CHAPTER II.

ECONOMIC ORGANIZATION AND BUSINESS CYCLES.

I. The Historical Connection Between Business Cycles and the Use of Money.

1. A Preliminary Statement.

That business cycles occur only in communities having a distinctively modern type of economic organization is explicitly recognized by several of the writers cited in Chapter I, and is implied by all who trace these cycles to institutional factors of recent development. Even the theories which resort to physical causes need not be taken as dissenting opinions. Whatever cycles occur in the weather produce cycles in economic activities only where economic activities are organized upon a business basis.

This dependence of business cycles upon a particular scheme of institutions must be a fact of the highest theoretical significance. But what we can learn from it will depend upon our understanding of the institutional scheme in question. Modern economic organization is so bewildering a complex that it explains nothing. Before we can make the historical connection illuminate our problem, we must find some way of breaking the complex into comprehensible elements, related to each other in a comprehensible fashion. Is there not, then, some feature of the economic organization found in all communities subject to business cycles, which will help us to plan our inquiry into the various processes marked for investigation in the first chapter?

Two suggestions are provided by Chapter I. Many economists have held that crises and depressions are a result of "capitalism," or, as others phrase it, "a disease of capitalism." A few recent writers have preferred to say that business cycles are produced by "money economy." [1] Neither of these statements professes to be a theory of business cycles. But both statements suggest working programs

[1] For illustrative citations, see the section of Chapter I called "Causal Theory and Analytic Description."

which we might follow. Can we organize our inquiry into the various processes involved in business cycles more efficiently if we relate these processes to "capitalism," or if we relate them to "money economy"?

The view which will be developed here runs as follows: The feature of modern economic organization which throws most light upon business cycles is that economic activities are now carried on mainly by making and spending money. This condition is characteristic of capitalism; but that term puts its stress upon other features of the present scheme of institutions—such as the ownership of the means of production—features of primary importance in certain problems, and not to be neglected here, but features of less service in the effort to understand alternations of business prosperity and depression than the feature stressed by the term "money economy." Accordingly, we shall seek a less ambiguous term for this concept, analyze its meaning, and use it in exploring the maze of processes which we have found to be involved in business cycles.

One reason why the connection between business cycles and pecuniary organization was long overlooked is that the difference between the use of money in communities which do not and in communities which do suffer from business cycles is a difference in degree, not a difference in kind. Economists accustomed to depend upon what Alfred Marshall called "qualitative analysis" were prone to overlook the significance of differences in degree, and to concentrate attention upon differences in kind, or what they took to be such. Capitalism seemed to many men in the nineteenth century, men not versed in economic history, a new portent in economic life. They fastened upon it as an explanation of many phenomena which seemed to them equally new—commercial crises among others.

As will be shown below, the coming of business cycles is a gradual development. It can be explained only by some change which proceeds by degrees. Communities slowly become subject to recurrent alternations of prosperity and depression as a large proportion of the people begin to rely upon making and spending money in a large proportion of their activities. We lack the data which might enable us to assign a critical point, or a critical range, in the growth of money economy at which business cycles appear. But we can tell in what period the critical range was reached in various countries.[2]

[2] Capitalism also developed gradually, and, so far as that goes, might serve as well to explain the coming of business cycles as does the cumulative growth of pecuniary

Just because its development has been so gradual, "money economy" has many meanings. It calls to mind certain features in the dissimilar economic organizations of states which have flourished at various times through several thousand years of history. A term which can be taken to cover all the successive stages in a long and checkered evolution is not an apt term to characterize the peculiarities of the latest stage in the series. To suggest the differentiating features of that highly developed form of money economy within which business cycles occur, we shall do well to use words which have modern associations in our minds. Perhaps the combination "profits economy" or "business economy" is most suggestive and least misleading. The second of these terms will be used in this discussion, but with frequent reminders that what seems to count in producing business cycles is the common practice of money-making and money-spending by the population as a whole, not merely by a limited class of business men.

2. The Meaning of "Business Economy."

To repeat: we do not say that a business economy has developed in any community until most of its economic activities have taken on the form of making and spending money. That way of organizing production, distribution and consumption is the matter of importance —not the use of money as a medium of exchange.[1]

Instead of making the goods their families need, 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 work of housewives, by the consumption of their own produce by farmers, by the raising of vegetables in family gardens,

organization. As said above, the reason for organizing the present inquiry around the use of money, rather than around the ownership of the means of production, is that the former plan puts the problems to be faced in a way which makes them more open to attack. Of course no contention of this sort can be justified in advance. It must stand or fall by the results to which it leads.

