold products.

The rise of prices resembles the increasing activity of trade also in that it is cumulative. If the advance is begun, for example, in the textile trades and spreads thence to other lines, it will flow back again in the form of higher prices for all the things which textile mills buy. Then these mills must raise their selling prices once more or submit to a reduced margin of profit. And if the textile mills, as is likely, do raise their selling prices further, that step starts the whole process over again on a higher level.

Since the successive sets of business men who handle a given commodity are generally successful in their endeavor to pass on the increase of prices from one to another, the onus of the advance finally falls upon the ultimate consumers. For present purposes, these people belong to one of two classes—individuals who buy consumers' goods for personal use, or investors who buy equipment for business use. Both classes pay the increased prices, not only without diminishing, but while actually augmenting the volume of their purchases. For the growing activity of business, which leads to the rise of prices, also provides the mass of families with larger money incomes to spend, and makes investors, whether acting singly or through business enterprises, eager to get the equipment necessary for participating in the high profits which prosperity promises.

## D. WHY DIFFERENT GROUPS OF COMMODITY PRICES RISE IN DISSIMILAR DEGREES

Of course the advance of prices is far from uniform. A few prices fall, a few remain constant, and of the many which rise some advance one or two, some one hundred or more per cent. Our concern, however, is not with the idiosyncrasies in the price-movements of single commodities, but with their average variations. That there is a distinct trend in the fluctuations even of those relative prices which lie far above or below the median is shown by the table of decils.<sup>12</sup> That this trend has been measured with substantial accuracy is shown by the close agreement among index numbers compiled by distinct authorities from quotations obtained from different sources and including dissimilar lists of commodities.<sup>13</sup>

But it has also been shown that this trend is not the same in all parts of the system of prices. While all parts of the system feel the influence of a business revival, they respond to the stimulus with varying degrees of promptness and energy. The genuineness of these differences as phenomena characterizing a shifting of the price level is attested not only by the regularity with which they recur whenever business improves; but also by the fact that the divergencies among the average fluctuations of the groups referred to are much wider than the divergencies among general index numbers made by different hands.<sup>14</sup>

Of such dissimilarities in the average price variations of groups of commodities, the following have been established: (1) retail prices rise less promptly and less considerably than the wholesale prices of the same commodities; (2) the wholesale prices of finished products lag behind the wholesale prices of the same commodities in a partially manufactured state, and the latter prices in turn lag behind the prices of the corresponding raw materials; (3) the wholesale prices of manufactured consumers' goods rise perhaps more promptly, but certainly less considerably than the wholesale prices of manufactured producers' goods; and (4) the wholesale prices of raw mineral products respond to changes in business conditions with greater certainty and greater accuracy than do the wholesale prices of raw farm, animal, or forest products.<sup>15</sup>

The differences between the average variations in the retail and wholesale prices of the same goods are due chiefly to the steadiness of certain important items of expense in conducting a retail shop. A shop-keeper's rent, wages, losses on bad debts, interest on fixed investment, depreciation charges, and the like do not rise promptly with the wholesale prices of his wares. Consequently he can maintain or even increase his profits on the business as a whole while raising his selling prices less than his buying prices have been raised. Therefore the more rigorously competition constrains shop-keepers to defend their

<sup>12</sup> See Chapter IV, i, 7.

<sup>13</sup> See Chapter IV, i, 8.

<sup>14</sup> See Tables 9 and 10, and the discussion appended to each—Chapter IV, i, 8.

<sup>15</sup> See Chapter IV, i, 3, 4, 5, and 6.

reputations for reasonable prices and fair dealing, the more certainly will retail prices lag behind wholesale prices on the rise.<sup>16</sup>

Similar is the explanation of the differences between the average variations in the wholesale prices of the same goods at successive stages of their progress from the state of raw materials to that of finished products. Manufacturing expenses like retailing expenses include important items which do not rise rapidly on the return of prosperity. Hence the more accurately selling prices are adjusted to total expenses of production, the more certainly will finished products lag behind partly-finished products and the latter behind raw materials when the price level is advancing.

Even the manufacturing enterprise with a complete monopoly finds its interest in keeping selling prices more stable than the prices of raw materials. For if the monopoly charged the maximum-net-revenue price before the price level advanced it runs danger of losing profits by putting up its selling prices faster than is necessary to meet the increase of expenses, and total expenses increase much less rapidly than the prices of raw materials. In fact, the large and ably managed combinations which control a considerable proportion of their industries have generally kept their selling prices more stable than prices had formerly been under competitive conditions.<sup>17</sup>

The dissimilarities between the average price variations of consumers' and producers' goods in their finished state have a different source. In both classes, the goods for which we have data are mainly important staples. Now the consumers' demand for articles which enter into the budget of the great mass of families is fairly constant. Families economize or expand their expend-

<sup>16</sup> Of course rent, wages, and interest charges are themselves aggregates of prices paid for certain business adjuncts. What happens, then, is that certain prices which enter into the cost of retailing rise less rapidly than the wholesale prices of wares. Hence the lagging of retail behind wholesale prices may be described as an adjustment of retail prices to the *aggregate* of the prices which the shopkeeper must pay.

<sup>17</sup> Since this chapter was written, Professor E. S. Meade has published an index number of the prices of 18 commodities produced by trusts and of 18 commodities produced under competitive conditions. His data were obtained from the Bureau of Labor and his relative prices were computed on the basis of actual prices in January, 1897. The articles selected and the results obtained are as follows:

<i>Non-Trust</i>	<i>Trust</i>
Manila rope	Anthracite coal
Bituminous coal (Yonghiogheny)	American cement
New Orleans molasses	Refined petroleum
Pig-iron (Bessemer, Pittsburgh)	Cotton-seed oil
Bleached sheetings	Glucose
Corn meal	Newspaper
Yellow pine	Proof spirits
Plain white oak	Leather
Print cloth	Wire nails
Glass tumblers	Steel rails
Vici kid shoes	Raw linseed oil
Sheet zinc	Pig lead
Flour (New York)	American fine salt
Cotton	Plug tobacco
Bare copper wire	Sulphuric acid
Wilton carpet	Granulated sugar
Earthenware plates	Cotton thread
Bleached shirtings	Domestic parlor matches

itures chiefly by cutting off or adding luxuries, amusements, savings, and the like. Moreover, population grows at a steady rate which is little affected by

	1897		1898		1899	
	Non-Trust	Trust	Non-Trust	Trust	Non-Trust	Trust
January	100.0	100.0	98.7	104.9	102.7	105.9
February	99.8	98.3	98.7	104.9	104.5	108.1
March	99.8	100.2	94.6	105.4	108.3	110.5
April	99.4	99.9	100.2	104.1	110.8	113.7
May	99.2	99.9	102.2	106.5	112.2	113.9
June	98.2	100.8	104.4	107.1	114.4	114.6
July	98.2	100.9	104.3	107.1	113.6	116.1
August	99.3	105.7	103.8	107.2	115.5	116.8
September	100.9	108.3	103.5	104.5	119.9	119.0
October	99.9	107.2	101.9	103.2	121.3	122.0
November	98.5	104.0	102.6	104.8	121.4	124.0
December	98.7	104.0	102.2	104.1	127.3	127.2
	1900		1901		1902	
January	131.6	130.1	119.2	126.5	123.7	126.2
February	132.1	133.3	119.1	128.7	124.3	129.1
March	134.0	133.4	118.7	128.6	125.2	130.2
April	134.1	133.6	119.5	128.8	125.2	129.8
May	131.9	130.5	117.3	127.5	128.0	128.8
June	128.3	131.3	117.5	126.9	128.0	128.3
July	136.9	131.0	117.0	131.3	128.0	130.4
August	123.5	128.8	118.2	131.1	127.3	129.6
September	121.2	128.9	120.1	126.8	127.3	127.7
October	121.2	128.8	121.3	128.3	128.6	125.2
November	119.7	131.0	123.3	127.4	129.5	123.1
December	119.1	128.0	124.4	125.9	128.3	125.4
	1903		1904		1905	
January	127.8	124.4	127.1	122.3	125.1	122.9
February	127.8	124.5	130.5	124.5	124.0	120.4
March	127.9	127.2	130.7	124.7	124.4	121.7
April	128.8	127.8	131.5	125.2	124.5	120.9
May	128.9	126.4	128.2	123.3	124.5	121.8
June	131.3	126.3	130.4	122.0	125.5	122.8
July	131.3	125.8	124.2	122.8	128.3	121.0
August	132.4	125.2	122.9	121.4	130.5	121.8
September	131.5	124.6	119.0	121.5	130.7	123.8
October	128.2	125.4	123.9	121.6	130.5	121.5
November	127.4	122.5	126.8	114.8	133.7	122.2
December	126.5	123.7	129.3	123.3	135.5	123.0
	1906		1907		1908	
January	135.9	124.5	142.1	130.2	142.7	130.1
February	135.2	126.3	143.8	130.2	142.2	130.0
March	133.7	122.7	147.2	131.7	138.5	131.8
April	136.5	126.1	147.5	131.4	136.0	130.1
May	136.7	124.4	147.7	131.8	135.9	129.8
June	136.8	124.2	153.8	135.3	132.0	131.2
July	136.8	123.9	154.5	132.9	131.8	129.8
August	136.6	125.7	152.3	133.1	131.5	131.0
September	136.6	125.3	146.5	133.3	130.1	131.4
October	137.6	126.3	148.3	133.1	131.7	132.0
November	141.1	126.8	146.9	130.4	132.1	130.3
December	142.8	130.0	142.1	130.1	133.3	131.5
	1909		1910			
	Non-Trust	Trust	Non-Trust	Trust		
January	133.3	129.2	144.4	136.7		
February	133.2	130.8	143.9	135.2		
March	133.1	130.8	143.8	137.2		
April	133.0	128.0	142.9	135.6		

business cycles.<sup>18</sup> On the contrary, the producers' demand for business supplies other than raw materials—particularly the demand for commodities which constitute part of the equipment for production—becomes much more brisk as the prospects of profits become brighter. At the same time the establishing of new business enterprises and the enlarging of old enterprises become more common. This superior stability of consumers' as compared with producers' demand is confined, however, to demand for staples. Had we price data for consumers' luxuries we should probably find them exhibiting average variations equal to or greater than those of staple producers' goods.

Finally, the difference in the accuracy with which the prices of raw minerals and of other raw products reflect changes in business conditions arises chiefly from technical circumstances affecting the volume of current supply. The production of coal, iron, copper, zinc, etc., is more completely under man's control than is the production of beef, pork, mutton, and wool, or of wheat, cotton, sugar, and corn. The influence of increasing demand upon the prices of the latter groups of products is often offset by favorable seasons for the farmers, or exaggerated by bad seasons, while the prices of mineral products respond regularly to changes of market conditions. Forest products belong with minerals rather than with animal and farm products, so far as concerns their conditions of production in very brief periods. But, in the United States at least, the exhaustion of the better sources of supply—better both in quality of timber and in location—has recently proceeded faster in the lumbering than in the mining business. Hence the prices of forest products have been moving upward rather steadily, and the influence of business conditions has been limited to retarding this advance in times of depression and accelerating it in times of prosperity.<sup>19</sup>

## 2. *The Prices of Labor*

Into the sweep of the changes which follow hard upon one another when business revives from depression there is presently drawn even the least business-like section of the community—the wage-workers whom we habitually think of

	1909		1910	
	Non-Trust	Trust	Non-Trust	Trust
May	134.0	128.2	139.2	133.8
June	135.4	128.5	138.6	134.0
July	137.3	129.0	138.6	132.4
August	138.9	128.5	138.6	138.4
September	138.9	130.4	137.4	141.4
October	138.9	130.8	137.4	133.7
November	142.2	135.4	135.1	133.3
December	142.4	133.7	135.2	138.3

From these figures Meade concludes (1) that in the years 1897-1900, while the trusts were in process of formation, the two series of relative prices ran nearly parallel; (2) that since 1900 the trust-made products have had lower relative prices than those made under conditions of competition; and (3) that the trust-made products have been decidedly more stable in price than the others, so far as concerns large fluctuations.—“The Economics of Combination,” *Journal of Political Economy*, April, 1912. Professor Meade has kindly provided me with a revised version of his table, in which an error or two has been corrected.

<sup>18</sup> See Chapter V, i.

<sup>19</sup> Compare Chapter IV, i, 6.

not as making money but as making a living. For reasons of peculiar interest the changes which take place in their rates of pay do not run parallel with the changes in the prices fixed for commodities by dealings between business enterprises. The results which flow from this inaccurate adjustment in their turn become new factors of great weight not only in determining the material well-being of large numbers of men—a matter with which business as such is not concerned—but also in determining the market for consumers' goods and the margins of profit between the selling prices of all sorts of commodities and the labor costs of providing them.

Both the American and the British statistics presented in Chapter IV confirm the prevailing opinion that in times of business revival the prices of labor rise less than the prices of commodities at wholesale. The American figures are confined to wages in manufacturing industries, but the British figures indicate that wages in agriculture are even more sluggish in their movements.

Less well known is the fact that the advance often begins sooner in the labor than in the commodity markets. Yet both in the United States and in Great Britain wages began to rise after the depression of the middle nineties before wholesale prices had touched their lowest point. The evidence for the second decade is less conclusive. The crisis of 1903-04 was not sufficiently severe in America to cause a reduction of wages, and the Bureau of Labor has not yet published data for the years after the panic of 1907. In England the crisis of 1900 was followed by wage-reductions, and in the later revival wholesale prices advanced not only farther but also earlier than the prices of labor.

The reason why wages rise less than wholesale prices is found principally in the unlike organization of the labor and commodity markets. Where trade unions are non-existent or weak the individual laborers have neither the prompt knowledge of changes in business conditions necessary to determine what employers can afford to pay for labor, nor the power to enforce such demands as are not readily conceded. As an organization for collective bargaining, the trade union improves the wage-earners' position in these respects. But many unions seek to make wage-contracts running for a considerable time and binding the men not to ask for fresh advances until the contracts have expired. Most important of all, the individual working-man, the trade union, and the employer are much more under the dominion of the idea of a just price than are the business men dealing in commodities. This survival from the relatively stable economic life of the middle ages has almost ceased to influence the prices men offer or accept for cotton, wheat, or iron;—such commodities are “worth what they will bring.” But there still persists in the minds of all the parties in the labor market certain notions of what is a proper wage for a day's labor. When the employer offers much less than the customary price, he arouses stubborn resistance which is reinforced by the whole community's commonsense that the work is worth more, or that a man cannot support his family decently on such

a sum. On the other hand, when working-men ask much more than the customary prices, their pretensions strike others as absurd. Of course, such feelings impede the free working of supply and demand in the labor market—or rather constitute an important feature of both supply-price and demand-price—and tend to keep wages more stable than are prices in markets where pecuniary motives have unrestricted sway.

If these conditions obstruct the rapid rise of wages when business revives, they also facilitate the restoration of wages to the customary levels when a depression accompanied by wage-reductions is passing away. Such is the explanation of the celerity with which wages rose after the hard times in the nineties. Early in the movement toward increase of activity, in the United States before a revival could fairly be spoken of, employers conceded a slight increase of pay. That English employers did not follow the same course in the revival of 1904-06 may be due to the fact that the unprecedentedly high rates which the men had secured before the crisis of 1900 had not been paid long enough to become fairly entrenched in the minds of masters and men as the fit and proper prices to be charged. Hence they yielded with unaccustomed ease to the pressure of hard times after the crisis and were restored in the subsequent period of prosperity with unaccustomed difficulty.

It must also be said that the economic pressure which drives the great mass of wage-earners to sustain their arduous struggles for higher wages relaxes just at the time when rapid increases might be wrung from employers. The relatively moderate rate at which retail prices rise in the earlier stages of revival prevents the cost of living from going up fast. On the other hand, the economic position of working-men is being improved by the greater regularity of employment and the abolition of "short time." Even without any increase in their rates of pay the wage-earning class is better off. They hesitate to demand an increase of their customary wages until the feeling of this relative prosperity is dulled by familiarity, until the cost of living has advanced seriously, and until personal savings or trade-union accumulations have put them in position to fight with vigor.

### 3. *The Prices of Loans*

Wage-earners may not be thorough business-men; but bankers most emphatically are. Nevertheless, discount rates usually average less in the first year of business revival than in the last year of business depression.<sup>20</sup> Invariably, however, these rates move upward before the revival has been long in

<sup>20</sup> Table 28 shows, for example, that in London and Paris both the market and the bank rates were lower in 1895 than in 1894, and that in these markets and in Berlin also the rates were lower in 1905 than in 1904. The more detailed data for New York, when averaged by phases of the business cycle, give similar results (Table 26). Almost every time that business conditions have improved the discount rates have dropped. If the examination is pushed back into the monthly figures of Table 22, the situation is found to be complicated by the regularly recurring seasonal fluctuations in rates. But, when this factor has been allowed for, the conclusion remains that in their earlier stages business revivals are characterized by low and often by declining rates of discount.

progress. Sometimes, as in the European money markets in the middle nineties, the advance precedes the rise of wholesale prices; sometimes it follows the latter, as in the same markets ten years later; sometimes the two movements are nearly simultaneous, as in New York in 1898 and again in 1905.

The cause of this advance in discount rates is not far to seek; what requires explanation is the slowness with which the rise starts. As has been said more than once, bank loans, like transportation, are among the goods required by nearly every business enterprise. The volume of loans demanded, however, increases, not with the physical, but with the pecuniary volume of business, and the latter type of expansion may be deferred by a continued fall of commodity prices for some time after conditions have bettered. Moreover, the banks have such liberal reserves at this stage of the business cycle that they are able to meet an increasing demand for some time without weakening their position unduly.<sup>21</sup> Still further, it was shown in Chapter VII that, during recovery from a period of depression which has been both long and severe, the ratio of capital liabilities to total liabilities among the banks is reduced by funds coming from depositors.<sup>22</sup> This inflow of money increases the lending power of the banks without increasing the investment upon which profits are reckoned, and therefore retards the advance of discount rates. But, when banks have secured tolerably full employment for their resources available for lending, they exact higher prices for additional advances, in the same way that manufacturers raise their selling prices when they have obtained substantial "backbone" orders.

Call-loan rates usually advance more promptly than discount rates.<sup>23</sup> The reason is partly that the demand, which comes almost wholly from the stock exchange, expands as soon as speculative interest revives, and partly that the supply of funds for lending on call contracts as soon as favorable opportunities open for employing money in other ways. For "the call-loan market is really the storage place for the nation's surplus credit, and consequently has to take up all the stress resulting from changes of stress in other parts of the credit system."<sup>24</sup>

On the contrary, interest upon long loans as represented by the net yields of investments in railway and government bonds at current prices, lags decidedly behind discount rates upon the rise.<sup>25</sup> One cause of the lagging is the increase of confidence among investors, with its consequent reduction in the premium charged for the assumption of risks. Another cause may be an increase in the current rate of savings, with its consequent growth in the sums coming

<sup>21</sup> Compare the ratios of cash on hand to demand liabilities in Tables 82, 83, 89, 97, 100, and 104.

<sup>22</sup> Compare Table 90, and the context.

<sup>23</sup> See the tables of Chapter IV, iii.

<sup>24</sup> T. F. Woodlock, "The Stock Exchange and the Money Market," in *The Currency Problem and the Present Financial Situation, a Series of Lectures delivered at Columbia University, 1907-08*, New York, 1908, p. 37. Compare Chapter VII, i, above.

<sup>25</sup> See Chapter IV, iii.

forward for investment. But our knowledge of savings is too indefinite to permit of confident statements.<sup>26</sup> A third cause will be revealed presently when we examine into the demand for long loans on the part of business enterprises.<sup>27</sup>

#### IV. THE INCREASE OF PROFITS

##### 1. *Why Profits Increase*

Since the quest of profits is the great driving force of the money economy, the significance of all the processes which have been sketched culminates in their bearing upon the amount of money business enterprises can make.

The net resultant of these processes is to increase profits. Of chief importance is the fact that supplementary costs rise slowly in comparison with the physical volume of business. So long as this marked difference in the rate of increase is maintained, prime costs may keep up with or even outstrip the advance of selling prices, and still net profits will grow larger with each successive increment added to the turnover. But in many instances prime costs also lag behind selling prices on the rise. Discount rates often and prices of raw materials regularly rise faster than do the prices of finished products. But rates of wages lag behind. While the number of well-trained hands remains equal to requirements, while dawdling can be prevented, and while "overtime" can be avoided, the cost of labor to the employer increases no faster than the rates of money wages. Freight charges constitute another important item in prime costs which probably lags behind wholesale prices on the rise.

It follows that the rise in the profits made by different business enterprises must vary widely. Obviously, those enterprises are favored which secure an early share in the increasing volume of business, and in the subsequent rise in selling prices. In contrast, enterprises which are late in being reached by the growing demand for goods, and early in being reached by the rise in the prices of raw materials, etc., may find the revival of prosperity a doubtful blessing for some time. Again, it is an advantage at such seasons to have relatively heavy supplementary and relatively light prime costs. Similarly, it is an advantage to have prime costs consisting largely of wages and freight charges. Now, since these several factors—promptness in being reached by the increase in the volume of business and by the rise in prices, the proportion of supplementary to prime costs, and the share of prime costs which is cost of labor and transportation—since these factors are found in all their possible combinations, the diversity in the fluctuations of profits is amply accounted for.

<sup>26</sup> See Chapter VIII, i.

<sup>27</sup> See section v of this chapter.

Meager as are the statistics concerning profits, they suffice to confirm the above conclusions. That, within large groups of enterprises or industries, the rate rises promptly with the tide of prosperity there is no doubt. Indeed it is certain in particular cases and probable on the average that profits begin to pick up before the period of depression is over. Wagon's statistics of the ratio borne by net profits to the share capital of joint-stock companies in 37 German industries even indicate that in a few cases the years of deepest depression were the most lucrative of the whole business cycle from 1891-1900. But these cases are decided exceptions, and the years which brought maximum profits to the largest number of industries were the two years following the revival of activity, in 1895, the year when prosperity culminated (1899), and the year of the crisis (1900). Dermietzel's figures, which show the general drift of affairs more clearly than Wagon's, indicate that profits were lowest in the third year of the depression, that they rose a trifle in the last year, and then continued their rise without interruption through the revival of activity and the period of prosperity to a climax in 1899.<sup>28</sup>

## 2. *The Rise in the Prices of Stocks*

Since the market price of a business enterprise rests primarily upon the capitalized value of its current and prospective profits, the prices of stocks vary roughly with the rate of profits. The degree of this correspondence can be determined for the one group of enterprises for which we possess data relating both to profits and stock prices—the American railways. On the whole, the prices of stocks do follow changes in net income, but follow at some distance, sometimes rising less than profits in periods of revival, for example in 1898,—sometimes rising more, for example in 1905 and 1909.<sup>29</sup> The explanation of the discrepancies which mar the parallelism is to be found in the facts that railway dividends have been kept more stable than net income, that the stock market looks forward to future profits in coming years as well as back to net earnings for recent months, that the interest rate at which anticipated future profits are capitalized is itself subject to variations, and that considerations other than those of an investor intent upon income and safety—such as speculation, manipulation, and contests for control—are frequently potent factors in the market.<sup>30</sup>

But even when stock prices lag furthest behind the gains in net income, they both precede and exceed the rise of prices at wholesale.<sup>31</sup> Two factors contribute toward this result. First, it has just been shown that profits recover some of

<sup>28</sup> See Chapter IX, i.

<sup>29</sup> See Chart 25, Chapter IV, iv.

<sup>30</sup> Compare Chapter IV, iv, 6.

<sup>31</sup> The following figures compare the index number for 40 common stocks with the various index numbers of prices at wholesale which are available by months for each of the periods of revival in America since 1890.

their earlier losses before the revival sets in, and in an earlier section it was shown that commodity prices often do not rise until the movement toward recuperation has continued for several months or even a year.<sup>32</sup> Second, the stock market does not wait for an increase of profits to take place, but discounts it as soon as its occurrence is anticipated.

The advance in prices is even less uniform among stocks than among commodities.<sup>33</sup> In part these differences arise from dissimilar changes undergone by the profits and financial prospects of the various companies. But there are other differences which regularly recur between the prices of different types of stocks. Low-priced stocks rise more rapidly than the high-priced, common stocks rise more rapidly than preferred, and stocks which pay dividends irregularly rise more rapidly than those which are firmly established upon an income-yielding basis. The chief reasons for these differences are the greater attractiveness of low-priced stocks to speculators, the greater relative weight of the investment demand in the case of dividend-paying stocks, and the superiority of preferred to common stocks in steadiness of yield.<sup>34</sup>

	1891-92 Falkner's index number	Railway stocks		1895-96 Falkner's index number	Railway stocks
July	97.7	102.5	January	84.7	74.0
October	97.9	125.0	April	84.7	80.0
January	96.5	128.0	July	85.2	93.0
			October	86.3	93.0
			January	85.2	77.0
	1897 Falkner's index number	Railway stocks		1900-01 Bureau of Labor index number	Railway stocks
January	82.0	79.5	January	111.4	128.0
April	80.9	72.0	April	112.9	140.0
July	79.9	83.0	July	109.3	128.0
October	83.6	95.5	October	108.7	131.5
			January	108.3	169.0
	1904-05 Bureau of Labor index number	Railway stocks		1908-09 Bureau of Labor index number	Railway stocks
January	113.2	184.0	January	125.7	174.5
April	114.0	172.5	April	124.0	181.0
July	112.0	177.5	July	121.7	206.0
October	111.8	217.5	October	122.1	217.0
January	114.0	236.5	January	124.0	259.0

It would be a mistake to conclude from these figures that whenever stock prices rise commodity prices will presently follow. Examination of Table 44 shows several instances in which the stock market turned upward and then relapsed again while commodity prices were falling.

<sup>32</sup> See sections ii, 4, and iii, 1, A, of the present chapter.

<sup>33</sup> The decils for the relative prices of 40 common stocks cover a wider range than the decils for 145 commodities. See Tables 33 and 8.

<sup>34</sup> See Tables 34, 37, and 42, together with the accompanying text.

## V. THE VOLUME OF INVESTMENTS

All the processes of a business revival heretofore described might run their course within the circle of business enterprises existing at the close of depressions. But it is characteristic of the money economy that the prospect of good profits leads not only to greater activity among the old enterprises, but also to extensions of their size and to the creation of new enterprises. This expansion of business undertakings is the more important because for a time at least it imparts new energy to the very causes which produced it.

While the investment of fresh capital in business enterprises never ceases altogether, it sinks during depression to a relatively lower ebb than does the rate of current production of such staples as agricultural produce, coal, or even iron. Recovery usually begins before depression has passed away; but it is not until business has distinctly entered upon the phase of revival that new investments of this character become large again. Sometimes the first year of recuperation brings the maximum investments of the cycle, more often the second or third year. This maximum is likely to be several times as great as the preceding minimum. The growth of industrial equipment is therefore most uneven.

These statements, based upon the tables given in Chapter VIII concerning the applications for business loans, the capital of new joint-stock companies, the increase of railway mileage, the cost of buildings erected, the amount of income re-invested in their own business by banks and railways, etc.,—these statements accord well with the preceding analysis. Not until work has been provided for the existing industrial equipment by the slow expansion in the volume of business during periods of depression, supplemented by its more rapid strides after revival begins, and not until the profits of existing business enterprises have been raised to a satisfactory level, are there many tempting opportunities for fresh investments. But as these conditions occur often at an early stage of the period of business expansion, so with corresponding frequency the first year or two of revival brings a large aggregate of corporate borrowings on long time.<sup>35</sup>

While our information with respect to the volume of savings from year to year is scanty, we have no reason to suppose that its growth is so uneven as that of investments. Hence it should follow that after a year or two of heavy business borrowings the current supply of investment funds available for the purchase of corporate securities will show signs of being unequal to the demand. At least one such sign has already been found—the rise of interest rates upon long-time loans, which usually begins somewhat later than the rise of discount

<sup>35</sup> An anomaly in the tables of applications for loans which may trouble readers at this point is explained in Chapter XIII, i, 1, C.

rates or even of commodity prices. While the return of confidence among investors helps materially to keep this rate from rising promptly with the demand for such loans, it presently has a contrary effect. Let confidence reach the point at which investors become ready to assume considerable risks and the demand for bonds at a fixed rate of interest will begin to shift into a demand for stocks promising a higher, but less certain, rate of dividend. Then corporations seeking to "place" bonds will be obliged to offer greater inducements by raising the nominal rate of interest or selling securities bearing the old rate at a lower price. Combined with the difference of pace at which the demand for long loans and the supply of current savings expand, this movement accounts for the rise in long-time interest rates which usually occurs when prosperity has fairly begun.<sup>36</sup>

So soon as the volume of investments has attained large proportions, another stimulus is imparted to the activity of business. For the establishment of new and the enlargement of old enterprises involves a heavy demand for new industrial equipment—buildings, machinery, furnishings, etc. Then the industries concerned with the supply of the many kinds of goods included in these broad categories come in for their share of prosperity, and add their quota to the increasing demand for materials, equipment, labor, discounts, and long loans. The whole set of processes characteristic of business expansion is thereby rendered still more intense.

## VI. THE BUSINESS EQUILIBRIUM

The preceding sections show how the endlessly complicated processes started by an increase in the physical volume of trade convert depression into prosperity. The salient feature of the whole development is that each successive effect reacts to strengthen the causes which produced it, so that the movement toward prosperity gathers momentum as it proceeds.

Every industry wakened to activity stimulates other industries, and when the latter are roused their activity creates a larger demand for the products of the industries from which the stimulus came. The swelling volume of trade presently sends up the prices of certain commodities; every such advance becomes a reason for raising other prices; the latter advances presently cause the first prices to be raised anew, thus starting the whole process over again on a higher level; and the rising of the price level promotes the expansion in the volume of business out of which it grew. In combination, the expansion of trade and the rise of prices make those who profit by them optimists; every convert to optimism makes new converts; the latter confirm the faith of the first; and the resulting prevalence of business confidence favors further expan-

<sup>36</sup> See section iii, 3, above.

sions in the volume of trade and further advances of prices. These developments make workingmen insistent to demand, and employers able to concede higher wages; the resulting increase of family incomes widens the market for the increasing output of consumers' goods and sustains the advances made in their prices; meanwhile the higher cost of labor occasions further advances in the prices of commodities at wholesale and retail. Interest rates and rents rise for similar reasons, and their advances have similar effects upon the demand for consumers' commodities, the costs of production, and the level of prices. Finally, every increase of profits resulting from the expanding volume of business and the rising level of prices encourages new investments in business enterprises; these new investments swell the volume of business still more, drive prices still higher, favor new advances of wages, interest, and rents, and augment afresh the profits of numerous trades.

The more vividly this cumulative growth of prosperity is appreciated, the more difficult becomes the problem why prosperity does not continue indefinitely; instead of being but one passing phase of the business cycle.

Of course prosperity confers no immunity against disasters which interfere with the course of business; but over many such rocks the accumulated momentum of good times may run without serious mishap. The great shortage of the American corn crop in 1901 did not stop the "boom" then in progress, though it came soon after a spectacular corner in the stock market; the failure of Mr. Walsh's banks in Chicago, the San Francisco fire, and the great coal strike did not stop the "boom" of 1905-06, though they followed hard one on the other. For such misfortunes affecting a few sections of the business community the superabounding prosperity of the other sections is more than a match. On the other hand, many periods of intense prosperity have ended in years of peace, plenty, and good fortune. The waning, like the waxing of prosperity, therefore, must be due, not to the influence of "disturbing causes" from outside, but to processes which run regularly within the world of business itself.

The world of business is a system comprising numberless independent enterprises, bound together by industrial, commercial and financial ties. For the continuance of prosperity it is indispensable that a certain balance be maintained between the fundamental processes which constitute the activity of this system. The demand for goods of every kind must keep pace with the increasing supply, despite the steadily rising prices; the cost of raw materials must not increase too much in comparison with the selling prices of manufactured goods; mercantile collections must grow with mercantile credits; bank reserves must expand with demand liabilities; the cost of living must not rise much faster than money incomes; banks and investors must continue able to provide the ever-increasing loan funds required by business enterprises; and the like. If there occurs a serious maladjustment in the rate at which any of these factors

are growing in relations to the others, some business enterprises will suffer loss of profits. Then the bonds which unite different enterprises will become channels through which the injury will spread to other enterprises, just as they were recently channels for the spread of prosperity. Unless the original injury is promptly healed, there is grave danger that the cumulation of prosperity will be converted into a cumulation of depression.

It is some such maladjustment among the various factors in the system of business which brings all seasons of expansion to a close and turns prosperity into crisis. The regularity with which this happens suggests that prosperity itself has other effects than those which tend to sustain and intensify business activity. During the earlier stages of a business revival these effects pass unnoticed; but, though slow in developing, their later growth must be cumulative at a higher rate than the growth of the prosperity-producing factors. The next task is to investigate the sources and character of these stresses which accumulate within the system of business until they finally disrupt its equilibrium.

## CHAPTER XI

### HOW PROSPERITY BREEDS A CRISIS

#### I. THE INCREASING COSTS OF DOING BUSINESS

Among the threatening stresses which gradually accumulate within the system of business during seasons of high prosperity is the slow but sure increase in the costs of doing business.

##### 1. *Supplementary Costs*

During the early stages of a business revival, that portion of the total cost of carrying on an enterprise which consists of supplementary charges declines, because the sum of these charges remains nearly constant while the number of sales over which they are distributed increases.<sup>1</sup> This decline of supplementary costs per unit gradually ceases as the revival grows into full prosperity. For when the current volume of business grows large enough to tax the full capacity of existing mines and factories, railways and stores, it becomes necessary to enlarge the old or to found new enterprises to care for additional orders. Of course such additions to the existing industrial equipment involve the enterprises which undertake them in new supplementary charges—interest on the funds invested, rents for the use of new premises, depreciation on buildings, machinery, etc., insurance, salaries for general officials, and the like.

Often these charges are less per unit of product which the new equipment turns out than in the case of the old equipment, because improved processes or machinery are available for adoption. But, on the other hand, the initial cost of construction in the midst of a period of prosperity is high—a fact which saddles the new plants from the start with heavy interest charges. Further, when a new plant is founded by a new company, the latter must usually invest considerable sums in building up a trade connection. In this process it is frequently compelled for a time to take customers who have made trouble for themselves in dealing with the old established firms and whose business is likely to prove equally unsatisfactory to the new. These high interest charges, costs of getting established, and losses upon bad debts often overbalance the advantages from improved technical equipment.

<sup>1</sup> See Chapter X, iv, 1.

Another factor of some moment is the gradual increase in the supplementary costs of the old enterprises themselves—an increase quite apart from that involved in extending plants. When leases expire or bonds fall due in a period of prosperity, the enterprises concerned must expect ordinarily to pay higher rents and higher interest to secure renewals. Permanent officers, also, are more likely to claim and to secure an increase in the scale of their salaries when business is good and the cost of living is advancing.

Often more important than this cessation of the decline in supplementary costs per unit, is the positive increase which prosperity brings in prime costs.

### 2. *The Prime Costs of Weak Enterprises*

When a revival of activity begins, the business enterprises which have been running with few intermissions during the period of depression are surrounded by a fringe of other enterprises which have closed down altogether. Disadvantageous location, antiquated equipment, poor trade connections, weak financial backing, timid or unskillful management—any of these circumstances may have been responsible for their inability to keep prime costs down to the low selling prices which depression brings. Rather than to make goods which do not repay even the cost of labor and materials, they have shut their doors and pocketed the entire loss of supplementary charges.

When prosperity returns and prices rise, these enterprises begin to start up again, one after one. They waste more material, or more labor, or more capital, or more transportation in putting a given output upon the market than do their more fortunate rivals, and at given prices their profits are narrower. But their resumption of business has this effect upon all the well-equipped, well-located, and well-managed enterprises in the field; it bids up the prices of materials, labor, etc., and its addition to the supply of goods sent to market increases the difficulty of advancing selling prices sufficiently to offset the encroachments of costs upon profits.

Many of the strongest enterprises have among their machines or plants some which fall below the current standard of efficiency. Like the weak enterprises, these sections of the industrial equipment are allowed to stand idle when business is dull, but started again when business becomes brisk. Of course, the average of the prime costs per unit of the goods produced by such an enterprise rises with every old machine and every ill-located plant it sets at work.

### 3. *The Cost of Labor*

The average rise in the rate of wages is slow in the first year or two of a trade revival, but it becomes more rapid in the later stages when employers have difficulty in finding sufficient hands to fill their orders. Encroachments would seldom be made upon profits, however, did fluctuations in the rate of

wages represent the sole changes in cost of labor; for wholesale prices usually keep rising faster than wages to the very climax of prosperity.<sup>2</sup> The source of serious trouble is that labor is a highly changeable commodity—its quality deteriorates as its price rises.

Where humanitarian motives are not allowed to interfere with business policy, the less efficient employes are the first to be discharged after a crisis. Hence the relatively small working forces of depression are the picked troops of the industrial army. When a revival has grown into full prosperity, on the contrary, employers are constrained to accept any help to be had. They must take on men who are too old, and boys who are too young, men of irregular habits, men prone to malingering, even the chronic "trouble makers." Raw recruits of all sorts must be enlisted and trained in a hurry at the employer's expense. A deterioration in the average efficiency of the working forces inevitably follows.

The genuineness of this deterioration admits of no doubt; but its weight in increasing costs is difficult to determine. The foreign statistics of unemployment show differences of not more than 5 or 6 per cent of the membership of reporting trade unions between the best and the worst years of a business cycle.<sup>3</sup> Among the masses of unskilled laborers belonging to no trade union the variations in employment may be greater; but that is a matter of conjecture.<sup>4</sup> In New York State the reported fluctuations are much wider than in France or England. For example, there is a difference exceeding 20 per cent of the membership of the reporting unions between the numbers out of work in the exceedingly dull year 1908 and the exceedingly busy year 1906.<sup>4a</sup> Such differences leave a wide margin for the improvement of working forces during depression, and for a corresponding deterioration during prosperity.

While the relatively inefficient reserve army of labor is thus called into active service, both the standing force and the reserves are kept at work long

<sup>2</sup> The following figures from Tables 9, 11, 15, and 17 compare the index number of wages in manufacturing enterprises with the index numbers of prices at wholesale in the United States and England during two periods of business expansion. A minus sign indicates that wages or prices fell, instead of rising.

Year	United States				England			
	Wages	Prices	Advance during the year		Wages	Prices	Advance during the year	
			Wages	Prices			Wages	Prices
1897	99	89	-1	0	100	93	1	1
1898	100	93	1	4	102	97	2	4
1899	102	103	2	10	105	104	3	7
1900	105	111	3	8	111	115	6	9
1904	116	114	1	0	106	108	0	2
1905	118	116	2	2	106	111	0	3
1906	123	122	5	6	108	119	2	8
1907	129	130	6	8	113	123	5	4

In three of these four cases the rate at which the rise of prices exceeds the rise of wages declines toward the end of the prosperous period; but in only one out of the four does the rise of prices in the culminating year fail to surpass the rise of wages.

<sup>3</sup> See Table 68, above. Compare A. de Lavergne and L. Paul Henry, *Le Chomage* (Paris, 1910), pp. 66-68.

<sup>4</sup> Compare W. H. Beveridge, *Unemployment* (London, 1909), pp. 21, 22.

<sup>4a</sup> See p. 271 above.

hours. Now overtime labor is especially expensive to employers, not only because it often commands extra rates of wages, but also because it is tired labor. Few manual laborers possess sufficient strength and vitality to stretch out their working day from 8 or 9 to 10, 11 or 12 hours for weeks or even months at a time without suffering a decline in efficiency. At first, the closing hours of the long day, after a time, all the hours of every day find the men less alert and less energetic—unable to accomplish as much work per hour as in less busy seasons. Moreover, the quality of the output declines as nerves become fatigued. “Spoiled work” increases often at an alarming pace, and the resulting loss of materials and time threatens serious encroachments upon profits.<sup>4b</sup>

Quite apart from this difficulty of overtime, men cannot be induced to work at so fast a pace when employment is abundant as when it is scarce. Employers complain that in good times their men “slow down”; employes complain that in dull times they are “speeded up.” Whatever may be the merits of this chronic dispute about the fairness of the day’s work given for a day’s pay in either phase of the business cycle, there is abundant testimony from both sides as to the existence of a considerable difference in the energy exerted. Theoretical writers have strangely neglected this point, but the trade journals make much of it. The most trustworthy body of evidence on the subject, however, is contained in the special report made by the federal Commissioner of Labor in 1904 upon *Regulation and Restriction of Output*. This evidence is the more convincing because the influence of business conditions upon the efficiency of labor was not a subject of inquiry. Nevertheless, manufacturers and foremen, trade-union officials, and manual workers both within and without the ranks of organized labor called attention time after time to the fact that the pace of work was slower in the flush times of 1900-02 than it had been in the dull times of 1894-96. In different phrases they all gave the same explanation—men are less afraid of discharge when business is good. A sample bit of testimony may be quoted. The superintendent of a company manufacturing electrical machinery said:

“The absorption of ‘driftwood’—that is, the taking on of men who would not be given a job in ordinary times, the temporary employment of tramps, to make it perfectly plain—is the cause of but a small percentage of the decreased output in machine shops. Five years ago men did not restrict their output, union or non-union men, because they wanted to hold their jobs, and a man would do anything and all he was told to do. Now a man knows that all he has to do is to walk across the street and get another job at the same rate of pay. During the hard times we took contracts at any price we could get, and in some places and cases men were driven at high speed to get this work out, so as to lose as little money on it as possible. Men will not keep up that speed rate in these days. We are not restricted in our right to hire and ‘fire,’ but we are mighty careful nowadays not to discharge a man unless we have the very best of cause, and would not discharge unless we had a case that would preclude a visit from a union committee. We are not looking for visits, nor trouble of any kind.”<sup>5</sup>

<sup>4b</sup> Compare Josephine Goldmark, “Fatigue and Efficiency” (New York, 1912), Chapter VI.

<sup>5</sup> P. 113. Similar statements from many sources may be found on pp. 21, 22, 146, 148, 159, 160, 164, 165, 168, 222, 273, 285, 327, 380, 382, 442, 711, 712, 810, 832, 884, and 910.

Among these various factors which co-operate to increase the cost of labor in a period of prosperity—the rise in wages, the employment of undesirables, the payment of extra rates for the tired labor of overtime, and the lessening energy put into their work by old hands and new—we can approximate a quantitative estimate of the first only. Unless employers grievously exaggerate, however, the last is the most important, and neither of the other two factors is negligible. That this combination of advancing prices for labor and declining efficiency produces a serious increase in the cost of getting work done is beyond question.

Of course, the most serious inroads are made upon profits in those industries where wages constitute a large proportion of the total outlay. A rough index of the variations in this proportion from one industry to another is afforded by the following table, which reproduces the census classification of expenses in thirty odd branches of manufacturing in 1900. Depreciation charges, insurance against mercantile and trade risks, and cost of selling products are not included by the census, so that the total expenses are somewhat understated and the proportion of wages correspondingly exaggerated. But since on the average wages make over a fifth of the recorded expenses of manufacturing goods, an increase of 5 or 10 per cent in labor cost must cut deeply into profits unless some way of offsetting it can be found.

For other than manufacturing branches we have few data regarding the relations of wages to total expenses. On the interstate railways the proportion mounts nearly to 40 per cent.<sup>6</sup> Among mines, quarries, and lumber companies the average proportion of labor cost must be nearer that of the railways than the manufacturing companies. Among mercantile establishments, both retail and wholesale, however, it is probably below the proportion in most branches of manufacturing. But the cases must be few in any line of business where the increasing price and declining efficiency of labor in periods of prosperity do not become matters of grave concern to employers.

<sup>6</sup> The following figures relate to the "operating roads" in the year ending June 30, 1909:

	Actual amounts in millions of dollars	Propor- tions of the total
Salaries .....	86	3.8%
Wages .....	902	39.5
Other operating expenses .....	662	29.0
Taxes .....	85	3.7
Rents for leases of other roads ....	120	5.2
Interest .....	354	15.5
Miscellaneous .....	75	3.3
Total .....	2,284	100.0

Compiled from the report upon the *Statistics of Railways in the United States for the Year Ending June 30, 1909*.

TABLE 129

CLASSIFICATION OF EXPENSES IN MANUFACTURING INDUSTRIES HAVING PRODUCTS VALUED AT MORE THAN \$100,000,000 IN 1900

	Actual amounts in millions of dollars					Proportions of the total			
	Salaries \$	Wages \$	Misc. Expenses \$	Cost of Materials \$	Total \$	Salaries %	Wages %	Misc. Expenses %	Cost of Materials %
All industries	404	2,322	1,028	7,345	11,099	3.6	20.9	9.3	66.2
Agricultural implements	8	22	11	44	85	9.4	25.9	12.9	51.8
Boots and shoes	8	59	11	170	248	3.2	23.8	4.4	68.6
Bakeries	6	28	10	95	139	4.3	20.1	7.2	68.4
Carpentering	2	71	49	142	264	.8	26.9	18.5	53.8
Carriages and wagons	4	30	6	57	97	4.1	30.9	6.2	58.8
Railway shops	6	96	6	110	218	2.8	44.0	2.8	50.4
Car building	2	23	3	70	98	2.0	23.5	3.1	71.4
Cheese, butter, etc.	1	6	2	109	118	.8	5.1	1.7	92.4
Clothing, men's	14	79	52	198	343	4.1	23.0	15.2	57.7
Clothing, women's	7	33	12	85	137	5.1	24.1	8.8	62.0
Copper smelting	1	9	2	122	134	.7	6.7	1.5	91.1
Cotton goods	7	87	22	177	293	2.4	29.7	7.5	60.4
Flour mills	5	18	10	476	509	1.0	3.5	2.0	93.5
Foundries	32	182	41	286	541	5.9	33.6	7.6	52.9
Furniture	7	43	11	65	126	5.6	34.1	8.7	51.6
Iron and steel	12	121	32	522	687	1.7	17.6	4.7	76.0
Lead smelting	1	5	1	144	151	.7	3.3	.7	95.3
Leather	3	23	7	155	188	1.6	12.2	3.7	82.5
Liquors, malt	13	26	109	52	200	6.5	13.0	54.5	26.0
Lumber	11	105	18	318	452	2.4	23.2	4.0	70.4
Planing mills	5	33	7	100	145	3.4	22.8	4.8	69.0
Masonry	2	53	31	87	173	1.2	30.6	17.9	50.3
Paper	5	21	10	71	107	4.7	19.6	9.3	66.4
Petroleum refining	2	7	3	103	115	1.7	6.1	2.6	89.6
Plumbing	3	32	5	65	105	2.8	30.5	4.8	61.9
Printing	36	84	56	87	263	13.7	31.9	21.3	33.1
Silk	3	21	10	62	96	3.1	21.9	10.4	64.6
Slaughtering, etc.	10	34	24	687	755	1.3	4.5	3.2	91.0
Sugar refining	2	7	7	223	239	.9	2.9	2.9	93.3
Tin smithing	3	22	5	50	80	3.7	27.5	6.3	62.5
Tobacco—chewing, etc.	4	7	48	35	94	4.8	8.3	57.2	41.7
Tobacco—cigars	5	41	31	58	135	3.7	30.4	23.0	42.9
Woollen goods	3	25	7	71	106	2.8	23.6	6.6	67.0
Worsted goods	2	20	7	77	106	1.9	18.9	6.6	72.6

#### 4. *The Cost of Materials*

According to the preceding table, the cost of materials exceeds wages in every one of the leading branches of manufacture, and in a majority of cases is over twice as large. Indeed, on the average it makes practically two-thirds of the total outlay. If wares for re-sale be substituted for materials, this proportion must run far higher in wholesale stores, while in retail shops it cannot be much lower than in factories on the average and may well be considerably higher. Even the transportation companies and enterprises in the extractive industries have to buy vast quantities of current supplies. Hence an increase in the cost of materials, wares, or supplies is often an increase in the largest single item of expense, and always an increase in an important item. The relative fluctuations in the prices of those commodities which are bought and of those which are sold are therefore of great, in many cases of decisive, importance in determining profits.

Concerning these relative fluctuations, our definite information consists of index numbers for raw materials, partially manufactured products, and finished goods; also for the same commodities at wholesale and at retail.<sup>7</sup> Now this statistical evidence points to the conclusion that what must be taken as buying prices creep up on selling prices during a period of prosperity.<sup>8</sup> Of course this movement, like the others which have just been traced, threatens a reduction of profits.

<sup>7</sup> Chapter IV, i, 3, 5, 6, and 9.

<sup>8</sup> The evidence may be summarized as follows. The figures are based on Tables 3, 5, 6, 7, and 13. Minus signs indicate that prices fell instead of rising.

	Number of points by which relative prices rose		
	1896-1900	1904-07	1908-09
25 foods at wholesale in the United States .....	17	9	.....
25 foods at retail in the United States .....	6	11	.....
23 foods at wholesale in England .....	10	6	2
19 foods at retail in England .....	8	1	0
23 foods at wholesale in France .....	11	12	0
36 foods at retail in France .....	-2	7	-5
20 raw materials .....	33	22	9
20 manufactured products .....	23	20	4
5 raw materials .....	30	10	16
5 partly manufactured products .....	20	5	10
5 finished commodities .....	11	12	1
45 raw producers' goods .....	30	22	9
28 manufactured producers' goods .....	24	18	-1
18 raw mineral products .....	27	24	2
23 manufactured mineral products .....	20	9	0
10 raw forest products .....	17	27	13
9 manufactured forest products .....	15	19	-1
9 raw animal products .....	29	21	20
18 manufactured animal products .....	20	13	8
18 raw farm products .....	35	9	7
40 manufactured farm products .....	16	15	-2

While a difficulty of this character seems to be encountered in most branches of business it is likely to become peculiarly acute in those manufacturing industries which use animal and farm products as their leading raw materials. For, following up a suggestion of Sombart's, we have found that these classes of products are more erratic in their price fluctuations than are the products of mines and forests.<sup>9</sup> Hence an uncommonly large speculative risk must be borne, or insured against, in such branches of trade as meat packing, flour milling, cotton spinning, woollen weaving, tanning, etc. Of course this risk exists during all phases of the business cycle, but it is augmented in prosperity by the necessity of carrying larger stocks of raw materials. The census indicates that more than three-fourths of all the "materials purchased in the raw state" by American factories in 1900 belonged to this class which is peculiarly unstable in price.<sup>10</sup>

### 5. *The Cost of Bank Loans*

Interest upon short-time loans is a minor element of expense in manufacturing operations, according to the American census;<sup>11</sup> but it must be a much more important matter to the mercantile classes. Certainly it is among the costs of doing business which trench upon profits in the later stages of prosperity; for the relative rates of discount rise at a much more rapid pace than the index numbers of wholesale prices—to say nothing of retail prices.<sup>12</sup> But this is a topic of many aspects, which will require more adequate treatment in a later section.<sup>13</sup>

<sup>9</sup> See Chapter IV, i, 6.

<sup>10</sup> The sources of raw materials are given as follows:

From farms .....	\$1,941,000,000
From forests .....	119,000,000
From mines .....	320,000,000
From the sea .....	10,000,000
From all sources .....	\$2,490,000,000

Twelfth Census of the United States, Manufactures, Part I, p. cxxxv. The "farm" products of this classification include both the animal and farm products of the tables in Chapter IV.

<sup>11</sup> "Rent of offices, insurance, interest, etc.," all put together made only 6.4 per cent of the total manufacturing cost in 1900. *Op. cit.*, compare the data in Tables XLIX and I.

<sup>12</sup> A conspectus of the evidence obtained by comparing figures from Tables 11 and 28 follows. In order to avoid the effect of crises in raising interest rates, the comparisons are made between the levels in the last year of depression and the last year before the crisis. A minus sign indicates a fall instead of a rise.

	Number of points by which relative prices and relative discount rates have risen	
	1896-99	1904-06
Wholesale prices in America .....	14	8
Discount rates in New York .....	-38	31
Wholesale prices in England .....	12	11
Market discount rates in London .....	85	66
Wholesale prices in France .....	15	11
Market discount rates in Paris .....	53	27
Wholesale prices in Germany .....	14	16
Market discount rates in Berlin .....	47	30

The one exception to the rule that discount rates rise faster than prices cannot be wholly explained away by the tension in the New York money market caused by the free-silver campaign of 1896. If comparison be made between 1897 and 1899, wholesale prices are found to have risen 14 points and discount rates only 10 points.

<sup>13</sup> See the section upon "The Tension in the Money Market."

### 6. *The Declining Economy of Business Management*

One final matter may be mentioned: prosperity is unfavorable to economy in business management. When mills are running overtime, when salesmen are sought out by importunate buyers, when premiums are being offered for quick deliveries, when the railways are congested with traffic, then neither the over-rushed managers nor their subordinates have the time and the patience to keep waste down to the possible minimum. The pressure which depression applies to secure the fullest utilization of all material and labor is relaxed, and in a hundred little ways the cost of doing business creeps upward. Still less can attention be given to the adoption of improved methods of organization; for changes in habitual routine are always the source of some confusion and delay when they are being introduced, and when an enterprise has all the business it can handle delay is the one thing to be avoided. Even when the feasibility of making an important improvement is demonstrated to the managers of an enterprise, they often defer its introduction to a less busy season. Progress in industrial technique and in business methods would be slower than it is if business communities were always prosperous.

## II. INDUSTRIAL EQUIPMENT AND THE INVESTMENT MARKET

### 1. *The Consequences of Increasing the Industrial Equipment*

While the increasing costs of doing business are threatening to encroach upon profits in almost every branch of trade, the rapid extension of industrial equipment is breeding other stresses.

It has been shown that the repairing of old and the building of new equipment for the handling of business is greatly accelerated by the return of prosperity after a period of depression.<sup>14</sup> This movement gains momentum as prosperity becomes more intense. Now the laying of new railways, the erection of new office buildings, factories, and power plants, the opening of new mines, quarries, lumber camps, and the like, stimulates all the branches of business concerned with construction work. Not only contracting firms, but also cement mills, brickyards, structural steel works, machine building companies, lumberyards, etc., etc., become busy. Direct statistical evidence is meager; but there is little doubt that the volume of business done by such enterprises regularly shows a higher ratio of increase in prosperity than is common among establishments which deal either in staple consumers' goods, or in the current

<sup>14</sup> See Chapter X, v, and the tables of Chapter VIII, ii.

supplies used by business enterprises.<sup>15</sup> Of course, the constant necessity for repairs and renewals provides a good deal of work for these construction trades at all times, and there is never a year when considerable extensions of old and construction of new plants are not undertaken. But when to this regular work of maintaining the efficiency of the existing equipment and to these odd contracts for new construction there is added the rush of orders from the many enterprises which see their own trade outrunning their facilities and from the numerous new projects launched on the rising tide of prosperity, then the construction trades have a season of activity which few of the industries for which they are working can match.

It follows at once that these trades add a sharply increasing demand to the market forces which are swelling the volume of business and lifting the level of prices. For a while their demand for commodities is not accompanied by a corresponding increase in the market supply. What they are making in the way of equipment has been sold in advance to business enterprises and does not come on the market as a factor opposing the advance of prices. While this condition lasts, the demand of construction trades has an especially stimulating effect upon the price level. But, at the same time, the bidding of these trades for labor and materials aids in driving up the costs of doing business in all the various ways described in the preceding section.

A second consequence of the situation is that the movement toward providing new industrial equipment is likely to become particularly rapid in the

<sup>15</sup> The production of pig-iron, for example, undergoes much wider fluctuations between seasons of prosperity and depression than the production of coal, as the following figures from Tables 50 and 51 show.

RELATIVE PRODUCTION OF PIG-IRON AND COAL IN THE UNITED STATES, UNITED KINGDOM, FRANCE, AND GERMANY  
BY YEARS, 1890-1910

Year	Average actual production in 1890-99 = 100							
	United States		United Kingdom		France		Germany	
	Pig-iron	Coal	Pig-iron	Coal	Pig-iron	Coal	Pig-iron	Coal
1890	98	82	99	95	88	93	79	83
1891	89	88	93	97	88	93	79	88
1892	98	93	84	95	93	93	84	86
1893	76	95	88	86	93	89	84	89
1894	72	89	93	98	93	96	91	92
1895	100	100	97	99	93	100	93	97
1896	92	100	109	102	107	103	109	105
1897	104	105	111	106	112	107	117	113
1898	126	114	108	106	116	114	124	119
1899	145	133	118	115	116	114	138	127
1900	147	141	113	118	126	117	145	139
1901	170	153	99	115	112	114	134	143
1902	190	157	109	119	112	107	145	140
1903	192	186	112	120	130	121	171	152
1904	176	183	109	121	135	121	171	158
1905	246	205	121	124	140	125	185	162
1906	270	216	127	131	153	121	209	180
1907	276	251	127	140	163	128	219	192
1908	170	217	114	137	158	132	200	201
1909	276	240	121	138	163	132	214	203
1910	292	262	126	138	186	135	252	208
Averages								
1890-99	100	100	100	100	100	100	100	100
1900-09	211	195	115	126	139	122	179	167

very trades whose business it is to furnish such equipment. The productive capacity of the existing enterprises which at the time of business revival is not used at all or not used to the full is especially large in these lines. But when orders for construction work do begin to come in, they come so fast and are so large and require such quick execution that this wide margin of reserve power is often exhausted in a year or less. Then the foundries, machine shops, cement mills, brickyards, and all the rest become the most anxious of all enterprises to install new equipment in the shortest possible space of time; for they cannot secure contracts unless they can guarantee prompt deliveries, and the season when contracts are to be had may be brief. Indeed, the *Produktivmittelindustriem* may well show a more rapid expansion of equipment than any of the trades to which they cater.<sup>16</sup>

Further consequences appear as soon as sections of the new industrial equipment are finished and put into active service. Then the enterprises which own the new equipment begin on the one hand to hire operatives, buy raw materials, etc., etc., and on the other hand to pour their products upon the market. This activity serves both to strengthen the forces which are already raising the costs of doing business and to obstruct the advance of selling prices. But, since new construction is not undertaken on a grand scale until a business revival has made considerable headway, and since the work of building and installing the elaborate equipment of to-day lasts months if not years, prosperity has neared its high tide before the new equipment begins to aggravate seriously the encroachments of costs upon profits.

## 2. *The Development of Stringency in the Investment Markets*

The extension of industrial equipment is financed in part by funds taken out of the current income of business enterprises and re-invested.<sup>17</sup> But the bulk of the necessary funds is obtained by borrowing, by inducing those already interested in enterprises to advance additional capital, or by bringing in new stockholders. As indices of how much money is raised for such purposes, we have the statistics of applications for loans, sales of bonds and stocks, and fluctuations in the interest rate upon long-term loans.<sup>18</sup>

After a year or two of the heavy borrowings of prosperity, this interest rate usually rises to what is regarded by the business community as a high

<sup>16</sup> They may; but they are far from doing so always. In the interests of symmetry, certain writers like Spiethoff have tried to show that this group of trades is regularly the chief seat of over-investment during prosperity and the chief seat of weakness in the subsequent crises. But less partial examination of the very evidence on which Spiethoff mainly relies shows that the lead in the German "boom" of 1896-99 and in the collapse of 1900-01 was not held by industries which are most exclusively devoted to the production of means of production. See, for example, W. Sombart, *Schriften des Vereins für Socialpolitik*, vol. CXIII, p. 130; J. Lescaur, *Des Crises générales et périodiques de surproduction*, Paris, 1907, p. 516.

<sup>17</sup> See Chapter VIII, ii, 5.

<sup>18</sup> Chapter VIII, ii, 2 and 3; Chapter IV, iii, 1, 2, and 4.

level,<sup>19</sup> and complaint begins to be heard of a "scarcity of capital." This is one of the most regularly recurring phenomena of the months which precede the outbreak of a crisis.

The popular explanation of this alleged scarcity is that too much capital has recently been locked up in fixed investments, and that the remainder of free capital is insufficient to meet the current needs of business. But all that the available data establish is that the supply of funds forthcoming for long loans is no longer equal to the demand *at the old rate of interest*. It does not necessarily follow that saving has declined, or that the heavy investments of the preceding year or two were made out of past accumulations which are now approaching exhaustion. The stringency may quite as well be due to the diversion of an increasing proportion of the funds seeking investment into other channels than those provided by the loan market. Active business men are likely to cease looking elsewhere for investments for their savings when their own special enterprises have in sight more business than can readily be carried with the available working funds. Others may be deterred from lending at the old rate because the advancing price level is reducing the purchasing power of fixed money incomes, or because they think it may reduce the purchasing power of the principal when it comes to be repaid. Still others who do not think their interests out so clearly may be impressed by the patent fact that bonds have been falling in price. The statistics and market reports show that the purchases of stock increase while the purchases of bonds are falling off.<sup>20</sup>

But, whatever the cause may be—a problem which cannot be settled until more definite knowledge is obtained concerning the fluctuations of savings and the promptness with which savings are invested—the effect is certain. The terms exacted for long loans become onerous.

### 3. *The Decline of Investment Borrowing*

When the market rate of interest for long-term loans has risen one-quarter, one-half, or, on some classes of business, 1 per cent above the level which had prevailed during the preceding period of depression, the financial managers of large business corporations begin to restrict their borrowings to the narrowest possible limits. Two shifts, indeed, are open to them: they may endeavor to follow the change in the appetite of investors by raising more capital on stocks and less on bonds, and they may take up money on one-, two-, or three-year notes at a high rate of discount instead of selling long-term bonds. That

<sup>19</sup> An interesting exception is afforded by the experience of the United States in 1897 to 1902. See Chapter IV, iv, 7.

<sup>20</sup> Compare Chapter VIII, ii, 2, and footnote 21, below.

they adopt both of these courses freely is proved by the evidence.<sup>21</sup> But it is also clear from the tables of Chapter VIII that the volume of public applications for capital usually suffers a heavy decline in the year preceding a crisis.

Of course this decline means, not that the desire on the part of business enterprises to secure funds has shrunk, but that the men in control are unwilling to saddle their companies for a long series of years with the heavy fixed charges which would result from borrowing under the prevailing conditions. They prefer to defer the execution of their plans until funds can be procured on better terms.

#### 4. *The Check upon Orders for New Construction*

High rates of interest, however, are not the sole, in many cases they are not even the most important, cause for deferring the execution of plans calling for new construction. The high prices demanded by contractors as the climax of prosperity approaches frequently count for more.

Evidence has been given that many contracts for permanent improvements are let in the early days of revival, or even in the late days of depression.<sup>22</sup> Much of the work then undertaken requires a year, two years, three years, or even more to execute. To safeguard themselves against an advance of prices, the firms which are contracting to construct houses, office buildings, factories, machinery, roadways, sewers, canals, docks, bridges, and the like enter into sub-contracts with enterprises which provide the necessary iron, steel, copper, lumber, cement, brick, tile, stone, etc. When it is feasible, the latter enterprises in their turn often enter into contracts with still other houses from which they buy materials or supplies. Now most of these enterprises bind themselves without definitely knowing how much business other enterprises in the same branch of trade are booking. It often happens, therefore, that contractors and their

<sup>21</sup> The following figures, compiled from Table 113, show the total amount of securities newly listed each year on the New York Stock Exchange, and the proportions borne to the total by bonds and by stocks.

Year	Amount in millions of dollars	Per cent of		Year	Amount in millions of dollars	Per cent of	
		Stocks	Bonds			Stocks	Bonds
1890	359	44.8%	55.2%	1901	650	66.2%	33.8%
1891	288	33.7	66.3	1902	449	55.9	44.1
1892	275	36.4	63.6	1903	365	47.4	52.6
1893	233	40.3	59.7	1904	551	22.0	78.0
1894	222	16.7	83.3	1905	694	18.0	82.0
1895	244	31.6	68.4	1906	540	43.9	56.1
1896	224	34.4	65.6	1907	406	39.2	60.8
1897	141	37.6	62.4	1908	773	16.0	84.0
1898	315	22.2	77.8	1909	1,010	29.4	70.6
1899	467	66.6	33.4	1910	877	34.8	65.2
1900	445	66.7	33.3				

It will be noticed that the proportion of bonds rises in the years of depression and declines rapidly in the years of full prosperity.

The substitution of short-term notes for bonds was particularly prominent in the tight money markets of 1903 and 1907. See the current issues of the financial journals, and for summaries the *Financial Review*, 1904, p. 27; 1908, p. 32.

<sup>22</sup> See Chapter X, v.

sub-contractors sell to investors more construction than can readily be executed within the contract time. This condition of trade is discovered when the contractors look about for labor and materials to perform the work they have undertaken. Then prices rise rapidly and large bonuses are often offered for quick deliveries. One result is that many building contractors and manufacturers find that what promised to be lucrative bargains turn out to be losing bargains. More important is the further result. When bids are invited for additional construction, contractors are forced to ask much higher prices than those which they would have asked a year or so earlier.<sup>23</sup>

Of the projects for permanent improvements some are so pressing that the contracts are let despite the onerous terms demanded. But there are other projects, many and large, which can be and are postponed to a season when the initial outlay will be less. Thus the high costs of construction which characterize a period of prosperity combine with the high interest charges upon long loans to reduce the number and the size of fresh contracts let.

Activity does not slacken at once in the trades which do contract work and furnish materials. For the finishing of the contracts already in hand may keep everyone as busy as ever for several months to come. Indeed, the mills making structural steel, etc., may be working under high pressure to get out work on which bonuses for quick delivery are expected at the very time their order books for the coming quarters are scantily filled, and while their selling agents are having great difficulty in drumming up custom.<sup>24</sup>

This change in the situation promises to relieve one of the stresses which is becoming acute. The provision of new equipment will decline, and therewith both the increase of competition for an already scant supply of labor and materials and the increase of the new products seeking sale. But at best this relief refers only to the pace at which the stress is accumulating. Moreover, the relief lies in the future, and as a rule it is not felt until after the crisis has occurred. And, worst of all, this problematical relief to the enterprises which would have to meet the competition of the new equipment is offset by the sudden apparition of acute strain approaching in the industries which provide equipment. Particularly when they have extended their own plants to handle the recent flood of contracts do they suffer when this tide recedes. How serious is the danger which their threatened embarrassment entails for the whole community of business enterprises will appear in the sequel.<sup>25</sup>

<sup>23</sup> Compare Mr. Hull's theory of industrial depressions, summarized in Chapter I, ii, 8.

<sup>24</sup> See, for example, the current weekly reports of the *Iron Age* in the summer of 1907. The following figures showing the unfilled orders on the books of the United States Steel Corporation at the end of the month are significant of the general trend:

1906—December .....	8,500,000 tons
1907—March .....	8,000,000 tons
June .....	7,600,000 tons
September .....	6,400,000 tons
December .....	4,600,000 tons

<sup>25</sup> See section iv, 2, B., and section v, below.

### III. THE TENSION IN THE MONEY MARKET

#### 1. *The Demand for Short-Term Loans*

The advance of interest rates in a period of high prosperity is relatively much greater in the money than in the investment market.<sup>26</sup> For, while certain of the factors which drive up interest rates operate in both markets, others are peculiar to the market for discounts.

It has already been pointed out that the volume of bank accommodation needed by the business community grows not only with the increase in the physical volume of business but also with the rise of prices.<sup>27</sup> Were no other factor to be considered, it would therefore be cumulative at a high rate. But there are other factors.

The expectation of large profits, coupled with the prevalence of an optimistic bias in judging business chances, disposes men of affairs to undertake as much business as possible upon their working capitals. Indeed, not a few venture beyond the line of safety, and failures ascribed to inadequacy of capital become numerous.<sup>28</sup> Of course, this effort to make one's own capital support as much business as possible involves borrowing a larger proportion of the funds required than is common in periods of depression or revival. That is to say, the demand for bank loans increases even more rapidly than the pecuniary volume of business.

Among the factors which differentiate the demand for short-term loans from the demand for long-term loans is a lesser degree of elasticity. The volume of discounts asked for does not contract so much as the volume of investment borrowings when interest rates rise. Many of the investment projects require that everything to be used shall be bought new. Then the whole annual cost of the undertaking may be treated from the accountant's viewpoint as the interest on the sums invested. But in the majority of the short-term loans the practical business problem relates to the additional service which may be got by the use of additional funds from equipment and labor which are already on hand and for which the cost has already been allowed. Then the interest on the projected loan cannot be treated as the whole expense. On the contrary, it may be a minor item, and an advance of the rate by 1 or 2 per cent may make so small a fraction of the whole cost as not to deter men from borrowing.

Again, in borrowing for long periods, the business man must consider probable selling prices in the years to come. Experience teaches him that it is folly to expect an indefinite continuance of the active demand for his goods and the high prices which prevail during the "boom." Hence his enterprise,

<sup>26</sup> Compare the relative rates of discount in Table 28 with the relative rates of bond-yields in Table 27.

<sup>27</sup> See Chapter X, iii, 3.

<sup>28</sup> Compare Chapter XII, ii, 4.

which for the present might support heavy fixed charges without disaster, will face more serious difficulties in the next period of depression. But in borrowing for 60 or 90 days, or even for a year, the business man is prone to count upon being able to turn over his goods promptly at prices equal to or higher than those prevailing at the moment. Hence he has less reason to hesitate because of an increased cost of loans.

Finally, the temporary shifting of a part of the investment demand for loans to the money market by the substitution of short-term notes for bonds increases the demand for bank accommodation.<sup>29</sup> For these notes are "peddled" not only among individual investors, savings banks, insurance companies, and others who might have bought bonds, but they are offered also to commercial banks and there added to the applications for discounts coming from the regular classes of local customers.

## 2. *The Supply of Short-Term Loans*

Directly or indirectly the supply of short-term loans comes chiefly from the banks.<sup>30</sup> Since the commodity loaned by a bank is usually some form of bank credit, an expansion of loans causes a corresponding expansion in the volume of demand liabilities.<sup>31</sup> And since these liabilities to pay on demand must be protected by an adequate stock of cash, the amount which the banks of any country can lend is ultimately limited by the amount of money which they hold.<sup>32</sup>

How, then, does prosperity affect the amount of money held by the banks?

It is only for the United States that we have regular statistics concerning the stock of money in the country and the distribution of this stock between the banks and the public. The influence of prosperity upon the total stock of money available for use will be discussed presently. For immediate purposes the pertinent fact is that even when the total stock is growing most rapidly, the American banks are unable to prevent their quota from being diminished by the activity of business. Of the money withdrawn from the banks day by day and week by week for paying wages and the like, the greater part flows back in a few days through the deposits of shopkeepers, street-car companies, restaurants, places of amusement, etc. But not all of it flows back. For when employment is full and wages are rising, millions of men carry each a little

<sup>29</sup> See section ii, 3, of this chapter.

<sup>30</sup> Discount houses and bill brokers either do a banking business themselves, depend largely upon banks for their funds, or act merely as middlemen between the borrower and a lending bank. Even the credits extended to their customers by American mercantile houses scarcely form an exception; because the lenders usually have recourse to banks for aid in carrying such accounts.

<sup>31</sup> Compare the tables in Chapter VII showing the concomitant fluctuations of bank loans and deposits, or bank loans and total demand liabilities.

<sup>32</sup> The validity of this statement is not affected by such long-standing differences of banking organization and practice as make it possible, for example, to sustain a far greater volume of demand liabilities with a given sum of money in England than is possible in America.

more money than when times are dull. And when trade is active thousands of retail shops carry each a little more "change" than when daily sales were smaller. Hence it is that the table relating to the distribution of the money in circulation between the banks and the public shows that the banks' proportion of the total declines gradually from the time when depression begins to relax to the time when prosperity reaches its zenith.<sup>33</sup>

This loss of money by the banks to the public is sometimes more than offset by an increase in the stock divided between these two claimants. For example, the actual amount of lawful money in the clearing-house banks of New York and in the national banks as a whole increased during the prosperous years 1897-99. At other times the decline in the quota exceeds the gain from the total to be divided. Such was the case in 1905-06 when both of these groups of banks found the actual amount of their cash declining.<sup>34</sup> But, whatever is the net change in the actual amount of money in the banks, prosperity checks the possible expansion of short-time loans in so far as it increases the proportion of money suspended in active circulation at the expense of the proportion held by the banks as reserves.

### 3. *The Development of Stringency*

Since the demand for short-term loans expands at a peculiarly rapid rate, since the supply of these loans is limited by the amount of cash in the banks, and since the banks lose cash to the public, prosperity ultimately produces a tense money market.

The coming of this result is deferred by the elasticity of the limit set by cash reserves upon the expansion of bank loans. In times of depression bank reserves become larger in proportion to demand liabilities than bank managers think needful, so that periods of prosperity open with a considerable excess of lending power above current demands.<sup>35</sup> But, owing to the processes just traced, the excess is gradually used up, and after a time bank managers are facing the difficult problem of precisely how much farther it is prudent to go in the way of lending additional credit on the basis of their available cash. In America hard and fast rules regarding the minimum ratios of reserve to be held are imposed by law upon all the national and many of the state banks. But, on the one hand, these rules are administered with much circumspection, and, on the other hand, business judgment affirms that the circumstances of the time, the character of a bank's clientele, its relations with other banks, and the liquidness of its assets other than cash ought always to be taken into account

<sup>33</sup> See Chapter VI, iv.

<sup>34</sup> See Tables 82, 83, 85, and 86.

<sup>35</sup> See Chapter VI, iv, and XIII, i, 2, D.

in determining whether it is really overstepping the limits of prudence. Hence there is in practice considerable leeway within which the responsible officials exercise their own judgment.

The net resultant of this situation as shown by bank reports is that in periods of prosperity the expansion of loans regularly proceeds at such a pace as to reduce the ratio of reserves to demand liabilities by a considerable though variable margin. The national banks of America, for example, have allowed their reserve ratios to fall from 3 to 6 per cent below the high records of the years preceding the revival of activity. The clearing-house banks of New York have let their ratios drop below 26 per cent, and frequently a trifle below the accepted minimum of 25 per cent.<sup>36</sup> Just where bankers will draw their line against further expansion of loans it is therefore impossible to say. But it is certain that they will draw such a line firmly somewhere within fairly definite limits. As these limits are approached the bankers put up their discount rates and become more exacting in their acceptances of new applications for loans. Business men then find that short-term loans are both more expensive and more difficult to secure.

That this development of stringency in the money market imposes a severe strain upon business prosperity cannot be doubted; but its precise bearings must be considered in connection with the other strains arising from the increasing costs of doing business, the tension of the market for bonds, and the difficulties faced by the enterprises producing industrial equipment. Before attacking this central problem it is necessary to dispose of a point which was recently mentioned only to be set aside—the inter-relations between prosperity and the quantity of money in circulation.

#### 4. *The Inter-relations Between Prosperity and the Quantity of Money in Circulation*

With the quantity of gold which passes into monetary use prosperity and its consequent developments have a highly complex set of inter-relations. (1) The advance in the cost of supplies, the decline in the efficiency of labor, etc., cause costs to encroach upon profits in gold mining more seriously than in most other lines of business. For the gold-mining company cannot increase the selling price of its product one jot. Hence the increase of the gold output is somewhat checked. Certain of the poorer mines may be closed, and in the

<sup>36</sup> Concerning the New York banks, see Chapter VII, i. The following figures from Table 89 refer to the national banks:

	Depression	Prosperity	
Feb., 1894	26.9%	19.6%	Sept., 1895
Mar., 1897	24.7	18.7	Sept., 1899
June, 1904	18.1	14.8	Nov., 1906
May, 1908	18.6	15.1	Mar., 1910

The tables for national banks in country and city districts show that this policy is followed in all parts of the United States. The foreign statistics, though scanty, yield similar results. See the various sections of Chapter VII.

better mines low-grade bodies of ore are temporarily passed over.<sup>37</sup> (2) Of the gold which is extracted, a decidedly larger quota is diverted from coinage to industrial uses by the growing demand which prosperity begets for jewelry, etc.<sup>38</sup> (3) Of the gold which is used as money in any country, a larger part is likely to be exported if prices have risen more rapidly there than in other commercial nations, because such a state of the markets stimulates imports of merchandise and checks exports.<sup>39</sup> All of these influences act in the direction of reducing an increase or augmenting a decrease in the quantity of gold money. On the other hand, (4) prosperity stimulates the production of gold by spreading a taste among investors for speculative securities promising a high rate of return, thereby making it easier to raise capital for developing new mines.<sup>40</sup> (5) Further, the adverse influence of prosperity upon the balance of payments on merchandise account may be more than offset by its favorable influence upon the balance on investment and banking account. For prosperity encourages the sale of securities to foreign capitalists, and by establishing high discount rates in the local money market encourages the international banking houses to keep large balances in the financial centers.<sup>41</sup> Thus the net effect of prosperity upon the quantity of gold coin depends upon two opposing sets of factors of which the relative strength varies from time to time. But, whatever this net effect may be, in recent times it has certainly been overshadowed by the influence of other factors which are not directly dependent upon the condition of business—the progress of mining and metallurgical technique, the discovery of new gold deposits, and the maintenance of order in the chief producing districts.<sup>42</sup>

The supply of paper money issued by the government is usually controlled by imperious necessities of public finance or by large issues of public policy, with neither of which the changing phases of business cycles have more than an indirect connection. As for the quantity of paper money issued by the banks, the influence of prosperity depends largely upon the provisions of law regarding issue, security, and redemption. These provisions are too elaborate to be rehearsed here. The present purpose may be met, however, by recalling the conclusion established by the statistics of bank-note circulation presented in Table 76. But a slight degree of correspondence appears between the average quantity of bank-notes outstanding in each year and the fluctuations of business activity—a conclusion which holds for the elastic systems of France and Germany as well as for the inelastic systems of America and England.<sup>43</sup>

<sup>37</sup> See Chapter VI, i.

<sup>38</sup> See Chapter VI, ii.

<sup>39</sup> See Chapter V, v.

<sup>40</sup> See Chapter VI, i.

<sup>41</sup> See Chapter VI, ii.

<sup>42</sup> See Chapter VI, i.

<sup>43</sup> See Chapter VI, iii.

Not until we come to deposit currency do we find the influence of prosperity upon the quantity of the circulating medium to be both clear in its bearing and decisive in its weight. By making business men more anxious to borrow and banks more willing to lend, good times produce a rapid expansion of credit currency. In the one country where the quantities can be measured, this expansion has regularly shown a higher ratio than the concomitant expansion of bank reserves or even of the total monetary stock.<sup>44</sup> Prosperity also causes the credit currency, and in less measure money, to circulate more rapidly.<sup>45</sup> In these two ways business activity automatically provides means by which the vastly increased payments required by the expanding pecuniary volume of trade are readily effected.

So much concerning the effect of prosperity upon the quantity of the currency. What of the counter effects of changes in the quantity of the currency upon prosperity?

Here the one important factor to deal with is changes in the supply of gold money, since gold is nowadays the vital element in bank reserves, and since the supply of gold is dominated by factors not intimately related to business cycles.

An abundant supply of gold favors a revival of business activity by giving the banks liberal reserves and thereby increasing their ability to lend credit at moderate rates of interest. This feature of the situation grows more important as the revival ripens into full prosperity. For the banks usually have a considerable reserve of lending power in the earlier stages of revival, even though the gold supply has been contracting; while, as the climax of prosperity approaches, the banks are usually straining every resource to meet the heavy demand for loans, even though the gold supply has been expanding. That is, an increasing supply of gold favors the continuance of prosperity by retarding the accumulation of one of the stresses which prosperity breeds—namely, tension in the money market.

#### IV. THE DECLINE OF PROSPECTIVE PROFITS

##### 1. *The Problem of Defending Profits against the Encroachments of Costs*

The gist of the first part of this chapter is that prosperity breeds an increase in the cost of doing business—an increase which threatens to diminish profits. The decline in supplementary costs per unit ceases; equipment of less than standard efficiency is brought back into use; the price of labor rises while the efficiency of labor falls; the cost of materials, supplies, and wares for resale advances faster than selling prices; discount rates go up at an especially rapid

<sup>44</sup> See Chapter VI, v.

<sup>45</sup> See Chapter VI, vi.

pace, and all the little wastes incidental to the conduct of business enterprises grow steadily larger.

So far all is clear. But it has not been shown that this rise of money costs necessarily involves a fall of money profits. For do not the higher cost prices paid by any person mean higher selling prices for someone else? If so, does not an increase of costs promise to augment the net incomes of sellers just as much as it threatens to reduce the net income of buyers? Is there, then, any real danger that the *average* rate of profits, taking all business enterprises together, will be encroached upon?

(1) With reference to those items among the increasing costs which consist of higher prices paid by one set of business enterprises for goods bought from other enterprises it is indeed true that the increase of expenditures is just balanced by the increase of receipts. But, though from the accountant's viewpoint the gains and losses are equal, equality does not make them negligible. For the additions to cost and the additions to income are most unevenly distributed—a condition which threatens to disturb confidence by bringing serious loss upon certain enterprises.

(2) So far as the additional costs consist of higher prices paid to persons not belonging to the business community proper, such as wage-earners and farmers, it is by no means certain that other enterprises will get back what any given enterprise pays out. For the additions to money income scattered among millions of men are not all spent promptly in ways which add to the profits of business enterprises.

(3) Against the remaining items of increasing cost—the use of old-fashioned equipment, the diminishing efficiency of labor, and the declining economy of business management—against these losses no compensating gains can be set. They represent a serious addition to the expense of accomplishing given results in most if not in all establishments—an addition which constitutes an immediate encroachment upon profits whenever it occurs and which benefits no other enterprise in anything like equivalent measure. Thus there is no escaping the conclusion that the increase of costs makes grave difficulties for the whole community of business as well as for particular enterprises.

But, granted so much, there still remains a problem to be faced. Why cannot business men defend their margins of profits against the threatened encroachments of costs by marking up their selling prices sufficiently? That simple expedient would remove the difficulty at a stroke.

Once squarely put, this question is not easy to answer squarely. It sounds well to say that the advance of selling prices cannot be continued indefinitely. But this plausible statement challenges the abrupt question: Why not? The only rejoinder which lies upon the surface is that the advance of the price level would ultimately be checked by the inadequacy of the quantity of money. Indefinitely high prices necessitate indefinitely large credits for merchants,

manufacturers, etc., and these credits must be sustained by indefinitely large bank reserves. Since the quantity of money has a limited ratio of increase, the time must come, soon or late, when the existing reserves would seem scanty in comparison with the volume of demand liabilities reposing upon them. Then confidence in the solvency of the banks would become impaired, and the whole movement of expansion and advancing prices would end in a grand panic. As a sketch of what might happen, this analysis has a certain academic interest. But other causes check the rise of prices before the banks have allowed themselves to be jeopardized in this fashion. And, what is more to the point, this analysis does not really bear upon the problem in hand. For the problem is not, What prevents the general level of prices from rising indefinitely? but, What prevents business enterprises from maintaining a profitable adjustment between the advance of two sets of prices, those which constitute costs and those which constitute returns? To show why a rise in the general level of all prices must come to an end is not to explain the accumulation of stresses between these two parts of the system of prices.

Thus we come back to our problem. During the earlier stages of prosperity no insuperable obstacle is encountered in defending profits by raising selling prices. What processes create such obstacles in the later stages?

## 2. *Hindrances to the Continued Advance of Selling Prices*

### A. PUBLIC REGULATION, CONTRACTS, AND CUSTOM

In certain important and many unimportant lines of business the encroachments of costs upon profits cannot be prevented because governmental regulation, established custom, business policy, or long-term contracts impede the advance of prices.

American street railways, for example, are usually prohibited by the conditions of their charters from charging more than a five-cent fare, and even when legally free to do as they like they seldom find it good policy to depart from the customary price. Gas and electric-lighting companies, water companies, and the like generally have their basic rates fixed by agreements with the public authorities, and cannot raise their tariffs except by negotiation at considerable intervals. Enterprises in this position find their share in prosperity limited to the advantage derived from an increase in the physical volume of their business. Often their fixed charges make so large a proportion of their total expenses that an increasing volume of sales suffices to keep their profits rising for some time after prime costs have begun to advance. But there is a limit upon the number of patrons they can serve with their existing plants, and as this limit is approached a further advance in the cost of materials, labor, etc., is bound to reduce their profits.

State and federal legislation has recently brought most of the American railways into the class of enterprises whose charges are subject to public supervision. And experience has shown that public commissions are much less ready to permit than railway managers are to propose advances in freight and passenger rates. For a public commission is prone to consider, not whether costs are encroaching upon profits, but whether current profits constitute a fair return upon the capital invested. This attitude may be wholly justifiable upon broad grounds of public policy; but the continuation of business prosperity may be imperilled by allowing costs to encroach upon profits, even though the rate which remains to the companies would have seemed amply remunerative in the earlier days of revival.<sup>46</sup>

As examples of enterprises which hesitate to raise prices because they sell to a wide circle of individual consumers at prices stereotyped by business policy or by custom, we may cite the newspapers, the weekly and monthly periodicals, and the manufacturers of trade-marked goods which are advertised widely at fixed prices. The first group, however, may raise its advertising rates, and perhaps the second may reduce the quality of its wares.

Early in every period of prosperity many other enterprises sign contracts which bind them to deliver at fixed prices goods which conform to strict specifications. When these contracts make up the bulk of their business, and require many months to execute, the selling firms are nearly helpless if their profits are threatened by rising costs.

All enterprises which have difficulty in protecting profits by raising prices have peculiarly strong motives for resisting the advance in the cost of materials, labor, etc. But, in so far as they are buying staples or supplies made from staples which are used by many other industries, they must get their shares in competition with enterprises which are free to raise selling prices. The gas company must bid for coal against the neighboring foundry, the newspaper must pay enough for paper to keep a portion of the logs cut from going to the planing mills, etc. And neither the gas company nor the newspaper can prevent its employes from slackening the intensity of their effort. Inability to raise selling prices certainly does not confer immunity against the rise of buying prices.

#### B. THE INCREASE OF CAPACITY FOR PRODUCING GOODS

The obvious point has already been made that when new industrial equipment is placed in active service both the demand for labor, materials, etc., and the current supply of products are enlarged. Hence the encroachments of costs and the difficulty of advancing selling prices are both aggravated.<sup>47</sup> The

<sup>46</sup> How a decline of prospective profits puts a close to prosperity is explained in the closing section of this chapter.

<sup>47</sup> See section ii, 1, of the present chapter.

resulting strain grows progressively more severe so long as prosperity continues to stimulate investment in new equipment. Must not the day come when, in all the industries affected, selling prices can no longer be raised?