[1] One of the objections to the term "money economy" is that it is often contrasted with a "credit economy." Thus Bruno Hildebrand, who seems to have introduced the terms, distinguished three stages of economic development: *Naturalwirtschaft, Geldwirtschaft,* and *Kreditwirtschaft* (*Jahrbücher für Nationalökonomie und Statistik,* vol. ii, pp. 1-24). But Hildebrand's stages have not proved of much use either in economic history or in economic theory, and his term *Geldwirtschaft* seems now to be used in Germany much as "business economy" is used here. In this sense, of course, the predominant use of credit instruments in effecting payments is merely one feature of a highly developed money economy.

and by agricultural leases for shares of the crops, are continuations of an earlier order, in which most families subsisted chiefly upon goods produced by their own efforts and themselves consumed most of what they produced.

It is characteristic of the dominating rôle played by money in economic planning that the nation collects hardly any data concerning these surviving elements of "real" income which families produce for themselves. Housewives form by far the largest occupation group, outnumbering farmers three to one, and the group whose work affects welfare most intimately. Yet the census of occupations does not count the number of housewives working at home. Enumerators are instructed to include only "gainful occupations," those from which people get money incomes. When the National Bureau of Economic Research made its first studies of income, it could do no more than estimate the number of housewives, and apply to this number the average wages of a group of paid workers consisting mainly of women who do some of the multifarious tasks of the housewife. The rough results thus obtained ran above 18 billion dollars in 1919, more than a quarter of the total money income. But the whole procedure was so conjectural that the National Bureau did not venture to add the housewife item to its other figures.[2]

The other elements of family-produced income can be priced without hesitation, because they consist of goods such as pass through the markets. Yet we know their magnitude but vaguely. In 1914, Mr. W. C. Funk of the Department of Agriculture made a careful study of the incomes of 483 farm families, and estimated the value of their own produce which these families consumed.[3] With the aid of Funk's data, Dr. W. I. King has figured that the non-monetary income of American farmers amounted to nearly 2 billion dollars in 1913 and nearly 4½ billions in 1920—say 6 per cent of the national income in the latter year. Much smaller values, not reaching half a billion, are produced for their own consumption by urban and village

[2] See *Income in the United States*, by the Staff of the National Bureau of Economic Research, New York, 1921, vol. i, pp. 57-60.

[3] See United States Department of Agriculture, *Farmers' Bulletin* No. 635, December, 1914. More recently Messrs. L. M. Bean and O. C. Stine of the United States Bureau of Agricultural Economics have estimated that the income "consumed on farms for family living" has varied between 21.6 per cent of "operators' *gross* income from agricultural production" in 1919-20 and 27.6 per cent in 1921-22. "Income from Agricultural Production," *The Annals of the American Academy of Political and Social Science*. January, 1925, vol. cxvii, p. 33.

families which cultivate kitchen gardens, or keep cows, pigs and poultry.[4]

Finally, as the most important survival of exchange by barter, it may be noted that rather more than a quarter of the 6,450,000 farms in the United States were cultivated in 1920 by tenants who paid as rent a share in the produce.[5]

Despite the considerable importance of these continuations of an earlier order, the economic comfort or misery of a family now depends more upon its ability to command an adequate money income and upon its pecuniary thrift, than upon its efficiency in making useful goods and its skill in husbanding supplies. Even in years when crops are short and mills are idle, the family with money need not be uncomfortable. The family without money leads a wretched life even in years of abundance.[6]

To the family, then, prosperity and depression appear less as problems of the adequacy of the goods produced by itself or by the community as a whole, than as problems of the adequacy of its money income. To the nation, the making of money is important in a way quite different. Comfort and misery do not depend upon the aggregate of money incomes received by its citizens; they depend upon the abundance of useful goods. Efficiency in producing goods is important to an individual chiefly because of its bearing on his ability to make money; money-making is important to a nation chiefly because of its bearing upon efficiency in production. Natural resources, mechanical equipment, workmanlike skill, and scientific technique are factors of fundamental importance under any form of organization. But where business economy prevails natural resources are not developed, mechanical equipment is not utilized, workmanlike skill

[4] See *Income in the United States*, vol. ii, p. 231. There are other items of income, particularly, the rental value of owned homes and the use of other consumption goods such as furniture, which do not figure in the money income and outgo of a family each year. But most of these goods have been bought for money in the past, and the real income derived from them cannot be regarded as produced by the recipients. The estimate of the non-monetary income of farmers given in the text does not include the rental value of farm homes.

[5] *Fourteenth Census of the United States*, Agriculture, Washington, 1922, vol. v. p. 124.