It is conceivable that under a supremely systematic and far-sighted direction of economic activity the rate at which new industrial equipment was provided in every branch of industry might be adjusted to the rate at which the demand for its products increased with such nicety as to prevent the overstocking of any market. Needless to say, such system and such foresight are not attained by the present business community. The provision of new equipment for business use is left to the initiative of any individual who will risk his own funds or who can persuade investors to risk theirs in the venture. Caution is enforced by the penalty of pecuniary loss if the enterprise does not find a profitable market for its wares. But a year or more is usually required to carry such a project from the stage of inception to the stage when an elaborate plant stands ready to begin operations. With the crude criteria available at present, no one can make accurate forecasts of the prices at which given quantities of a commodity can be sold so long in advance. The result is that many of the forecasts which are made go wrong. The provision of industrial equipment proves inadequate to meet the demand which exists at profitable prices in some branches of trade, and more than adequate in other branches. The whole tenor of prosperity, however, is in the direction of augmenting errors of the latter kind. The optimistic temper which prevails disposes most men to under-rate the risks and to over-rate the probable gains. Even the active and experienced men of affairs do not escape this infection of over-confidence, and the mass of investors are especially subject to it. Indeed, the credulity of the latter class offers a tempting opportunity to enterprising promoters, who launch plausible schemes, sell them out to the general public, and abandon them to their fate.<sup>48</sup>

The twist given by over-confidence to forecasts of future demand, always difficult to make with accuracy, thus leads in every period of prosperity to an overstocking of certain markets. To check the prosperity out of which the movement grows it is not necessary that investments should return no profits or involve heavy losses. Difficulty arises whenever the increase in the capacity of certain kinds of mines or factories, or of the sawmills, railways, etc., in certain districts, proceeds fast enough to keep selling prices from rising as rapidly as costs. For a decline of orders from the industries first affected spreads trouble among other branches of business by a process analagous to that by which activity is propagated.<sup>49</sup> And, what is more serious still, an actual or even a prospective decline of profits in a few important industries suffices to create financial difficulties of grave concern to all industries.<sup>50</sup>

<sup>48</sup> See Chapter II, iv, 2 and 3.

<sup>49</sup> See Chapter X, ii, 1 and 2.

<sup>50</sup> See section v, 3, below.

## C. THE ADVANCE IN INTEREST RATES

Rising rates of interest of course count among the increasing costs of doing business which threaten to reduce profits. But they also have other effects which must be counted among the obstacles which prevent selling prices from being raised sufficiently to cancel increasing costs.

It has already been shown that the discouragement of long-term borrowing, caused by the rise of interest rates, makes it difficult for the trades engaged in construction work of all kinds to secure new contracts.<sup>51</sup> Investors will not pay these high rates. Neither will they let contracts freely at the high prices which contracting firms are forced to charge in order to meet their own high costs. And when contractors of various kinds begin to restrict their orders for materials and supplies, the decline of demand threatens to stop the rise of prices in other industries, if not to cause a fall.

In the money market there is little evidence that the demand for short-time loans falls off when interest rates mount high; but it is clear that banks restrict their loans when the ratio of reserves falls dangerously low.<sup>52</sup> Of course, inability to borrow means inability to buy—a check upon the expansion in the demand for a vast variety of goods and hence an added obstacle in the way of further price advances.

High discount rates also impede the efforts, often made toward the end of a prosperous period, to maintain selling prices by keeping goods off the market and allowing the current output to pile up in huge stocks, which are held for sale at a more opportune moment. This policy interrupts the inflow of cash from sales, and makes it necessary to borrow money to pay running expenses. A temporary relief from a threatened fall of prices may be obtained in this way, but the potential danger becomes more grave. The heavy interest cost of “carrying” the unsold stocks saps the financial strength of even the largest enterprises and makes long persistence in this course hazardous. If buyers get wind of the situation, they hold off for the drop in prices which they expect to come when the stocks are finally “sacrificed.” In short, there can be but one end to such a policy when initiated under the business conditions of waning prosperity, and that disastrous end is hastened by high discount rates.

## D. UNDER-CONSUMPTION

If certain of the theories reviewed in the first chapter are sound, the greatest obstacle in the way of defending profits by advancing selling prices is the lagging of consumers' demand behind the supply of consumers' goods. May goes so far as to say that a glutting of the markets can be prevented only by combining an increase in wages with a decrease in prices—only by such double

<sup>51</sup> See section ii, 4, of the present chapter.

<sup>52</sup> See section iii, 3, of the present chapter.

stimulation can demand be kept up to supply. Aftalion holds simply that the increasing supplies of consumers' goods cause marginal utilities to fall, and thus bring on a decline in the price level.<sup>53</sup>

Such theories are speculative solutions of a quantitative problem, which is commonly formulated in the question, Does the increase in consumers' demand keep pace with the increase in consumers' supply? but which is more accurately stated by asking, Does consumers' demand grow fast enough to absorb the forthcoming supplies at the continually rising prices which must be charged to prevent costs from encroaching upon profits?

To answer this question categorically would require more refined and more extensive statistics of demand, supply, and prices than are to be had.<sup>54</sup> One

<sup>53</sup> See Chapter I, ii, 3 and 5.

<sup>54</sup> Some light is shed upon the theory of under-consumption by figures which deal with the purchasing power of wage-earners' incomes.

The federal Bureau of Labor has computed the average changes in the purchasing power of factory hands by combining its index numbers of wages per hour, hours per week, and retail prices of food. The results, reproduced below, indicate a slight decline between the early and the late stages of prosperity in the amount of food a wage-earner can buy. Thus the statistics seem to bear out the contention that consumers' demand does not expand rapidly. But several factors of moment have been omitted from the computation. (1) The number of employes in the establishments investigated by the bureau increases rapidly during prosperity. To show the effect of this factor upon market demand for food, a final column has been added to the table as published by the bureau. It is made by multiplying the relative purchasing power of full-time weekly earnings by the relative number of employes. A rapid expansion of purchasing power appears in the results, though the rate of growth becomes somewhat slower as the climax of prosperity is approached. (2) The increase of money incomes arising both from the greater steadiness of employment and the greater frequency of "overtime" in active periods is unrepresented. (3) The proportion of money income which is spent upon consumers' goods may change. If extravagance does become as widespread as popular moralists assert, the rate of savings may shrink somewhat in comparison with the early days of prosperity—shrink to the detriment of would-be borrowers, but to the advantage of purveyors of consumers' goods.

RELATIVE NUMBER OF EMPLOYES, HOURS PER WEEK, WAGES PER HOUR, FULL TIME WEEKLY EARNINGS PER EMPLOYEE, RETAIL PRICES OF FOOD, AND PURCHASING POWER OF HOURLY WAGES AND OF FULL TIME WEEKLY EARNINGS PER EMPLOYEE, MEASURED BY RETAIL PRICES OF FOOD, 1890-1907

(Relative Numbers computed on basis of averages for 1890-99 = 100)

Year	Number of employes	Hours per week	Wages per hour	Full time weekly earnings per employe	Retail prices of food, weighted according to family consumption	Purchasing power measured by retail prices of food of		
						Hourly wages	Full time weekly earnings per employe	Weekly earnings multiplied by number of employes
1890	94.8	100.7	100.3	101.0	102.4	97.9	98.6	93.5
1891	97.3	100.5	100.3	100.8	103.8	96.6	97.1	94.5
1892	99.2	100.5	100.8	101.3	101.9	98.9	99.4	98.6
1893	99.4	100.3	100.9	101.2	104.4	96.6	96.9	96.3
1894	94.1	99.8	97.9	97.7	99.7	98.2	98.0	92.2
1895	96.4	100.1	98.3	98.4	97.8	100.5	100.6	97.0
1896	98.6	99.8	99.7	99.5	95.5	104.4	104.2	102.8
1897	100.9	99.6	99.6	99.2	96.3	103.4	103.0	103.9
1898	106.4	99.7	100.2	99.9	98.7	101.5	101.2	107.7
1899	112.1	99.2	102.0	101.2	99.5	102.5	101.7	114.0
1900	115.6	98.7	105.5	104.1	101.1	104.4	103.0	119.1
1901	119.1	98.1	108.0	105.9	105.2	102.7	100.7	119.9
1902	123.6	97.3	112.2	109.2	110.9	101.2	98.5	121.7
1903	126.5	96.6	116.3	112.3	110.3	105.4	101.8	128.8
1904	125.7	95.9	117.0	112.2	111.7	104.7	100.4	126.2
1905	133.6	95.9	118.9	114.0	112.4	105.8	101.4	135.5
1906	142.9	95.4	124.2	118.5	115.7	107.3	102.4	146.3
1907	144.4	95.0	128.8	122.4	120.6	106.8	101.5	146.6

Mr. George H. Wood's British figures ("Real Wages and the Standard of Comfort Since 1850," Journal of the Royal Statistical Society, March, 1909, vol. 72, p. 103) seek to cover some of these omitted items. His series for retail prices include other articles than food. He has estimated the variations in working-class rents, and combined the data for unemployment with the data for wages. Further, Mr. Wood points out that

significant fact, however, is established in Chapter IV. The monthly figures of Table 4 show that producers' goods reached their highest point and began their decline earlier in 1907 than did consumers' goods. Likewise, the monthly

in England there has been a steady shifting away from the ill-paid toward the well-paid occupations. Hence the "average workman" has improved his position more rapidly than the "workman of unchanged grade." The final results of his investigation, converted from English into American money and shifted from the basis actual amounts in 1850=100 to the basis average actual amounts in 1890-99=100, are summed up in the

THE ESTIMATED CHANGES IN THE REAL WAGES OF ENGLISH WORKMEN  
BY YEARS, 1890-1902

Year	Relative money wages	Relative retail prices	Percentage unemployed	Money cost of			Money wages assuming 20s in 1850		Relative real wages		Relative figures for workmen of unchanged grade		
				Commodities 1850 = 16s	Rent 1880 = 4s	Rent and commodities 1850 = 20s	Full work	Allowing for unemployment	Full work 1890-99 = 100	Allowing for unemployment	Money wages		
											Full work	Allowing for unemployment	Real wages
1890	99	104	2.1%	\$3.55	\$1.22	\$4.77	\$7.91	\$7.74	97	99	100	103	98
1891	99	105	3.5	3.58	1.24	4.82	7.91	7.64	96	97	100	101	97
1892	99	105	6.3	3.58	1.24	4.82	7.86	7.37	95	94	100	98	96
1893	99	101	7.5	3.46	1.24	4.70	8.10	7.28	98	95	99	96	98
1894	99	99	6.9	3.38	1.24	4.62	7.86	7.32	99	97	99	97	100
1895	99	96	5.8	3.26	1.27	4.53	7.86	7.40	102	100	98	96	100
1896	99	95	3.4	3.24	1.27	4.50	7.91	7.64	103	104	99	100	102
1897	101	98	3.5	3.33	1.27	4.60	8.08	7.79	103	103	100	101	102
1898	102	99	3.0	3.41	1.27	4.67	8.13	7.88	102	103	102	103	102
1899	105	98	2.4	3.33	1.29	4.62	8.35	8.15	105	108	104	106	104
1900	109	101	2.9	3.46	1.29	4.75	8.69	8.42	107	108	108	109	106
1901	109	103	3.8	3.50	1.29	4.79	8.69	8.35	106	106	107	108	104
1902	107	104	4.4	3.55	1.29	4.84	8.57	8.18	104	103	105	106	102

accompanying table. They show a definite increase in the purchasing power of money wages up to the very end of the prosperous period 1896-1900. If these figures could be multiplied by the relative number of employees, the total purchasing power represented would doubtless increase much more rapidly.

Mr. Walter T. Layton (Introduction to the Study of Prices, London, 1912, p. 150) has extended to 1910 Mr. Wood's relative figures for money wages, retail prices, unemployment, and real wages of men in full work, and allowing for unemployment. The last-mentioned series, shifted to the basis 1890-99=100, runs as follows:

RELATIVE REAL WAGES IN ENGLAND, ALLOWING FOR UNEMPLOYMENT

1890.....	99	1901.....	107
1891.....	97	1902.....	104
1892.....	94	1903.....	100
1893.....	95	1904.....	98
1894.....	97	1905.....	100
1895.....	100	1906.....	103
1896.....	104	1907.....	104
1897.....	104	1908.....	97
1898.....	103	1909.....	96
1899.....	108	1910.....	98
1900.....	109		

These figures, like the others, indicate a gain in the purchasing power of wage-earners' incomes up to the years of the crises—even without counting the gain in the number of persons at work. The rate of gain, however, slows down in the crisis years. It is noteworthy that real wages did not attain as high a level in 1907 as in 1899-1900.

Interesting as are these estimates, they leave much to be desired. Even if the figures be accepted at their face value, they show merely that, despite the rise of retail prices, one large class of people is able to buy an increasing volume of consumers' goods in periods of prosperity. How matters stand with other classes remains conjectural. The incomes of bondholders must increase rather slowly; indeed, they do not increase at all except so far as these persons have fresh savings to invest at the high rates which become prevalent in prosperity, or venture to shift their funds to securities which yield higher returns. If the tables of Chapter IX and the analysis of Chapter X may be trusted, stockholders and other recipients of profits enjoy a more rapid increase of money income than wage-earners. It may also be said with some assurance that the incomes of the landlord and salaried classes grow more slowly on the average than do wages. But concerning the non-salaried professional men, concerning farmers, and concerning wage-earners outside of manufacturing industries, there is no substantial basis for making even a guess at the average increase of money incomes. And, if the rates of increase were known, there would be no satisfactory data to confirm or disprove Hobson's assertion that the proportion of income saved gains upon the proportion spent. Finally, if we did know at what average rate expenditure upon consumers' goods increases, we should still be unable to complete the demonstration; for we have no satisfactory statistics of the increase in the volume of consumers' goods produced and sent to market.

figures of Tables 5 and 6 show that raw materials began to fall in price before the products manufactured from them. Now, if the chief stress arose from the lagging of consumers' demand behind the supply of consumers' goods, one would expect the opposite result to be registered by the index numbers. Consumers' goods would be the first to fall in price, and this decline would extend to the prices of producers' goods and of raw materials. This extension might take place promptly; but certainly these other classes of commodities would not be the first to fall. What is known about the behavior of prices, then, favors the view that the impossibility of defending profits against the encroachments of costs is experienced earlier by enterprises which handle raw materials and producers' goods. This conclusion is confirmed by a comparison between the current reports concerning retail trade, jobbing, and manufacturing at times when crises are approaching. The technical journals usually report that the factories and wholesale houses are restricting their orders some weeks, if not months, before they report that retail sales are flagging.

Until the under-consumption theories have been shored up by more convincing evidence than has yet been adduced in their favor, therefore, the view must prevail that the difficulty of warding off encroachments upon profits by advancing costs comes to a head earlier in other lines of business than in those concerned with consumers' goods. The latter industries may well have troubles of their own, troubles which would presently become acute if left to themselves. But these gradually accumulating difficulties usually cut but a small figure, because before they have reached a critical stage they are overshadowed by graver troubles arising in other quarters.

### 3. *The Critical Point*

To sum up: The very conditions which make business profitable gradually evolve conditions which threaten a reduction of profits. When the increase in the volume of business, at first a cause and later both a cause and a consequence of rising profits, taxes the productive capacity of the existing industrial equipment, the early decline of supplementary costs per unit of output comes gradually to a standstill. Meanwhile, the expectation of making satisfactory profits induces active bidding among business enterprises for materials, labor, and loan funds, and sends up their prices. At the same time, the poorer parts of the industrial equipment are brought back into use, the efficiency of labor declines, and the incidental wastes of management rise. Thus the prime costs of doing business become heavier. After these processes have been running cumulatively for a time, it becomes difficult to advance selling prices fast enough to avoid a reduction of profits by the encroachment of costs. In many industries the increase in industrial equipment has been so rapid that the full output can scarcely be marketed at the high prices which must be asked. In the trades

engaged in construction work the volume of new contracts declines when the rise in long-term interest discourages borrowing, and when the cost of construction becomes excessive in the eyes of investors. The decline in bank reserves ultimately makes the banks disinclined to expand loans further—a development which diminishes the ability of many enterprises to buy as freely as they had planned. The high discount rates also clog the effort to forestall a decline of prices by holding stocks of commodities off the market. In other trades prices are more or less stereotyped by public regulation, custom, contract, or business policy. It may also be that the purveyors of consumers' goods in general find difficulty in selling their supplies at sufficiently high rates to maintain profits unimpaired, though index numbers and market reports indicate that these difficulties come to a head earlier in other branches of trade.

Since these various stresses become more severe the longer prosperity lasts and the more intense it becomes, and since a set-back suffered by any industry necessarily aggravates the stress among others by reducing the market for their products, a reduction in the rate of profits must infallibly occur. But both the analysis and the statistics of profits in Chapter IX show that this reduction comes much later in some branches of business than in others, and varies widely in its severity. Even in the same industry different enterprises have exceedingly dissimilar fortunes, partly because of unlike advantages of location and business connection, partly because each enterprise encounters its own peculiar set of unforeseen business conjunctures, partly because of unequal energy and skill among the managers. Indeed, what quantitative information we possess indicates that in the very last year preceding a crisis a large number, perhaps a majority, of enterprises are still making profits as high as or higher than in any preceding year. That is, if an average rate of profits could be computed for a whole country, it would not be surprising to find it reaching its climax just before the crisis breaks out. But this result would not mean that there had been no serious encroachment upon profits. On the contrary, it would mean that the critical point is reached and a crisis precipitated as soon as a decline of present or prospective profits has occurred in a few leading branches of business and *before that decline has become general*. To understand this development, it is necessary to examine the bearings of the rate of prospective profits upon outstanding credits.

## V. THE UNDERMINING OF BUSINESS CREDIT

### 1. *The Relations between Credit and Profits*

Towards the end of a period of expansion practically all business enterprises have become enmeshed in the network of credit. Customers prefer to buy "on time," and in their turn sellers insist upon receiving similar terms from those from whom they buy. There are outstanding numberless contracts which require

work to be done by one enterprise for another in advance of payment. And nearly all enterprises above the smallest size borrow from the banks. This seeking for credit, indeed, is not purely voluntary. Where the increase in the volume of business made possible by the use of borrowed funds adds more to profits than the interest adds to costs, borrowing becomes compulsory in sharply competitive trades. For a man who uses borrowed funds in addition to his own capital can make higher profits than a rival who refuses to "run into debt," if both sell at the same price. Then the borrowing competitor, if he be aggressive, can undersell his less daring rival and still make a fair rate of profit while driving the latter out of business. Thus even the reluctant among business men are constrained to ask as well as to grant credit.<sup>55</sup>

In order to bring out the relation between these credits and profits it is necessary to recite a few familiar facts of business practice. The amount of credit which an enterprise can secure depends primarily upon the estimate set by lenders upon its value as a going concern. Several elements are commonly taken into consideration in framing such estimates: the amount, nature, and condition of the physical property owned by the enterprise, including stocks of materials and finished goods as well as real estate and equipment; the number and character of the contracts, patent rights, franchises, securities, etc., which it holds; its pecuniary obligations already outstanding; the balance between its bills due and bills receivable; the good-will it enjoys; the business prospects of the branch of trade in which it is engaged, etc. Now all of the property owned by a business enterprise, both tangible and intangible, is valued primarily upon the basis of the amount of money which can be made by its use. Good-will, also, is valued according to its estimated contribution toward profits. Pecuniary obligations of all sorts have to be considered because they represent deductions which must be made from gross receipts before net profits can be computed. And business prospects mean precisely the prospects of making money. That is, profits, present and prospective, are by far the most important single element in deciding how much a business enterprise is worth and how large a line of credit can safely be granted it. Indeed, if the available data concerning present and prospective profits were sufficiently full and sufficiently trustworthy to be accepted without being checked by any other methods of estimate, a business enterprise might be rated simply by capitalizing these profits at the current rate of interest.<sup>56</sup>

<sup>55</sup> Compare Thorstein Veblen, *Theory of Business Enterprise*, pp. 92-97.

<sup>56</sup> Additional elements are taken into consideration when an enterprise offers the lender of credit some guarantee in support of its promise to pay. If the security consists of endorsements by other business enterprises, or of promissory notes, bills of exchange, etc., owned by the applicant, then the lender estimates the financial standing of the other enterprises on the basis just described. If the security is stocks offered as collateral, their pecuniary value is estimated, and again the factor of chief importance is the present and prospective profits of the business enterprise concerned. If the security be bonds, it is still necessary to know what profits the issuing corporation makes in order to determine the chances that the interest will be paid promptly. In case the security consists of warehouse receipts, bills of lading, bills of exchange, or similar documents which carry with them the legal title to certain commodities, the prices which the latter will command become the matter of prime importance. But even then the business standing of the applicant for credit is taken into account, since lenders do not want the trouble, delay, and uncertainty involved in having to sell the commodities to secure reimbursement.

Whatever form credit assumes, in fine, whether it be a bank loan, mercantile credit, or a contract requiring the performance of services for future payment, whether it be supported by collateral security or not, the present and prospective profits of the applicant form an element, usually the crucial element, in determining how much may be granted.

## 2. *The Effect of Prosperity upon the Volume of Credits*

In its earlier stages, prosperity increases the volume of credits which prudent judges are willing to concede by broadening the basis upon which credits are granted. All who deal in staple commodities by methods which enable them to pledge their stocks to lenders, can secure increasing advances as the prices of their goods rise. The concomitant advance of stock-exchange securities performs a like service for those with shares and bonds to offer as collateral. And the increasing profits of business enterprises, coupled with their brighter prospects in the immediate future, justifies them not only in their own opinion, but also in the opinion of lenders, in asking for more liberal lines of credit. The effect of these definite changes in the business situation is heightened by the prevailing spirit of confidence. On the same facts submitted by an applicant for discounts bankers will pass a more favorable verdict; the credit men of wholesale houses have less critical eyes for the orders sent in by retail dealers; and manufacturers are more easily induced to make up goods to be paid for after delivery.

As prosperity grows more intense, a pyramiding of credits begins. The larger advances secured in one form or another by most business houses help to swell their profits. In turn, the higher profits, present and prospective, give these enterprises both a business motive and a business justification for demanding larger credits. If their applications are granted and followed by further increases of profit, the enterprises make still larger demands, and so on. At the same time, the high rate of profits disposes business men to use their own funds to control as many enterprises as possible; that is, to finance their ventures with borrowed money to the extreme limit permitted by lenders.<sup>57</sup> Similarly with the other bases of credit. Prosperity leads to a rapid advance in the prices of commodities; then higher prices force the dealers to secure more funds to finance their purchases, and, on the other hand, enable them to borrow more money on their warehouse receipts, etc. So, too, with stock-exchange securities, when used as collateral for loans. Every rise of the quotations entitles holders to ask for larger advances, and if these advances are invested in further purchases on the exchange they aid in screwing up quotations, and the higher quotations increase the borrowing power of the owners once more.

<sup>57</sup> Compare section iii, 1, above.

This process does not run long without encountering obstacles. The advance in interest rates is one, because it cuts down the capitalized value of given prospective profits. The fall of bond prices, which usually comes after a year or two of prosperity is another, because it reduces the borrowing power of men having this class of collateral. Stock prices are subject to frequent relapses, even in the best of times. The like is true of commodity prices, particularly in the case of the great agricultural staples. And the credit based on the business rating of enterprises has its ups and downs; for the prospective profits of different enterprises vary endlessly, bankruptcies occur in every year to inculcate caution among lenders, and every year has its seasons of relative dullness and doubt. But, despite these minor checks, the grand total of credits rises year by year until the climax of prosperity has been reached.<sup>58</sup>

Accordingly, that climax finds business enterprises trusting each other liberally for the payment of goods sold upon time, contracting freely to make goods for future delivery, and also borrowing on the grand scale permitted by high profits and easy optimism. At this stage of the cycle the typical business enterprise has outstanding heavy financial obligations to creditors, but relies confidently on the still larger sums which will fall due from its debtors, plus the sums represented by its unsold goods and unfilled contracts, to bring in the necessary funds in good season.

### 3. *The Effect Upon Outstanding Credits of the Decline in Prospective Profits*

Upon such a structure of inter-locking credits, the encroachments of costs upon profits combine with the tension in the money and investment markets to impose an ever-increasing strain.

The course of development can be followed most clearly with reference to credits granted upon stock-exchange collateral in New York during the period which bred the panic of 1907. The following figures show the lowest and the highest points touched between January, 1904, and September, 1907, by interest rates, and commodity and security prices, together with the level at which all these factors stood in the last-named month—just before the panic began.<sup>59</sup>

Bond prices began to rise before the depression of 1903-04 was over. Two or three months later stock prices moved upward, and, after another two or three months, commodity prices. Discount rates did not advance until eight or nine months after commodities, and two months more passed before investment rates of interest turned the corner. The early advance of securities, the slightly later advance of commodities, and the continued decline of interest rates, all helped to broaden the basis of credit.

<sup>58</sup> Compare the rapid increase of bank loans shown by the tables of Chapter VII.

<sup>59</sup> The commodity prices are from the *Bulletin of the Bureau of Labor*, March, 1910, p. 398. The other data are all compiled from the monthly tables of Chapter IV, iii and iv.

Substantially the reverse order was observed on the fall. Bonds and preferred stocks touched their highest points in August, 1905, common stocks in January, 1906, and raw materials in June, 1907, while manufactured goods and

TABLE 130

THE EXTREME FLUCTUATIONS OF INTEREST RATES AND OF COMMODITY AND SECURITY PRICES IN NEW YORK, BETWEEN JANUARY, 1904, AND SEPTEMBER, 1907

	Lowest point in Jan. 1904–Sept. 1907	Interest rates Highest point in Jan. 1904–Sept. 1907	Standing just before the panic
Average yields upon investments in ten railway bonds.....	3.80%, Aug., 1905	4.27%, Sept., 1907	4.27%, Sept., 1907
Discount upon 60–90 day com- mercial paper.....	3.75%, June, 1905	6.79%, Sept., 1907	6.79%, Sept., 1907
		Commodity prices	
Raw materials.....	117.3, Oct., 1904	136.9, June, 1907	132.8, Sept., 1907
Manufactured goods.....	110.3, Sept., 1904	130.3 Sept., 1907	130.3, Sept., 1907
		Security prices	
Ten railway bonds.....	113.1, Mch., 1904	118.6, Aug., 1905	105.6, Sept., 1907
Ten preferred stocks.....	143.5, June, 1904	188.5, Aug., 1905	123.0, Sept., 1907
Ten common stocks.....	183.5, June, 1904	311.5, Jan., 1906	205.0, Sept., 1907
Forty common stocks.....	165.5, May, 1904	279.5, Jan., 1906	197.0, Sept., 1907

interest rates on both long and short loans continued to advance until the panic broke out. Of course, the fall in security prices was partly a consequence of the rise in interest rates; for a bond or stock expected to bring in interest or dividends at a specified rate is worth less on an investment basis when “money” brings 6 per cent than when it can be had for 4 per cent.<sup>60</sup> But, whatever the cause to which it was due, the fall in the prices of securities began to undermine the credit of borrowers who depended upon this type of collateral considerably more than a year before the panic occurred. The strain began earlier in the case of bonds, but it became much more severe in the case of stocks—especially of common stocks. Borrowers whose credit depended upon the prices of raw materials which they could use directly or indirectly as collateral, did not suffer in the same way until the summer before the panic, and then the decline in the prices of their wares was much more moderate than the decline in stock prices. Finally, those who could make a similar use of manufactured goods had a nominally increasing security to offer until the panic actually began.

Now, the money value of an enterprise as a going concern and the price of shares in business enterprises are matters of the same sort. No doubt, the listing of shares on a stock-exchange gives opportunity for the occurrence of many fluctuations in prices which find no parallel in a banker’s rating of the business

<sup>60</sup> Indeed, the relative prices of bonds can be computed only on the basis of their net yields. See Chapter IV, iv, 6.

enterprises which apply for loans.<sup>61</sup> But, if the enterprise has difficulty in financing its plans for permanent improvements, the banker is less disposed to take its paper. A mere rise in interest rates will tend to depress its capitalized value in the banker's eyes, in the same way that a tight money market tends to depress the prices of stocks. Most of all, the moment that prospective profits decline, even though present profits continue large, the banker revises his estimate of how much credit the enterprise may reasonably be granted. In short, the business factors which cause stocks to fall in the later stages of prosperity have a similar effect upon the credit ratings of business enterprises. The latter fact is less clear solely because these ratings are not made upon an open market, and not quoted in the newspapers.

Accepting the prices of shares in business enterprises, then, as the best available index of the current valuations set by men of affairs upon going concerns, we may enquire how general and how severe was the decline in market ratings before the panic of 1907. The *Financial Review* gives stock quotations for 63 manufacturing, mining, gas, electric, street railway, and miscellaneous companies on January, 1906, January, 1907, and September, 1907. Adding our 40 transportation companies, we have a list of over one hundred business enterprises for which the changes in current valuation during the period which bred the crisis are recorded. Between January, 1906, and January, 1907—the culminating year of prosperity—shares in 21 of these companies rose in price, while in 82 companies shares fell. That is, nine months before the panic broke out a reduction of market valuation had occurred in the case of four out of five of these enterprises. But the average decline was rather moderate as stock-market fluctuations go—9 per cent of the prices in January, 1906. As the stresses bred by prosperity became more intense this decline grew greater in degree and became all but universal. Only one enterprise—the American Cotton Oil Company—saw its shares rise between January and September, 1907, while 102 enterprises saw their shares fall. The average drop in these eight months was 28 per cent.<sup>62</sup>

While we cannot prove by direct evidence that this decline in the values set by the stock market on shares in large corporations fairly represented the

<sup>61</sup> Compare Chapter IV, iv, 1.

<sup>62</sup> Among the seven industrial groups into which the 103 companies fall, two show a slight average rise between January, 1906, and January, 1907—the mining and smelting companies, and the great iron and steel companies which mine much of their own coal and ore. On the other hand, these two groups suffered a heavier average fall in market valuation between January and September, 1907, than did any of the five other groups. These facts accord well with the preceding analysis. The rapid rise in the prices of raw mineral products during a period of prosperity enables the mining company to offset the encroachments of costs upon profits until the falling off in new contracts for construction work begins. But when the cycle has reached that point these same companies experience a peculiarly violent constriction in demand, and their prospective profits drop suddenly.

Among the remaining groups, which differ widely from each other in character of products, the fall of stock prices from January, 1906, to January, 1907, and again from the latter date to September, 1907, presents surprisingly uniform averages.

The data upon which these generalizations rest are given in the following table. The actual prices are means between the highest and lowest quotations reported by the *Financial Review*.

change in the values set by credit men upon smaller business enterprises, still we can scarcely doubt that lenders of all classes were growing more and more conservative in their ratings of applicants for loans. Of course this change in mental attitude was no mere whim or emotional aberration, but the mature

PRICES OF COMMON SHARES IN 103 BUSINESS ENTERPRISES IN JANUARY, 1906, JANUARY, 1907, AND SEPTEMBER, 1907.

	Mean actual prices			Mean relative prices Actual prices in Jan., 1906 = 100			Rise (+) or fall (—) in relative prices between		
	Jan., 1906	Jan., 1907	Sept., 1907	Jan., 1906	Jan., 1907	Sept., 1907	Jan., '06 Jan., '07	Jan., '06 Sept., '07	Jan., '07 Sept., '07
<i>Mining and Smelting—</i>									
Amalgamated Copper Co. ....	\$109.69	\$116.13	\$65.38	100	106	60	+ 6	— 40	— 46
American Smelting and Refining Co. ....	167.75	148.31	93.94	100	88	56	— 12	— 44	— 32
Columbus and Hocking Coal and Iron Co. ....	22.06	26.06	22.44	100	118	102	+ 18	+ 2	— 16
Federal Mining and Smelting Co. ....	168.50	161.50	95.50	100	96	57	— 4	— 43	— 39
Homestake Mining Co. ....	81.50	85.00*	71.25	100	104	87	+ 4	— 13	— 17
National Lead Co. ....	87.69	71.13	49.88	100	81	57	— 19	— 43	— 24
Ontario Silver Mining Co. ....	3.44	6.56	3.50	100	191	102	+ 91	+ 2	— 89
Pittsburg Coal Co. of New Jersey ....	16.06	16.13	9.75	100	100	61	—	— 39	— 39
U. S. Reduction and Refining Co. ....	32.00	28.88	13.75	100	90	43	— 10	— 57	— 47
Average, 9 enterprises .....				100	108	69	+ 8	— 31	— 39
<i>Iron and Steel—</i>									
Colorado Fuel and Iron Co. ....	69.38	52.19	21.88	100	75	32	— 25	— 68	— 43
Republic Iron and Steel Co. ....	35.50	37.44	22.38	100	105	63	+ 5	— 37	— 42
Sloss-Sheffield Steel and Iron Co. ....	91.50	73.63	46.50	100	80	51	— 20	— 49	— 29
Tennessee Coal and Iron Co. ....	147.00	158.00	135.00†	100	107	92	+ 7	— 8	— 15
U. S. Steel Corporation .....	44.13	46.56	29.75	100	106	67	+ 6	— 33	— 39
Virginia Iron, Coal, and Coke Co. ....	26.57	43.50	26.25	100	164	99	+ 64	— 1	— 65
Average, 6 enterprises .....				100	106	67	+ 6	— 33	— 39
<i>Machinery and Railway Equipment—</i>									
Allis Chalmers Co. ....	24.69	15.19	7.56	100	62	31	— 38	— 69	— 31
American Car and Foundry Co. ....	43.50	43.19	39.06	100	99	90	— 1	— 10	— 9
American Locomotive Co. ....	74.62	72.38	52.38	100	97	70	— 3	— 30	— 27
American Steel Foundries .....	14.44	9.75	6.63	100	68	46	— 32	— 54	— 22
General Electric Co. ....	176.63	159.13	126.50	100	90	72	— 10	— 28	— 18
International Power Co. ....	76.50	49.38	40.88	100	65	53	— 35	— 47	— 12
International Steam Pump Co. ....	32.50	37.63	22.50	100	116	69	+ 16	— 31	— 47
New York Air Brake Co. ....	159.25	137.25	109.00	100	86	68	— 14	— 32	— 18
Pressed Steel Car Co. ....	59.06	52.00	28.13	100	88	48	— 12	— 52	— 40
Railway Steel Spring Co. ....	60.75	54.25	36.13	100	89	59	— 11	— 41	— 30
U. S. Cast Iron Pipe and Foundry Co. ....	49.56	47.38	30.13	100	96	61	— 4	— 39	— 35
Westinghouse Electric Manufacturing Co. ....	171.00	151.38	138.00	100	89	81	— 11	— 19	— 8
Average, 12 enterprises .....				100	87	62	— 13	— 38	— 25
<i>Manufacturing, various—</i>									
American Agricultural Chemical Co. ....	29.31	24.19	16.88	100	83	58	— 17	— 42	— 25
American Beet Sugar Co. ....	30.50	21.50	12.50	100	70	41	— 30	— 59	— 29
American Cotton Oil Co. ....	40.63	30.88	32.50	100	76	80	— 24	— 20	+ 4
American Grass Twine Co. ....	10.75	7.38	4.63	100	69	43	— 31	— 57	— 26
American Hide and Leather Co. ....	9.31	5.88	3.94	100	63	42	— 37	— 58	— 21
American Ice Securities Co. ....	40.88	86.50	42.88	100	212	105	+112	+ 5	—107
American Linseed Co. ....	24.63	17.63	8.50	100	72	35	— 28	— 65	— 37
American Sugar Refining Co. ....	150.69	132.81	112.38	100	88	75	— 12	— 25	— 13
American Woolen Co. ....	44.31	33.63	22.44	100	76	51	— 24	— 49	— 25
Butterick Co. ....	57.44	49.06	31.25	100	85	54	— 15	— 46	— 31
Central Leather Co. ....	47.06	36.38	17.88	100	77	38	— 23	— 62	— 39
Distillers Securities Corporation .....	52.56	72.25	54.38	100	137	103	+ 37	+ 3	— 34
General Chemical Co. ....	79.50	75.13	63.00*	100	95	79	— 5	— 21	— 16
International Paper Co. ....	24.18	16.88	14.00	100	70	58	— 30	— 42	— 12
Knickerbocker Ice Co. (Chicago) .....	64.88	54.75	50.75	100	84	78	— 16	— 22	— 6
National Biscuit Co. ....	69.00	81.63	73.50	100	118	107	+ 18	+ 7	— 11
National Enameling and Stamping Co. ....	17.25	14.25	10.94	100	83	63	— 17	— 37	— 20
U. S. Rubber Co. ....	54.75	50.13	30.25	100	92	55	— 8	— 45	— 37
Union Bag and Paper Co. ....	14.31	7.56	5.38	100	53	38	— 47	— 62	— 15
Virginia Carolina Chemical Co. ....	51.00	35.94	19.75	100	70	39	— 30	— 61	— 31
Average, 20 enterprises .....				100	89	62	— 11	— 38	— 27

\* February, 1907.

† August, 1907.

conclusion of much thinking about the changes in business prospects which prosperity itself was bringing about. When this growing conservatism in judging what a business enterprise was worth had reached a certain point it became an independent force reacting powerfully upon the situation which had bred it.

Let the estimated money values set upon business enterprises decline seriously, then creditors become apprehensive lest their margins of security shrink to nothing. Certainly the overwhelming majority of enterprises are still solvent; probably a very large proportion are still making high profits; perhaps more than half are doing better than at any previous stage of the business cycle.

PRICES OF COMMON SHARES IN 103 BUSINESS ENTERPRISES IN JANUARY, 1906, JANUARY, 1907, AND SEPTEMBER, 1907—(Continued)

	Mean actual prices			Mean relative prices Actual prices in Jan., 1906 = 100			Rise (+) or fall (—) in relative prices between		
	Jan., 1906	Jan., 1907	Sept., 1907	Jan., 1906	Jan., 1907	Sept., 1907	Jan., '06 Jan., '07	Jan., '06 Sept., '07	Jan., '07 Sept., '07
	\$	\$	\$						
<i>Public Utilities—</i>									
American Telephone and Telegraph Co. ....	141.44	130.50	109.75†	100	92	78	— 8	— 22	— 14
Brooklyn Rapid Transit Co. ....	89.69	77.75	45.81	100	87	51	— 13	— 49	— 36
Brooklyn Union Gas Co. ....	171.50	110.50	102.31	100	64	60	— 36	— 40	— 4
Chicago Union Traction Co. ....	11.38	5.31	3.00	100	47	26	— 53	— 74	— 21
Consolidated Gas Co. ....	174.88	136.00	101.63	100	78	58	— 22	— 42	— 20
Detroit United Railways ....	97.06	79.56	63.00	100	82	65	— 18	— 35	— 17
Metropolitan Street Railways ....	123.50	105.50	40.81	100	85	33	— 15	— 67	— 52
N. Y. and N. J. Telephone Co. ....	154.75	113.00	105.00	100	73	68	— 27	— 32	— 5
North American Co. (new stock) .....	102.50	85.00	59.88	100	83	58	— 17	— 42	— 25
Peoples Gas, Light, and Coke Co. (Chicago) ....	100.50	96.44	86.88	100	96	86	— 4	— 14	— 10
Third Avenue Railway Co. ....	137.25	120.25	50.50	100	88	37	— 12	— 63	— 51
Toledo Railways and Light Co. ....	34.13	28.50	21.50	100	84	63	— 16	— 37	— 21
Twin City Rapid Transit Co. ....	119.63	105.31	93.31	100	88	78	— 12	— 22	— 10
Average, 13 enterprises .....				100	81	59	— 19	— 41	— 22
<i>Miscellaneous—</i>									
Brunswick Dock and City Improvement Co. ....	19.00	14.00	10.00	100	74	53	— 26	— 47	— 21
Pullman Co. ....	244.88	175.56	156.75	100	72	64	— 28	— 36	— 8
U. S. Realty and Improvement Co. ....	91.25	83.75	50.00	100	92	55	— 8	— 45	— 37
Average, 3 enterprises .....				100	79	57	— 21	— 43	— 22
Average, 63 "industrial" enterprises .....				100	91	63	— 9	— 37	— 28
<i>Transportation Companies—</i>									
New York, New Haven, and Hartford .....	200.94	186.63	150.25	100	93	75	— 7	— 25	— 18
New York, Ontario, and Western .....	54.25	45.44	33.31	100	84	61	— 16	— 39	— 23
New York Central .....	152.06	129.88	104.25	100	85	69	— 15	— 31	— 16
Pennsylvania .....	144.25	135.44	119.88	100	94	83	— 6	— 17	— 11
Erie .....	48.75	38.94	20.81	100	80	43	— 20	— 57	— 37
Central of New Jersey .....	226.75	215.00	173.00	100	95	76	— 5	— 24	— 19
Delaware and Hudson .....	223.63	217.75	158.50	100	97	71	— 3	— 29	— 26
Delaware, Lackawanna, and Western .....	465.75	495.00	469.00	100	106	101	+ 6	+ 1	— 5
Philadelphia and Reading .....	149.13	129.19	94.44	100	87	63	— 13	— 37	— 24
Cleveland, Cincinnati, Chicago, and St. Louis ....	107.44	90.00	62.25	100	84	58	— 16	— 42	— 26
Wheeling and Lake Erie .....	19.19	14.75	9.69	100	77	50	— 23	— 50	— 27
New York, Chicago, and St. Louis .....	69.50	60.75	35.88	100	87	52	— 13	— 48	— 35
Wabash .....	23.38	17.31	11.69	100	74	50	— 26	— 50	— 24
Pittsburg, Cincinnati, Chicago, and St. Louis ....	85.25	75.69	66.50	100	89	78	— 11	— 22	— 11
Canada Southern .....	69.94	64.63	60.88	100	92	87	— 8	— 13	— 5
Lake Erie and Western .....	41.44	27.75	16.56*	100	67	40	— 33	— 60	— 27
Illinois Central .....	178.00	165.00	138.00	100	93	78	— 7	— 22	— 15
Chicago, Milwaukee, and St. Paul .....	186.38	151.31	120.19	100	81	64	— 19	— 36	— 17
Chicago and Northwestern .....	230.00	192.38	145.50	100	84	63	— 16	— 37	— 21
Chicago, St. Paul, Minneapolis, and Omaha ....	194.00	165.00	127.00	100	85	65	— 15	— 35	— 20
Duluth, South Shore, and Atlantic .....	21.00	18.00	9.50	100	86	45	— 14	— 55	— 41
Iowa Central .....	32.19	26.44	15.94	100	82	50	— 18	— 50	— 32
Minneapolis and St. Louis .....	82.13	57.88	39.63	100	70	48	— 30	— 52	— 22
Wisconsin Central .....	30.50	24.19	15.13	100	79	50	— 21	— 50	— 29
Chesapeake and Ohio .....	58.56	52.50	33.69	100	90	58	— 10	— 42	— 32
Norfolk and Western .....	89.13	88.38	70.88	100	99	80	— 1	— 20	— 19

\* Interpolated.

† July, 1907.

But the creditors of those enterprises which have suffered most severely from the encroachments of costs, from the decline of new orders, or from some unfortunate conjuncture; or may be the creditors who happen to be most nervous—certainly numerous creditors of some sort become sufficiently alarmed to refuse to renew maturing loans. Then their debtors must pay up.

When prosperity has evolved such a condition of business, the process of liquidation, once begun, spreads rapidly and promptly brings into its sweep even the creditors who are least nervous and the debtors who are most prosperous. For the efforts to raise money made by the men called upon for settlement presently increase the uneasiness of other creditors and create new difficulties for the enterprises whose prospects of profits have not been dimmed hitherto. The analysis of the process by which liquidation spreads over the whole field of business, however, belongs in the next chapter; for when the demand for reduction of outstanding credits becomes general the business cycle passes over from the phase of prosperity into the phase of crisis.

PRICES OF COMMON SHARES IN 103 BUSINESS ENTERPRISES IN JANUARY, 1906, JANUARY, 1907, AND SEPTEMBER, 1907—(Concluded)

	Mean actual prices			Mean relative prices Actual prices in Jan., 1906 = 100			Rise (+) or fall (—) in relative prices between		
	Jan., 1906 \$	Jan., 1907 \$	Sept., 1907 \$	Jan., 1906	Jan., 1907	Sept., 1907	Jan., '06 Jan., '07	Jan., '06 Sept., '07	Jan., '07 Sept., '07
Louisville and Nashville .....	152.50	139.50	107.81	100	91	71	— 9	— 29	— 20
Missouri Pacific .....	103.13	89.38	69.44	100	87	67	— 13	— 33	— 20
Missouri, Kansas, and Texas .....	38.31	38.63	35.00	100	101	91	+ 1	— 9	— 10
Texas and Pacific .....	36.06	34.19	27.38	100	95	76	— 5	— 24	— 19
Atchison, Topeka, and Santa Fé .....	92.94	103.31	86.88	100	111	93	+ 11	— 7	— 18
Denver and Rio Grande .....	44.94	39.19	23.69	100	87	53	— 13	— 47	— 34
Southern Pacific .....	69.25	93.25	85.44	100	135	123	+ 35	+ 23	— 12
Union Pacific .....	154.25	175.94	129.69	100	114	84	+ 14	— 16	— 30
Canadian Pacific .....	173.38	187.50	164.00	100	108	95	+ 8	— 5	— 13
American Express Co. ....	235.75	241.00	202.00	100	102	86	+ 2	— 14	— 16
United States Express Co. ....	131.25	113.50	89.47*	100	86	68	— 14	— 32	— 18
Wells-Fargo Express Co. ....	244.00	285.00	280.00*	100	117	115	+ 17	+ 15	— 2
Pacific Mail Steamship Co. ....	48.75	37.75	24.38	100	77	50	— 23	— 50	— 27
Western Union Telegraph Co. ....	93.63	83.63	75.50	100	89	81	— 11	— 19	— 8
Average, 40 enterprises .....				100	91	70	— 9	— 30	— 21
Grand average, 103 enterprises .....				100	91	66	— 9	— 34	— 25

\* Interpolated.

## CHAPTER XII

### CRISES

#### I. THE BEGINNING OF LIQUIDATION

We have seen that the very conditions of business prosperity ultimately beget a downward revision of credits. For prosperity produces a vast expansion of credits based primarily upon the capitalization of large anticipated profits. When profit margins are threatened by the encroachments of costs, when these encroachments cannot be offset by further advances of selling prices, and when the rate at which profits are capitalized is reduced by the rise of interest, then creditors begin to take alarm and press for the settlement of their claims.

The beginning of this process of liquidation is sometimes prematurely brought on by the collapse of some conspicuous enterprise which has suffered heavy losses in speculative ventures. Such failures, however, are more often signs that liquidation is already under way than causes of its beginning. At other times crop failures, political disorders, uncertainties about the monetary standard, the outbreak of war or a drop of prices following upon the making of peace, crises in foreign countries, or other developments which do not arise from the domestic business situation give the impetus to liquidation before the period of prosperity has run its full course. But the preceding description of the processes going forward in a period of business activity shows that, even in the absence of any disquieting event from the outside, prosperity itself gradually accumulates stresses which impel creditors to demand repayment of a part of their advances.

There is no general rule concerning the spot in the business system at which this process of forcing debtors to pay up begins. If there occur violent fluctuations in the prices of certain important materials which threaten losses to manufacturers or merchants, the trades concerned may be the first to suffer loss of credit. Contractors or others engaged in providing industrial equipment are especially likely to be early victims, because their orders fall off as soon as the bond market becomes stringent and the cost of construction becomes heavy. Or there may be some district of the country, rather than some line of business, where the great lenders of the financial centers think that the expansion of credits has proceeded faster than the expansion of security for

repayment. Or it may be merely that certain individual creditors take the conservative tack before others, and put the screws upon whatever enterprises happen to have borrowed from them. The spot where liquidation begins, however, is less important than the manner in which it spreads from enterprise to enterprise, from trade to trade, and from town to town.

Say, then, that some creditor more cautious than his fellows, or the creditor of some enterprise more heavily involved than most, gives notice that a maturing debt will not be renewed or extended. The debtor has various ways of raising funds. He may apply to some other lender, he may put pressure upon those who owe him money, he may offer liberal inducements to settle accounts not yet due, he may persuade other creditors to allow more time on sums due them, he may force cash sales of wares on hand, he may "sacrifice" his securities or other property. If any of these shifts prove successful in securing the necessary funds, the debtor escapes bankruptcy himself. But his efforts increase the business difficulties of others. If he borrows from some bank, that institution is brought nearer the point where it must restrict its loans to other would-be borrowers. If he applies pressure to his own debtors he lands them in the same predicament he is facing. If he persuades other debtors to pay before their time or other creditors to defer their claims, he at least diminishes the means at their disposal. Finally, if he sells commodities, securities, or other property at a sacrifice for cash he injures the market for others. Thus, though the earlier attempts to force a liquidation of outstanding credits may cause no failures, they increase the likelihood that further attempts will have more serious results.

They also increase the likelihood that similar attempts will be made by other creditors. Both creditor and debtor have an interest in concealing such matters as the refusal to extend a loan; but the steps which the debtor takes to raise money give an inkling of his plight to the business men whom he approaches on the subject. A suspicion that some creditor is becoming apprehensive and that some debtor is having trouble in meeting his obligations is all that is needed to decide other hesitating creditors to put on the screws. And each new effort to reduce outstanding credits spreads wider the knowledge of what is going on, and strengthens the movement toward liquidation.

The more general such a movement becomes, the more difficult it is to carry through without disaster. For the money and investment markets promptly become more tense than ever. The demand for loans which falls upon any bank is swelled not only by the men who are being pushed to settle by other banks and by mercantile or manufacturing concerns, but also by the men who seek to fortify their position by having funds in readiness to meet demands which may be made upon them. For, when a serious crisis is thought to be impending, it seems wiser to pay interest on money which may not be needed for some time than to risk inability to secure it later. In addition, enterprises

which have bonds maturing, or which must raise money to pay for contract work nearing completion fall back upon the banks because investors will not take their long-time obligations. This sudden increase in the demand for loans to meet outstanding obligations much more than makes up for the decrease in the demand for loans to finance fresh business ventures. On the other hand, banks are particularly loath to increase loans at such seasons if they can help it. Their reserves were reduced to a low point by the preceding period of prosperity, and experience teaches that if the situation goes from bad to worse they may be subjected to heavy demands from depositors and require very large reserves to maintain their own prestige. Further, the risk of loss on bad debts increases with the demand for loans. Heavy failures are likely to occur, and no one can tell what enterprises will be crippled by these failures. The one certainty is that the banks holding the paper of bankrupt firms will suffer delay and perhaps a serious loss on collection. Hence each bank is disposed to limit its efforts to "taking care of its own customers."<sup>1</sup>

Such a restriction of loans, however prudent it may appear from the viewpoint of a single bank, aggravates the stress. On the one hand, it increases the likelihood that some of the enterprises already trying to raise money will fail and be pushed to the wall; on the other hand, it increases the general uneasiness and makes the pressure for liquidation more general and more intense. Thus matters run along for some days or weeks, the strain becoming more severe until the bankruptcy of one or more conspicuous enterprises publishes abroad the gravity of the situation.

What happens then depends primarily upon the leading banks. The crisis may degenerate into a panic, or its severity may be greatly mitigated by effective measures of relief. The best way of presenting these alternatives is to describe two concrete instances in detail—a typical panic and a typical crisis.

## II. A TYPICAL PANIC—THE UNITED STATES, 1907

Since 1890 the United States has had two great panics, while England, France, and Germany have had none. We are therefore confined to the study of American experience in 1893 and 1907. The phenomena of these two panics are sufficiently alike to make a review of one suffice for present purposes. The later is preferable, not only because it is closer to contemporary interests, but also because more material is available concerning it, and because it is not complicated by a monetary problem.<sup>2</sup>

<sup>1</sup> Particularly when the banking system has such a rudimentary organization as in the United States at present. Compare section v, below.

<sup>2</sup> On the panic of 1893 see Chapter III, iii, 6; A. C. Stevens, "Analysis of the Phenomena of the Panic in the United States in 1893," *Quarterly Journal of Economics*, January, 1894; O. M. W. Sprague, *History of Crises Under the National Banking System* (Publications of the National Monetary Commission), Chapter IV; W. J. Lauek, *The Causes of the Panic of 1893*, Boston and New York, 1907. A very brief description of the panic of 1907 is given above in Chapter III, viii, 4.

### 1. *The Beginning of the Panic of 1907*

It was a series of bank failures in New York which turned the crisis of 1907 into a panic.

Months before the panic broke out, tension in the investment market had caused a slackening of new construction. Copper was among the commodities which suffered a loss of demand. Its price fell from 26 cents a pound early in the year to 20 cents in July, 15½ cents in September, and 12 cents in October. Of course, the prices of stocks in copper mining companies also fell heavily. In turn this fall embarrassed the capitalists who were large owners of copper stocks and who presumably depended on these securities to serve as collateral for heavy loans. Among these capitalists was one, Mr. F. A. Heinze, who organized a pool to bolster up the prices of shares in the United Copper Company. On October 14th the pool succeeded in running up the prices of this stock on the "curb" from 37¼ to 60. But this success was brief. Next day the price declined again, and on the 16th it tumbled to 10. Gross & Kleeberg failed, alleging that the brokerage firm of Heinze's brother would not take stock bought for their account. Next day the latter firm—Otto Heinze & Company—suspended.

This episode in copper stocks made trouble because Mr. F. A. Heinze was president of the Mercantile National Bank. It was believed that he "owned the control" of this institution, and suspected that he had taken advantage of that fact to obtain large loans upon the security of the stocks which had fallen so heavily in price. Naturally, the bank's depositors became alarmed and began to withdraw their accounts. The suspicion spread quickly to seven other banks which were controlled by Messrs. C. W. Morse, E. R. and O. P. Thomas—men believed to have close business affiliations with the Heinzes. The names and sizes of these banks are shown by the following table.<sup>3</sup> The insti-

	Capital and surplus	Deposits on Oct. 12
Mercantile National Bank* .....	\$8,043,600	\$11,569,400
Consolidated National Bank .....	2,114,700	3,913,300
National Bank of North America* .....	4,407,600	13,320,000
Mechanics and Traders Bank* .....	2,943,300	19,001,000
New Amsterdam National Bank* .....	1,266,600	5,132,900
Fourteenth Street Bank* .....	1,416,200	7,392,300
Hamilton Bank .....	488,700	7,210,000
Hudson Trust Company .....	1,106,000	3,828,000
	<hr/> \$21,786,700	<hr/> \$71,366,900

tutions starred were members of the Clearing House.

Distrusting their ability to meet the demands of depositors, these institutions appealed to the Clearing House for help. After examination to determine their condition, the Clearing House pledged its aid on condition that the Heinze, Morse, and Thomas interests withdraw from control. These arrangements were completed by Sunday, October 20th, when it was generally believed that danger of a panic had been averted.

<sup>3</sup> *Bradstreet's*, Oct. 26, 1907.

But next day confidence received a yet more serious shock. The president of the Knickerbocker Trust Company was credited with being interested in certain of the Morse enterprises. Distrust resulted in a succession of unfavorable clearing-house balances, and on Monday the National Bank of Commerce announced that it would no longer act as clearing agent for the trust company. Tuesday, October 22, the Knickerbocker opened its doors to a run, and suspended after three hours, during which it claimed to have paid out some \$8,000,000.<sup>4</sup>

The Knickerbocker Trust Company was the third largest institution of its kind in New York, and had deposits of about \$62,000,000. Its failure caused widespread alarm, and precipitated runs on the Trust Company of America (deposits \$64,000,000) and the Lincoln Trust Company (deposits \$22,400,000). To add to the distrust, several of the Westinghouse companies went into the hands of a receiver on October 23rd, and the Pittsburgh Stock Exchange was closed. Next day several runs began on banks and trust companies in New York, and the Hamilton and Twelfth Ward Banks suspended payments as a safety measure. The day following several other suspensions were announced by banks and trust companies—one in Manhattan, four in Brooklyn, and one in Providence.

## 2. *The Scramble for Money*

The salient feature of the panic precipitated by this epidemic of bank troubles was a desperate scramble for money. To the New York banks which were actually subjected to runs, and to the banks which feared lest they might be, large supplies of currency were a matter of self-preservation. Out-of-town banks, knowing that panic in New York would spread to the rest of the country, and remembering that remittances had been scaled down or refused in 1893, ordered the return of their balances with reserve agents and "called" the loans they had outstanding with stockbrokers. Timid depositors sought to get their money into their own hands, and many large business men locked up such sums as they could secure in order to be fortified against emergencies and prepared to take advantage of favorable opportunities—such as stock sales at bargain prices or a premium on currency.

The first relief measures were directed toward enabling the Trust Company of America and the Lincoln Trust Company to meet the run by their depositors. October 23rd a committee of trust-company presidents was formed to aid them

<sup>4</sup> Compare Sprague, *History of Crises Under the National Banking System* (Publications of the National Monetary Commission), pp. 251, 252. Mr. Edmond Kelly says that the Knickerbocker Trust Company had become "an independent financial power" of which the "Wall Street Group" was jealous, and that this group took advantage of the institution's temporary financial embarrassment to get rid of its efficient president, Mr. Charles J. Barney. Subsequent events proved that the company was solvent, and might have been saved from passing into the hands of receivers. *Twentieth Century Socialism*, New York, pp. 182-184. Interesting personal details concerning this incident and its consequences are given by Carl Hovey, *The Life Story of J. Pierpont Morgan*, N. Y., 1911, ch. XIV.

by advancing cash and securities to be used as the basis of loans. The Secretary of the Treasury deposited \$35,000,000 in the national banks within four days, and much of the large share allotted to New York was transferred to the threatened trust companies. Meanwhile, to prevent the further collapse of prices on the Stock Exchange, a pool was formed to lend \$25,000,000 on call on October 24th, and \$10,000,000 on the 25th. But it was not until October 26th—four days after the suspension of the Knickerbocker Trust Company—that the New York Clearing House began to issue clearing-house loan certificates.<sup>5</sup>

While this measure improved the situation by enabling the banks to lend more freely, it was coupled with another measure which intensified the scramble for money. Although the New York bank reserves had not declined seriously by October 26th—for most of the millions absorbed by the trust-company runs and shipped to out-of-town banks had been provided by the government deposits—the banks began to restrict their payments of cash as soon as the issue of clearing-house loan certificates was authorized. Then out-of-town banks, thinking themselves in desperate need of lawful money for reserves, and employers who could not get from their banks enough money to pay wages, were compelled to buy currency at a premium from brokers. A premium on currency was first reported by the press on the 30th of October. Early in November it rose as high as 4 per cent, remained above 1 per cent until the second half of December, and did not disappear until the last two or three days of the year.<sup>6</sup>

Of course the existence of the premium gave depositors an additional incentive for drawing money out of the banks, and gave those who received money an additional incentive for refusing to deposit it. Moreover, the prevailing distrust of the banks on the part not only of the general public but also of each other was augmented by the refusal to honor in full checks and demands for remittances. On the other hand, the premium may have induced some men who had locked up money in safety deposit boxes to sell their hoards. But the scramble for money was certainly rendered more rather than less intense by the restriction of payments on the part of the New York banks.

The \$35,000,000 transferred from the federal sub-treasuries to the national banks was the first addition made to the supply of money in circulation. But much more was needed, and the banks resorted to an increase of their notes and an importation of gold. Neither measure, however, gave prompt relief. It was not until after the first of November that the bank notes began to increase rapidly, and not until the week ending November 9th that the first shipments of gold were received.<sup>7</sup>

<sup>5</sup> Sprague regards this delay as "the most serious error made" in managing the panic of 1907. *Op. cit.*, p. 257.

<sup>6</sup> A. P. Andrew, "Hoarding in the Panic of 1907," *Quarterly Journal of Economics*, February, 1908.

<sup>7</sup> For the importation of gold see Table 131, below. The volume of national-bank notes outstanding was as follows:

In the meantime the panic had spread rapidly from New York to the interior. In two-thirds of the cities having more than 25,000 inhabitants the banks followed the example of the metropolis in suspending cash payments to a greater or less degree.<sup>8</sup> Since lawful money could not be provided quickly enough to meet the insistent demand, a variety of substitutes for cash came into use. An attempt made by Dr. A. P. Andrew to ascertain the amount of this illegal and inconvertible paper money yielded the following result:

	Millions of dollars
Clearing-house loan certificates (large) .....	238
Clearing-house loan certificates (small) .....	23
Clearing-house checks .....	12
Cashiers' checks .....	14
Manufacturers' pay checks .....	47
Total .....	334

But this record was far from complete, and Dr. Andrew thought it safe to "place an estimate of the total substitutes for cash above 500 millions."<sup>9</sup>

Developments in New York can best be followed by aid of the annexed table, which shows the recorded movements of money into and out of the clearing-house banks. Before the panic began, money was being shipped westward from New York for crop-moving purposes at about the usual rate; but the time was close at hand for this movement to decline.<sup>10</sup> The panic quadrupled the outflow

October 1 .....	\$603,900,000	December 1 .....	\$656,200,000
October 15 .....	607,100,000	December 15 .....	676,900,000
November 1 .....	611,800,000	December 31 .....	690,100,000
November 15 .....	631,300,000	January 18 .....	695,900,000

Response of the Secretary of the Treasury to Senate Resolution no. 33 of December 12, 1907 (60th Congress, 1st session, Senate Document 208, pp. 11, 126).

To provide lawful security for this increase of notes and for further government deposits, on November 17th the Secretary of the Treasury offered to receive subscriptions for \$50,000,000 in Panama Canal bonds and \$100,000,000 in 3 per cent certificates of indebtedness, and to permit 90 per cent of the proceeds of the bonds and 75 per cent of the proceeds of the certificates to remain in the national banks as government deposits. But only \$24,631,980 of the bonds and \$15,436,500 of the certificates were actually sold. (Report of the Secretary of the Treasury, 1908, pp. 21, 22.)

<sup>8</sup> A. P. Andrew, "Substitutes for Cash in the Panic of 1907," *Quarterly Journal of Economics*, August, 1908, pp. 501, 502.

<sup>9</sup> *Ibid.*, p. 515. As an additional aid to the banks in restricting payments, the governors of Oklahoma, Nevada, Washington, Oregon, and California declared a succession of legal holidays. Sprague, *op. cit.*, 286, 287.

<sup>10</sup> The average gain (+) or loss (—) to the New York banks by interior movements of cash during the months October to January in the ten years 1899–1908 was as follows. The amounts are stated in thousands of dollars.

October—1st week .....	—3,883	December—2d week .....	— 836
October—2d week .....	—2,543	December—3d week .....	+ 515
October—3d week .....	—3,014	December—4th week .....	+ 60
October—4th week .....	—3,685	December—5th week .....	+2,188
November—1st week .....	—2,700	January—1st week .....	+6,684
November—2d week .....	—2,666	January—2d week .....	+6,621
November—3d week .....	—1,530	January—3d week .....	+7,773
November—4th week .....	— 563	January—4th week .....	+6,895
December—1st week .....	— 213		

E. W. Kemmerer, *Seasonal Variations in the Demand for Money and Capital in the United States* (Publications of the National Monetary Commission), p. 125.

in the last week of October and caused it to increase still further throughout the first half of November. Thereafter the shipments declined; but the current did not set in favor of New York until the first of the New Year—three weeks later than usual. Of course these figures mean that the restriction of payments

TABLE 131

RECORDED MOVEMENTS OF MONEY INTO AND OUT OF THE CLEARING-HOUSE BANKS OF NEW YORK CITY DURING THE PANIC OF 1907

In millions and tenths of millions of dollars

Weeks ending	Reserves of the banks	Net gain (+) or loss (—) by			Totals of the three preceding columns	Net gain (+) or loss (—) in bank reserves
		Shipments to and from interior	Sub-treasury operations	Imports and exports of gold		
October 5	261.8	— 3.9	— 1.0	+ .1	— 4.8	— 7.6
12	261.2	— 4.9	+ 1.0	+ .2	— 3.7	— .6
19	267.6	— 4.4	+ 4.0	.....	— .4	+ 6.4
26	254.7	—16.3	+21.0	— 1.3	+ 3.4	—12.9
November 2	224.1	—17.0	+ 9.5	— .5	— 8.0	—30.6
9	219.8	—17.4	+15.0	+ 7.3	+ 4.9	— 4.3
16	218.7	—22.6	— 6.1	+21.1	— 7.6	— 1.1
23	215.9	—17.3	+ .6	+12.4	— 4.3	— 2.8
30	217.8	—10.6	— .6	+16.5	+ 5.3	+ 1.9
December 7	222.5	— 9.0	+ 3.5	+13.8	+ 8.3	+ 4.7
14	226.6	— 6.8	— 2.8	+ 9.5	— .1	+ 4.1
21	233.1	— 5.2	+ 1.4	+ 5.7	+ 1.9	+ 6.5
28	242.6	— 2.2	+ 2.4	+ 4.1	+ 4.3	+ 9.5
January 4	250.6	+ 5.5	— 4.3	+ 5.3	+ 6.5	+ 8.0
11	269.0	+13.4	— 4.6	+ 3.6	+12.4	+18.4
18	295.2	+12.3	+ 3.5	+ .5	+16.3	+26.2
25	318.9	+20.6	+ 1.5	+ .4	+22.5	+23.7

Compiled from the *Commercial and Financial Chronicle*. The interior movements and sub-treasury operations are for weeks ending one day earlier than indicated by the table. For the weeks ending November 15 to January 10, the *Chronicle* gives the net result of sub-treasury operations and gold imports together; but as it also gives the gold imports separately it is easy to segregate the two movements.

by the New York banks was far from total; on the contrary, they supplied the interior banks with nearly \$125,000,000 between the outbreak of the panic and the end of the year. Only a small part of these funds, however, came out of the reserves of the banks. At first the bulk was provided by the treasury, and when that source began to fail the gold which had been ordered from Europe began to arrive. Indeed, these receipts of money from the government and from abroad exceeded the western shipments during the first seven weeks of the panic.



the banks, so that the amount in circulation increased about 70 millions. Thereafter the increase came chiefly from the importation of gold and the issue of new bank notes. Between the end of October and the end of December the circulation of gold coin and certificates rose 105 millions, bank notes 84, silver dollars and silver certificates 6, subsidiary silver 8, and greenbacks 2 millions. In the hurry of the panic, banks did not stop to take out gold certificates, but used gold coin with unaccustomed freedom. The very unpopularity of the latter medium rendered it more acceptable to banks which were endeavoring to restrict withdrawals of deposits. In all \$273,000,000 were added to the money in circulation between September 30th and the end of the year. But even this huge sum was far from adequate; for, if Andrew's estimate is not exaggerated, more than twice as much unlawful currency was provided in the form of substitutes for cash. The monetary demands created by a panic seem to be insatiable, because a comparatively small decrease in the use of credit instruments makes a large increase in the need of money.

Still more striking results would appear if we had for these months data concerning the distribution of the money in circulation between the banks and the public. But Secretary Cortelyou has prepared an interesting substitute for such figures in the shape of an estimate of the money absorbed by the public during the panic. The sums are given in millions of dollars.<sup>13</sup> These figures show that the national banks of the whole country lost less cash than those of

	New York City	United States
Reduction in cash held by the national banks between August 22 and December 3 .....	42	41
Net importations of gold, November 1 to December 31 .....	94	106
Increase in government deposits in the national banks, August 22 to December 3 .....	48	80
Increase in bank-note circulation, August 22 to December 3 .....	16	50
Reduction in cash held by the state banks and trust companies of New York City, August 22 to December 19 .....	19	19
Total .....	218	296

New York City. In other words, the banks outside of the metropolis participated in the scramble for money and locked up what they laid hands on. This fact is brought out more clearly by Table 133. In Chicago, St. Louis, and the reserve cities the banks used their reserves, though timidly, to meet the demands for money; but in the smaller towns the very banks which were forcing substitutes for cash upon depositors increased their own holdings of lawful money.

<sup>13</sup> Response of the Secretary of the Treasury to Senate Resolution no. 33 of December 12, 1907 (60th Congress, 1st session, Senate Doc. 208), pp. 14, 15.

TABLE 133

CASH RESERVES AND NET DEPOSITS WITH RESERVE AGENTS HELD BY THE NATIONAL BANKS OF DIFFERENT CLASSES  
ON AUGUST 22 AND DECEMBER 3, 1907

	In millions of dollars Central reserve cities			Reserve cities \$	Country banks \$
	New York \$	Chicago \$	St. Louis \$		
Cash reserves					
August 22.....	218.8	66.1	26.8	190.3	199.6
December 3.....	177.1	54.0	21.0	162.6	246.0
Gain (+) or loss (—).....	— 41.7	—12.1	— 5.8	— 27.7	+ 46.4
Percentage of reserves	%	%	%	%	%
August 22.....	26.5	25.2	23.0	13.4	7.6
December 3.....	20.5	23.1	19.6	12.9	9.9
Gain (+) or loss (—).....	— 6.0	— 2.1	— 3.4	— .5	+ 2.3
Net deposits with reserve agents				\$	\$
August 22.....	.....	.....	.....	166.5	410.0
December 3.....	.....	.....	.....	139.7	356.0
Gain (+) or loss (—).....	.....	.....	.....	— 26.8	— 54.0

From O. M. W. Sprague, *Crises under the National Banking System*, (Publications of the National Monetary Commission), pp. 305, 308, 309, 310. A slight mistake in Sprague's figures for the gain in cash by the country banks has been corrected by reference to the *Report of the Comptroller of the Currency, 1908*, p. 195.

### 3. *The Demoralization of the Markets for Loans and Investments*

This desperate scramble for cash threw the money market into confusion.

Business journals testify that collections were seriously interfered with, so that many business enterprises were temporarily deprived of the regular remittances of funds on which they had been counting to meet their current expenses and their financial obligations.

More precise information concerning the confusion which reigned in all matters pertaining to payments between different places is given by the following table of domestic rates of exchange. In ordinary times these rates fluctuate within limits set by the cost of shipping currency, including insurance and the loss of interest during transit. Even between San Francisco and New York 40 cents per thousand dollars is the usual shipping point, so long as paper money is available for remittance.<sup>14</sup> But in November, 1907, rates as high as \$2 prevailed in places so close to New York as Boston and Philadelphia. In some towns the extraordinary rates were premiums and in other towns discounts. The whole machinery for making payments was thrown out of gear for a month or two, and the resulting embarrassment to business houses and banks must have been severe.<sup>15</sup>

<sup>14</sup> Kemmerer, *op. cit.*, p. 118.

<sup>15</sup> Compare Sprague, *op. cit.*, pp. 291–297.

TABLE 134

RATES OF EXCHANGE ON NEW YORK IN VARIOUS CITIES DURING THE PANIC OF 1907

Week ending	Boston	Philadelphia	Cincinnati	Kansas City
October 26	\$ .25 discount	Par	\$ .25 discount	\$ .25 premium
November 2	.25 discount	.....	.50 discount	.25 premium
9	.30 premium	\$2.50 premium	Par- .25 discount	1.00 premium
16	1.50 premium	5.00 premium	Par- .60 discount	1.00 premium
23	2.00 premium	2.50-\$4.00 premium	Par- .60 discount	1.00 premium
30	Par	2.00- 3.00 premium	1.00 premium	1.00 premium
December 7	.25 discount	1.50- 2.50 premium	.30- .50 discount	1.00 premium
14	.30 discount	2.50 premium	.50 discount	1.00 premium
Successive weeks of	Chicago	St. Louis	New Orleans	San Francisco
October 1st	\$ .25 discount	\$ .75 discount	\$ .75 discount	\$ .20 premium
2nd	.20 discount	.45 discount	.35 discount	.60 discount
3rd	.20 discount	.60 discount	.35 discount	.70 discount
4th	.25 discount	2.00 discount	.75 discount	10.00 discount
November 1st	.25 discount	.30 discount	1.50 discount	7.50 discount
2nd	Par	2.50 premium	2.00 discount	Unsaleable
3rd	.25 premium	4.00 premium	1.50 discount	Unsaleable
4th	1.00 premium	6.00 premium	1.00 discount	Unsaleable
December 1st	1.00 premium	2.00 premium	.80 discount	5.00 discount
2nd	Par	2.00 premium	.40 discount	3.50 discount
3rd	Par	4.00 premium	.40 discount	4.00 discount
4th	.50 discount	3.00 premium	.75 discount	4.00 discount
5th	.50 discount	2.00 premium	.85 discount	

Data for the first four cities from Sprague, *History of Crises under the National Banking System*, pp. 291, 292; for the second four cities from Kemmerer, *Seasonal Variations in the Relative Demand for Money and Capital in the United States*, p. 372. In all cases the quotations are for \$1,000 of New York exchange.

Other anomalies were observed in the market for foreign exchange. It was fortunate for the country that few finance bills were outstanding when the panic broke out. In October, 1906, the Bank of England had been forced to advance its rate of discount to 6 per cent in order to check an outflow of gold to America. It took advantage of the occasion to warn the other London banks that the accepting of more finance bills for New York account would menace the stability of the local market. The monetary stringency of the following months in America was partly caused by this step. New York financiers were forced to settle for their old bills as they matured and could get no further advances of moment. Moreover, an unusually small amount of anticipatory bills had been drawn in the summer of 1907 against shipments of produce.

Hence, when the export movement of wheat and cotton began in the autumn, the proceeds of the bills of exchange were not required to settle old debts, but supplied credits against which gold could be demanded.<sup>16</sup> The panic also caused a rapid decline in imports of commodities, so that the favorable balance of payments on merchandise account reached unprecedented proportions.<sup>17</sup>

All this was highly favorable to the banks, and, as we have seen, enormous amounts of gold were imported—63 millions in November, 43 in December, and 10 in January. The curious feature of the situation was that these importations were made in the face of quotations for sterling bills high above the import point. Under ordinary circumstances the import point for sight exchange, with discount at 6 per cent, is about \$4.84¼ and the export point is about \$4.88.<sup>18</sup> Just before the panic, the actual rates for bankers' sight bills stood in the neighborhood of 4.86. In the first turmoil they dropped as low as 4.82¼ on October 26th—considerably below the import point. But a quick rally brought them up to 4.86¾—88 on November 2nd. During this whole month the lowest quotation was 4.85-85¼, while the highest quotation was 4.88½-4.88¾.<sup>19</sup> That is, tens of millions of gold were engaged for import at prices for bills always well above the import point and sometimes exceeding the export point. Of course, the explanation is that the importing banks could sell the gold "to arrive" at a premium of perhaps 1 to 3 per cent. It does not follow that the premium on currency facilitated imports; but simply that this premium affected the nominal prices of bills of exchange, when the bills were paid for in checks upon banks which were restricting withdrawals of cash.

On the Stock Exchange the panic wrought havoc with prices. Common stocks were most seriously depressed, but preferred stocks also fell heavily (Table 135). Even high-grade railway bonds sold off several points. The lowest prices in all classes of securities were touched in November. December brought a distinct rally, and January, the first month after the panic, showed higher prices for bonds and preferred stocks than September, the last month before the panic. Common stocks, however, were slower in recovering.

The one encouraging feature of the market was that sales at these low prices were not made on a large scale. During the severe liquidation of March, 1907, over 32 million shares of stock had changed hands in a single month. In October the sales were not much over half and in November less than a third

<sup>16</sup> Sprague, *op. cit.*, pp. 241 and 246.

<sup>17</sup> The imports and exports of merchandise were as follows:

	Imports	Exports	Balance
September .....	\$103,400,000	\$135,400,000	+\$32,000,000
October .....	111,800,000	180,400,000	+ 68,600,000
November .....	110,900,000	204,500,000	+ 93,600,000
December .....	92,300,000	207,100,000	+114,800,000
January .....	85,000,000	206,200,000	+121,200,000

Compiled from the *Monthly Summary of Commerce and Finance*.

<sup>18</sup> A. Strauss, "Gold Movements and the Foreign Exchanges," in *The Currency Problem and the Present Financial Situation*, a series of addresses delivered at Columbia University 1907-08, pp. 65-67.

<sup>19</sup> *Financial Review*, 1908, p. 59.

TABLE 135

PRICES AND VOLUME OF BUSINESS ON THE NEW YORK STOCK EXCHANGE DURING THE PANIC OF 1907

	Relative Prices of Bonds and Stocks Average actual prices 1890-99=100				Forty common stocks		
	Bonds of the West Shore R. R.	Ten railway bonds	Ten preferred stocks	Ten common stocks	Grand averages	Averages of highest relative prices	Averages of lowest relative prices
September	95.4	105.6	123.0	205.0	197.0	204	190
October	94.5	103.3	126.0	169.5	171.5	192	151
November	90.9	99.5	117.5	152.5	159.0	169	149
December	92.9	101.6	123.5	161.5	167.0	176	158
January	95.9	105.8	124.5	166.5	174.5	186	163

	Volume of Business Transacted Par Value of					
	Bonds sold <i>a</i>		Stocks sold <i>a</i>		Actual value of stocks sold <i>a</i>	Number of shares sold <i>b</i>
September	25	1088	902	12.2		
October	50	1551	1127	17.3		
November	63	849	617	9.7		
December	60	1072	779	12.6		
January	86	1396	1016	16.6		

*a*=in millions of dollars.  
*b*=in millions of shares.

Data concerning prices of securities from the Tables in Chapter IV, iii and iv above. Data concerning volume of business from the "Quotation Supplement" of the *Commercial and Financial Chronicle*, and the *Financial Review*.

of this volume. Doubtless the drastic decline of the spring and summer months had already forced most of the weaker holders to dispose of their stocks. In addition, the banks made considerable effort to sustain the market, first by contributing to the money-pools of October 24th and 25th, and, after clearing-house loan certificates had been issued, by refraining from forcing repayment of call loans, and by taking over loans called by the trust companies and out-of-town banks. Indeed, this policy of forbearance was compulsory. Brokers and their customers could not have found the money to settle had all the banks stopped lending on the one hand, and on the other called in their outstanding loans. And if the banks had endeavored to get back their money by selling the stocks pledged with them as collateral, the resulting fall of prices in a market where no one could borrow would have wiped out their margins of security and left them with heavy losses.

Judging from the comments of the press on the sudden increase in "odd-lot" sales, the purchasers at this season were largely small investors. The low prices offered tempting bargains to all who had funds available for payment. The bond sales were much heavier relatively than the sales of stocks, both because purchasers faced smaller risks in taking bonds under panic conditions, and because the slighter decline in price made the man who was forced to raise money by parting with his securities prefer to let bonds go rather than stocks.



The most violent manifestations of the panic appeared in the market for short-time loans. Unfortunately, we have statistics of discount rates for New York City alone.<sup>20</sup> The best compilation of these figures, that published in the *Financial Review*, is partially reproduced in the following table for the weeks preceding, during, and following the panic.

The exceedingly high rates for call loans are the most spectacular feature of this exhibit.<sup>21</sup> But we have seen that these rates did not force such a ruinous liquidation as might have been expected. In any case, the eccentricities of the call-loan rate possess less significance for general business than the demoralization of the market for time loans and commercial paper.

TABLE 136

Weeks ending		RATES OF INTEREST IN NEW YORK DURING THE PANIC OF 1907												
		Call Loans					Time Loans				Commercial paper			
		Premium on currency	At Stock Exchange		At Banks and Trust Co's.	60 days		90 days	4 mos.	6 mos.	Choice 60-90 days	Prime 4-6 mos.	Good 4-6 mos.	
Range	Range	Average	Minimum	Range	Range	Range	Range	Range	Range	Range	Range			
1907	October	4	.....	3 - 10	5	3	5½ - 6	6 - 6½	6 - 6½	6 - 6½	7	7	.....	
		11	.....	2½ - 6	5	3	6 - 6½	6½ - 7	6½	6	7 <sup>s</sup>	7 <sup>s</sup>	7 - 7½ <sup>s</sup>	
		18	.....	2¼ - 10	5	3	6	6½	6	6	7 <sup>s</sup>	7 - 7½ <sup>s</sup>	7½ <sup>s</sup> +	
		25	.....	5 - 125	40	6	6½ - 7 <sup>4</sup>	6½ - 7 <sup>4</sup>	6½ - 7 <sup>4</sup>	6 <sup>4</sup>	7 - 7½ <sup>s</sup>	7 - 7½ <sup>s</sup>	.....	
	November	1	1 - 3	3 - 75	50	3	12 - 16	12 - 16	No business	No business				
		8	1 - 4	4 - 25	22	3	.....	12 - 15	No business	7 - 7½ <sup>s</sup>	7 - 7½ <sup>s</sup>	.....		
		15	2½ - 4	5 - 15	10	3	12 - 15	12 - 15	No business	7 - 7½ <sup>s</sup>	7 - 7½ <sup>s</sup>	.....		
		22	1½ - 3½	3½ - 15	10	3	12 - 15	12 - 15	No business	No business				
		29	¾ - 1¾	3 - 12	7	3	.....	12 - 15	No business	8	8	.....		
	December	6	½ - 2	3 - 13	6	3	No regular rates: All business by special agreement							
		13	½ - 1½	2 - 25	18	3	8 - 10	8 - 10	8	7 - 8	8 <sup>s</sup>	8 <sup>s</sup>	.....	
		20	½ - 1¼	6 - 17	12	3	12	10	8	6 - 7	8 <sup>s</sup>	8 <sup>s</sup>	.....	
		27	¼ - 1¼	6 - 25	20	3	12	10 - 12	.....	7½ - 8	8 <sup>s</sup>	8 <sup>s</sup>	.....	
		31 <sup>1</sup>	½ - ¾	5 - 20	17	3	10	10	6	.....	8	8	.....	
	1908	January	3 <sup>2</sup>	.....	5 - 20	10	.....	10	10	7	6	8	8	.....
		10	.....	2 - 9	6	4	6½	6	6	6	6	6¾ - 7½	6¾ - 7½	.....
		17	.....	2½ - 6	4	3	5¼ - 5½	5¼ - 5½	5¼ - 5½	5½ - 6	6½ - 7	6½ - 7	7½	
		24	.....	1½ - 3	2	1½	4	4½	4½	5	5½	6 - 6½	6½ - 7	
		31	.....	1½ - 2	1¾	1½	3 - 3½	3 - 3½	4½	4½	5½ - 6	5½ - 6	6 - 6½	

<sup>1</sup> Covers business for last two days of year.

<sup>2</sup> Covers business for first three days of year.

<sup>3</sup> Banks and trust companies out of the market.

<sup>4</sup> Nominal rates; no offerings.

<sup>5</sup> Quotations entirely nominal; no business.

(From the *Financial Review*, 1909, pp. 40, 41.)

<sup>20</sup> *Bradstreet's*, indeed, publishes the nominal rates of discount in a number of cities; but Table 136 shows that nominal rates are not trustworthy indices of money-market conditions during a panic. For that reason it would be vain to compile the figures for other towns.

<sup>21</sup> The statement made in the table that the banks and trust companies were out of the call-loan market from the last week of October to the end of the year does not mean that they lent no money on call. They did lend perforce at the "money post" on the Stock Exchange, though not over their own counters. Compare Mr. T. F. Woodlock's excellent paper on "The Stock Exchange and the Money Market," in *The Currency Problem and the Present Financial Situation*, a series of addresses delivered at Columbia University, 1907-08.

Rates of 12 per cent and over are bad enough, but far worse are the entries "no business" and the footnotes which explain that the quotations in the table are purely nominal, because no loans were being made.<sup>22</sup> At a pinch, the merchant and the manufacturer may be able to pay 10-15 per cent for loans during a month or two. Not to be able to get loans at all is a far worse plight. And many enterprises must have found themselves in this predicament for six or eight weeks. No doubt most of the strong banks "took care of" such regular customers as seemed to be really solvent. But the enterprises which relied largely for loans upon selling their commercial paper through note brokers had no such protection.

Further light is thrown on the extreme stringency of the money market during the panic by the following data concerning the clearing-house banks in New York, Boston, Philadelphia, Chicago, St. Louis, New Orleans, and San Francisco. The New York banks increased their loans more than 10 per cent in the very height of the panic; in Boston and Philadelphia the changes were slight; but in the other cities the banks contracted loans, slightly in St. Louis, heavily in Chicago, New Orleans, and San Francisco. The exceptional action of the New York banks is accounted for by the facts that the trust companies were compelled to liquidate loans whenever possible, and that the outside banks followed the same course. "These two groups of lenders more than exhausted the possibilities of contraction in New York, and a part of their loans had to be taken over by the clearing-house banks to prevent a general disaster."<sup>23</sup> Of course, the extreme reluctance of the banks to make new or even to extend old loans aggravated the panic among business men who needed to borrow.

Deposits fell off faster than loans were contracted in Chicago, St. Louis, and San Francisco. It might be expected that the difference would be accounted for by a reduction of reserves. But such is not the case. Even where reserves declined, the loss of cash is not sufficient to sustain the theory that the banks were paying off depositors in cash taken from their vaults. If such withdrawals were permitted on a considerable scale, despite the restriction of payments, they were more than offset with funds imported from Europe, obtained from New York, or raised by selling bonds. In New Orleans the decline of deposits was very slight, and in New York deposits increased some \$63,000,000 in the first four weeks of the panic. This increase was due to the expansion of loans by \$115,000,000. The difference between these two sums—\$52,000,000—is nearly equalled by the concomitant drop of \$49,000,000 in the reserve.

Finally, the table shows again how tenaciously the banks held to their cash in the face of the most urgent demands from their customers. Though the

<sup>22</sup> Probably the 60- and 90-day loans made at 12 per cent and over in November went largely to stock-brokers, who usually carry half or more of their loans on time, and depend on call money for the balance. Some of these time loans to brokers had to be renewed during the panic, as part of the plan to forestall worse things on the Stock Exchange.

<sup>23</sup> Sprague, *op. cit.*, p. 300. Compare Chapter VII, i, above.