[6] Compare Dr. Robert L. Hale's statement: "All incomes, in the last analysis, whether derived from ownership of property or from personal services, are not 'products' created by the recipients; they are payments derived from the rest of the community by the exertion of some sort of pressure. To say this is not to condemn the exertion of such pressure; it is the only means a man has under present arrangements, and perhaps under any workable scheme of things, for keeping alive." "Economic Theory and the Statesman," *The Trend of Economics*, edited by R. G. Tugwell, New York, 1924, p. 216.

is not exercised, scientific discoveries are not applied, unless conditions are such as to promise a money profit to those who direct production.

The elaborate coöperative processes by which a nation's people provide for the meeting of each other's needs are thus brought into dependence upon factors which have but an indirect connection with the material conditions of well-being—factors which determine the prospects of making money.

3. The Evolution of Business Economy.

To grasp the rôle played in our lives by this form of organization is difficult, because we who have grown up in a business economy have had our minds molded by it. In studying the institution as it now exists, we are practicing a sort of introspection into our own mental processes. To get an objective view of the present situation, our best course is to trace the stages by which the uses of money have grown. What is so familiar and organic a whole to us that we hardly see the need of analyzing it, will dissolve into thought-suggesting parts as we note how our race has slowly evolved one element in the complex after another.

The faltering first steps toward the use of money were taken in those dim stretches of time when men were beginning to exchange gifts and then to barter for the sake of goods, to evolve the concept of ownership, to express values in a common denominator, to use some commodity as currency, to hold markets, to develop specialized occupations, and to mix trading as a business with cattle lifting, man stealing and town sacking. Of all these slow developments what little information is available comes mainly from anthropologists and archæologists and is loosely tied together by conjecture.

When written history begins in Babylonia and Egypt, in China and India, in Europe, in Mexico and Peru, it shows us a more advanced stage. Men are using copper, silver or gold as currency; they are making contracts involving the future; they are buying and selling, borrowing and lending on a considerable scale; they are keeping rude accounts. Very slowly these practices diffuse from the centers of cultural achievement, and quite as slowly the shifting cultural centers score advances. The epochal invention of coinage was probably made in western Asia Minor about 700 B. C., and was carried by Phœnician traders round the Mediterranean world.

Having passed through these earlier stages, the uses of money entered a phase of rapid development in Phœnicia, Carthage, and Greece and upon a still more notable expansion in Rome. Money changing, letters of exchange, simple banking, production of staple goods on a large scale for a wide market, speculation, business enterprises not only in trading, but also in mining and manufacturing, became common. Large fortunes were built up by private people and invested for profit. Despite the prevalence of slavery, many men worked for wages. It was, indeed, a business-like society that flourished under the Pax Romana.

But with the disintegration of Roman culture, pecuniary organization declined as decisively as any other phase of civilization. In economic, as in political life, a sharp contrast appeared between East and West. Over those parts of the empire which were later to assume leadership in culture, central authority dissolved into a shifting multitude of local controls; petty warfare became a chronic misery; the admirable Roman roads fell into disrepair; commerce shrank to a dribble of luxuries for the powerful and a local exchange of indispensables like iron, salt and tar for the commonalty; manufacturing for a wide market almost disappeared; coinage became scanty, irregular, and incredibly confused; the use of money was superseded in large part by the payment of feudal and manorial dues in personal services and commodities. The vast majority of the population lived in village communities, each of which produced most of the things its low standard of living required, and consumed most of its own products. Even the kings and other magnates spent much of their time moving about from one manor to another, eating up the local produce on the spot. All the more elaborate achievements of pecuniary organization had to be won over again.

Quite different was the situation in the area dominated by Constantinople. There the money economy suffered no such eclipse as in western and northern Europe. Gold coinage, a banking system, manufacturing on a considerable scale, a commerce which tapped the Orient on one side and the western Mediterranean on the other side were maintained and in some respects elaborated. It was due largely to this continuation that the reëstablishment of money economy in western and northern Europe was a far more rapid process than its original growth, requiring scarcely a thousand years. What the Byzantines had conserved they, and the Saracens, passed on. After the sack of Constantinople by crusaders and Venetians in 1204, and

more decisively after the capture of Constantinople by the Ottoman Turks in 1453, commercial leadership passed to the Italian cities. Many merchants emigrated to Venice, Amalfi, Genoa, and other towns, carrying with them their capital, as well as their skill in commerce and finance. A vigorous development of money economy began in the lands bordering the western Mediterranean and spread by degrees to northern countries.

The stages of this revival are imperfectly known, though they have been lived through so recently. Economic history is a young specialty, and the men devoted to it have not been fully alert to the importance of pecuniary institutions. Nor do the surviving materials on which their work is based pay much attention to the homely details of the life of the peasant, the craftsman and the merchant, except as these humble people had relations with their lords. Yet enough is known, particularly regarding England, to reveal the broad features of the story.