TABLE 137

LOANS, DEPOSITS, AND RESERVES OF THE CLEARING-HOUSE BANKS OF NEW YORK, BOSTON, PHILADELPHIA, CHICAGO,  
ST. LOUIS, NEW ORLEANS, AND SAN FRANCISCO, DURING THE PANIC OF 1907

In millions of dollars

Week ending	New York City				Chicago			
	Loans \$	Deposits \$	Reserves		Loans \$	Deposits \$	Reserves	
			Amount \$	Ratio %			Amount \$	Ratio %
October 5	1089	1037	262	25.3	279.7	405.2	62.7	15.5
12	1083	1026	261	25.5	276.7	402.8	62.8	15.6
19	1077	1026	268	26.1	277.1	398.9	59.0	14.8
26	1088	1024	255	24.9	279.3	391.6	54.5	13.9
November 2	1148	1052	224	21.3	276.0	384.3	53.9	14.0
9	1187	1087	220	20.2	271.2	376.8	55.7	14.8
16	1192	1089	219	20.1	270.8	372.4	55.8	15.0
23	1188	1080	216	20.0	265.1	370.5	58.1	15.7
30	1198	1083	218	20.1	261.1	371.1	63.8	17.2
December 6	1186	1075	223	20.7	258.0	369.8	65.3	17.7
13	1175	1067	227	21.2	255.0	363.4	65.6	18.1
20	1165	1059	233	22.0	252.5	363.2	66.5	18.3
27	1148	1051	243	23.1	250.2	358.9	69.0	19.2
January 4	1133	1048	251	23.9	247.3	363.3	71.5	19.7
11	1117	1052	269	25.6	244.0	371.8	74.8	20.1
18	1127	1090	295	27.1	243.5	381.2	76.0	19.9
25	1136	1127	319	28.3	246.3	389.5	77.4	19.9

TABLE 137—(Continued)

LOANS, DEPOSITS, AND RESERVES OF THE CLEARING-HOUSE BANKS OF NEW YORK, BOSTON, PHILADELPHIA, CHICAGO,  
ST. LOUIS, NEW ORLEANS, AND SAN FRANCISCO, DURING THE PANIC OF 1907

In millions of dollars

Week ending	Boston				Philadelphia			
	Loans \$	Deposits \$	Reserves		Loans \$	Deposits \$	Reserves	
			Amount \$	Ratio %			Amount \$	Ratio %
October 5	190.3	214.8	21.6	10.1	224.3	252.9	54.7	21.6
12	190.8	213.3	21.6	10.1	223.0	251.3	53.6	21.3
19	191.7	224.2	22.4	10.0	222.0	254.8	55.6	21.8
26	191.2	222.1	22.8	10.3	219.8	246.3	52.7	21.4
November 2	192.5	222.2	20.8	9.4	219.6	236.2	47.4	20.1
9	191.5	214.7	19.9	9.3	221.2	233.8	45.9	19.6
16	190.9	217.7	19.2	8.8	222.2	233.3	44.8	19.2
23	190.4	213.7	18.6	8.7	223.0	230.7	44.8	19.4
30	190.7	212.1	17.1	8.1	224.2	231.2	44.5	19.2
December 6	191.9	214.7	17.4	8.1	224.4	230.2	44.8	19.5
13	190.6	211.3	18.2	8.6	224.8	230.5	43.0	18.7
20	189.5	209.4	19.3	9.2	224.8	229.5	43.1	18.8
27	190.1	210.0	20.5	9.8	225.1	231.1	43.3	18.7
January 4	191.1	218.9	21.9	10.0	224.6	235.3	45.7	19.4
11	188.9	216.3	23.8	11.0	223.1	233.9	46.5	19.9
18	188.6	216.0	25.1	11.6	222.9	235.5	48.1	20.4
25	188.1	210.3	25.8	12.3	221.4	234.1	50.0	21.4

TABLE 137—(Continued)

LOANS, DEPOSITS, AND RESERVES OF THE CLEARING-HOUSE BANKS OF NEW YORK, BOSTON, PHILADELPHIA, CHICAGO, ST. LOUIS, NEW ORLEANS, AND SAN FRANCISCO, DURING THE PANIC OF 1907

		St. Louis				New Orleans			
				Reserves				Reserves	
Week ending		Loans \$	Deposits \$	Amount \$	Ratio %	Loans \$	Deposits \$	Amount \$	Ratio %
October	5	171.7	203.4	24.9	12.1	65.9	54.8	5.4	9.9
	12	168.2	200.6	23.9	11.9	66.2	54.3	4.8	8.8
	19	168.4	198.4	22.0	11.0	66.5	52.7	4.4	8.3
	26	167.8	194.5	22.4	15.2	66.0	53.3	5.1	9.6
November	2	167.3	189.0	21.3	11.3	65.8	52.8	4.6	8.7
	9	167.4	188.8	21.7	11.5	64.9	52.9	5.0	9.5
	16	168.1	188.6	23.9	11.5	64.8	52.9	5.5	10.4
	23	167.1	186.9	24.8	13.2	62.5	53.1	5.6	10.5
	30	166.4	187.0	25.6	13.6	62.3	52.9	5.9	11.2
December	6	166.7	186.7	25.7	13.8	62.0	52.1	5.8	11.0
	13	166.1	186.5	26.0	13.9	61.3	52.0	5.6	10.8
	20	165.3	185.1	26.2	14.2	60.3	51.5	6.1	11.8
	27	163.1	184.3	26.8	14.5	59.1	51.9	6.2	11.9
January	4	162.4	182.6	26.0	14.3	60.3	51.5	6.1	11.8
	11	160.3	181.0	26.4	14.4	59.1	51.9	6.2	11.9
	18	157.5	180.4	26.7	14.2	58.2	51.6	6.3	12.2
	25	154.1	176.6	27.2	15.3	57.3	51.5	6.0	11.7

TABLE 137—(Concluded)

LOANS, DEPOSITS, AND RESERVES OF THE CLEARING-HOUSE BANKS OF NEW YORK, BOSTON, PHILADELPHIA, CHICAGO, ST. LOUIS, NEW ORLEANS, AND SAN FRANCISCO, DURING THE PANIC OF 1907

		San Francisco			
				Reserves	
Weeks ending		Loans \$	Deposits \$	Amount \$	Ratio %
October	5	93.0	108.2	13.8	12.8
	12	93.3	108.3	13.1	12.1
	19	94.6	111.0	13.7	12.3
	26	93.4	108.3	12.0	11.1
November	2	90.1	99.5	12.0	12.1
	9	88.8	96.1	11.3	11.8
	16	89.1	94.3	12.5	13.2
	23	88.0	92.7	14.0	15.1
	30	87.1	91.4	15.3	16.7
December	6	86.3	90.3	15.7	17.4
	13	85.5	90.5	16.7	18.5
	20	85.0	90.1	17.9	19.9
	27	84.1	89.7	17.8	19.8
January	4	83.5	91.7	17.7	17.7
	11	82.6	92.0	18.6	20.2
	18	82.2	92.5	19.5	21.1
	25	81.1	92.7	19.5	21.0

Compiled from E. W. Kemmerer, *Seasonal Variations in the Relative Demand for Money and Capital in the United States*. (Publications of the National Monetary Commission). Pp. 258, 264, 269, 274, 275. The data for Boston and Philadelphia are compiled from the *Commercial and Financial Chronicle*.

New York banks displayed great nervousness in restricting payments, their course was bolder than that pursued by the banks in these other cities, with the exception of Boston and Philadelphia. After losing a relatively small sum in the first or second week of the panic, the banks of Chicago, St. Louis, New Orleans, and San Francisco all began to gain once more. By the end of November their percentages of reserve were higher than in the weeks preceding the panic. Had the New York banks set the example of attempting to quiet the panic by meeting all demands in full, it is probable that the scramble for cash would never have assumed great dimensions and that the banks in other towns would have been able to maintain the same policy. But with restriction begun in New York, a timid policy may have been compulsory upon the banks in smaller places.

Concerning the policy pursued by banks in other towns, our information is slight. The last report of the national banks before the panic was made August 22, and the next report not until December 3. The changes between these two dates cannot with confidence be ascribed to the effect of the panic. The drift of this evidence, however, indicates that a moderate contraction of loans was practiced throughout the country, while deposits everywhere fell much more rapidly than loans. It has already been shown that reserves decreased a little in most of the reserve cities and increased in the country districts.<sup>24</sup>

#### 4. *The Reaction of Monetary Stringency upon General Business*

On the one side, the panic intensified the process of liquidation—that is, the process of forcing the settlement of outstanding accounts. On the other side, it made the raising of money extremely difficult. The restriction of payments by the banks, the slowness of collections, the confusion of domestic exchanges, the fall in the prices of securities, the demoralization of the discount market, and the contraction of bank loans, one and all added to the troubles of debtors who were being pressed for payment.

An increase in the number of business failures resulted. Table 138 shows, however, that this increase was not very great during the weeks when the panic was at its worst. On the other hand, the number increased as the panic relaxed after the first of the year. The explanation is partly that banks and other lenders made special efforts to allay distrust so long as the danger was most threatening, and partly that the January 1st settlements brought affairs to a head with many weakened firms.

It has already been shown that just before and during a crisis the increase in the liabilities of firms which fail is more rapid than the increase in their

<sup>24</sup> See Table 133, and compare Sprague, *op. cit.*, pp. 303-313.

TABLE 138

WEEKLY NUMBER OF BUSINESS FAILURES IN THE UNITED STATES DURING THE PANIC OF 1907, COMPARED WITH THE NUMBERS IN THE CORRESPONDING WEEKS OF FOUR PRECEDING YEARS

Weeks ending	1907	Corresponding weeks in			
		1906	1905	1904	1903
October 3	177	136	189	195	197
10	192	192	183	196	203
17	194	170	178	227	216
24	220	184	178	180	217
31	223	163	160	200	216
November 7	226	146	166	184	250
14	259	222	198	190	234
21	265	212	224	193	167
28	258	174	188	184	239
December 5	272	216	203	231	241
12	284	220	226	239	239
19	300	227	235	249	243
26	248	161	212	218	209
	1908	1907	1906	1905	1904
January 2	345	185	220	278	262
9	435	283	286	295	315
16	431	234	279	304	266
23	408	252	276	228	242
30	359	211	228	239	216

Compiled from *Bradstreet's*.

number.<sup>25</sup> Dun's figures by quarters (Table 139) bring out the facts clearly with reference to the panic of 1907. Still more striking would be the showing if bank suspensions were included with these commercial and manufacturing bankruptcies. But, as they stand, the figures show that the average size of the enterprises dragged down by a panic considerably exceeds the size of those which fail during prosperity or those which succumb after the panic has yielded to depression.

TABLE 139

THE NUMBER AND AVERAGE LIABILITIES OF BUSINESS FAILURES IN THE UNITED STATES

By quarters, 1907 and 1908			Number of failures	Average liabilities
Year	Quarter			
1907	1st quarter		3,136	\$10,228
	2nd quarter		2,471	15,173
	3rd quarter		2,483	18,714
	4th quarter		3,635	22,379
1908	1st quarter		4,909	15,422
	2nd quarter		3,800	12,805
	3rd quarter		3,457	15,997
	4th quarter		3,524	12,099

*Dun's Review*, January 8, 1910, p. 11.

<sup>25</sup> See Chapter IX, ii, 1, above.

This result follows from a change in the relative importance of the causes which bring about failure. For years *Bradstreet's* has endeavored to ascertain the leading reason for every failure it records. Lack of capital and incompetence usually account for more than half the cases, while fraud, inexperience, etc., bring up the proportion "due to the faults of those failing" to about four-fifths. In a panic, however, failures which are "not due to the faults of those failing," but to failure of others, competition, or what *Bradstreet's* calls "specific conditions" become, if not more numerous relatively, more important financially. Thus in the prosperous years 1905 and 1906 about a quarter of the defaulted liabilities were ascribed to causes beyond the control of the failing firms, while in 1907 this proportion increased to more than one-half, and in 1908 remained above one-third.<sup>26</sup> During a panic a considerable number of large concerns, furnished with adequate capital and well managed, are among the victims of these unfortunate conjunctures, and it is primarily their fall which swells the average liabilities.

On commodity prices panic has a sharply depressing influence. It was brought out in the closing section of Chapter XI that several groups of commodities had passed their maximum prices several months before the panic of 1907 began. Raw mineral products began to decline after February, raw forest products after April, 20 miscellaneous raw materials after May, and goods manufactured from them after June. June also marked the turning point for all the producers' goods for which we have data. On the other hand, raw animal and farm products, especially subject to seasonal influences, rose after midsummer to maxima in October.<sup>27</sup> Consumers' goods also rose until October and did not begin to decline until December, while the retail prices of foods rose slightly during the panic itself.

Thus, upon most classes of wholesale prices the influence of the panic was limited to accelerating a fall already in progress, or to diminishing the effect of seasonal conditions which tended toward an advance. It is probable, how-

<sup>26</sup> Though it is difficult to discover and classify the causes of all bankruptcies, *Bradstreet's* figures possess great interest as a pioneering effort in an important field of enquiry. Rearranged for the sake of greater convenience, the data for 1904-08 are as follows:

	Percentage of Number of Failures					Percentage of Liabilities				
	1908	1907	1906	1905	1904	1908	1907	1906	1905	1904
Faults of those failing										
Lack of capital	34.2	37.1	35.9	33.4	32.2	27.2	18.4	30.9	33.0	32.0
Incompetence	21.6	22.6	22.3	24.4	23.1	16.0	8.9	15.5	21.6	14.1
Fraud	11.5	10.1	10.0	9.2	8.6	6.9	5.1	16.2	8.2	6.4
Inexperience	4.0	4.9	4.9	4.8	5.1	1.8	3.2	2.2	2.1	3.2
Unwise credits	2.0	2.3	2.6	3.5	3.4	3.7	3.1	2.1	4.2	4.8
Neglect	2.2	2.5	2.2	2.9	3.1	.8	.5	1.5	1.1	1.6
Extravagance	1.0	.9	1.0	1.1	.8	.9	.5	.9	1.2	.7
Speculation	1.0	.7	.8	.7	.8	4.7	4.9	3.6	7.7	5.3
<b>Total</b>	<b>77.5</b>	<b>81.1</b>	<b>79.7</b>	<b>80.0</b>	<b>77.1</b>	<b>62.0</b>	<b>44.6</b>	<b>72.9</b>	<b>79.1</b>	<b>68.1</b>
Not faults of those failing										
Specific conditions	18.9	16.3	17.3	16.3	19.1	31.3	51.7	17.9	15.5	22.7
Failure of others	1.8	1.4	2.0	2.2	2.5	5.0	3.3	8.8	4.5	8.2
Competition	1.8	1.2	1.0	1.5	1.3	1.7	.4	.4	.9	1.0
<b>Total</b>	<b>22.5</b>	<b>18.9</b>	<b>20.3</b>	<b>20.0</b>	<b>22.9</b>	<b>38.0</b>	<b>55.4</b>	<b>27.1</b>	<b>20.9</b>	<b>31.9</b>

<sup>27</sup> For animal products, however, this maximum was less than that of the preceding February.

TABLE 140  
RELATIVE PRICES OF COMMODITIES IN 1907 AND 1908. BY MONTHS

	Prices at Wholesale in the United States											
	Retail prices of foods (1)	Con- sumers' goods (2)	Pro- ducers' goods (3)	Raw ma- terials (4)	Manu- factured articles (5)	Raw materials				145 Com- modities (10)	Brad- street's index No. (11)	Eng- land Sauer- beck (12)
						Min- eral (6)	Forest (7)	Animal (8)	Farm (9)			
1907												
January	120	116	140	144	130	146	170	145	124	127	8.9	80
February	120	117	142	147	131	148	171	145	127	129	9.0	81
March	119	117	143	147	133	146	174	136	131	129	9.1	80
April	119	115	143	146	134	143	177	133	127	129	9.0	81
May	119	116	144	149	135	144	174	131	134	130	8.9	82
June	119	116	144	148	136	143	171	130	138	130	9.0	82
July	120	117	142	146	135	141	170	131	134	130	9.0	81
August	120	120	141	144	132	137	170	135	131	130	8.9	79
September	122	122	141	148	134	134	168	137	135	131	8.8	79
October	123	125	138	148	134	131	164	142	141	132	8.9	79
November	123	125	134	139	133	128	162	136	135	129	8.7	77
December	124	123	130	135	129	122	153	130	135	126	8.5	76
1908												
January	.....	120	128	136	129	120	151	125	136	124	8.3	76
February	.....	118	128	131	128	119	153	120	134	123	8.1	75
March	.....	118	127	134	127	120	151	120	136	122	8.0	74
April	.....	117	127	133	127	119	154	122	134	122	8.1	74
May	.....	115	123	132	125	118	153	119	136	121	8.0	74
June	.....	114	123	129	123	116	148	121	136	119	7.7	73
July	.....	115	124	131	122	116	148	128	137	120	7.8	73
August	.....	114	124	135	121	118	146	131	135	120	7.9	72
September	.....	113	123	135	122	117	146	136	129	119	7.9	73
October	.....	113	124	133	121	118	151	140	130	120	8.0	72
November	.....	113	125	134	121	120	153	144	128	120	8.1	72
December	.....	115	126	136	123	121	157	147	129	121	8.2	72

Column (1) is from the Bulletin of the Bureau of Labour, July, 1908, p. 187—"simple average"; columns (2) and (3) are from Table 4 above; columns (4) and (5) are from Table 5 above; columns (6), (7), (8), and (9) from Table 7; column (10) from the materials used in making Table 7—"grand totals" of all commodities raw and manufactured; column (11) from Bradstreet's, and column (12) from the Journal of the Royal Statistical Society.

ever, that the recorded quotations from which the index numbers are computed fail to show the full severity of the reaction in commodity markets. For there are broad hints in the contemporary issues of the financial periodicals that heavy reductions from list prices were quietly made in private negotiations by overstocked houses, as one means of raising money.<sup>28</sup>

<sup>28</sup> The changes in the general index numbers which include many commodities of different classes are less illuminating than these detailed figures. For the points of time which such series as those published by the Bureau of Labor, Bradstreet's, and Sauerbeck mark as the beginning of recession clearly depend upon the proportionate representation allowed to consumers' and producers' goods, to manufactured articles and raw materials, and to the raw products of the mines, forests, and farms. Thus the Bureau of Labor's index number puts the maximum price in October, 1907, and Bradstreet's index number in March, primarily because the former includes relatively more manufactured goods than the latter.

The total volume of general business continued to increase slowly for some time after the recession of wholesale prices had begun. Such at least is the conclusion suggested by the statistics of bank clearings given in the next three tables. Owing to the influence of seasonal factors upon the clearings, the comparisons made between corresponding periods in 1907 and 1906 possess more significance than comparisons between successive months or weeks of 1907.

So far as New York is concerned, clearings in 1907 ran steadily behind the records of 1906 except in March and July. But most, if not all, of the decline was due to dullness upon the Stock Exchange.<sup>29</sup> It is impossible, however, to segregate the clearings which originate in the sales of stocks and bonds from those which originate in other transactions, so that we cannot be certain that the volume of general business in New York was less before the panic in 1907 than it was in the preceding year of high prosperity.<sup>30</sup> Outside of New York, it was certainly greater in every month of the year until November, if the clearings may be trusted as an index. But after midsummer the gains were considerably smaller than they had been in April to July, and probably would have turned presently into moderate losses, even had the crisis not become a panic.

TABLE 141

## BANK CLEARINGS IN NEW YORK AND OUTSIDE OF NEW YORK IN 1906 AND 1907

	By months In millions of dollars				1907 compared with 1906	
	New York		Outside New York		Gain (+) or loss (—) New York      Outside New York	
	1906	1907	1906	1907	New York	New York
January	11,239	9,638	5,095	5,383	-1,601	+ 288
February	8,324	7,332	4,153	4,461	- 992	+ 308
March	8,377	9,562	4,630	5,063	+1,185	+ 433
April	8,543	7,668	4,359	4,969	- 875	+ 610
May	8,793	7,335	4,444	5,047	-1,458	+ 603
June	7,816	6,369	4,433	4,767	-1,447	+ 334
July	7,256	7,312	4,392	5,037	+ 56	+ 645
August	8,834	6,891	4,310	4,637	-1,943	+ 327
September	8,314	6,030	4,199	4,522	-2,284	+ 323
October	9,344	8,196	5,206	5,584	-1,148	+ 378
November	8,608	5,500	5,048	4,159	-3,108	- 889
December	9,227	5,350	5,058	4,057	-3,877	-1,001

Compiled from the *Financial Review*.

<sup>29</sup> The exceptional gain of clearings in March enforces this opinion; for this was the only month in the year when the number of shares sold in 1907 was greater than in 1906. See the table in the *Financial Review*, 1908, p. 35.

<sup>30</sup> The slight excess of the July clearings in 1907 occurred in the face of a decline in the number of shares sold from 16.3 to 12.8 millions.

TABLE 142  
BANK CLEARINGS IN VARIOUS CITIES DURING THE PANIC OF 1907

		In millions of dollars								
Weeks ending	New York	Outside New York	Chicago	Boston	Philadelphia	St. Louis	Pittsburg	San Francisco	Baltimore	
	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
October	3	1724	1176	259	159	149	64.5	55.6	45.0	31.2
	10	1580	1141	249	144	130	67.7	50.0	44.3	32.8
	17	1778	1257	271	172	152	76.2	52.3	47.3	29.6
	24	1948	1247	265	171	151	73.2	55.3	43.7	32.8
	31	1846	1176	244	178	152	61.5	52.7	40.6	31.7
November	7	1357	1029	208	138	122	55.9	46.9	.....	26.4
	14	1373	994	200	138	125	55.5	51.9	30.9	29.0
	21	1316	970	198	137	118	57.8	49.6	28.0	28.0
	28	981	749	153	94	95	45.1	44.8	20.6	20.5
December	5	1455	1017	205	131	139	60.5	55.2	30.3	27.3
	12	1320	952	191	125	110	58.8	47.6	29.2	26.3
	19	1243	951	191	124	117	58.0	45.3	31.2	26.0
	26	1031	792	166	100	95	50.2	42.0	24.5	20.0
January	2	1062	844	168	131	103	53.1	43.5	26.0	19.7
	9	1545	1071	213	152	131	65.5	48.4	32.6	28.3
	16	1674	1055	216	168	122	61.7	42.8	34.4	26.2
	23	1664	1054	229	161	123	62.8	44.9	35.1	25.5
	30	1345	942	214	132	104	57.1	44.8	33.3	24.3

		Kansas City	Cincinnati	New Orleans	Minneapolis	Cleveland	Detroit	Louisville	Los Angeles	Omaha
		\$	\$	\$	\$	\$	\$	\$	\$	\$
October	3	37.7	26.4	17.7	29.9	19.8	14.5	14.1	10.4	11.6
	10	39.9	25.8	17.7	32.4	17.2	13.0	13.1	11.2	12.9
	17	39.6	27.5	19.0	36.9	20.3	14.9	13.9	12.9	13.5
	24	40.9	27.5	20.4	36.0	17.7	14.8	13.4	11.2	12.7
	31	39.5	24.6	19.6	29.2	17.4	14.3	14.4	9.0	13.7
November	7	34.5	23.5	18.4	24.8	15.9	14.0	11.5	9.7	10.2
	14	31.1	21.3	18.7	22.5	16.7	13.2	10.2	9.2	10.4
	21	29.2	21.7	19.5	23.2	15.9	14.2	9.1	8.7	10.5
	28	23.6	16.8	15.5	19.4	12.2	10.7	7.1	6.1	8.3
December	5	26.7	22.6	22.9	26.5	15.4	12.7	10.7	7.3	10.3
	12	29.2	20.7	21.6	25.3	15.0	13.9	8.9	9.9	10.7
	19	31.1	21.9	23.2	24.2	15.3	13.6	9.0	7.2	10.5
	26	25.7	17.9	19.8	19.6	13.0	10.7	7.6	5.8	9.4
January	2	25.5	19.9	20.7	19.5	12.7	11.1	8.1	6.4	8.5
	9	33.1	29.8	20.9	23.4	18.6	14.1	11.6	8.9	11.3
	16	34.9	27.0	22.2	22.9	16.1	13.2	11.8	9.6	12.9
	23	34.9	25.2	22.7	20.9	17.4	13.9	11.7	9.4	11.7
	30	32.7	24.1	18.1	18.6	14.7	11.3	11.0	7.6	11.0

Compiled from *Bradstreet's*.

TABLE 143

PER CENT OF INCREASE (+) OR DECREASE (—) OF BANK CLEARINGS IN VARIOUS CITIES DURING THE PANIC OF 1907 IN COMPARISON WITH THE CLEARINGS OF CORRESPONDING WEEKS IN THE PRECEDING YEAR

Weeks ending	New York %	Outside New York %	Chicago %	Boston %	Philadelphia %	St. Louis %	Pittsburg %	San Francisco %	Baltimore %
October 3	—24.8	+ 4.2	+16.2	— 6.5	—12.2	+14.3	+ 1.3	— 8.4	+ 8.2
10	—21.3	+ 3.6	+14.7	—17.4	— 4.5	+14.2	+ 6.6	+ 1.4	+13.5
17	—17.8	+ 5.6	+20.2	—11.0	— 8.6	+21.9	+ 8.8	+ 3.3	— 2.5
24	— 7.7	+12.6	+20.1	— 3.0	+ 1.9	+22.3	+ 7.9	— 2.2	+21.2
31	+ .7	+ 8.5	+13.8	+ 9.7	+ 1.0	+ 6.0	+ 2.2	—14.8	+ 8.2
November 7	—24.9	— 6.1	— 3.0	—13.3	—14.7	+ .1	+ 1.7	.....	.....
14	—35.1	—19.0	—15.3	—21.2	—22.0	—18.0	— 1.8	—82.4	— 8.3
21	—42.3	—19.9	—18.6	—26.9	—25.8	—13.4	— 5.8	—48.1	—10.2
28	—39.7	—20.6	—18.9	—30.6	—27.7	—16.6	— .8	—48.7	—15.7
December 5	—37.5	—21.3	—22.7	—29.5	—23.2	—10.6	— 4.6	—46.6	—19.0
12	—38.9	—18.1	—14.4	—26.0	—27.7	—11.3	—12.0	—36.6	—14.7
19	—48.2	—20.0	—20.3	—30.9	—26.0	— 9.6	—11.2	—30.8	—19.8
26	—43.5	—20.2	—17.9	—28.3	—29.1	— 8.5	—14.7	—35.4	—24.8
January 2	—48.1	—25.0	—25.8	.....	—33.2	—13.2	—16.9	—41.7	—34.6
9	—31.1	—13.4	—10.7	—23.7	—17.0	— 3.9	—12.7	—28.0	—10.6
16	—23.7	—15.6	— 9.2	—29.7	—17.7	—10.9	—19.0	—26.4	—15.8
23	—25.2	— 8.3	— .7	—17.7	—14.4	— 3.1	—18.1	—25.3	—11.4
30	—28.0	—13.1	— 6.2	—18.6	—28.5	— 1.3	—18.8	—26.4	—17.1

	Kansas City %	Cincinnati %	New Orleans %	Minneapolis %	Cleveland %	Detroit %	Louisville %	Los Angeles %	Omaha %
October 3	+36.8	+ 1.7	—13.7	+12.4	+ 9.6	+10.1	+ 9.2	—12.0	+10.9
10	+37.9	+ 5.7	—28.5	+19.5	+ 1.1	+ 5.6	+ 7.3	— 2.1	+13.0
17	+26.4	— 4.5	—17.6	+24.4	+ 2.9	+ 6.6	+ 7.1	+10.1	+18.3
24	+36.7	+10.8	—16.6	+45.1	+14.6	+26.4	+ 8.6	+ 1.0	+25.9
31	+36.8	— 2.1	— 6.0	+29.9	— 7.2	+20.9	+11.2	— 9.6	+39.5
November 7	+20.7	—15.9	—32.1	— 8.0	— 4.6	+15.6	— 9.7	—17.1	+ 3.2
14	— 1.0	—16.7	—30.9	—19.9	—13.9	—34.1	—23.8	—35.6	+ 3.8
21	+ .6	—22.1	—29.8	+ .6	— 9.2	—40.5	—25.3	—30.9	+ .1
28	+ 2.0	—18.8	—31.4	— 2.0	— 7.5	—10.5	—25.0	—44.9	+ 1.5
December 5	—14.8	—19.8	—24.0	— 4.8	—14.3	—14.9	—22.2	—45.8	— 6.0
12	— 5.7	—19.5	—22.1	+ 2.9	—11.5	— 5.8	—33.9	—22.2	— 2.9
19	+ .4	—17.7	—16.8	+ 7.5	—20.5	— 9.2	—34.0	—47.9	—12.0
26	— 5.1	—19.3	—10.7	— 4.6	—15.2	—11.5	—31.3	—40.0	+ .8
January 2	— 5.4	—20.2	—11.9	+ 1.4	—32.9	—15.9	—36.5	—42.2	—10.0
9	— 1.1	— 6.9	—20.4	+11.9	— 7.2	— 4.9	—25.9	—32.9	+ 6.1
16	+ 4.4	—21.0	—16.6	+27.4	—14.2	—10.2	—22.3	—35.1	+18.4
23	+10.8	— 7.8	— 4.0	+24.4	+10.4	+ 2.6	— 8.5	—25.1	+17.1
30	+15.0	—10.5	—20.6	+21.5	—10.7	— 5.3	— 7.2	—36.7	+10.9

Compiled from *Bradstreet's*.

The detailed figures by weeks show that, just before the panic, Boston, Philadelphia, and New Orleans were running steadily behind their records of a year before, and that San Francisco and Los Angeles were barely keeping even. But the middle-western towns were still making gains sufficient to keep the totals for the country outside of New York above the totals of 1906.

The first effect of the panic in the great business centers of the East was to increase the volume of financial transactions, such as the sale of securities by embarrassed banks and individuals, the shifting of loans, etc. These transactions availed to put the clearings even of New York, Boston, and Philadelphia temporarily above the records of 1906. But business of more ordinary kinds was restricted with such promptness that the special panic operations cut little figure in the totals after the end of October. The eastern cities which had been running behind before the panic now showed losses of a quarter, a third, or even a half in comparison with the corresponding weeks of the year before. Still more surprising is the speed with which the trouble spread from New York to the Gulf and to the Pacific. The very first week of the panic showed lessened gains over 1906 or actual losses in a majority of the towns. From the third week of the panic to the end of the year the restriction of business, measured from the level of 1906, averaged about 20 per cent outside of New York and about 40 per cent in New York. Among the leading towns, Kansas City, Minneapolis, and Omaha fared least badly—perhaps because their industries are so largely concerned with foodstuffs. In general, the industrial sections of the east lost more heavily than the agricultural sections of the middle west; for the harvests were on the whole profitable to American farmers.

Notes in the business periodicals show clearly how this restriction in the volume of business was brought about. At the first hint of trouble from the banks, merchants began to limit their purchases. "Hand-to-mouth" buying became the order of the day. Wholesale dealers and manufacturers received telegrams cancelling orders already placed or asking for deferred deliveries. Other concerns found that they could not secure the specifications necessary for making up goods ordered on contracts. On the other hand, sellers often hesitated to ship goods, fearing lest the consignees should prove unable to pay. Not a few houses withdrew commercial travelers already in the field, and stopped soliciting orders for a time. Here and there inability to secure money for payrolls caused a temporary stoppage of work.

Such interruptions of the usual course of wholesale trade and manufacturing, with their reactions upon transportation, mining, and the like, became epidemic in the first fortnight of the panic. But retail trade continued to be reported "fair" for several weeks, especially in the middle west. No doubt the approach of the Christmas shopping season and of cold weather was largely responsible for sustaining the business of shopkeepers in 1907. But the same phenomenon was remarked upon in 1893, when the panic occurred in summer.

Retail trade, in fact, seems not to be curtailed seriously outside of the largest cities until a panic has closed many industrial enterprises, put others on short time, and led to the widespread discharge of wage-earners. Then, of course, the shopkeeper sees his sales fall off, as the wholesale merchant and manufacturer had several weeks earlier.

### III. A TYPICAL CRISIS—ENGLAND, 1907

Since our example of a panic is taken from American experience in 1907, our example of a crisis had best be taken from the simultaneous experience of England.

#### 1. *The Beginning of Reaction*

Definite signs that the business "boom" had passed its zenith appeared in England as early as midsummer, 1907, several months, that is, before the American panic occurred.

Among the symptoms of reaction which called forth contemporary comment were the following. British railway stocks fell in the first half of 1907 without any apparent reason save that investors were holding aloof.<sup>31</sup> A series of high-grade loans failed to find subscribers. The Bristol corporation, the Middlesex County Council, the East Indian Railway, and finally the Manchurian Railways, supported by an unconditional guarantee from the Japanese government, tried one after another to raise money and were "more or less cold-shouldered by the public."<sup>32</sup> While the shipbuilding yards were kept busy most of the year executing orders received in 1906 or even in 1905, their outlook for the future was dismal, since few new contracts were in sight.<sup>33</sup> The iron and steel trades were in a similar position. Though the mills were working at high tension for the moment, and though stocks of pig-iron were very low, the price of "Cleveland warrants" began falling in July, since both domestic and foreign demand for future delivery was declining.<sup>34</sup> Indeed, manufacturers were not anxious to take new business at the ruling quotations, because of the high cost of production. The *Economist* explained that the price of coal was "a crushing tax on present and prospective industry,"<sup>35</sup> and that producers of iron were practically trading at a loss in executing orders booked at a time when materials and fuel were much cheaper.<sup>36</sup> The building trades also were

<sup>31</sup> See the London *Economist*, vol. 65, pp. 1144, 1192, 1328.

<sup>32</sup> *Ibid.*, p. 1284. The failure of the Manchurian railway loan attracted especial attention because of the attractiveness of the terms offered—interest 5 per cent, subscription price 97, amount of issue £4,000,000. The underwriters included some of the strongest British banks, and the guarantee of principal and interest by the Japanese government seemed to afford good security.

<sup>33</sup> *Ibid.*, p. 1261.

<sup>34</sup> *Ibid.*, pp. 1138–1139.

<sup>35</sup> *Ibid.*, p. 1583.

<sup>36</sup> *Ibid.*, p. 1502.

dull in almost all sections of the country.<sup>37</sup> Among the railways, gross receipts grew steadily, but operating expenses grew faster, so that the ratio of net to gross receipts declined.<sup>38</sup> Sauerbeck's index number of prices at wholesale reached its summit in May, and fell in every subsequent month. After July town clearings in London ran in most weeks below the records of 1906. Imports began to show diminishing gains after April. Perhaps most significant of all the signs of reaction, the percentage of unemployment, which in every month since March, 1905, had been less than in the corresponding month of the year before, began in July, 1907, to run steadily higher than in 1906.<sup>39</sup>

By midsummer of 1907, then, the tide of British business began to recede, because prosperity had bred the stresses described in Chapter XI. But it was only in the markets and the industries most sensitive to coming events that the change was noticed. The current volume of business outside of the financial markets showed no slackening; for railways receipts continued to grow, country clearings in London and clearings in most of the provincial towns continued to exceed the high records of 1906, and exports showed no falling off in their rate of gain<sup>40</sup>. Nevertheless, the difficulties already present on the stock exchange and in the bond market, and definitely foreshadowed in shipbuilding, the iron trade, and the labor market were certain to extend in a short time over the whole field of business. The more acute difficulties experienced in foreign countries, then, did not cause the British crisis of 1907—they did no more than hasten its development and make it more severe.

## 2. *The Effect of Foreign Crises*

London's position as the world's free market for gold exposes British business in an exceptional degree to disturbance from financial troubles in other countries; and the exceptionally high ratio of foreign commerce to domestic trade in Britain makes her business exceptionally sensitive to depression among her customers. The year 1907 brought severe stresses from the first source, the year 1908 from the second.

Egypt had a serious crisis in the spring of 1907, South Africa in the late summer and early autumn, Holland in the first half of October, the United States and Hamburg in the second half, Portugal in November, and Chile in December.<sup>41</sup> Each of these disasters produced some effect upon the delicate

<sup>37</sup> The *Economist's* "Commercial History and Review of 1907," p. 1.

<sup>38</sup> *Economist*, vol. 65, p. 1499.

<sup>39</sup> Tables relating to clearings, imports, and unemployment are given on a later page.

<sup>40</sup> In England as in America the metropolitan clearings are a less faithful guide to the volume of business than country clearings. Even the town clearings in London show no decline if the figures for stock-exchange pay days and consols settling days be excluded. See the *Economist's* "Commercial History and Review of 1907," p. 3; for statistics of clearings and exports see Tables 147, 148, and 149.

<sup>41</sup> *Economist*, vol. 65, pp. 1138, 1583, 1755-56, 1814-15, 1977, 2083-84, and 2171.

mechanism of the London money market and later upon the demand for British products. Incomparably greatest among these effects, however, was that produced by the panic in New York.

The first consequence of the crash in America was the fall of "Yankee rails" on the London stock market. No large failures followed; indeed, dealers were said to be pleased by what they described as the emancipation of the home and foreign markets from "American bondage."<sup>42</sup> The second consequence, withdrawals of gold from the Bank of England for export to New York, had more serious results.

On October 16th the Bank of England had a reserve of \$116,000,000, equal to 49% of its deposit liabilities to the banks and the public. Meanwhile its loans made 63.6% of deposits. In both respects the bank was stronger than usual; for the averages of these ratios in 1900-09 were 46.8 and 70.0 per cent respectively.<sup>43</sup> The bank rate had stood since the middle of August at the moderately high level of 4½ per cent, and the market rate for 60-day bills was 4.13 per cent. In all respects the bank had the situation well in hand.

The first heavy withdrawals of gold were made in the week ending November 2—\$13,436,000.<sup>44</sup> In the next two months \$97,700,000 in gold was exported from England.<sup>45</sup> Meanwhile, since the holiday shopping season was approaching, the domestic withdrawals of currency from the bank exceeded the deposits in most weeks.<sup>46</sup> To meet this enormous drain, the Bank of England advanced its discount rate from 4½ to 5½% on October 31st, to 6% on November 4th, and to 7% on the 7th. It also secured some \$15,000,000 in American eagles from the Bank of France early in November,<sup>47</sup> and induced the India Council to release into the bank's general fund about \$7,500,000 of gold that had been "earmarked."<sup>48</sup> These measures proved amply sufficient. Between October 23rd and November 6th the reserve fell \$31,000,000; next week the gold from France was largely instrumental in raising it by \$17,000,000; another decline of \$6,000,000 followed; but thereafter gold began to flow into England freely and by December 11th the reserve stood again at \$115,000,000, equal to 47 per cent of the deposits. The usual end-of-the-year settlements caused a new drop of the reserve after the middle of December, so that the ratio stood at 36 per cent on January 1st; but the managers knew that the strain was passed and reduced the bank rate to 6 per cent on the 2nd, and to 5 per cent on the 16th. Meanwhile the reserve had mounted to sums larger both absolutely and in proportion to deposits than before the American panic began.

<sup>42</sup> *Ibid.*, pp. 1840, 1886.

<sup>43</sup> See the tables relating to the Bank of England in Chapter VII, v.

<sup>44</sup> See the money article of the *Economist*, October 26th and November 2d.

<sup>45</sup> See Table 146.

<sup>46</sup> See the weekly money article of the *Economist* in November and December.

<sup>47</sup> The latter institution received in return long dated bills at 4¾ per cent discount, charged 1-0/00 premium for the gold, and stipulated that the reimbursement should be in sovereigns. See the French correspondence of the *Economist*, November 9th.

<sup>48</sup> See the money articles of the *Economist* for November 30th, and December 14th and 21st.

TABLE 144

WEEKLY RETURNS OF THE BANKING DEPARTMENT OF THE BANK OF ENGLAND.  
AUGUST 7, 1907, TO JANUARY 29, 1908

		In millions of dollars							
		Capital and rest	Public deposits	Other deposits and seven-day bills	Government securities	Other securities in banking department	Reserve notes and specie	Per cent of reserve to deposits	Per cent of loans to other deposits
1907									
August	7	88	31	214	78	140	115	47%	65.4%
	14	88	32	208	71	136	121	50	65.4
	21	88	37	226	71	153	127	48	67.7
	28	88	37	228	71	151	131	49	66.2
September	4	89	31	233	70	151	132	50	64.8
	11	89	37	229	70	148	136	51	64.6
	18	89	42	229	70	150	140	52	65.5
	25	89	45	221	70	149	136	51	67.4
October	2	89	42	213	70	150	125	49	70.4
	9	86	32	220	77	144	117	47	65.5
	16	86	26	209	72	133	116	49	63.6
	23	86	34	213	72	145	117	47	68.1
	30	87	35	219	70	170	101	40	77.6
November	6	87	33	212	70	176	86	35	83.0
	13	87	34	220	70	168	103	40	76.4
	20	87	38	212	70	170	97	39	80.2
	27	87	38	210	70	159	106	43	75.7
December	4	87	27	216	70	153	107	44	70.8
	11	87	26	219	70	147	115	47	67.1
	18	87	25	212	70	145	109	46	68.4
	25	87	27	212	70	161	96	40	75.9
1908									
January	1	87	37	256	77	199	104	36	77.7
	8	87	26	220	79	135	118	48	61.4
	15	88	22	217	70	131	126	53	60.4
	22	88	33	211	70	128	134	55	60.7
	29	88	43	205	70	126	141	57	61.5

Compiled from *Statistics for Great Britain, Germany, and France, 1867-1909*. (Publications of the National Monetary Commission.) Pp. 120, 121. The ratio of loans to deposits is computed from the 3rd and 5th columns of the table.

TABLE 145  
LONDON RATES OF DISCOUNT, BY WEEKS, AUGUST, 1907, TO JANUARY, 1908

		Bank rate %	Discount rates		Call money %	Deposit allowances	
			60-day bills %	6-months bills %		Banks %	Discount houses %
1907							
August	2	4.00	3.56	4.19	2.75	2.50	2.75
	9	4.00	3.94	4.44	2.00	2.50	2.75
	16	4.50	4.50	5.00	3.00	3.00	3.25
	23	4.50	4.63	5.19	2.50	3.00	3.25
	30	4.50	4.19	4.88	2.50	3.00	3.25
September	6	4.50	3.94	4.69	2.13	3.00	3.25
	13	4.50	3.81	4.38	2.25	3.00	3.25
	20	4.50	3.69	4.13	1.75	3.00	3.25
	27	4.50	3.69	4.25	3.63	3.00	3.25
October	4	4.50	3.88	4.25	3.63	3.00	3.25
	11	4.50	3.94	4.44	2.25	3.00	3.25
	18	4.50	4.13	4.44	2.88	3.00	3.25
	25	4.50	4.50	4.75	3.38	3.00	3.25
November	1	5.50	5.69	5.56	4.50	4.00	4.25
	8	7.00	6.75	6.44	5.00	4.00	5.25
	15	7.00	7.00	6.13	5.00	4.00	5.25
	22	7.00	6.94	6.13	6.50	4.00	5.25
	29	7.00	6.38	5.13	5.25	4.00	5.25
December	6	7.00	5.88	4.75	3.50	4.00	5.25
	13	7.00	6.06	5.13	4.00	4.00	4.75
	20	7.00	6.06	4.94	4.50	4.00	4.75
	27	7.00	6.38	5.13	6.50	4.00	4.75
1908							
January	3	6.00	5.00	4.63	4.88	4.00	4.25
	10	6.00	4.63	4.31	4.13	4.00	4.25
	17	5.00	4.31	4.06	3.63	3.50	3.75
	24	4.00	3.75	3.50	3.25	2.50	3.00
	31	4.00	3.63	3.31	3.75	2.50	3.00

Compiled from *Statistics for Great Britain, Germany, and France, 1867-1909*. (Publications of the National Monetary Commission.) Pp. 61, 62.

TABLE 146

MONTHLY IMPORTS AND EXPORTS OF GOLD INTO AND OUT OF GREAT BRITAIN, 1906-1908

	In millions of dollars								
	1906		1907		1908		Net imports (+) or exports (-)		
	Imports	Exports	Imports	Exports	Imports	Exports	1906	1907	1908
January	11.6	16.1	22.3	18.2	15.7	14.3	- 4.5	+ 4.1	+ 1.4
February	27.2	7.7	18.1	14.5	20.2	17.7	+19.5	+ 3.6	+ 2.5
March	25.9	10.1	21.4	11.3	18.5	7.0	+15.8	+10.1	+11.5
April	13.6	28.1	17.8	8.7	27.5	16.7	-14.5	+ 9.1	+10.8
May	22.2	20.4	23.9	14.1	15.8	21.6	+ 1.8	+ 9.8	- 5.8
June	11.6	3.1	10.6	18.6	15.5	23.6	+ 8.5	- 8.0	- 8.1
July	13.4	7.5	18.1	10.7	22.1	24.7	+ 5.9	+ 7.4	- 2.6
August	21.4	4.4	19.4	8.5	14.0	18.9	+17.0	+10.9	- 4.9
September	14.3	40.6	12.7	17.0	24.1	24.7	-26.3	- 4.3	- .6
October	15.7	43.1	20.6	28.2	14.9	24.7	-27.4	- 7.6	- 9.8
November	26.7	10.8	55.1	74.0	13.8	25.9	+15.9	-18.9	-12.1
December	20.4	15.5	37.9	23.7	22.4	23.2	+ 4.9	+14.2	- .8
Year	224.0	207.4	277.8	247.5	224.5	243.1	+16.6	+30.3	-18.6

Compiled from *Statistics for Great Britain, Germany, and France, 1867-1909*. (Publications of the National Monetary Commission.) P. 65.

This increase of the reserve after the first fortnight of the heavy withdrawals, while due partly to the \$22,500,000 of gold obtained from the Bank of France and the India Council, and partly to the inflow of funds from the interior after the holidays, was also due in large measure to imports from other countries. In fact the imports of gold in November and December amounted to \$93,000,000—only \$4,700,000 less than the exports.<sup>49</sup> Never was the efficacy of an advance in the bank rate as a means of attracting gold more strikingly demonstrated.

### 3. *The Crisis in Industry and Commerce*

Though the Bank of England succeeded in meeting the double strain imposed by the approach of crisis at home and the call for help from New York, it was obliged to maintain the extraordinarily high discount rate of 7 per cent for nearly two months. During all this time the market rate for 60-day bills averaged nearly 6½ per cent and for 6-months bills nearly 5½ per cent.<sup>50</sup> While these rates were much lower than those reported in New York,<sup>51</sup> they were much higher than English business was accustomed to paying. The tense condition of the money market, therefore, had a powerful effect in hastening and aggravating the crisis which had been developing slowly since midsummer.

<sup>49</sup> Doubtless the gold received from the Bank of France is counted among the imports.

<sup>50</sup> See Table 145.

<sup>51</sup> See Table 136.

This crisis, however, proved mild and tame in comparison with the American panic. There was no hint of suspension or even of limitation of payments by the banks, and therefore no scramble for money. There was no fear that solvent borrowers with acceptable security to give would be refused bank accomodation, and therefore no needless failures and no wholesale destruction of credit. In the very fortnight when the Bank of England lost \$31,000,000 of cash it increased its loans by \$31,000,000. If the loans declined after November 6th, it was not because the bank was refusing to lend, but because business men were refusing to borrow at 7 per cent.

On the Stock Exchange the crisis had less effect than might have been expected, largely because of a fortunate coincidence. In September the Executive Council of the Amalgamated Society of Railway Servants had decided to take a ballot upon the advisability of calling a general strike. But Mr. Lloyd George intervened, and news that the dispute would be adjusted without a conflict was published on the same day that the Bank of England raised its rate to 7 per cent.<sup>52</sup> While this good news did much to buoy up the market, nevertheless November brought the lowest stock prices of the year. Recovery was prompt, however, and, if the "index number of stock-exchange values" compiled by the London *Bankers' Magazine* may be trusted, the general level of prices was higher in January than it had been in September.<sup>53</sup>

Another fortunate circumstance helped to mitigate the effects of the crisis upon industry and commerce. The British farmers reaped exceptionally large harvests in 1907 and sold them for exceptionally high prices.<sup>54</sup> While agriculture employs a much smaller proportion of the population in the United Kingdom than in the United States, still the ability of the farming classes to buy freely was an important factor in counteracting the shrinkage in the demand for commodities from other sources. Nevertheless, the recession of activity, already under way, became more marked in the last three months of the year.

In November, the *Economist* sought the opinions of representative firms in many branches of trade regarding the effect of "dear money" upon their business. The replies indicated that there had not as yet been any serious interruption of manufacturing; but the passing of the "boom" was generally admitted. Not a few manufacturers who had been troubled by the heavy cost of production seemed to welcome the change. In particular, the high prices of raw materials had become a serious burden, and many firms had been "unable to recompense

<sup>52</sup> *Economist*, vol. 65, pp. 1863, 1945.

<sup>53</sup> This so-called index number shows the aggregate "values" of 387 representative issues of securities, including both stocks and bonds. The results for 1907-08 in millions of dollars are as follows:

1907—January .....	18,702	1907—August .....	17,023
February .....	18,571	September .....	17,188
March .....	17,962	October .....	17,062
April .....	17,972	November .....	16,823
May .....	17,792	December .....	17,033
June .....	17,461	1908—January .....	17,334
July .....	17,685	February .....	17,320

<sup>54</sup> *Economist*, vol. 65, p. 2031, and "Commercial History and Review of 1907," pp. 3, 4.

themselves by charging more to their customers." The most pessimistic opinions came from trades like jute and linen which depended largely upon the American market. But no serious disasters were anticipated, because manufacturers had received such a long warning of the crisis that speculation had been kept within narrow limits.<sup>55</sup>

TABLE 147

MERCHANDISE IMPORTS AND EXPORTS OF GREAT BRITAIN BY MONTHS, JANUARY, 1907, TO MARCH, 1908, TOGETHER WITH THE PERCENTAGE OF GAIN (+) OR LOSS (—) IN COMPARISON WITH THE CORRESPONDING MONTHS OF THE PRECEDING YEAR

	In millions of dollars									
	Food, drink, and tobacco		Raw materials and articles mainly unmanufactured		Articles wholly or mainly manufactured		Miscellaneous and unclassified		Grand total	
	Amount	Per cent of gain or loss	Amount	Per cent of gain or loss	Amount	Per cent of gain or loss	Amount	Per cent of gain or loss	Amount	Per cent of gain or loss
Imports										
1907										
January	96.1	+ 0.2	130.8	+31.6	66.4	+ 4.2	1.2	— 0.9	294.6	+13.2
February	79.5	— 1.4	116.9	+32.1	60.1	— 1.7	1.1	+ 5.9	257.6	+11.3
March	95.7	+ 0.6	115.8	+ 2.9	68.6	— 0.3	.9	—19.4	281.0	+ 8.4
April	95.5	+10.2	112.3	+39.8	67.5	+10.7	.9	— 2.3	276.3	+20.5
May	99.1	+ 0.1	91.6	+12.1	64.5	— 5.8	.9	—12.3	256.0	+ 2.1
June	100.3	— 2.7	74.8	+ 9.7	56.6	— 7.1	1.0	+11.6	232.6	— 0.2
July	105.0	+ 3.4	82.2	+14.8	65.9	+ 5.5	1.0	— 2.3	254.1	+ 7.4
August	106.0	+18.4	71.7	+ 3.5	61.3	— 4.8	.9	—18.5	239.9	+ 0.8
September	98.6	+ 1.7	78.9	+ 0.5	56.8	— 1.3	1.0	+26.3	220.6	+ 0.6
October	119.0	+12.4	95.8	+ 2.8	64.9	— 1.3	.9	—18.4	280.6	+ 5.5
November	108.9	+11.1	106.7	— 1.6	61.5	— 3.4	.9	— 4.9	278.1	+ 2.5
December	101.0	+ 7.9	112.8	+ 1.1	57.9	— 3.6	.9	+ 0.6	272.5	+ 2.4
1908										
January	97.1	+ 1.0	121.5	— 7.0	54.9	—17.5	.8	—32.0	274.3	— 6.8
February	91.1	+14.5	102.2	—12.4	60.7	+ 0.7	1.2	+ 9.5	255.1	— 0.9
March	107.3	+12.0	81.4	—29.5	64.0	— 6.8	.9	— 1.5	253.6	— 9.7
Exports										
1907										
January	7.3	— 1.0	18.9	+18.9	141.8	+13.9	2.7	+35.5	170.6	+13.9
February	6.8	+ 5.8	19.0	+26.2	128.3	+ 9.7	2.0	+19.2	156.1	+11.5
March	6.9	— 3.9	20.1	+13.7	139.7	+10.1	2.2	+ 1.6	169.0	+ 9.7
April	7.2	+12.1	21.1	+29.8	136.7	+28.2	2.4	+ 9.1	167.5	+27.3
May	7.8	+ 2.4	22.6	+25.0	146.8	+17.7	2.4	+ 2.1	179.7	+16.4
June	8.4	+12.7	21.9	+38.6	128.5	+ 3.7	2.3	+18.6	161.1	+ 8.1
July	11.2	+22.1	24.8	+30.6	158.3	+19.9	2.6	— 3.7	196.8	+20.9
August	11.4	+19.3	23.7	+28.9	143.5	+ 8.9	3.2	+40.9	181.8	+11.5
September	11.3	+ 8.7	23.6	+33.3	133.9	+13.2	2.3	+ 0.4	171.1	+15.1
October	11.6	+ 0.3	25.7	+28.8	146.3	+14.3	2.9	+27.5	186.5	+15.3
November	11.8	+ 4.1	24.4	+35.2	135.3	+ 5.5	3.0	+ 2.6	174.5	+ 8.7
December	9.1	+ 7.8	21.9	+27.1	125.8	+ 1.0	2.6	— 7.5	159.3	+ 4.2
1908										
January	7.4	+ 1.1	20.6	+ 9.1	137.0	— 3.4	2.5	— 6.8	167.4	— 1.8
February	7.1	+ 4.2	20.3	+ 6.8	125.9	— 1.8	2.2	+ 9.2	155.5	— 0.3
March	7.2	+ 4.4	20.5	+ 1.8	130.4	— 6.6	1.9	—13.5	160.1	— 5.2

Compiled from the monthly trade supplements of the (London) *Economist*.

<sup>55</sup> *Economist*, vol. 65, pp. 2022, 2071-72.

TABLE 148  
CLEARINGS IN LONDON  
BY WEEKS, 1907-08

Weeks ending		Town clearings			Country clearings		
		Amounts in millions of dollars		Gain (+) or loss (-) Per cent	Amounts in millions of dollars		Gain (+) or loss (-) Per cent
1907	1906	1907	1906		1907	1906	
July 3	July 4	1,460	1,483	- 1.6%	105	98	+ 7.1%
10	11	1,134	995	+14.0	123	113	+ 8.8
17	18	1,198	1,146	+ 4.5	112	104	+ 7.7
24	25	913	908	+ .6	95	88	+ 8.0
31	Aug. 1	1,151	1,237	- 7.0	95	88	+ 8.0
Aug. 7	8	1,042	864	+20.6	96	86	+11.6
14	15	899	1,126	-20.2	101	98	+ 3.1
21	22	1,111	931	+19.3	102	87	+17.2
28	29	880	907	- 3.0	84	75	+12.0
Sept. 4	Sept. 5	1,102	1,321	-16.6	93	91	+ 2.2
11	12	878	836	+ 5.0	102	86	+18.6
18	19	1,007	1,244	-19.1	96	90	+ 6.7
25	26	905	864	+ 4.7	89	82	+ 8.5
Oct. 2	Oct. 3	1,268	1,340	- 5.4	94	94	0.0
9	10	1,053	916	+15.0	124	112	+10.7
16	17	1,154	1,197	- 3.6	114	106	+ 7.5
23	24	935	965	- 3.1	102	93	+ 9.7
30	31	1,245	1,301	- 4.3	98	92	+ 6.5
Nov. 6	Nov. 7	1,069	1,016	+ 5.2	120	105	+14.3
13	14	975	1,128	-13.6	104	93	+11.8
20	21	1,138	997	+14.1	112	99	+13.1
27	28	940	924	+ 1.7	94	83	+13.2
Dec. 4	Dec. 5	1,151	1,362	-15.5	99	100	- 1.0
11	12	872	956	- 8.8	108	92	+17.4
18	19	1,151	1,252	- 8.1	106	99	+ 7.1
24	26	834	717	+16.3	79	57	+38.6
1908	1907	1908	1907		1908	1907	
Jan. 1	Jan. 2	1,096	1,518	-27.8	79	94	-16.0
8	9	1,114	1,128	- 1.2	123	113	+ 8.8
15	16	1,025	1,347	-23.9	108	102	+ 5.9
22	23	1,105	1,070	+ 3.3	107	97	+10.3
29	30	976	967	+ .9	95	86	+10.5
Feb. 5	Feb. 6	1,287	1,430	-10.0	112	109	+ 2.8
12	13	949	1,002	- 5.3	103	91	+13.2
19	20	1,127	1,265	- 6.4	90	90	0.0
26	27	915	978	-10.9	104	96	+ 8.3

TABLE 149  
PROVINCIAL CLEARINGS IN ENGLAND  
BY WEEKS, 1907-08

Weeks ending 1907	Manchester		Liverpool		Birmingham		Newcastle-on-Tyne		Bristol	
	Amount in millions of dollars	Gain (+) or loss (-) in comparison with 1906	Amount in millions of dollars	Gain (+) or loss (-) in comparison with 1906	Amount in millions of dollars	Gain (+) or loss (-) in comparison with 1906	Amount in millions of dollars	Gain (+) or loss (-) in comparison with 1906	Amount in millions of dollars	Gain (+) or loss (-) in comparison with 1906
July 6	37.1	+ 6.5%	24.3	+26.6 %	9.3	+10.5%	6.2	- 3.1%	3.9	+ 5.2%
13	30.4	+ 5.4	20.7	+19.4	5.5	+ 0.8	5.3	+22.3	2.9	+ 0.4
20	30.9	+17.5	18.7	+41.1	5.1	+11.0	4.6	- 1.7	2.7	+ 6.5
27	27.7	+ 8.0	13.8	+ .2	4.8	- 2.4	5.2	- 6.4	2.8	- 3.7
Aug. 3	34.7	+14.1	19.8	+17.4	8.4	+ 8.0	5.8	-11.6	3.5	+ 3.6
10	28.2	+12.6	13.8	+15.1	3.6	+19.8	4.6	- 2.4	2.1	+ 2.5
17	29.5	+10.8	16.6	+ 2.0	5.0	+ 8.4	6.5	+ 6.7	2.7	- 7.1
24	24.1	+13.8	14.5	+ 3.7	3.8	- 5.0	6.0	+13.8	2.5	0.0
31	28.6	+12.9	16.3	+13.3	4.7	-11.1	5.1	+ 5.2	2.5	- 4.4
Sept. 7	31.4	+12.1	16.9	+ 8.8	7.7	+27.2	5.6	+ 2.6	2.9	+12.0
14	26.6	+ 5.9	16.4	-0.01	4.4	+ 5.1	5.1	- 4.7	2.6	+ 5.8
21	26.8	+12.1	20.2	+56.6	4.1	- 4.3	5.4	+ 2.9	2.4	- 0.1
28	27.4	- 0.5	17.2	- 5.7	4.2	-10.7	5.2	+ 8.8	2.4	- 8.3
Oct. 5	38.3	+13.1	20.4	- 3.3	8.2	+12.2	6.5	- 3.8	3.6	- 6.2
12	30.4	+ 1.9	17.3	-15.2	4.8	- 1.7	4.8	- 3.6	2.8	+ 0.3
19	30.2	+10.4	17.4	-17.3	5.2	- 6.5	4.5	-12.0	3.1	+ 8.7
26	27.2	+ 1.8	17.4	+ 2.4	4.3	- 8.7	4.7	- 9.8	3.2	+11.6
Nov. 2	35.5	+12.1	22.4	+ 8.7	7.7	- 2.8	6.1	+18.9	3.3	+ 6.6
9	32.1	+19.7	16.5	+10.5	6.1	+29.2	4.9	+24.4	2.9	+ 7.9
16	31.6	+ 6.0	19.9	+ 1.8	5.4	- 0.3	6.0	+ 5.5	3.1	- 4.9
23	27.8	+ 8.8	16.8	- 1.5	4.5	- 9.7	6.1	+11.7	2.8	+ 2.7
30	29.9	+ 2.6	20.3	+ 7.1	4.7	-18.6	5.2	+ 2.3	2.7	+ 2.8
Dec. 7	35.8	+34.1	19.3	+13.1	7.9	+ 1.9	5.9	- 6.8	3.2	- 7.6
14	30.1	+ 0.7	19.9	+ 2.0	4.9	- 7.9	5.7	+ 3.9	2.6	- 0.9
21	29.2	+ 6.7	18.8	+ 5.5	5.3	-18.1	5.8	- 4.0	4.0	+18.5
28	36.6	-14.3	16.2	- 0.6	5.3	- 1.8	6.7	+86.1	2.9	-20.8
1908										
Jan. 4	23.0	- 3.6	14.2	-11.0	6.8	- 9.0	3.7	-43.0	2.8	-13.0
11	30.9	+ 2.9	17.8	- 5.1	4.8	- 6.2	5.2	+12.8	3.0	0.0
18	31.9	+ 2.0	21.1	- 4.7	5.1	-10.9	5.1	- 3.6	2.9	- 9.2
25	27.2	+ 1.9	19.2	+12.2	4.4	-13.5	4.8	-15.3	2.8	- 3.8
Feb. 1	31.0	- 5.7	18.8	-14.1	5.8	-26.1	4.4	-14.0	3.0	-13.9
8	35.7	+17.1	19.2	+ 8.2	7.1	+ 9.2	4.5	-21.1	3.5	+ 4.5
15	31.8	+ 6.5	18.5	-11.1	5.3	- 9.6	4.2	-26.7	3.3	+ 7.7
22	26.5	- 3.1	17.8	- 2.5	4.9	-12.2	4.2	-24.8	2.9	- 4.0

These views are amply confirmed by the statistical record. The dwindling gains of imports and exports over the figures of twelve months before turned after the first of the year into positive losses. Country clearings in London held out longer, but town clearings and clearings in the provincial centers of trade showed losses or diminished gains. Finally, unemployment, instead of declining after the end of the year as usual, continued to rise until the percentage was more than twice that of the year before.

Thus English business, like American business, passed from a state of high prosperity in the summer of 1907 into a state of marked depression in the summer of 1908; but the transition was accomplished without a serious epidemic of bankruptcies and without violent interruption of the usual processes of producing and distributing goods.

TABLE 150

PERCENTAGE OF TRADE UNION MEMBERS UNEMPLOYED IN THE UNITED KINGDOM AT THE END OF EACH MONTH,  
1904-08

	1904	1905	1906	1907	1908
January	6.1	6.3	4.3	3.9	5.8
February	5.6	5.7	4.1	3.5	6.0
March	5.5	5.2	3.4	3.2	6.4
April	5.5	5.2	3.2	2.8	7.1
May	5.8	4.7	3.1	3.0	7.4
June	5.5	4.8	3.2	3.1	7.9
July	5.6	4.7	3.1	3.2	7.9
August	5.9	4.9	3.3	3.6	8.5
September	6.3	4.8	3.3	4.1	9.3
October	6.3	4.6	3.9	4.2	9.5
November	6.5	4.3	4.0	4.5	8.7
December	7.1	4.5	4.4	5.6	9.1
Average	6.0	5.0	3.6	3.7	7.8

From the *Fourteenth Abstract of Labor Statistics of the United Kingdom*, 1908-09, p. 7.

#### IV. THE CLOSE OF CRISES

No certain dates can be assigned for the beginning or for the end of crises. For the strains which result in forced liquidation of credits accumulate slowly and the demand for settlement of outstanding credits may become widespread before the public is apprised of what is going on and before the pace of activity has sensibly abated. Further, in a large country this process of liquidation may begin at some business center, while the tide of prosperity is still rising elsewhere, and spread rather gradually to the latter places. On the other hand, the strains relax as gradually as they have gathered, and the crisis merges into depression in the same unobtrusive fashion that it emerged from prosperity.

For example, it is impossible to say precisely when the crisis of 1907 began in the United States. Stringency in the money and investment markets became severe in 1906; the stock market was in difficulties at least as early as January, 1907, and a crash occurred in March; the prices of raw mineral products began to decline after February; complaints of the encroachment of operating expenses on profits became common in the spring; bond issues began to find few takers about the same time; several large industrial plants went into the hands of receivers in the summer because they could not secure loans, and restriction of construction work was frequently reported after July. In short, a crisis was brewing toward the end of 1906 and in the earlier part of 1907. But none the less the volume of general business continued to rise month by month. To say precisely when the crisis began is therefore to select some arbitrary criterion and apply it irrespective of other conditions.

Panics, on the other hand, may be dated with more assurance. The suspension of the Knickerbocker Trust Company on October 22nd marks the beginning of the panic of 1907, and with less definiteness the crash of industrial stocks and the bank failures of May mark the beginning of the panic of 1893.

The ending of a crisis, whether accompanied by panic or not, is the cessation of the intense demand for prompt liquidation. Where the banks have been able to satisfy the needs both for currency and for deposit credits, solvent debtors gradually meet their obligations as they mature, and the insolvent debtors fail and pass from the management of business enterprises. There are losses to be written off, but confidence in the safety of the remaining credits is restored. Meanwhile but little borrowing is done to finance new business ventures, and that little is done upon a broad margin of security to the lender and on exceedingly conservative estimates of profit to the borrower. Interest rates relax, and money accumulates in the banks. In short, the crisis ends because the members of the business community have withstood, on the whole successfully, the test of ability to meet their financial obligations.

When a panic has occurred, with a restriction of payments, a scramble for money, contraction of loans, heavy failures, etc., the process of recuperation is slower but possesses the same general character. Despite the intense stress of the demand for money, the percentage of failures to the whole number of firms in business is very small. According to *Bradstreet's* this percentage was 1.46 in 1893, .70 in 1907, and .94 in 1908. *Dun's Review* gives 1.28 per cent in 1893, .82 per cent in 1907, and 1.08 per cent in 1908. The great majority of enterprises reassure their sceptical creditors by actually paying, or proving their ability presently to pay, what they owe. Meanwhile the importation of gold, the increase in bank-notes, and the issue of substitutes for money gradually relieves the worst of the monetary stringency. Just so soon as banks become able and willing to pay in cash, hoarding ceases, and money locked up in deposit boxes comes back into circulation. Presently the banks find themselves with a super-

fluity of cash and reduce interest rates. The restriction in the volume of business brings with it a meagre demand for credit, while borrowing to meet maturing debts declines. There may remain much anxiety concerning the collection of old accounts, the number of failures may remain large or even increase; but the inability to borrow on good security is a thing of the past. The acute stage of the liquidation—the crisis—is over, and depression—the dragging stage of the liquidation—begins.

## V. THE PREVENTION OF PANICS

Experience supports the current belief that occasional crises are inevitable in communities where economic organization has developed into the full-blown money economy and where knowledge concerning the workings of the money economy is imperfect. Just as definitely, experience supports the belief that crises can be prevented from degenerating into panics. The distinction between these two states of business is a matter of degree, but in this case matters of degree have grave importance. To save solvent firms from failing for lack of loans they can repay, to save capable managers from being forced to part with the control of properties they are developing effectively, to save employers from having to discharge men because banks will not furnish money for payrolls,—in short to prevent the more violent manifestations of business confusion from occurring—is a service of great value to a country.

The American panics of 1893 and 1907 were ushered in by a series of heavy failures. But the downfall of the *Comptoir d'Escompte* in 1889 in France, of *Barings* in 1890 in England, and of the *Bank of Leipzig* in 1901 in Germany were no less alarming than the failure of the *Knickerbocker Trust Company* in 1907 in America. Had the former failures occurred in the United States, panics would have followed; had the latter failure occurred in England, France, or Germany, there would have been no panic.

For in any of these European countries the shock to confidence would have been allayed by the prompt intervention of the other banks. A syndicate of the strongest financial institutions in the country would have taken charge of the embarrassed concern and guaranteed payment to its depositors. More important still, the central bank would have taken the lead in a policy of lending freely to all necessitous business men who could provide adequate security for repayment. Most important of all, a restriction of payments on the part of the leading banks would not have been made—it would not even have been feared. Failures would not have been avoided, for enterprises which had become insolvent through mismanagement or misfortune would have gone into the hands of receivers; but the bankruptcies would not have been swelled by the inability of solvent concerns to secure bank accommodation. Interest rates would have risen, but

not to 10 and 12 per cent, and commercial paper would not have become unsaleable. The process of liquidation would have proceeded with its concomitant decline in prices and volume of trade; but the transition from prosperity to depression would have been far less violent.

The difference in efficiency for purposes of withstanding strain between the American and the English banking organization and banking practice, stands out with startling clearness from the following figures concerning bank reserves.

<i>Actual amounts:</i>	Bank of England reserve		Banks of New York reserves	
Before the panic .....	Oct. 9	\$117 millions	Oct. 12	\$261 millions
Lowest point .....	Nov. 6	86	Nov. 23	216
After the panic .....	Jan. 8	118	Jan. 11	269
<i>Relative amounts:</i>				
Before the panic .....	Oct. 9	100%	Oct. 12	100%
Lowest point .....	Nov. 6	74	Nov. 23	83
After the panic .....	Jan. 8	101	Jan. 11	103

American importations of gold from London actually caused a greater relative fall in the Bank of England reserve than occurred in the combined reserves of the New York clearing-house banks. Yet no one feared for a moment that the great British bank would hesitate to honor in full all legitimate demands made upon it from home or abroad, while the New York banks advertised their weakness by restricting payments almost at the outset of the strain.

The crucial importance of the policy followed by the leading banks in determining whether a crisis shall become a panic arises from the fact that the banks are the chief source of short-time loans and the chief organs for increasing the currency on short notice. Since a crisis occasions a liquidation of outstanding credits, the imperative need of the time is for sufficient bank accommodation to enable solvent debtors to meet the demands made upon them for payment. If the banks can inspire the community with confidence in their ability to satisfy this need, the process of liquidation can be carried through with a minimum of loss and confusion.

Defects both of banking law and banking practice, therefore, may fairly be held responsible for the degeneration of American crises into panics. The legislation which prevents any but national banks from issuing notes and which requires the latter institutions to deposit government bonds as security prevents a rapid increase of the currency at the moment when it would be most effective in checking an incipient panic.<sup>56</sup> But the need would not be fully met even by the most elastic system of bank-note issue. For the majority of business enterprises require deposit credits rather than money to meet their accruing obliga-

<sup>56</sup> Whether the provisions for the issue of emergency currency made by the Aldrich-Vreeland Act, passed after the panic of 1907, afford an adequate remedy for this long-standing defect in the American currency system cannot be told until the new machinery has been tested in practice. And this law seems likely to expire by limitation before occasion has arisen for its application.

tions. Elasticity of lending power is needed more than elasticity of currency. At present American banks in the country districts, and still more American banks in the reserve and central-reserve cities, make a practice in good times of keeping reserves but little above the minimum required by law. Indeed, the end of a prosperous period commonly finds the great majority of city banks with reserves barely above or just under the limit.<sup>57</sup> These reserves are not small; indeed, they are larger in proportion to deposits than the reserves, carried in other countries which avoid panics.<sup>58</sup> But there is no adequate machinery in the American system of thousands of small, independent banks for putting the available funds where they are most needed. Each institution in country districts must fend for itself, and many banks not threatened keep idle in their vaults money which under a higher type of organization might be used effectively to calm uneasiness and avert disaster in other places. In the towns, the issue of clearing-house loan certificates does something toward enabling the banks to co-operate with each other. But, in recent panics, this measure has been shorn of one of its original elements—the equalization of reserves among the banks by assessments levied upon institutions which have more money than they require and the distribution of the proceeds among the institutions whose reserves are running low.<sup>59</sup> As matters stand now, the clearing-house loan certificate does enable city banks to keep all their cash for the use of their depositors and correspondents, instead of using a large proportion for the payment of clearing-house balances. But it does not enable the bank which has heavy demands for currency from country banks or from local customers to obtain funds from its neighbors. Thus, even in the reserve and central-reserve cities, the available money is prevented from flowing to the places where it is most needed. Of course this fact renders more difficult the avoidance of restrictions upon payments. The banks most exposed to demands for money—that is, the city banks which make a specialty of soliciting deposits from country institutions—are tempted to restrict their remittances early in any season of strain, because they cannot count definitely upon support from their neighbors.<sup>60</sup>

Granting that much of the difficulty of meeting the strains imposed upon banks by crises arises from the lack of organic inter-relations among the institutions, we still have to admit that the American banks have made a fetish of the reserve requirements of the national-bank act. Just at the moments of hesitation when timidity on the part of the banks spreads fear among business men and when boldness inspires confidence, the banks have been timid. Instead

<sup>57</sup> See Chapter VII, i and ii.

<sup>58</sup> Compare F. S. Mead, "Bank Reserves in the United States, Canada, and England," *Quarterly Journal of Economics*, May, 1907.

<sup>59</sup> Sprague, "History of Crises Under the National Banking System" (Publications of the National Monetary Commission), especially the chapters dealing with the crises of 1884, 1893, and 1907.

<sup>60</sup> Sprague's suggestion that institutions which make a business of holding bankers' deposits should be required by law to keep larger reserves than institutions which do a purely local business merits careful consideration. See his *Banking Reform in the United States*, Cambridge, Mass., 1911, pp. 94ff.

of using their reserves promptly and liberally, they have sought to keep them intact or even to increase them by withdrawing money from other banks in which they have placed deposits. Willingness to "go below the legal reserves" on occasions when alarm is spreading would probably do more to check panics in the United States than the practice of holding larger reserves in ordinary times. Certainly, the latter measure would give little relief unless it were coupled with the former policy.

## CHAPTER XIII <sup>R</sup>

### BUSINESS DEPRESSION

#### I. HOW CRISES BREED DEPRESSIONS

##### 1. *Abortive Revivals of Activity*

Both in 1893 and in 1907, the passing of the panic in America was promptly followed by an increase of business activity. Newspapers and technical journals reported the re-opening of mills and factories which had been closed during the panic, the return to the road of commercial travelers who had been recalled, the freer buying of goods, etc. Optimists, encouraged by such reports, began to predict a speedy revival of prosperity. The crisis, they argued, had arisen from impaired confidence. If confidence could be restored, no real reason would remain why business should not be resumed on the scale prevailing before the panic. The supply of labor, the stock of raw materials, the equipment for transporting and manufacturing goods, had not been reduced in quantity or quality by runs upon the banks or by insolvencies. Everyone was eager to be at work. Let business men "look on the bright side," combat sceptics by talking prosperity instead of hard times, prove their faith by their works, and all would be well once more.<sup>1</sup>

In both cases a few weeks sufficed to prove the falsity of such predictions and the futility of such a policy. The little burst of activity which followed the panic subsided again, and hope gave place to renewed discouragement. There was no recurrence of the acute strain which had marked the panics, but in its place there came a slow liquidation which dragged on through many months.

The failure of these "sunshine movements" lends point to the problem, Why are crises followed by depression? Why do so many mills which re-open their gates after the season of severe stress is over presently close again? Is the reason solely that the majority of business men will not or cannot shake off their gloomy forebodings? Or are there elements in the business situation as left by the crises which make a period of depression inevitable—elements beyond the control of sentiment?

<sup>1</sup> In 1908 a number of business men in St. Louis, inspired by sentiments of this sort, organized a "National Prosperity Association," which sought to establish branches in all parts of the country. The chief effort of the association was directed toward inducing producers and manufacturers to agree upon a general resumption of operations on June 1st. *Financial Review*, 1909, p. 22.

While a decline in the current volume of new orders and contracts for future performance begins some months before the crisis,<sup>2</sup> yet the close of the crisis finds many factories, mines, contracting firms, and the like with a considerable amount of work still to be performed. A temporary stoppage of operations during a panic may be caused by inability to obtain money for pay-rolls, or by doubts concerning the ability of consignees to pay for goods when delivered. But when the banks have ceased to limit payments, and when indiscriminate distrust of the solvency of business enterprises has disappeared, then work is promptly resumed upon these left-over orders and contracts. Other concerns find themselves caught with stocks of raw materials already on hand or contracted for, far larger than are required by current consumption in a period when orders are light. Their best way of raising money to meet maturing obligations is often to work up and sell these materials, even though very low prices have to be quoted in order to force a market. Such conditions account for the re-opening of many business enterprises in the weeks immediately following a panic.

But, unless large new orders and contracts are obtained speedily, these business enterprises soon reach the end of their order-books or surplus stocks. Then they reduce their working forces, put their plants on part-time, or close altogether. As a matter of fact, neither in 1894 nor in 1908 did the volume of new business prove sufficient to support the mills which had re-opened. Hence the reports of the second, third, and fourth months after the panics told a disappointing tale of new suspensions of industrial operations.<sup>3</sup>

It is the paucity of new orders, then, which blights the hope of a quick restoration of prosperity after a severe crisis. Business men may be ready to talk prosperity in the hope that others may be induced to buy; but in their own purchases they practise extreme conservatism. Confidence may be restored in the sense that no one longer doubts the solvency of the banks, or the ability of any one fairly entitled to credit to secure loans. But confidence in the sense of sanguine expectations of profitable prices and a large volume of business is not restored, and cannot be restored by cheerful conversation. Past experience enforces the contrary belief that prices will fall and the volume of business shrink for some time to come. The processes which work out these results must now be described.

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<sup>2</sup> Compare Chapter XI, ii, 4.

<sup>3</sup> These reports of fresh suspensions are seldom given as much prominence as the more cheerful news of earlier weeks. Indeed, the newspapers sometimes report the opening of a conspicuous establishment several times within a few months, without referring to its intermittent suspensions. Such cases usually mean that the managers let their small current orders accumulate for a few weeks until enough work is on hand to justify starting the machinery, execute the work rapidly, and then close once more. Compare the *Iron Age*, July 30, 1908, vol. 82, p. 324.

## 2. *The Cumulation of Depression*

### A. THE VOLUME OF BUSINESS

The wholesale discharges of workingmen, which occur during a crisis and again when the left-over contracts and accumulated stocks of materials have been worked off, cause a decline in consumers' demand. Many business and professional men likewise are compelled to retrench their family expenditures. Few people may starve; but tens and hundreds of thousands are forced to put up with a less varied or a less abundant diet. Other lines of expenditure are reduced more sharply than the purchases of food. Clothing and furniture are used longer before being discarded and are replaced at urgent need by cheap articles. Fuel and light are economized to an uncomfortable degree; amusements, travel, and all the dispensable adjuncts of comfort are pared down. Accumulated savings, personal credit at retail shops, and personal property which can be pawned are gradually eaten up by those hardest pressed. As these resources are exhausted, the straits of many families become worse and their purchases of commodities are progressively reduced. Hence the calls upon private and public charity usually increase and the volume of consumers' demand usually decreases as the period of hard times drags on.<sup>4</sup>

In general, the current business demand for the raw materials and partially finished products from which consumers' goods are made shrinks with the shrinkage of family expenditure. Indeed, for a time this business demand shrinks even faster than consumers' demand; for either merchants or manufacturers may fill their orders for a while after the crisis from their left-over stocks, which are likely to be larger than they care to carry in a dull market. On the other hand, in order to keep at least a skeleton organization together, manufacturers sometimes make goods for which they have no present sale. But operations of this last kind must necessarily be limited in scale.

Information concerning the current demand for such producers' goods as are used in repairs and renewals of existing plants is scanty. Every period of intense activity brings out all the weak points of the active establishments, and leaves many of them in a somewhat run-down condition. The first lull in activity affords a favorable opportunity for overhauling plants and bringing their equipment up to the highest standard of efficiency. But what has been proved to be technically desirable may not be financially expedient. Many alterations are

<sup>4</sup> This restriction of demand and the patent misery from which it arises are ordinarily more severe in the great cities and the industrial towns than in the country districts. The farmers may have abundant crops and remunerative prices at the very time when the mills are idle and their hands are walking the streets. Even when, as in 1894-96, the agricultural interest also suffers from bad seasons or low prices, there is less acute privation in the country than in the towns. Agricultural depression, however, renders the depression in the industrial centers still more intense; for the slackening of the farmers' demand for goods ruins the market for many manufacturing and mercantile enterprises.

planned as soon as the reduction in orders gives the managing staffs leisure; but their execution is often deferred until a resumption of active demand for products is in sight. On the whole, it is probable that a leisurely course is taken by the majority of enterprises, so that the demand for repairs and renewals is light during at least the first quarter or two of depression.

Concerning the demand for all the variety of goods which enter into new construction work it is possible to speak with more confidence. While many of the existing factories are standing idle, while many buildings lack tenants, while the railways have light traffic, etc., there is little inducement to enter upon the provision of new equipment. While investors have the recent decline in the price of securities fresh in mind, there is little use in issuing any but the best accredited grade of bonds. Finally, while a further fall of prices is in prospect, it is vain to expect the larger capitalists to take up new projects which can probably be executed more cheaply after the lapse of a year or two. Engineers, architects and the like may be kept busy preparing plans for future use; but in the early stages of depression few contracts for new construction are actually put under way. Hence the demand for this kind of work continues the decline which began in the latter days of prosperity.

The processes which cause this shrinking in the volume of trade, like the processes which cause an increase in times of revival, are cumulative in their effects. The more workmen are discharged the smaller becomes consumers' demand. Every reduction in consumers' demand causes a further decline in the business demand for the materials from which consumers' goods are made. On the one hand, this latter decline causes more workmen to be discharged, and on the other hand it discourages managers from making the repairs and renewals which they have in mind, and discourages capitalists from putting their new projects under contract. The longer these plans for improving and extending the industrial equipment are deferred, the less grows employment in the enterprises which provide materials. And the longer men remain wholly or partly idle, the more are their families forced to scrimp expenditures, so that consumers' demand shrinks still further, and this shrinkage further intensifies the influences which are constricting the volume of business.

Nevertheless, the lowest ebb in the physical volume of industrial production usually comes in either the first or second year after a severe crisis. The statistics presented in Chapter V, and the index numbers of the volume of trade compiled by Kemmerer and Irving Fisher, all point to this conclusion.<sup>5</sup> Agricultural production, of course, is more erratic, showing an increase in periods of depression quite as often as it shows a decrease. What are the forces which

<sup>5</sup> See Chapter V, iii; E. W. Kemmerer, *Money and Credit Instruments in Their Relation to General Prices*, (ed. 2, New York, 1909), p. 131; Irving Fisher, *The Purchasing Power of Money* (New York, 1911), pp. 478-486.

counteract the cumulative shrinkage in the physical volume of trade within two or three years after a crisis is a problem which must be deferred to the concluding section of this chapter.<sup>6</sup>

#### B. THE FALL OF PRICES

As a crisis subsides, the confusion which reigns in the markets for commodities<sup>7</sup> gradually disappears. But, while the extremely low prices made in a few forced sales may not be matched again, the trend of fluctuations continues downward for a considerable period. Thus the fall in wholesale prices after the crisis of 1890 lasted at least four years in Germany and at least six years in England and France; that after the crisis of 1893 lasted four years in America; that after the crisis of 1900 lasted three years in England and four years in Germany and France; that after the crisis of 1907 lasted from one to two years in different places.<sup>8</sup> So far as recorded quotations show, then, the lowest level of commodity prices is reached, not during the crisis, but toward the close of the subsequent period of depression, or even early in the final revival of business activity.<sup>9</sup>

The chief cause of this fall is the shrinkage in the demand for consumers' goods, raw materials, producers' supplies, and construction work analyzed in the preceding section. On the other side of the market stands a reserve army of capital and labor capable of producing the much larger supplies of commodities for which there was call in the recent period of prosperity. The anxiety of these enterprises now standing idle or working below their capacity to get more business intensifies competition in those branches of trade where it already exists, and often extends competition into branches of trade whence it had been banished by agreements to sustain prices. Pools, working agreements, and combinations of other kinds become far more difficult to sustain in the face of a buyers' market, and many of them go to pieces because their members begin to suspect each other of secret undercutting of rates. Moreover, enterprises verging on bankruptcy and enterprises in the hands of receivers are peculiarly dangerous competitors for solvent firms to meet. They often disregard supplementary charges altogether and seek to defray their operating costs by taking work at prices which their rivals who are keeping up interest on their bonds find it hard to match. Finally, the fall in prices is cumulative. It spreads from one part of the system of prices to other parts along the various lines of interconnection traced in Chapter II, and then spreads back again from the parts which are slow to be affected to the parts in which the decline began.

<sup>6</sup> Section ii, 3.

<sup>7</sup> Chapter XII, ii, 4.

<sup>8</sup> See Tables 9, 11, and 12.

<sup>9</sup> Compare Chapter X, ii, 4.

As on the rise, so on the fall, there are marked differences in the promptness with which different classes of commodity prices begin to change and in the degree to which the change extends. Retail prices lag behind wholesale prices of the same goods; consumers' goods lag behind producers' goods; manufactured commodities lag behind the raw materials from which they are made; farm and forest products are less regular in their fluctuations than mineral products. These differences arise partly from the differences in the shrinkage of demand pointed out above, partly from technical circumstances affecting the possibility of adjusting current production to current consumption, and partly from the effort to adjust selling prices to the total costs incurred by business enterprises rather than to the buying prices of particular wares.<sup>10</sup>

For reasons which have been sufficiently explained, the prices of labor fall less rapidly than the prices of commodities at wholesale.<sup>11</sup> Interest rates on long-time loans behave like wage rates in that they decline at a slow pace, but unlike wage rates in that they fall for a longer time.<sup>12</sup> On the contrary, short-time interest rates fall faster and further than commodity prices.<sup>13</sup> There is less hesitation at lending funds freely at low rates for three months than for ten years, and large sums which the owners will later invest in more permanent ways are transferred in times of depression from the bond to the money market, checking the fall of rates in the first and accelerating the fall in the second.

As for the prices of securities, high-grade bonds rise because of the decline in long-time interest rates, while, at the other end of the scale, common stocks fall under the combined influence of diminished earnings and dull prospects. Securities which stand between these extremes, like speculative bonds, stocks with a good dividend-paying record, and preferred stocks, rise or fall according as they partake more of the character of gilt-edged bonds or of common stocks. In most cases, the latter relations are more potent factors and prices decline, though less than the prices of ordinary shares.<sup>14</sup>

#### C. SAVINGS AND INVESTMENTS

What is known concerning the changes which occur in money incomes in periods of depression suggests that the amount of money saved declines heavily—a conclusion which receives at least a measure of statistical support from data showing the deposits in savings banks.<sup>15</sup> That the volume of funds required

<sup>10</sup> For index numbers of the various classes of prices referred to see Chapter IV, i, 2, 3, 4, 5, 6, and 9; for a fuller analysis of the causes of the differences in range of fluctuation see Chapter X, iii, 1, D.

<sup>11</sup> For index numbers see Chapter IV, ii; for analysis see Chapter X, iii, 2.

<sup>12</sup> For index numbers see Chapter IV, iii, 2 and 4; for analysis see the following discussion of "Savings and Investment."

<sup>13</sup> For index numbers see Chapter IV, iii, 1, 3, and 4.

<sup>14</sup> See Chapter IV, iv. As the tables in that section show, there is usually a reaction from the lowest prices touched during a crisis, particularly if the crisis has degenerated into a panic; but when the subsequent depression is severe and prolonged prices begin to sag again, and sometimes reach a lower point than that recorded in the time of most intense strain.

<sup>15</sup> See Chapter VIII, i, and ii, 1.

for current investments, in the extension of old or the construction of new concerns, also shrinks seriously is attested by abundant evidence.<sup>16</sup> Finally, the often-noted change in the preference of investors—their neglect of the speculative shares which were the favorites of flush days and their taste for ultra-conservative bonds—is also proved by statistics.<sup>17</sup>

All this answers to expectations. But the investment market presents one peculiar feature. The first year of depression often brings an exceedingly heavy issue of securities by large corporations.<sup>18</sup> The apparent anomaly, however, has a simple explanation. During the high tide of prosperity preceding a crisis, many great enterprises provide for their most pressing financial needs by selling short-time notes or by borrowing directly from the banks.<sup>19</sup> After the crisis when interest rates have begun to relax, they seek the first opportunity to fund these floating debts into long-time bonds. Of course, large issues of securities made for such purposes represent neither extensions of new equipment nor investments of fresh capital, but at most a shifting from one form of obligations to another form, and from one set of lenders to another set.

#### D. THE CURRENCY AND THE BANKS

Upon the production of gold, the proportion of the output applied to monetary uses, and the international movements of the existing monetary stock, depression exercises a complicated set of influences which need not be described in detail because they are the precise opposites of the influence exercised by prosperity.<sup>20</sup> The net outcome of all the factors involved differs from one period of depression to the next. In the United States, the one country for which we have adequate data, the stock of gold currency declined in the dull months January to July 1891, February to November 1894, July to September 1895, April to July 1896, March to May 1908, and July 1909 to April 1910; but it rose during the dull months January to May 1897, May to November 1908, April 1910 to May 1911, and during the dull years 1903-04.<sup>21</sup> There is therefore no warrant for the belief that the quantity of gold currency contracts regularly with the pecuniary volume of business.

As for other kinds of money, bank notes alone possess pretensions to elasticity which merit serious consideration. However, a survey of the records for England, France, and Germany, as well as for the United States, shows that in these countries the amount outstanding has seldom shrunk in years of business depression.<sup>22</sup>

<sup>16</sup> See Chapter VIII, ii, 3-6.

<sup>17</sup> See Chapter VIII, ii, 2.

<sup>18</sup> See Chapter VIII, ii, 3.

<sup>19</sup> See Chapter XI, ii, 3, and iii, 1.

<sup>20</sup> See Chapter XI, iii, 4.

<sup>21</sup> See the monthly figures for the stock of gold money in the appendices to the annual Reports of the Treasurer of the United States.

<sup>22</sup> See Chapter VI, iii.

Much more decided than its influence upon the volume of the currency, is the influence of depression upon the distribution of the money in circulation between the banks and the public. As soon as the strain of a severe crisis relaxes, current deposits of cash in the banks begin to exceed current withdrawals, so that presently the banks hold a decidedly larger proportion of the monetary stock than in seasons of active trade.<sup>23</sup>

Of course, this process increases the deposits of the banks so far as deposits represent actual cash. In addition, the large reserves increase the ability of the banks to lend their own credit, and therefore to extend the deposits which result from discounts. Nevertheless, deposit currency usually shrinks in volume when a period of prosperity merges into a period of depression. The elasticity of this element in the circulating medium, indeed, is decidedly greater than that of money. As a result, the ratio between deposits subject to check and money in circulation falls in dull years.<sup>24</sup>

One other fact concerning the effect of depression on the currency is brought out in Chapter VI. The velocity of the circulation of money, and in higher degree the velocity of the circulation of checks, declines with the activity of trade.<sup>25</sup>

By these changes in the quantity of money and of deposit currency and in the velocities at which both money and checks circulate, the volume of payments is reduced in harmony with the fall of prices and the shrinkage in the physical volume of trade. In this complicated series of readjustments the causative influences, however, are not all on the side of the business situation. The failure of the quantity of money to contract promptly when a crisis turns into depression results in monetary redundancy, of which the visible sign is the accumulation of idle cash in the banks. This accumulation, we have seen, does not produce the expansion in loans and deposits which would occur if the prospects of profits were bright.<sup>26</sup> But it does increase the competition among banks for such business as is to be had, and aids in producing that fall in the discount rates which we have seen to be more rapid than the fall of prices at wholesale.<sup>27</sup> In so far, the quantity of money is a factor in accelerating the readjustment of costs to selling prices which ultimately restores the prospects of profits and ushers in a period of expanding trade and rising prices.<sup>28</sup> Hence

<sup>23</sup> See Chapter VI, iv.

<sup>24</sup> See Chapter VI, v.

<sup>25</sup> See Chapter VI, vi.

<sup>26</sup> New York often presents an apparent exception to this rule. In 1908, for example, bank loans were larger in this city than in 1907, chiefly because country banks were sending to New York idle funds which they could not use at home, and were depositing in the banks at 2 per cent interest funds which they had formerly lent on their own account at call on the Stock Exchange. The demand which absorbed the increased supply of loans arose largely from the fact that money could be had for 1 per cent or even less at call and invested in securities which yielded interest or dividends of 4 per cent or more. The national banks as a whole, and the great foreign banks for which we have statistics, usually show a decline in loans when prosperity is succeeded by depression. See the various tables in Chapter VII.

<sup>27</sup> See the paragraph upon the prices of loans in section B, above.

<sup>28</sup> See the next section of this chapter.

such an increase in the world's production of gold as has been going on in recent years tends to cut short and to mitigate periods of depression, as well as to prolong and to intensify periods of prosperity. By thus altering somewhat both the intensity and the relative duration of these two phases of business cycles, it tends to give an upward direction to those long-period movements of the price curve in which the years of depression and years of prosperity are averaged together.

## II. HOW DEPRESSION BREEDS PROSPERITY

### 1. *The Re-adjustment of Prime Costs*

The shrinkage which depression brings in the volume of orders, and the accompanying decline of selling prices put severe pressure upon the managers of business enterprises to reduce their expenses within the narrowest feasible limits. Certain of the price-phenomena which have been pointed out<sup>29</sup> show that the resulting efforts are successful at least in part.

That wholesale prices fall faster than retail prices, that the prices of producers' goods fall faster than those of consumers' goods, and that the prices of raw materials fall faster than the prices of manufactured products means, of course, that in these cases buying prices are reduced more than the corresponding selling prices.<sup>30</sup> Further, since short-time interest rates fall much faster

<sup>29</sup> See section i, 2, B, above.

<sup>30</sup> The statistical evidence given by the tables of Chapter IV, i, may be summarized as follows. Plus signs mean that prices rose instead of falling.

	Number of points by which relative prices fell		
	1893-96	1902-04	
25 foods at wholesale in the United States .....	31	7	.....
25 foods at retail in the United States .....	10	0	.....
	1891-96	1900-03	1907-08
23 foods at wholesale in England .....	21	5	0
19 foods at retail in England .....	12	+ 4	+ 3
	1891-96	1900-04	1907-08
23 foods at wholesale in France .....	25	1	8
36 foods at retail in France .....	8	+ 1	+ 2
	1890-96	1902-04	1907-08
20 raw materials in the United States .....	27	4	12
20 manufactured products in the United States .....	22	7	9
5 raw materials in the United States .....	41	+ 7	7
5 partly manufactured products in the United States ....	23	+12	6
5 finished commodities in the United States .....	14	+ 6	5
45 raw producers' goods in the United States .....	28	0	15
28 manufactured producers' goods in the United States	22	0	14
18 raw mineral products in the United States .....	27	5	20
23 manufactured mineral products in the United States	22	2	10
10 raw forest products in the United States .....	13	+19	18
9 manufactured forest products in the United States .....	20	+ 5	13
9 raw animal products in the United States .....	22	16	7
18 manufactured animal products in the United States	18	1	3
18 raw farm products in the United States .....	43	+ 2	2
40 manufactured farm products in the United States .....	27	+ 2	7

than wholesale prices, the cost of loans declines in proportion to the prices of products.<sup>31</sup> Wages also are reduced in seasons of severe depression, but in this case the reduction is less than that in commodity prices.<sup>32</sup> It does not necessarily follow, however, that the cost of labor increases in proportion to the selling prices of what labor produces. For there is strong evidence that the efficiency of labor becomes much greater in dull years than it had been in the preceding brisk years. Overtime ceases, and with it cease not only the payment of extra rates but also the weariness of long hours. When working forces are reduced in size they are raised in quality by weeding out the less desirable hands. Most important of all, the fear of being discharged at a time when thousands of men are already looking in vain for work disposes every man who is kept to do his best—to keep any pace which may be set, even at grave danger of over-taxing his strength.<sup>33</sup> The heightening of the physical productivity of labor which results from these changes does more than the fall of wages to diminish the ratio between money cost of labor and money value of products.

When selling prices have been materially reduced, enterprises which are poorly equipped, disadvantageously located, or inefficiently managed are often compelled to close altogether, because they cannot get back even their prime costs on an output sold at current rates. Within the stronger enterprises the poorer portions of the equipment are allowed to stand idle for the same reason. It results that the producers who remain in the race during periods of depression can “figure” on the basis of prime costs considerably lower than the average which prevails in seasons of prosperity.

Finally, depression checks the numerous small wastes which grow up within most business enterprises during years of intense activity. There is not only a strong incentive but also sufficient leisure to economize materials, to make the

<sup>31</sup> A similar summary follows of the evidence from Chapter IV, i and iii, relating to wholesale prices and discount rates in periods of depression.

	Number of points by which relative prices and relative rates of interest fell		
	1893-97	1903-04	1907-08
Wholesale prices in America .....	16	0	9
Discount rates in New York, 60-90 days .....	72	25	41
	1890-95	1900-04	1907-08
Wholesale prices in England .....	15	7	11
Market discount rates in London .....	153	46	107
Wholesale prices in France .....	15	8	14
Market discount rates in Paris .....	47	43	59
Wholesale prices in Germany .....	21	8	8
Market discount rates in Berlin .....	59	43	54

<sup>32</sup> The evidence of the tables (Chapter IV, i and ii) is as follows:

	Number of points by which relative prices and relative wages fell		
	1893-95	1903-04	
Wholesale prices in America .....	12	0	.....
Relative wages in America .....	3	+ 1	.....
	1891-95	1900-04	1907-09
Wholesale prices in England .....	15	7	9
Relative wages in England .....	3	5	3

<sup>33</sup> Compare Chapter XI, i, 3.

most of by-products, to supervise the work of every employe, to adjust each successive step of each process accurately to the other steps, and to make whatever changes in organization promise a saving of cost without entailing a heavy investment of fresh capital.

## 2. *The Re-adjustment of Supplementary Costs*

Reductions in prime costs begin to be made promptly upon the passing of prosperity. But, for a while at least, they are accompanied by an increase of supplementary costs per unit of product, arising from the distribution of the existing fixed charges over a declining volume of sales. To determine the average net effect of these opposing changes upon total cost per unit is impossible for lack of information, detailed in character and extensive in scope, regarding the quantitative importance of the numerous factors involved. But, whatever these net effects may be, it is certain that the policy of making selling prices cover total costs, is perforce abandoned by many enterprises when business enters upon the phase of depression. Competition for what business is to be had often results in a temporary disregard of supplementary costs and the basing of quotations upon estimates which include little beyond the prices of materials, freight, and labor.

Obviously such a disregard of supplementary costs in fixing selling prices cannot continue long without threatening insolvency. Unless the coupons of bond-holders and the rents of lessors are met, the creditors will secure the appointment of a receiver to manage the property in their interest. But, under the modern form of business organization, insolvency does not necessarily involve suspension of operations. When a considerable sum has been invested in real estate, plant, machinery, or good will, so specialized in form that it cannot be diverted to other uses without serious loss, then an insolvent concern is usually kept running so long as it can pay even a slight margin above the indispensable current expenses. The financial obligations of the enterprise, however, are so re-organized as to turn the temporary disregard of supplementary costs into a permanent reduction of fixed charges. The bond-holders may be forced to concede a reduction in the rate of interest or in the nominal value of their principal, lessors may be compelled to scale down their rents, preferred shares may be turned into common, outsiders may buy the whole company under foreclosure at a price which leaves little for the common stockholders, or some other plan of re-organization may be arranged among the various parties at interest which enables the enterprise to continue its business with some prospect of meeting all of its obligations.<sup>34</sup>

<sup>34</sup> Compare, for example, Stuart Daggett's detailed study of *Railroad Reorganization* (Harvard Economic Studies, vol. IV), Boston, 1908.

Such forced reductions of supplementary costs are a common feature not only of the months succeeding a crisis but also of the years of depression which follow. For many enterprises which weather the violent storm are so weakened that they cannot withstand the prolonged strain of low prices and meager business. And both the weak enterprises still struggling desperately to avoid receiverships and the other enterprises which have been re-organized are particularly dangerous competitors for solvent concerns, and make it difficult for the latter to avoid a similar compromise with their creditors. But just so fast as the process of re-organization is carried through, the prospects of profits are improved by the scaling down of costs.

A somewhat similar, but less drastic, reduction of supplementary costs is gradually effected in many enterprises which never pass through the hands of receivers. Reluctantly managers write down the book value of plants and equipment that are not paying their way. New men buy into old enterprises and estimate the selling prices they must charge on the basis of the moderate sums they have invested. As old leases run out they may well be renewed at lower rents, and as old bonds mature they may well be replaced at lower rates of interest. More in general, business men are constrained to admit to themselves and to their bankers that the capitalized values of their enterprises have suffered somewhat the same decline that the stock exchange records for listed securities. While these reduced capitalizations arise primarily from the reduction of profits, they also become the basis for reduced expectations of return, and justify a smaller capital charge in fixing selling prices.

Finally, such new enterprises as may be set on foot during depression have the advantage not only of low prime costs, conferred by improved processes and machinery, but also of low supplementary costs, conferred by the low prices for construction work and the low interest on bonds.

### 3. *The Increase in the Physical Volume of Business*

Evidence has been cited to show that the physical volume of business reaches its lowest ebb within the first or second year after a crisis.<sup>35</sup> In other words, the second or third year of depression regularly ushers in an expansion in the quantity of goods turned out by factories, transported by railways, and handled by merchants. What are the processes which bring about this result in the face of the many discouraging circumstances of dull times?

First, the accumulated stocks of goods carried over from the preceding period of prosperity are gradually disposed of. Even when current consumption is small, manufactories and merchants can reduce their stocks of raw materials and finished wares by filling orders chiefly from what is on hand and confining purchases to the small quantities needed to keep full assortments.

<sup>35</sup> See section i, 2, A, of the present chapter.

But, when these stocks have once been reduced to the smallest dimensions allowed by the regular filling of orders, then current purchases and current production are perforce increased, even though current consumption does not grow larger.

In somewhat similar fashion, families can get on for a time with the clothing and furnishings purchased in the later days of prosperity, and business enterprises can get on for a time with their old equipment—not, however, for an indefinite time. As these articles are gradually worn out and discarded, it becomes necessary to buy new ones, if money can be found for the purpose. Then the demand for both consumers' and producers' goods begins to pick up.

Third, the aggregate volume of consumers' demand depends in large part upon the number of the population, and this number has been shown to increase at almost the same rate in depression as in good times.<sup>36</sup> This factor counts for nothing in France, but for much in Germany, and for something in England. Its importance in the United States is uncertain, because we have no adequate statistics comparing the excess of births over deaths with the excess of emigrants over immigrants.

Once more, the development of new tastes among consumers, the appearance of new materials, and the introduction of new processes do not come to a standstill even in times of depression. While the changes in the character of demand which result may restrict the market for commodities which are being superseded, the losses of the producers of the latter are gradually written off, and there remains over the stimulating effect of activity among producers of the novelties.

Finally, and most important of all, the later stages of depression see a marked increase in the demand for new construction. This phase of the development requires more extended notice.

While the amount of funds saved each year by the people of any country probably declines in hard times, certainly saving never ceases.<sup>37</sup> For a time, however, the fresh accumulations of capital are not accompanied by a corresponding volume of fresh investments in business ventures. Refunding operations make a large proportion of the business done in the investment market, for governments and business enterprises alike are keen to secure the advantage of the low rates of interest which prevail.<sup>38</sup> Of the money seeking fresh investments, whether it be the product of current savings or of refunding, much goes into the purchase of property which embarrassed holders are forced to sell. That is, certainly a considerable and probably an extremely large share of the liquid capital provided by certain individuals in seasons of depression is used merely to cancel part of the losses incurred by other individuals. Such invest-

<sup>36</sup> See Chapter V, i.

<sup>37</sup> See Chapter VIII, i.

<sup>38</sup> Compare the tables in Chapter VIII, ii, 3.

ments represent a redistribution of ownership, but no new creations of industrial equipment.<sup>39</sup> Finally, a part of the funds which in the prosperous phase of the business cycle seek the investment market are left during the earlier stages of depression on deposit in the banks, and used, so far as a use can be found, in making short-time loans.<sup>40</sup>

The changes in the business situation which in the later stages of depression direct investment funds once more to the construction of new equipment are numerous. (1) When most of the weaker owners of business enterprises have once been squeezed out and forced to sell their holdings, and when the necessary corporate reorganizations have been largely completed, the opportunities to buy into old enterprises on favorable terms become less numerous. Thereafter more of the men seeking business openings build for themselves. (2) The timidity inspired among investors by the crisis gradually wears off, and capitalists large and small become more ready to risk their funds in business ventures. (3) The low rate of interest at which money can be borrowed on long time, provided good security be offered, means that the more enterprising spirits can secure whatever funds they require in addition to their own means on terms which will keep the fixed charges moderate for years to come. (4) Even more important in most cases in its bearing on fixed charges is the low initial cost at which contracts for construction can be let when labor is efficient and materials are cheap. (5) Under the influence of systematic research, in recent times the progress of industrial technique has become fairly steady and continuous. Hence, the longer the period during which new construction is checked by business depression the greater becomes the accumulation of technical improvements of which new plants can take advantage, and therefore the greater becomes the inducement to invest in new equipment. (6) The gradual growth of the current demand for consumers' and producers' goods, brought about in the manner already explained, stimulates the investment demand with which we are now dealing. When current orders begin to increase, the managers of existing enterprises are encouraged to begin the improvements in their facilities which perhaps have been planned for several years, and the organizers of new ventures are encouraged to let their contracts. Both sets of investors are anxious to make their bargains for construction before the cost of building advances and to have their new plants ready for operation by the time a revival of activity becomes pronounced.

Under the combined pressure of these various business forces, then, a marked increase in the demand for all the innumerable kinds of commodities and labor required for construction occurs in the later stages of depression. Of course this increase in the volume of demand from investors causes fuller employment of labor and assures more orders to the existing producers of pro-

<sup>39</sup> Compare the digest of Johannsen's theory of "impaired savings" in Chapter I, ii, 14.

<sup>40</sup> See section i, 2, B, above.

ducers' goods. There follows a new expansion in consumers' and producers' demand, and this expansion reacts in the way suggested to enhance investment demand. Thus the increase in the volume of business is cumulative in its growth. Unless the processes which we have traced are checked by some untoward event such as a serious failure of crops, within a year or two they carry the physical volume of business to higher levels than those reached at the close of the preceding period of prosperity.<sup>41</sup>

#### 4. *The End of Liquidation*

The various processes just described combine reductions in both prime costs and fixed charges with an expansion in the physical volume of business. In this fashion depression ultimately breeds prosperity. For of course these changes increase prospective profits, and in the money economy prospective profits are the great incentive to activity.

But for many months the processes by which depression works its own ending are kept down to a slow pace by the continued fall of prices. For the data presented in Chapters IV and V indicate that the price level and even the pecuniary volume of business usually continue to fall for some time after the physical volume of business has begun to rise. The rate at which prices fall, however, is slower in the later than in the earlier stages of depression. And the effect of the fall in reducing profits is mitigated, if not wholly offset, by the increasing volume of sales. For to the various factors already mentioned as reducing supplementary costs per unit another factor is added when fixed charges begin to be distributed over an increasing output.

The business situation into which depression evolves, then, differs radically from the situation in which it began. Most of the heavy stocks of goods which hung menacingly over the market at the close of the crisis have been disposed of, so that every increase of consumption leads to an equivalent increase of production. The floating debts and the heavy fixed charges which threatened widespread insolvency have been paid off, written down, or otherwise readjusted, so that the enterprises can once more live within their incomes. Even the great mass of business enterprises which did not change hands and which made no compromise with their creditors are now assigned a lower capitalized value corresponding to their moderate expectations of profit. The volume of credits outstanding is well within the limits which mercantile houses and banks can support. Investors have ceased to be foolishly timid, and they have not yet become recklessly bold. Prices are still declining, but at a slackening pace. Costs of doing business have been so reduced as to leave a narrow margin of profit despite the low scale of selling prices. The demand for goods of many

<sup>41</sup> Compare the various indices of the volume of business presented in Chapter V.

kinds—though not such as to tax the existing equipment to its utmost—is already large and growing steadily larger.<sup>42</sup>

In fine, this business situation is that described at the beginning of Chapter X—the situation out of which a revival of activity presently develops. Having thus come round again to its point of departure, after tracing the processes of cumulative change by which prosperity breeds crisis, crisis evolves into depression, and depression paves the way for a return of prosperity, the present theory of business cycles has reached its appointed end.

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<sup>42</sup> Alone among the writers reviewed in Chapter I, Veblen holds that the business conditions of depression tend to become chronic rather than to breed prosperity. (Section ii, 10.) The basis for this view is that the continual improvements in industrial technique give new plants such an advantage in cost over their older competitors as to keep the majority of existing enterprises always in difficulties. The one remedy which Veblen sees for this condition, apart from the favorable accidents which occasionally interrupt the downward trend of prices, is an ever more thorough coalition or combination among business men to restrain competition.

The reason why business history has not yet answered this expectation is that other price-making factors have proved more potent than technical improvements in methods of production. Among these other factors, the one on which Veblen lays stress—extension of combinations in restraint of competition—certainly requires attention. But the factors mentioned above—particularly the reduction in the operating and supplementary costs of the old enterprises themselves, and the increase of demand for construction work—have so far exercised a powerful influence in restoring conditions which promise a fair margin of profit.

To forecast the future relative force of the numerous factors involved is far from easy. Of course depressions bred prosperity in the days before competition had been severely shackled by combination; but in those days the progress of technique was seemingly less steady than it is now. Should the further progress of combination be checked, however, it is still probable that the changes which depression brings about in the efficiency of labor, in the policy of investors, in the capitalization of corporations, in the relative prices of finished products and raw materials, etc., would continue to over-balance the depressing influence exercised by the introduction of improved processes and machinery.

## CHAPTER XIV ✓

### THE WIDER ASPECTS OF BUSINESS CYCLES

#### I. SUMMARY OF THE PRECEDING THEORY OF BUSINESS CYCLES

✓ The theory of business cycles presented in Chapters X-XIII is a descriptive analysis of the processes of cumulative change by which a revival of activity develops into intense prosperity, by which this prosperity engenders a crisis, by which crisis turns into depression, and by which depression, after growing more severe for a time, finally leads to such a revival of activity as that with which the cycle began.

This analysis rests primarily upon an elaborate statistical enquiry into the phenomena of recent cycles in the United States, England, France, and Germany. The statistical line of attack was chosen because the problem is essentially quantitative in character, involving as it does the relative importance of divers forces which are themselves the net resultants of innumerable business decisions. The selection of statistical data, the methods of presentation, and the co-ordination of the results were determined in large part by ideas borrowed from theoretical writers or from financial journals. But all the tables of figures and all the borrowed ideas were fitted into a framework provided by a study of the economic organization of to-day, which showed that the industrial process of making and the commercial process of distributing goods are thoroughly subordinated to the business process of making money.

The theory derived from these materials has filled so many pages that a summary may prove serviceable. There is always danger, however, that a plausible summary may carry too much weight. Readers who have looked over Chapter I will appreciate how easy it is to make many dissimilar explanations of crises sound convincing when attention is confined to a restricted range of phenomena. Only by putting any theory to the practical test of accounting for actual business experience can its value be determined. The case for the present theory, therefore, and also the case against it, is to be found not in the easy summary which follows, but in the difficult chapters which precede, or better still in an independent effort to use it in interpreting the ceaseless ebb and flow of economic activity.

### 1. *The Cumulation of Prosperity*

With whatever phase of the business cycle analysis begins, it must take for granted the conditions brought about by the preceding phase, postponing explanation of these assumptions until it has worked around the cycle and come again to its starting point.

A revival of activity, then, starts with this legacy from depression: a level of prices low in comparison with the prices of prosperity, drastic reductions in the costs of doing business, narrow margins of profit, liberal bank reserves, a conservative policy in capitalising business enterprises and in granting credits, moderate stocks of goods, and cautious buying.

For reasons which will appear in the sequel, such conditions are accompanied by an expansion in the physical volume of trade. Though slow at first, this expansion is cumulative. Now it is only a question of time when an increase in the amount of business transacted which grows more rapid as it proceeds will turn dullness into activity. Left to itself, this transformation is effected by slow degrees; but it is often hastened by some propitious event arising from other than domestic business sources, such as exceptionally profitable harvests, heavy purchases of supplies by government, or a marked increase in the export demand for the products of home industry.

Even when a revival of activity is confined at first within a narrow range of industries or within some single section of the country, it soon spreads to other parts of the business field. For the active enterprises must buy more materials, wares, and current supplies from other enterprises, the latter from still others, and so on without assignable limits. Meanwhile all enterprises which become busier employ more labor, use more borrowed money, and make higher profits. There results an increase in family incomes and an expansion of consumers' demand, which likewise spreads out in ever widening circles. Shopkeepers pass on larger orders for consumers' goods to wholesale merchants, manufacturers, importers, and producers of raw materials. All these enterprises require more supplies of various kinds for handling their growing trade, and increase the sums which they pay out to employes, lenders, and proprietors—thus stimulating afresh the demand for both producers' and consumers' goods. Soon or late this expansion of orders reaches back to the enterprises from which the impetus to greater activity was first received, and then this whole complicated series of reactions begins afresh at a higher pitch of intensity. All this while, the revival of activity is instilling a feeling of optimism among business men, and this feeling both justifies itself and heightens the forces which engendered it by making everyone readier to buy with freedom.

While the price level is often sagging slowly when a revival begins, the cumulative expansion in the physical volume of trade presently stops the fall and starts a rise. For, when enterprises have in sight as much business as they

can handle with their existing facilities of standard efficiency, they stand out for higher prices on additional orders. This policy prevails even in the most keenly competitive trades, because additional orders can be executed only by breaking in new hands, starting old machinery, buying new equipment, or making some other change which involves increased expense. The expectation of its coming hastens the advance. Buyers are anxious to secure or to contract for large supplies while the low level of quotations continues, and the first definite signs of an upward trend of quotations brings out a sudden rush of orders.

Like the increase in the physical volume of business, the rise of prices spreads rapidly; for every advance of quotations puts pressure upon someone to recoup himself by making a compensatory advance in the prices of what he has to sell. The resulting changes in prices are far from even, not only as between different commodities, but also as between different parts of the system of prices. Retail prices lag behind wholesale, the prices of staple consumers' behind the prices of staple producers' goods, and the prices of finished products behind the prices of their raw materials. Among raw materials, the prices of mineral products reflect the changed business conditions more regularly than do the prices of raw animal, farm, or forest products. Wages rise often more promptly, but always in less degree than wholesale prices; discount rates rise sometimes more slowly than commodities and sometimes more rapidly; interest rates on long loans always move sluggishly in the early stages of revival, while the prices of stocks—particularly of common stocks—both precede and exceed commodity prices on the rise. The causes of these differences in the promptness and the energy with which various classes of prices respond to the stimulus of business activity are found partly in differences of organization between the markets for commodities, labor, loans, and securities; partly in the technical circumstances affecting the relative demand for and supply of these several classes of goods; and partly in the adjusting of selling prices to changes in the aggregate of buying prices which a business enterprise pays, rather than to changes in the prices of the particular goods bought for resale.

In the great majority of enterprises, larger profits result from these divergent price fluctuations coupled with the greater physical volume of sales. For, while the prices of raw materials and of wares bought for resale usually, and the prices of bank loans often, rise faster than selling prices, the prices of labor lag far behind, and the prices which make up supplementary costs are mainly stereotyped for a time by old agreements regarding salaries, leases, and bonds.

This increase of profits, combined with the prevalence of business optimism, leads to a marked expansion of investments. Of course the heavy orders for machinery, the large contracts for new construction, etc., which result, swell still further the physical volume of business, and render yet stronger the forces which are driving prices upward.

Indeed, the salient characteristic of this phase of the business cycle is the cumulative working of the various processes which are converting a revival of trade into intense prosperity. Not only does every increase in the physical volume of trade cause other increases, every convert to optimism makes new converts, and every advance of prices furnish an incentive for fresh advances; but the growth of trade also helps to spread optimism and to raise prices, while optimism and rising prices both support each other and stimulate the growth of trade. Finally, as has just been said, the changes going forward in these three factors swell profits and encourage investments, while high profits and heavy investments react by augmenting trade, justifying optimism, and raising prices.

## 2. *How Prosperity Breeds a Crisis*

While the processes just sketched work cumulatively for a time to enhance prosperity, they also cause a slow accumulation of stresses within the balanced system of business—stresses which ultimately undermine the conditions upon which prosperity rests.

Among these stresses is the gradual increase in the costs of doing business. The decline in supplementary costs per unit of output ceases when enterprises have once secured all the business they can handle with their standard equipment, and a slow increase of these costs begins when the expiration of old contracts makes necessary renewals at the high rates of interest, rent, and salaries which prevail in prosperity. Meanwhile prime costs rise at a relatively rapid rate. Equipment which is antiquated and plants which are ill located or otherwise work at some disadvantage are brought again into operation. The price of labor rises, not only because standard rates of wages go up, but also because of the prevalence of higher pay for overtime. More serious still is the fact that the efficiency of labor declines, because overtime brings weariness, because of the employment of “undesirables,” and because crews cannot be driven at top speed when jobs are more numerous than men to fill them. The prices of raw materials continue to rise faster on the average than the selling prices of products. Finally, the numerous small wastes, incident to the conduct of business enterprises, creep up when managers are hurried by a press of orders demanding prompt delivery.

A second stress is the accumulating tension of the investment and money markets. The supply of funds available at the old rates of interest for the purchase of bonds, for lending on mortgages, and the like, fails to keep pace with the rapidly swelling demand. It becomes difficult to negotiate new issues of securities except on onerous terms, and men of affairs complain of the “scarcity of capital.” Nor does the supply of bank loans grow fast enough to keep up with the demand. For the supply is limited by the reserves which

bankers hold against their expanding demand liabilities. Full employment and active retail trade cause such a large amount of money to remain suspended in active circulation that the cash left in the banks increases rather slowly, even when the gold output is rising most rapidly. On the other hand, the demand for bank loans grows not only with the physical volume of trade, but also with the rise of prices, and with the desire of men of affairs to use their own funds for controlling as many business ventures as possible. Moreover, this demand is relatively inelastic, since many borrowers think they can pay high rates of discount for a few months and still make profits on their turnover, and since the corporations which are unwilling to sell long-time bonds at the hard terms which have come to prevail try to raise part of the funds they require by discounting one- or two-year notes.

Tension in the bond and money markets is unfavorable to the continuance of prosperity, not only because high rates of interest reduce the prospective margins of profit, but also because they check the expansion in the volume of trade out of which prosperity developed. Many projected ventures are relinquished or postponed, either because borrowers conclude that the interest would absorb too much of their profits, or because lenders refuse to extend their commitments farther.

There is one important group of enterprises which suffers an especially severe check from this cause in conjunction with high prices—the group which depends primarily upon the demand for industrial equipment. In the earlier stages of prosperity, this group usually enjoys a season of exceptionally intense activity. But when the market for bonds becomes stringent, and—what is often more important—when the cost of construction has become high, business enterprises and individual capitalists alike defer the execution of many plans for extending old and erecting new plants. As a result, contracts for this kind of work become less numerous as the climax of prosperity approaches. Then the steel mills, foundries, machine factories, copper smelters, quarries, lumber mills, cement plants, construction companies, general contractors, and the like find their orders for future delivery falling off. While for the present they may be working at high pressure to complete old contracts within the stipulated time, they face a serious restriction of trade in the near future.

The imposing fabric of prosperity is built with a liberal factor of safety; but the larger grows the structure the more severe become these internal stresses. The only effective means of preventing disaster while continuing to build is to raise selling prices time after time high enough to offset the encroachments of costs upon profits, to cancel the advancing rates of interest, and to keep investors willing to contract for fresh industrial equipment.

But it is impossible to keep selling prices rising for an indefinite time. In default of other checks, the inadequacy of cash reserves would ultimately compel the banks to refuse a further expansion of loans upon any terms. But before this

stage has been reached, the rise of prices is stopped by the consequences of its own inevitable inequalities. These inequalities become more glaring the higher the general level is forced; after a time they threaten serious reduction of profits to certain business enterprises, and the troubles of these victims dissolve that confidence in the security of credits with which the whole towering structure of prosperity has been cemented.

What, then, are the lines of business in which selling prices cannot be raised sufficiently to prevent a reduction of profits? There are certain lines in which selling prices are stereotyped by law, by public commissions, by contracts of long term, by custom, or by business policy, and in which no advance, or but meagre advances can be made. There are other lines in which prices are always subject to the incalculable chances of the harvests, and in which the market value of all accumulated stocks of materials and finished goods wavers with the crop reports. There are always some lines in which the recent construction of new equipment has increased the capacity for production faster than the demand for their wares has expanded under the repressing influence of the high prices which must be charged to prevent a reduction of profits. The unwillingness of investors to let fresh contracts threatens loss not only to contracting firms of all sorts, but also to all the enterprises from whom they buy materials and supplies. The high rates of interest not only check the current demand for wares of various kinds, but also clog the effort to maintain prices by keeping large stocks of goods off the market until they can be sold to better advantage. Finally, the very success of other enterprises in raising selling prices fast enough to defend their profits aggravates the difficulties of the men who are in trouble. For to the latter every further rise of prices for products which they buy means a further strain upon their already stretched resources.

As prosperity approaches its height, then, a sharp contrast develops between the business prospects of different enterprises. Many, probably the majority, are making more money than at any previous stage of the business cycle. But an important minority, at least, face the prospect of declining profits. The more intense prosperity becomes, the larger grows this threatened group. It is only a question of time when these conditions, bred by prosperity, will force some radical readjustment.

Now such a decline of profits threatens worse consequences than the failure to realise expected dividends. For it arouses doubt concerning the security of outstanding credits. Business credit is based primarily upon the capitalized value of present and prospective profits, and the volume of credits outstanding at the zenith of prosperity is adjusted to the great expectations which prevail when the volume of trade is enormous, when prices are high, and when men of affairs are optimistic. The rise of interest rates has already narrowed the margins of security behind credits by reducing the capitalized value of given profits. When profits themselves begin to waver the case becomes worse.

Cautious creditors fear lest the shrinkage in the market rating of the business enterprises which owe them money will leave no adequate security for repayment. Hence they begin to refuse renewals of old loans to the enterprises which cannot stave off a decline of profits, and to press for a settlement of outstanding accounts.

Thus prosperity ultimately brings on conditions which start a liquidation of the huge credits which it has piled up. And in the course of this liquidation prosperity merges into crisis.

### 3. *Crises*

Once begun, the process of liquidation extends rapidly, partly because most enterprises which are called upon to settle their maturing obligations in turn put similar pressure upon their own debtors, and partly because, despite all efforts to keep secret what is going forward, news presently leaks out and other creditors take alarm.

While this financial readjustment is under way, the problem of making profits on current transactions, is subordinated to the more vital problem of maintaining solvency. Business managers concentrate their energies upon providing for their outstanding liabilities and upon nursing their financial resources, instead of upon pushing their sales. In consequence, the volume of new orders falls off rapidly. That is, the factors which were already dimming the prospects of profits in certain lines of business are reinforced and extended. Even when the overwhelming majority of enterprises meet the demand for payment with success, the tenor of business developments therefore undergoes a change. Expansion gives place to contraction, though without a violent wrench. Discount rates rise higher than usual, securities and commodities fall in price, and as old orders are completed working forces are reduced; but there is no epidemic of bankruptcies, no run upon banks, and no spasmodic interruption of the ordinary business processes.

At the opposite extreme from crises of this mild order stand the crises which degenerate into panics. When the process of liquidation reaches a weak link in the chain of interlocking credits and the bankruptcy of some conspicuous enterprise spreads unreasoning alarm among the business public, then the banks are suddenly forced to meet a double strain—a sharp increase in the demand for loans, and a sharp increase in the demand for repayment of deposits. If the banks prove able to honor both demands without flinching, the alarm quickly subsides. But if, as has happened twice in America since 1890, many solvent business men are refused accommodation at any price, and if depositors are refused payment in full, the alarm turns into panic. A restriction of payments by the banks gives rise to a premium upon currency, to hoarding of cash, and to the use of various unlawful substitutes for money. A refusal by the banks

to expand their loans, still more a policy of contraction, sends interest rates up to three or four times their usual figures, and causes forced suspensions and bankruptcies. There follow appeals to the government for extraordinary aid, frantic efforts to import gold, the issue of clearing-house loan certificates, and an increase of bank-note circulation as rapid as the existing system permits. Collections fall into arrears, domestic-exchange rates are dislocated, workmen are discharged because employers cannot get money for pay-rolls or fear lest they cannot get pay for goods when delivered, stocks fall to extremely low levels, even the best bonds decline somewhat in price, commodity markets are disorganized by sacrifice sales, and the volume of business is violently contracted.

That crises still degenerate on occasion into panics in America, but not in England, France, or Germany, arises primarily from differences in banking organization and practice. In each of the three European countries, the banking system as a whole is so organized by the prevalence of branch banking and the existence of a central bank that reserves which bear a small proportion to the aggregate demand liabilities of all the offices can be applied when and where they are most needed. The central bank not only carries a reserve which is far in excess of immediate requirements in ordinary times, but also uses this reserve boldly in times of stress, presenting in both these respects a marked contrast to the policy of American banks. As a result, European business men need not fear either a refusal to lend or a restriction of payments by the banks on which they depend. And panic has small chance to develop where the depositor can get his money at need and the solvent business man can borrow.

#### 4. *Depression*

The close of a panic is usually followed by the re-opening of numerous enterprises which had been shut during the weeks of severest pressure. But this prompt revival of activity is partial and short-lived. It is based chiefly upon the finishing of orders received but not completely executed in the preceding period of prosperity, or upon the effort to work up and market large stocks of materials already on hand or contracted for. It comes to an end as this work is gradually finished, because new orders are not forthcoming in sufficient volume to keep the mills and factories busy.

There follows a period during which depression spreads over the whole field of business and grows more severe. Consumers' demand declines in consequence of wholesale discharges of wage-earners, the gradual exhaustion of past savings, and the reduction of other classes of family incomes. With consumers' demand falls the business demand for raw materials, current supplies, and equipment used in making consumers' goods. Still more severe is the shrinkage of investors' demand for construction work of all kinds, since few individuals or enterprises care to sink money in new business ventures so long as trade remains

depressed and the price level is declining. The contraction in the physical volume of business which results from these several shrinkages in demand is cumulative, since every reduction of employment causes a reduction of consumers' demand, and every decline in consumers' demand depresses current business demand and discourages investment, thereby causing further discharges of employes and reducing consumers' demand once more.

With the contraction in the physical volume of trade goes a fall of prices. For, when current orders are insufficient to employ the existing equipment for production, competition for what business is to be had becomes keener. This decline spreads through the regular commercial channels which connect one enterprise with another, and is cumulative, since every reduction in price facilitates, if it does not force, reductions in other prices, and the latter reductions react in their turn to cause fresh reductions at the starting point.

As the rise of prices which accompanied revival, so the fall which accompanies depression is characterized by certain regularly recurring differences in degree. Wholesale prices fall faster than retail, the prices of producers' goods faster than those of consumers' goods, and the prices of raw materials faster than those of manufactured products. The prices of raw mineral products follow a more regular course than those of raw forest, farm, or animal products. As compared with general index numbers of commodity prices at wholesale, index numbers of wages and interest on long-time loans decline in less degree, while index numbers of discount rates and of stocks decline in greater degree. The only important group of prices to rise in the face of depression is that of high-grade bonds.

Of course the contraction in the physical volume of trade and the fall of prices reduce the margin of present and prospective profits, spread discouragement among business men, and check enterprise. But they also set in motion certain processes of readjustment by which depression is gradually overcome.

The prime costs of doing business are reduced by the rapid fall in the prices of raw materials and of bank loans, by the marked increase in the efficiency of labor which comes when employment is scarce and men are anxious to hold their jobs, and by closer economy on the part of managers. Supplementary costs also are reduced by re-organizing enterprises which have actually become or which threaten to become insolvent, by the sale of other enterprises at low figures, by reduction of rentals and refunding of loans, by charging off bad debts and writing down depreciated properties, and by admitting that a recapitalization of business enterprises—corresponding to the lower prices of stocks—has been effected on the basis of lower profits.

While these reductions in costs are still being made, the demand for goods ceases to shrink and then begins slowly to expand—a change which usually comes in the second or third year of depression. Accumulated stocks left over from prosperity are gradually exhausted, and current consumption requires

current production. Clothing, furniture, machinery and other moderately durable articles which have been used as long as possible are finally discarded and replaced. Population continues to increase at a fairly uniform rate: the new mouths must be fed and the new backs clothed. New tastes appear among consumers and new methods among producers, giving rise to demand for novel products. Most important of all, the investment demand for industrial equipment revives; for though saving may slacken it does not cease, with the cessation of foreclosure sales and corporate re-organizations the opportunities to buy into old enterprises at bargain prices become fewer, capitalists become less timid as the crisis recedes into the past, the low rates of interest on long-term bonds encourage borrowing, the accumulated technical improvements of several years may be utilized, and contracts can be let on most favorable conditions as to cost and prompt execution.

Once these various forces have set the physical volume of trade to expanding again, the increase proves cumulative, though for a time the pace of growth is kept slow by the continued sagging of prices. But while the latter maintains the pressure upon business men and prevents the increased volume of orders from producing a rapid rise of profits, still business prospects become gradually brighter. Old debts have been paid, accumulated stocks of commodities have been absorbed, weak enterprises have been re-organized, the banks are strong—all the clouds upon the financial horizon have disappeared. Everything is ready for a revival of activity, which will begin whenever some fortunate circumstance gives a sudden fillip to demand, or, in the absence of such an event, when the slow growth of the volume of business has filled order books and paved the way for a new rise of prices. Such is the stage of the business cycle with which the analysis began, and, having accounted for its own beginning, the analysis ends.

#### NOTE

##### *The Relation of the Preceding Theory of Business Cycles to the Theories Reviewed in Chapter I*

When viewed in the light of the preceding analysis, none of the theories of business cycles summarized in Chapter I seems to be demonstrably wrong, but neither does any one seem to be wholly adequate. Perhaps an effort to suggest the limitations of each theory may throw additional light upon a problem which is dark enough at best—certainly such an effort will show how much the present discussion has borrowed from its predecessors.

Beveridge's theory, that the competitive effort of each producer to engross as much of the market as possible for his own wares necessarily leads to gluts, puts all the stress upon a single feature in a set of processes which have been shown to be exceedingly complex. To do Mr. Beveridge justice, he is far from professing to advance an adequate theory of crises. And the one factor which he does emphasize certainly counts in the sense that the whole course of business cycles would be profoundly altered if competition between producers were completely suppressed.

But the claims freely made a decade since, both in America and Germany, that the development of trusts and cartels would put an end to crises, have not been sustained by business history. The industries in which combination has made greatest strides toward regulating competition still feel the stress caused by the increasing cost of labor and by tension in the investment and money markets. Nor have the managers of these great combinations been able to avoid a reduction of profits from waning demand for their products when prosperity has passed its zenith.

The various forms of the under-consumption theory have already been criticized. Their value lies in showing one of the possible obstacles in the way of preventing the encroachments of costs upon profits. But it has never been proven that consumers' demand falls behind supply before a crisis has begun. And whatever may be the facts of this case, there is evidence that the strains which have actually precipitated the crises of recent years have appeared earlier in other branches of trade than those which cater to the wants of consumers.<sup>1</sup>

Spiethoff's theory of the ill-balanced production of industrial equipment and of complementary goods supplies two elements in the preceding discussion. But here these elements have been given a somewhat different setting. The under-production of complementary goods appears in the guise of an increase in the costs of materials, labor, etc., so rapid that it threatens to reduce prospective profits. The over-production of industrial equipment appears as one of the obstacles in the way of advancing selling prices sufficiently to offset this increase in costs. If this setting helps to make the bearing of Spiethoff's analysis clearer, it also serves to show that other elements besides those upon which he enlarges must be taken into account.

Hull's theory that the high cost of construction work in periods of intense prosperity causes a severe decline in investment demand and hence a crisis, which spreads from such industries as the steel trade to all branches of business, has been incorporated into the preceding analysis. But there it is combined with numerous other ideas which Mr. Hull has neglected.

Lescure's theory of variations in prospective profits combined with Veblen's theory of the discrepancy between prospective profits and current capitalization affords the general framework of Chapter XI. But the analysis of these two writers has been developed by the aid of suggestions drawn from other sources, and an attempt has been made to test certain of their assumptions by the use of statistical materials.

Among the suggestions thus utilized are those made by Sombart, Carver, and Irving Fisher. While all three suggestions belong in an analysis of the way in which prosperity engenders a decline of prospective profits and thus undermines the basis of credit, no one of them can properly stand alone.

Stresses within the system of prices may well arise, as Sombart holds, because the supply of organic goods does not keep the same pace as the supply of minerals and the like; but, unless the preceding analysis is sheer imagination, there are other factors at work, more regular in their operation than the uncertainties of the harvests, and not less potent in encroaching upon profits.

Carver's theory of the dissimilar price fluctuations of producers' and consumers' goods is another way of explaining the fact that prosperity brings on a rapid increase of industrial equipment, and that a crisis occurs when the increasing supply of goods cannot be sold at a profit. Of course this feature of business developments has been taken into account; but it is far from standing alone—a conclusion which Mr. Carver would be prompt to recognize were he dealing with the problem on a more extended scale.

Likewise, the lagging adjustment of interest rates to the fluctuations of the price level, utilized by Mr. Fisher to explain the occurrence of crises, is only one among several factors which widen the margins of profit in the early stages of prosperity and narrow them at a later stage.

Finally, incidental use has been made of Mr. Johannsen's theory of "impair savings." That is, it has been recognized in Chapter XIII that investments in refunding bonds, in the securities

<sup>1</sup> See Chapter XI, iv, 2, D.

of companies which are undergoing reorganization, and in properties sold under foreclosure, have no such stimulating effect upon business as investments in new industrial equipment. It is in part—but only in part—because investments of the former type predominate in the months succeeding a crisis that the current volume of production falls off.

While the proof sheets of this chapter were in my hands, Mrs. Minnie Throop England's preliminary sketch of her projected theory of crises appeared ("Economic Crises," *Journal of Political Economy*, April, 1913). Mrs. England seems to have formulated the problem in much the same way that I have done, to have employed like methods, and to have reached broadly similar conclusions.

## II. DIVERSITIES AMONG BUSINESS CYCLES AND THEIR CAUSES

Any analysis which traces the general course of the processes bringing about prosperity, crisis, and depression, inevitably leaves a misleading impression of uniformity among business cycles. As a matter of fact these cycles differ widely in duration, in intensity, in the relative prominence of their various phenomena, and in the sequence of their phases.<sup>2</sup>

### 1. *The Diversities*

If the years between one crisis and the next be taken as the length of a business cycle, the English, French, and German cycles beginning in 1890 lasted ten years, and those beginning in 1900 lasted seven years. The contemporaneous American cycles have shown wider variations: three years from 1890 to '93; ten years from 1893 to 1903; and four years from 1903 to '07. In view of these diversities, the notion that crises have a regular period of recurrence is plainly mistaken.

That business cycles do not always consist of a period of unruffled prosperity, of a well-defined crisis, and of uninterrupted depression is shown by American experience in 1893-1903. Depression was broken by the revival in 1895, and then aggravated by the extreme monetary stringency of 1896. The revival which began in 1897 was interfered with for a short time by the outbreak of war with Spain in the spring of 1898. The prosperous phase which followed was marred by the stock-exchange troubles of 1899 and 1901, and by the temporary slackening of general business in 1900.

Of examples of differences in intensity, the contrast between French and American cycles is the most striking. But even within the limits of one country, successive cycles bring relatively mild crises like those of 1890 and 1903 in America and severe panics like those of 1893 and 1907; relatively brief and moderate periods of depression like those of 1891 and 1904, and relatively long and drastic ones like that of 1894-96; relatively transient periods of prosperity like those of 1892 and 1909, and relatively long periods of intense prosperity like those of 1898-1902, and 1905-07.

<sup>2</sup> Compare "The Framework of Part III."

Finally, no two periods of prosperity, crisis, or depression show just the same combination of elements. Speculation is sometimes rampant during prosperity as in America in 1901, and sometimes held firmly in check as in England in 1906-07. A contraction of credit is often the most conspicuous feature of crises, as in the American panics of 1893 and 1907; while at other times it plays a minor role in comparison with the declining volume of new business, as in the British crisis of 1907. Different branches of trade and different sections of the country are found to be the chief seats of activity, the chief sources of stress, and the chief sufferers from depression in successive cycles. Indeed, dissimilarities of this type are so numerous and so obvious that it is not worth while to cite more than these few examples.

## 2. *Their Causes*

Many of these divergences among business cycles are due to events which arise from other than business sources. For the mechanism of the money economy is so delicate that someone's prospects of profits are affected by every day's news. Most important of all these extraneous factors in the long run are the chances of the weather which make crops good or bad, and so affect the prices of farm products, the purchasing power of agricultural communities, the earnings of "granger" railways, etc., etc. The making of war or of peace, disturbances of domestic order, earthquakes, conflagrations, epidemics, changes in monetary standards, tariff revisions, governmental policies regarding corporations, alterations in the gold output, improvements in industrial technique, the opening of new lands to settlement, the depletion of natural resources, the shifting of trade routes,—these and a thousand other things can scarcely fail of helping or hampering some business venture. If the circle which they reach be large and their effects pronounced, they doubtless give a peculiar twist to the business cycle within which they fall. Particularly in times of transition from one phase of the cycle to another, when the set of the current is uncertain, the influence of such events is often marked. But in the midst of prosperity, of crisis, or depression, it often seems as if the business community pays no heed to news which does not accord with the tenor of the time.

Less obvious but more persisting in their effect upon the course and character of business cycles are the changes continually occurring in business organization and practice, and in the relative importance of different industries. For example both the extravagance of "booms" and the violence of panics have been tempered by closer organization, wider knowledge, and firmer policies among the banks. Again, the rapid development of manufacturing and the decline of railway building in rank among American industries have helped to make the business cycles of 1900-10 different from those of 1880-90. Once more, the increasing dominance of large corporations which rely upon the investing public for their

funds gives greater influence to the markets for bonds and stocks than these markets exercised in the days of family enterprises. The broad contrast between French and American cycles shows how powerfully the relative development of thrift or of enterprise affects the intensity of both prosperity and depression. Other changes which react upon business cycles are the extension of monopoly control, the integration of industry, the organization of labor with its standardization of wage rates, and in general the readjustment of business to meet changes in the material, political, or social environment.

The reaction of such contemporary changes in economic organization upon the character of successive business cycles may be difficult to trace. But each new change accomplished becomes the basis upon which further change proceeds. That is, the broad changes of economic organization are cumulative, like the lesser changes which make each phase of every business cycle evolve into its successor. And, being cumulative, their dominating influence upon the phenomena of business cycles stands out clearly in the lapse of years. Hence it is probable that the economists of each generation will see reason to recast the theory of business cycles which they learned in their youth.

### III. BUSINESS CYCLES IN ECONOMIC HISTORY

#### 1. *The Genesis of Business Cycles*

If the term economic crisis be made to cover any serious disturbance of the usual processes of producing and distributing goods, then such crises are at least as old as economic records. Destructive "acts of God" and the wasteful wrath of man often brought acute distress upon communities of industrious people long before economic organization assumed its present form and business cycles began to run a regular course.

More modern in their character were the disturbances which followed the organization of credit. By the sixteenth century, for example, the public debts of France, Spain, Austria, etc., had attained such development that royal repudiations became a prolific source of financial crises in centers like Antwerp and Lyons.<sup>3</sup> The rise of banking exposed mercantile circles to still other dangers. The goldsmith bankers in London, to cite specific instances, were subjected to runs and their patrons to panics when the Dutch burnt the English fleet at Chatham on the Thames in 1667, and again in 1672 when Charles II stopped payments from the Exchequer. But, though such episodes may fairly be called financial crises, they differ from their recent counterparts both in the limited number of trades which they affected and in their direct dependence upon war or the fiscal embarrassments of government.

<sup>3</sup> See the second volume of R. Ehrenberg's *Das Zeitalter der Fugger*, Jena, 1896.

Even in the eighteenth century most of the English crises arose from other than business sources—though by this time England had definitely assumed the leadership in economic organization. In 1708 the goldsmith bankers took advantage of reports of Jacobite plots and of preparations in France for a descent upon Scotland to attack the credit of the Bank of England. In 1720 the South Sea Bubble burst, ending an almost incredible mania of speculation in stocks. The next crisis occurred in 1745, when the Pretender with his Highlanders penetrated within 120 miles of London. The end of the Seven Years' War was followed in 1763 by lively speculation and collapse upon the Stock Exchange. Again in 1771-73 the making of peace led to speculation and a crash. Five or six years later losses brought on by the war with the American Colonies caused serious business difficulties. When this war ended, in 1783, peace once more gave rise to a sudden expansion of business and the expansion ended in a crisis. Finally, in 1793, came what the historian of these events calls the first of England's great industrial crises, followed by depression in general business.<sup>4</sup>

This brief recital indicates that business cycles are much later in appearing than economic, or even strictly financial crises. In England itself they seem not to have begun before the close of the eighteenth century. But when they did appear, it was in the form of an extension over all branches of industry of difficulties not unlike those which had been suffered for more than a hundred years by large capitalists, bankers, and speculators in stocks. With this extension in scope came a shifting in the relative importance of the causes. In the past, the undermining of credit had usually been caused by war, by the making of peace, or by some violation of financial obligations on the part of government. In the future, the undermining of credit was to be caused more frequently by stresses engendered within the world of business itself.

The reason for both of these changes lay in the gradual extension of the highly organized business enterprise from its earlier centers of foreign commerce, mining, finance, and banking over the wide field of manufacturing and domestic trade—an extension which accompanied the Industrial Revolution. As handicraft gave place to factories managed on business principles, catering to a wide and uncertain market, entering freely into long-term contracts, requiring a heavy investment of fixed capital, and using borrowed money on a liberal scale, the circle of enterprises affected by financial difficulties grew steadily larger, and the danger that financial difficulties would arise from the conduct of business affairs grew steadily greater.

Moreover, as manufacturing and domestic trade became dependent upon the money and investment markets, crises began regularly to be followed by periods of liquidation in manufacturing and mercantile circles. But since the financial difficulties now arose largely from the embarrassment of manufacturers

<sup>4</sup> Mentor Bouniatian, *Studien zur Theorie und Geschichte der Wirtschaftskrisen*, vol. II; *Geschichte der Handelskrisen in England, 1640-1840*, Munich, 1908, chapters 3-6.

and merchants, a thorough-going liquidation on the part of the latter ended the conditions which had caused the crisis and paved the way for a resumption of business activity. And since both the accumulation and the relaxing of these stresses came about regularly as a by-product of business processes, the irregular, unpredictable crises of the past turned gradually into the cycles of prosperity, crisis, and depression upon which men have come to count and which they are beginning to forecast.

In proportion as the Industrial Revolution and its concomitant changes in the organization of commerce and transportation spread to other countries, the latter began to develop the phenomena of business cycles already familiar in England. And in proportion as the business enterprise completed its domination of manufacturing, wholesale trade, finance, transportation, mining, and lumbering, and began to invade retail trade, the professions, and agriculture, the cyclical oscillations of expansion and contraction brought ever larger numbers of men under their immediate sway.

## 2. *Man's Mastery over the Workings of the Money Economy* ✓

Business cycles, then, make their appearance at that stage of economic history when the process of making and distributing goods is organized chiefly in the form of business enterprises conducted for profit.

This form of economic organization has been gradually developed out of earlier forms by successive generations of men who have thought to gain some advantage from each successive step. But the complicated machinery of the money economy has never been wholly under the control of its inventors. The workings of the system are not fully mastered even by the present generation of business men, and recurrently the financial machinery inflicts grave suffering upon us who use it. Because we have not learned how to prevent costs from encroaching upon profits and stringency from accumulating in the money markets, how to keep steady the construction of new industrial equipment, how to control the market capitalization of business enterprises, and how to avoid spasmodic expansions and contractions of credits—because our theoretical knowledge and our practical skill are deficient regarding these technical matters, we cannot maintain prosperity for more than a few years at a time.

Nevertheless, within the past century, we have made incontestable progress toward mastery over the processes of the money economy. The Tulip Mania in Holland, the South Sea Scheme in England, and the Mississippi Bubble in France have no worthy rivals in recent decades. Even the speculative excitement which preceded the crisis of 1873 in the German states and in America has scarcely been equalled since 1890. By a combination of various agencies such as public regulation of the prospectuses of new companies, legislation supported by efficient administration against fraudulent promotion, more rigid requirements on the part of stock exchanges regarding the securities admitted to official lists, more efficient agencies for giving investors information, and more conserva-

tive policy on the part of the banks toward speculative booms, we have learned to avoid certain of the rashest errors committed by earlier generations. Again, from hard experience, European banks at least have learned methods of controlling a crisis and preventing it from degenerating into a panic. The "integration of industry" has also done something, though less than is often claimed, toward steadying the course of business both by concentrating power in the hands of experienced officials, and by moderating the extreme fluctuations of prices.

### 3. *Proposals for Controlling Business Cycles*

What has been already accomplished in these directions toward controlling our business machinery may well be the earnest of greater achievements in the future. Three promising lines of effort are presented by the proposals to re-organize the American banking system, to use governmental and railway purchases as a business balance wheel, and to "stabilize the dollar."

The first proposal aims primarily at preventing crises from degenerating into panics. The feasibility of accomplishing this aim has been proven by European and Canadian experience, and practical plans have been worked out in detail by the Monetary Commission, congressional committees, bankers' associations, and private investigators. Indeed, banking reform is both the most needed and the easiest to accomplish among all the changes which promise to increase our control over the workings of the money economy. But the literature upon this subject is so large and so accessible that there is no need to go into detail in this book.

The second proposal, to use governmental and railway purchases as a balance wheel to steady the business mechanism, aims primarily at mitigating the severity of depressions. It has been formulated most definitely in France and in England. In 1907 the French Minister of Public Works directed that inquiry be made concerning the effect of crises upon railways. The report argued that it is feasible for the great railway systems to distribute their orders for rolling stock, etc., systematically over the full period of a business cycle in such fashion as to reduce the volume of orders now placed in busy years and to increase the volume in dull years. This change would be to the financial advantage of the railways in that equipment is cheaper to build in years of depression, to the advantage of shippers in that a more timely provision of rolling stock would diminish the frequency of freight blockades and car famines, and to the advantage of the public in that the plan would make employment steadier in an important industry. By way of applying these ideas the Minister of Public Works in May, 1907, invited the railways to submit a definite programme for the purchase of rolling stock covering the years 1907-1910.<sup>5</sup>

<sup>5</sup> Notice sur la périodicité des crises économiques e ses rapports avec l'exploitation des chemins de fer français. Ministère des Travaux Public. Paris, December, 1907. Quite independently, Mr. Carl Snyder has suggested the financial advisability of much the same policy for the American railways. *New York Globe and Financial Advertiser*, January 3, 1913.

More ambitious in scope and different in emphasis is the scheme worked out by Mr. and Mrs. Sidney Webb. As part of a comprehensive plan for the prevention of destitution, they propose that a portion of government contracts be held back in years of intense activity and let out in slack years. Dr. A. L. Bowley's figures, on which they rely, indicate that if only 3 or 4 per cent of the government's orders were treated in this fashion, a very large part of the unemployment now caused by cyclical depressions might be counterbalanced. Among the items which could be relegated to a ten years' programme, and put to contract only when trade showed signs of falling off, they mention: ". . . one-half of the yearly appropriation for rebuilding and multiplying . . . government buildings . . .; one-half of the normal annual provision for such stores as blankets, canvas, and khaki cloth, of which there is always a large stock; the whole (or one-half) of the sum allocated annually to the gradual placing of telegraph wires underground, and the gradual extension of the telephone into every little village; the whole of such printing as the reports of the Historical Manuscripts Commission, and the official history of the South African War; at least one-half of the annual expenditure on developing the Government forests . . .; a considerable proportion of the Board of Education grants for the building of new training colleges and secondary schools; some part of the year's normal shipbuilding . . .; at least one-half of the annual appropriation for new rifle ranges and drill halls for the Territorial Force; most of the capital expenditure of the Congested Districts Board in Ireland, and so on. And to this should be added the whole of the sums, amounting to more than a million a year, already placed at the disposal of the Development Commissioners and the Road Board. It is very clear [they conclude] that there is, in the aggregate, a very large amount—out of which the total of four millions a year could easily be selected—and a very considerable variety of expenditure which could, without any appreciable inconvenience, be rearranged within the decade."<sup>5a</sup>

Finally, if Professor Irving Fisher's ingenious plan of "stabilizing the dollar" were adopted, and if it succeeded in keeping fluctuations of the price level within narrow limits, the course of business cycles would doubtless become more even than at present. For if every rise or fall in commodity prices were checked promptly, one of the chief factors now causing changes in the prospects of profits would be practically removed. Of course there might still occur unequal changes in the relative prices of raw materials and finished products, of consumers' goods at wholesale and retail, or of labor and loans, which would affect profit margins without disturbing in equivalent degree the general index number used as a basis for compensating the dollar. Profits would also be subject to changes arising from variations in the volume of business, in the

<sup>5a</sup> *The Prevention of Destitution* (London, 1912), pp. 118, 119. Consult also the references given on p. 157. Compare B. S. Rowntree and B. Lasker, *Unemployment* (London, 1911), pp. 306-308.

efficiency of labor, etc. But since the magnitude of the effects now produced by these factors results from their cumulative action in heightening each other's intensity, the paralyzing of one potent factor would render the others also less potent.

The feasibility of carrying out these proposals, aside from banking reform, has not been demonstrated on a large scale. Certainly all three plans merit careful consideration. They are brought forward in this place, however, merely for the purpose of suggesting concretely possible ways in which man's control over the workings of the money economy may be increased in the future.

Apart from such specific reforms in economic organization, progress lies in the direction of bettering our forecasts of business conditions. For when coming troubles are foreseen they may be mitigated often, and sometimes averted.

#### IV. THE FORECASTING OF BUSINESS CONDITIONS

The uncertainty attending present forecasts of business conditions arises chiefly from the imperfections of our knowledge concerning these conditions in the immediate past and in the present. For, since business cycles result from processes of cumulative change, the main factors in shaping tomorrow are the factors at work yesterday and today.

Now the money economy affords most unequal insight into its own workings to different classes of business men. These inequalities open a rich source of profit to the favored class, and their efforts to make the most of their chances may increase the violence of crises. One way of increasing social control over economic activity is therefore to democratize the knowledge of current business conditions already possessed by a few. But the ways and means to this end can be discussed better after the present inequalities of knowledge and their consequences have been set forth.

##### 1. *The Exceptional Opportunities of Certain Financiers*

Concerning the business condition of crucial importance—fluctuations in profits—it is especially difficult to secure prompt, reliable, and wide information. There are certain men so placed in the business world, however, that they have a wide outlook over profits, and so trained that they can draw fairly safe conclusions concerning the trend of the changes going forward. The greater capitalists who are actively participating in many enterprises and who have intimate personal relations with other captains of industry are in this position of vantage, and so also are the managers of the largest banks. Doubtless the information at the disposal of even these men at the center of the financial system leaves much to be desired in scope and accuracy. Doubtless the inferences which they draw

are warped by their personal equations and the forecasts which they make are measurably divergent. But could these gentlemen be induced to publish frankly what they know concerning the present and what they really expect in the near future, it is probable that the concensus of their opinions would seldom prove far wrong.

However, this superior foresight is a business asset of too much value to be given away. The man of large means who can make trustworthy forecasts of the coming of a crisis is able to shift his holdings in such fashion as to avoid losses which will fall upon the unwary and to make profits by having funds in hand for buying property at bargain prices. Not until his own affairs have been thus arranged is he likely to take the public into his confidence. When he does speak it may well be with a view toward influencing the trend of sentiment among lesser business men and investors to his own advantage. The public, therefore, has good reasons for reading the interviews which prominent financiers occasionally give out in a highly critical spirit.

The advantage enjoyed by this small group of major financiers is not limited to superior opportunities for foreseeing approaching changes. In a measure they can control the events they forecast. This ability arises chiefly from the increasing centralization of power to grant or withhold credits. On the one hand, the rise of the great corporation has made the business enterprises of strategic importance dependent upon the metropolitan markets for loans and securities, rather than upon local banks and investors. On the other hand, the great banks, insurance companies, and investment houses which dominate the financial markets of New York, London, Paris, and Berlin have developed intimate relations with each other, and can be controlled by a few small coteries of financiers. To these men is therefore given a large measure of power over the granting of bank loans, the floating of new securities, and the prices of outstanding stocks and bonds. This power they can use, if they choose, to increase the stresses which prosperity breeds. If they lock up large sums of money, for example, they reduce the reserves of banks and precipitate the downward revision of credits with which a crisis begins. If they block corporations from raising loans needed to meet maturing obligations, they force the appointment of receivers, beat down the price of stocks, and create a sentiment of distrust which produces further consequences of its own.

What little is known of the "inside workings of high finance" indicates that this power has not yet been exercised with the ruthless efficiency of which it is susceptible. Doubtless many great business men would recoil from the idea of deliberately aggravating a crisis for their own gain. Moreover, the financiers who have most power over credit are often heavily interested in industrial enterprises, and fear to lose dividends in the period of depression which would follow a crisis. A third deterrent is the obsession of the dollar as a stable measure of value. So accustomed do business men become to treating the dollar as constant

and imputing all changes in prices to fluctuations in the value of the goods quoted, that they do not readily grasp the money profit to be made out of changes in the general level of prices. Finally, even in the highest circles of finance; centralization of power has not yet gone far enough to guarantee unanimity of action.<sup>6</sup>

Among these deterrents from the effort to aggravate the fluctuations of business conditions, two at least seem to be losing their force. The increasing mobility of investments is making it easier for financiers to extricate their funds from industrial entanglements and put them into such form that a period of depression can bring no serious loss. And the continual fluctuations in the price level are ever demonstrating that dollars are shifting units, out of whose fluctuations profits may be made. It is therefore quite possible that financiers may exploit their opportunities for aggravating crises with greater energy in the immediate future than they have done in the recent past.<sup>7</sup>

If their efforts in this direction become more energetic, it may be expected that the old-fashioned capitalists who are interested primarily in the uninterrupted conduct of industrial operations will join with the great numbers of smaller business men to safeguard themselves from raids upon credit. Probably the demand for government regulation, which is directed at present chiefly toward regulation of railway and industrial corporations, would then be extended to regulation of all the financial operations concerned with the granting of loans. But it is not yet clear precisely how government could intervene to prevent powerful groups of financiers from locking up money when they saw fit, from refusing banking accommodation when they chose, or from declining to underwrite new issues of securities for corporations out of favor.

Indeed, the increase of government regulation in industry may make the most aggressive capitalists more eager to interest themselves primarily in finance and to exploit to the utmost their opportunities of manipulating credit. In that case a second line of defence may be followed by many whose business interests are jeopardized. If reliable information concerning profits and credits, such as now exists in partial form and in few hands, were collected and published, the strategic advantage of the great financiers in forecasting crises would be materially reduced. For then everyone interested could take such measures of precaution when prosperity was seen to be breeding a crisis as his affairs required and his judgment suggested. Indeed, everyone within the measure allowed by his pecuniary resources might endeavor to turn the coming crisis to

<sup>6</sup> In New York, for example, there appear to be several groups of powerful financiers, each group more or less firmly cemented together by family ties and business interests, but changing from time to time in personnel, in relative prestige, and especially in their relations with the other similar groups. Ordinarily each group acts more or less independently, and frequently one group engages in a bitter contest with some rival. Sometimes such contests bring about grave disturbances in the business world, as when the fight between the Hill and Harriman interests for the control of the Burlington railroad led to the Northern Pacific corner of May, 1901. But at other times the lack of concerted action is a factor of safety in that it lessens the control which any single power can exercise over the financial markets.

<sup>7</sup> Compare Veblen, *Theory of Business Enterprise*, pp. 206-209; Edmond Kelly, *Twentieth Century Socialism* (New York, 1910), Book II, Chapter VI.

his own profit—a situation which would result in few being caught at a disadvantage. The field left open for predatory exploitation by financiers would be reduced to the production of sudden contractions of credit of which the statistics of profits and credits had given no warning. That is to say, these campaigns would run counter to the general trend of business developments and would therefore be far less destructive than campaigns reinforced by the stresses accumulated by prosperity.

But all this concerns a problematical future. How do matters stand with the business public at present?

## 2. *The Business Barometers Available to the Public*

The American man of affairs who seeks to keep informed about the trend of business conditions at large relies upon the financial columns of his daily paper, supplemented perhaps by one or two of the financial weeklies and a special trade journal. The data which he can compile from these sources cover a considerable range.

Commodity prices at wholesale are represented both by actual quotations for the great staples of commerce and by index numbers like Bradstreet's. The prices of loans on call and on time for thirty days to six months are reported for New York, together with the market and bank rates in London, Paris, and Berlin. The prices of securities dealt in on the New York exchange are published in detail, and to show the general trend of the market there are convenient records such as the *Wall Street Journal's* average actual prices of twenty railway and twelve industrial stocks.

Fluctuations in the volume of business must be estimated from various sources: bank clearings, railway gross earnings, number of idle cars, imports and exports, coal, copper, pig-iron, and steel output, shipments of grain, cotton, live stock, etc. Government crop reports help to forecast the probable state of trade in various agricultural sections. Less systematic but often helpful are the numerous reviews of business conditions in different trades and different cities published at regular intervals by several weekly papers.

Information about the currency is supplied by the official estimates of the monetary stock, by reports of gold imports and exports, by the recorded movements of money into and out of the New York banks, and by the figures concerning production and industrial consumption of gold, and the distribution of money between the banks and the public—though these last three statements come but once a year. Regarding the banks there are telegraphic statements from the central institutions of Europe, weekly reports from the clearing-houses of New York, Boston, and Philadelphia, five reports a year from the national banks, and a variety of official and private reports of banks organized under state laws.

Some idea of the volume of investment and speculation going on may be obtained from the transactions of the New York Stock Exchange, the number of building permits granted, the mileage of railway under construction, and from the less systematic news items concerning fresh contracts let, security issues offered to the public, and the like.

Last and most important, the prospects of profits are best shown for the railways, whose gross and net earnings are published and commented upon with unflinching interest. The earnings of the United States Steel Corporation probably stand second in general esteem. Then comes a miscellaneous mass of information supplied by such reports as the large corporations engaged in various branches of mining, manufacturing, and banking choose to make public. The other side of the shield is shown by the statistics of bankruptcy compiled weekly by two great mercantile agencies.

Though far from complete, this list of materials for gauging the trend of business conditions is long. In fact, it is all too long for the average business man. To compile and to analyze the available data requires more time, more effort, more statistical skill, or more analytic ability than most men have to spend on the task. Hence the typical man of affairs skips the bewildering evidence and reads only the summary conclusions drawn by the editor of his financial paper or by the forecasting agency to which he subscribes. That the studying of business barometers and the forecasting of business weather has itself become a profitable business affords convincing proof at once of the need and the difficulty of using effectively materials published to all. It is from such specialists, rather than from the average merchant and manufacturer, that we may expect the improving and disseminating of the information required as a basis for perfecting social control over the workings of the money economy.

Now, these professional forecasters attached to the staffs of financial papers, investment houses, and the like do not find the data already at hand too elaborate. They have the time and the patience, they will acquire whatever they now lack of statistical technique and analytical skill to extract the essence from large masses of data. What they most need to improve their forecasts is more extensive and more reliable materials to work upon. But it is also quite possible to better the use they make of data already available.

In the next section certain suggestions are offered for the making of new and the bettering of old business barometers. Since they have grown out of an effort to understand recent cycles, these suggestions may be of service to professional business forecasters if not to the business public.

### 3. *Suggestions for Bettering Business Barometers*

#### A. NEW BAROMETERS NEEDED

Among the most needed additions to the list of American business barometers are the following:

A general index number of the physical volume of trade could be made from data showing the production of certain staples, the shipments or receipts of others, the records of foreign commerce, and similar sources. Professor Irving Fisher has shown that much material for this purpose is already incidentally provided in official documents,<sup>8</sup> and doubtless much more could be had for an enquiry which did not go back of 1900 or 1905. Separate averages should be struck for the great departments of industry, since the differences between the relative activity in different lines would often be not less significant than the computed changes in the total. So far as feasible these sub-divisions of the index number of the physical volume of trade should be made to correspond with those of the wholesale-price index.

Mr. Hull's plan for obtaining reports concerning the volume of contracts let for construction work and the percentage of work performed upon old contracts merits careful consideration.<sup>9</sup> Since it comes from a man intimately acquainted with the business, the feasibility of the plan cannot be lightly denied. Few sets of figures would give more insight into business conditions when prosperity was verging toward a crisis or when depression was engendering prosperity.

An index number of the relative prices of bonds and corresponding figures showing changes in interest rates upon long-term loans would not be difficult to prepare.<sup>10</sup> Even if standing alone, these two series would possess great value as reflecting the attitude of investors; but they would be still more useful if accompanied by data concerning the amount of bonds and short-term notes put upon the market by business enterprises and by governments, whether central or local.

Certain states—notably New York and Massachusetts—have made a beginning in the direction of providing statistics of unemployment. But we have no comprehensive data of this kind comparable with those provided by England, France, and Germany. Their value, not only as an index of welfare among wage-earners, but also as reflecting changes of activity within important industries and changes in the demand for consumers' goods is such as to make the present lack a matter of general concern.

<sup>8</sup> See the Appendix of his *Purchasing Power of Money*.

<sup>9</sup> George N. Hull, *Industrial Depressions* (New York, 1911).

<sup>10</sup> Compare Chapter IV, iii, 1, and iv, 6, above. Since this chapter was written the *New York Times Annalist* has made a beginning in this direction.

Most to be desired of all are statistics which would show the relative fluctuations of costs and profits. Unhappily, the difficulties both theoretical and practical in the way of obtaining such figures are particularly grave. But certainly every extension of public authority over corporate activity should be utilized to secure such uniform methods of accounting as have been imposed upon the interstate railways, and the reports obtained by the government should be made available in some significant form for the information of the business public.

Finally, the information practically available in forecasting business conditions could be materially increased by prompter publication of many of the data supplied by the government. In numerous cases extremely valuable figures are not given to the press until they have become matters of historical interest rather than current news.

#### B. THE IMPROVEMENT OF OLD BAROMETERS

The index numbers of commodity prices at wholesale would be more useful if separate series were computed for raw materials and for the articles manufactured from them, and if the raw materials were sub-divided into farm, animal, forest, and mineral products. The differences between the fluctuations of these several groups would be of great assistance in determining the causes, and therefore the significance, of changes in the grand total. Further, an index number of identical commodities in the United States, England, France, and Germany would facilitate the effort to follow the concomitant courses of business cycles in different countries and to anticipate the reaction of foreign upon domestic conditions.

Stock prices should be computed upon the index-number plan instead of in the current form of average actual prices of shares in a selected list of corporations or the aggregate market values of certain issues of securities. To facilitate comparisons the basis chosen for the index number of stocks should agree with that chosen for commodity prices. The distinctively investment stocks should be separated from the speculative favorites, and separate averages should be struck for railways, public utilities, and industrials. By proper selection of data fluctuations in the average relative prices of the industrial stocks might be made to reflect the fortunes of enterprises especially concerned with the providing of industrial equipment. In contrast, the public-utility stocks would be affected by a relatively steady consumers' demand, and railway stocks by the activity of general business.

The weekly and monthly reports of clearings also would be more useful if they were accompanied by index numbers which showed the relative magnitude of the changes in actual amounts. Separate averages of these relative figures should be provided for the centers in which financial operations, industrial activity, and agricultural conditions are the dominant factors.

Banking statistics would be more instructive if the actual amounts of the leading items were supplemented by ratios not only of reserves to deposits, but also of loans to deposits. Another set of relative figures should be made to show the amplitude of the fluctuations in the leading items. If the clearing-house associations would require from their members and make public accurate returns of the receipts and shipments of currency the activity of business in various sections could be followed with greater certainty. Finally, one of the darkest points of current business conditions in America could be cleared up if the rates of discount upon first-class commercial paper in these various centers could be regularly ascertained. But perhaps no thoroughly comparable statistics of discount rates can be compiled until the varying qualities of commercial paper now in circulation have been standardized by permitting the national banks to accept drafts after the European fashion.

To extend this list of suggestions for bettering figures of the sorts already published would be easy; but enough has been said to make clear the character of the desirable changes. In general, the need is for more careful discrimination between dissimilar data now often lumped together in a single total, the collecting from new centers of data already published for New York, more uniform methods of compilation to guarantee the comparability of what purport to be similar figures, and the computing of relative fluctuations upon a common basis. In many if not in all cases a double set of relative figures is highly desirable—one set referring to average actual amounts in some fixed decade, the other set making comparisons with the corresponding period of the preceding year.

#### C. DIFFICULTIES IN THE WAY

When the discussion of how to improve our control over the workings of the money economy is thus brought down to practical details, the complexity of the task becomes patent. Scarcely one of the suggestions made for bettering or extending the indices of business conditions but calls to mind various obstacles which hinder the getting of trustworthy data—the reluctance of private interests to divulge information, the diversity of business practices in various trades and sections of the country, the continual changes going forward in business organization, the alterations in the relative importance of different raw materials and still more in the kinds and qualities of manufactured products, the technical puzzles of statistical classification and averaging, etc. In view of these difficulties, the prospect of rapid improvement in the data for business forecasting is not so bright as might be desired.

The vigor of the efforts made to overcome the difficulties will depend largely upon the demands of business men for better service than they are now receiving. To-day the one class which evinces the clearest sense of the

usefulness of a comprehensive statistical survey of the business present as a basis for forecasting the business future is the class of speculators in stocks. But many men who prefer to call themselves investors, and an increasing number of brokers, bankers, merchants, manufacturers, contractors, and the like, are becoming active consumers of such reports. Since these classes can be counted upon to subscribe to those papers and confidential agencies which give them the most satisfactory service, business forecasting will doubtless become a more extensive profession, and make such progress as is possible under private initiative spurred on by competition.

There are many lines of business, however, concerning which information that is both reliable and comprehensive cannot be secured by private enterprise. Whether the government will extend the scope of its present activities in this field will probably be determined chiefly by large issues of public policy. For most of the figures compiled by the government are by-products of measures taken with other ends in view than the increase of knowledge concerning the workings of the money economy. As the railway statistics are an incidental result of the interstate commerce law, the banking statistics of the national banking act., etc., so future additions to the government's statistical output will be made or not as public control over business affairs is extended or restricted.

Certainly the community as a whole has a deep interest in developing this branch of the government's work. The business men who study financial journals are chiefly concerned to make profits or to avoid losses arising from the ups and downs of the markets. The community, on the contrary, is interested in reducing the disturbances which these market ups and downs cause in the process of making and distributing useful goods. But so long as this process of making and distributing useful goods is subordinated to the process of making money, the community's interest in steadying the pace of economic activity can be promoted by giving all business men alike the best possible opportunities for knowing the present and forecasting the future. However, a vivid realization of what might be accomplished along this line for the general welfare is not common. More direct efforts to apply governmental agencies to the correction of what are deemed to be ill results of business enterprise make a stronger appeal to the majority of voters. Hence it is those who desire to see the present form of economic organization perfected rather than fundamentally changed who are most concerned with pressing the demand for better governmental reporting of business conditions.

#### V. THE "MONEY SURFACE OF THINGS" AND WHAT GOES ON BENEATH

The present theory of business cycles deals almost wholly with the pecuniary phases of economic activity. The processes described are concerned with changes in prices, investments of funds, margins of profit, market capitalization of business enterprises, credits, the maintenance of solvency, and the

like—all relating to the making of money, rather than to the making of goods or to the satisfaction of wants. Only two non-pecuniary factors command much attention—changes in the physical volume of trade and in the efficiency of labor—and even these two are treated with reference to their bearing upon present and prospective profits.

The reason for thus staying upon the “money surface of things” in analyzing business cycles, rather than for attempting to penetrate beneath to the motives which actuate economic conduct, is the reason set forth in Chapter II. Modern economic activity is immediately animated and guided, not by the quest of satisfactions, but by the quest of profits. Therefore business cycles are distinctly phenomena of a pecuniary as opposed to an industrial character. To dip beneath the business considerations relating to profit and loss, to deal with “psychic income” and “psychic cost,” even to deal with physical production and consumption in other than their pecuniary bearings, is to distort the problem. For the processes actually involved in bringing about prosperity, crises, and depression are the processes performed by business men in endeavoring to make money. Business men refuse to complicate their problems by going back of the dollar to that for which the dollar stands, and he who would understand what they are doing must treat their action as it is.

But if the causes of business cycles which it is important to trace lie almost wholly within the pecuniary order, the consequences of moment are matters of human well-being. The ways in which business prosperity, crisis, and depression react upon the bodily and mental welfare of the community are so numerous, however, that it is feasible to mention only a few of the most significant.

First, it has been shown that the provision made for satisfying the community's needs—the physical volume of current production—grows more abundant when business is prosperous and more scanty in the earlier stages of business depression. But neither the expansion nor the shrinkage in this supply of useful goods is so great as the expansion and the shrinkage in the corresponding pecuniary values. And the alteration which does occur in the output of industry is distinctly greater with reference to producers' than with reference to staple consumers' goods. That is, the amount of food, clothing, and the like produced by the community for its own current use is steadier than the business barometers suggest.

Upon the distribution of this current supply of useful goods business cycles exert a strong influence, since they produce widespread changes both in money incomes and in the purchasing power of dollars. The precarious plight of the wage-earner's family in the money economy consists largely in the shrinkage of employment caused by business depression. The physical privations, the anxieties, and the humiliations forced upon this class by inability to find work are not only themselves a grievous evil, but they are also prolific sources of

further evils—intemperance, prostitution, chronic idleness, the desertion of families, and the stunting of children. Profits doubtless shrink in larger proportion than wages, and many families who draw their income from this source are forced to adopt painful economies and to endure much anxiety, though they seldom suffer such extreme hardships as those of wage-earners out of work. On the other hand, the relatively small class of persons whose incomes really do remain fixed during depression profit by the reduced cost of living; but for this material advantage they pay a heavy price in uncertainty and in sympathetic participation in the sufferings of others.

Business cycles also affect material well-being by influencing the selection of business leaders, the centralization of economic power, and the progress of industrial technique.

Prosperity stimulates enterprise and encourages business men to set up for themselves. But by making it easier for the unfit managers to survive for a time, it reduces somewhat the community's economic efficiency. Even the abler business men, under the press of hurry, relax somewhat their precautions against waste. Meanwhile investors become more inclined toward rash ventures, and an increasing proportion of society's energy is thrown away in unprofitable undertakings. Crisis and depression, on the contrary, serve at least to weed out the less competent managers, to enforce vigilant attention to detail upon all, and to make investors cautious.

The foreclosure sales and reorganizations to which depression gives rise afford the best opportunity for the increase of fortunes already large, and for the rise of business magnates already powerful.<sup>11</sup> In this way depression promotes the centralization of control in the world of business. But, on the contrary, it often weakens or destroys loosely cemented alliances or pools for the regulation of competition. And the promotion of great combinations among business enterprises formerly independent is usually undertaken in the middle stages of prosperity, when investors are optimistically inclined and before the money and bond markets have become stringent.

For the progress of industrial technique, in the sense of the practical application of improvements already invented, the most favorable phase of the business cycle is the period of revival of activity. Depression forces men to cast about for any feasible method of reducing cost; but it offers little inducement for the immediate expenditure of large sums upon improvements. It is the season when alterations are planned; that of revival is the season when they are executed on the largest scale. Prosperity is less favorable, not for lack of funds, but for lack of time and attention.

In general, prosperity is a season of strenuous activity, recompensed by material comfort and enlivened by high hopes. Its chief social drawbacks are the waste incidental to hurry, the extravagance bred by affluence and optimism, the obsession of attention by business interests, and the anxieties which cloud

<sup>11</sup> See Anna Youngman, *The Economic Causes of Great Fortunes* (New York, 1909).

its later days. A crisis intensifies these anxieties, particularly for business men and investors. The turmoil subsides in depression; but the subsidence brings despondency upon those whose fears have been realized, and leaves others with a dull outlook at best. To workingmen it is the season of most suffering—of over-driving when at work and of privation when on the street. For these disadvantages its repression of waste, stimulation of plans for technical improvements, and enforcement of caution regarding investments are but partial compensation.

Brief as it is, this statement of how business cycles react upon social well-being suffices to suggest the double personality acquired by citizens of the money economy. Money making for the individual, business prosperity for the nation, are artificial ends of endeavor imposed by pecuniary institutions. Beneath one lies the individual's impulsive activities—his maze of instinctive reactions partially systematized into conscious wants, definite knowledge, and purposeful efforts. Beneath the other lie the vague and conflicting ideals of social welfare which members of each generation re-fashion after their own images. In this dim inner world lie the ultimate motives and meanings of action, and from it emerge the wavering standards by which men judge what is for them worth while.

The money economy has not supplanted, but it has harnessed these forces. Upon human activity and human ideals it has stamped its own pattern. How it has facilitated the division of labor, how it has given a pecuniary twist to the desire for distinction, how it has shifted the basis of political power and given rise to new social classes—these results of the money economy are widely recognized. How it has taught men to think in terms of its own formal logic, efficient within certain limits but arid when pushed to extremes, has been partially worked out by writers like Simmel, Sombart, and Veblen. How its technical exigencies subject economic activity to continual alternations of expansion and contraction this book has aimed to show in detail.

Subject as men are to the sway of pecuniary concepts and ideals they can still judge the workings of the money economy by more intimate and more vital standards. To make these latter standards clear, to show in what definite ways the quest of profits transgresses them, and to devise feasible methods of remedying these ill results, is a large part of the task of social reform. Economic theory will not prove of much use in this work unless it grasps the relations between the pecuniary institutions which civilized man is perfecting, the human nature which he inherits from savage ancestors, and the new forces which science lends him. To treat money as an empty symbol which "makes no difference save one of convenience" is a habit exceeded in superficiality only by the habit against which it protests—that of treating money-making as the ultimate goal of effort.

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