In economic development, the leaders were successively the Italian cities, Spain, Southern Germany, France and the Low Countries. England lagged behind until the 18th century, when London finally displaced Amsterdam as the greatest financial center, and the English began to live by making and spending money incomes as generally as the Dutch. In a history of money economy, English developments would form but one strand in a complicated fabric—a strand which does not fairly represent the whole. But the very slowness of English developments serves the present purpose. For that purpose is not to sketch the history of pecuniary organization as a whole; but to make clear the complex character of the institutions which we are wont to take as a simple matter of course. Also, the English have peculiar interest for us, because, when they finally took the lead, pecuniary organization was just reaching that stage which ushers in the business cycles of our historical record.

Even in Anglo-Saxon times, the English kings were finding that the use of money was a more efficient method of administration than levying upon commodities and requiring feudal services. They early began to commute the duties in kind upon exports and imports, for example, so many tuns of wine or bales of wool in a cargo, into money payments, and to collect in money as much of the internal taxes, fines, and dues as their officers could. The Danegeld, for instance, was levied and paid in silver. The Anglo-Saxon kings struck a cur-

rency of silver pennies based on the Carolingian pound. (It was not until 1343 that gold coins were issued in England and the gold standard was not established until nearly 400 years more had passed.) Besides taxing, the English kings borrowed on a considerable scale from religious establishments, from the Jews until their expulsion in 1290, and later from Italian merchants and bankers who did business in London.

Another great step in pecuniary organization was taken when the kings began to replace the unreliable feudal levies with paid professional soldiers. This change involved commuting the tenant's obligation to render military service in person with his retainers at his back into money payments by the tenant-in-chief and his knights. And a similar change was effected gradually in the management of the crown lands. On royal manors the villeins were allowed to commute their dues in labor and commodities into sums of money which constituted a revenue the king could use where convenient.

Meanwhile the reorganization of life among the common people on the basis of buying and selling was proceeding spontaneously in the towns. Here the differentiation of crafts could develop only so fast as the exchanging of products increased. As they devoted more and more time to their specialties, the master craftsmen had to buy their raw materials and most of the food for their families, apprentices and in-working journeymen. The towns were also the centers of what foreign or inter-regional trade was carried on, and the volume of such trade grew unsteadily larger with each generation. Thus the towns came to be "islands of money economy" in a sea of customary duties and rights—*foci* from which organization on a monetary basis diffused itself gradually over the countryside.

In the rural districts the epochal change was the extension of commutation into money rents of the week-work, boon-work and commodity payments required of the masses of villeins and cotters. From the manors held by the crown and the great religious houses, this change spread slowly and unevenly to manors held by lesser magnates. The process was piecemeal, marked by pauses and spurts, but cumulative. It was accompanied by the rise of estate management for revenue, instead of for subsistence. More slowly still the masses of the peasantry moved, or were shoved, into a new manner of life. Holdings of scattered strips in the common fields were amalgamated into blocks. The waste lands, the commons and the common fields themselves were enclosed. On many manors, the old three-

field system of cultivation was abandoned in favor of the more lucrative grazing of sheep for the export commodity, wool, and later for methods involving more use of fertilizers and the rotation of crops.[1] Specialization in animal husbandry and crops increased. Those of the old population who could not master the new arts of making and living on money, sank to the position of wage-workers on the land, or drifted away to the towns. The more adaptable men turned into business-like farmers, paying money rents, using hired laborers and selling most of their produce. So slow and so uneven was the process of transformation that over much of England these changes were still going on in the 18th and early 19th centuries. Perhaps four-fifths of English acreage was enclosed after 1760.

Even by the 16th century, however, the uses of money had developed far enough in England to make the inflow of Mexican and Peruvian silver from Spain produce grave social results. The "price revolution" of the 16th and 17th centuries reduced the value of the money payments into which many dues had been commuted and so forced a reorganization of estate management upon many reluctant landlords. On the other hand, it gave increased opportunities for profit by dealings between the districts where silver was abundant and the districts where it was scanty. Thus the new supplies of the precious metals (for presently gold began to come in considerable volume from the Brazilian placers) gave a powerful impetus to commercial enterprise. England, which had been mainly a self-contained agricultural state, entered upon a career of colonizing, developed a mercantile marine, and in the 18th century became the foremost commercial power.

As commerce increased, financial organization became more elaborate. Lending at interest, which had been permitted only under conditions carefully stipulated by the Church, became a legalized practice as the benefits of investment of capital grew clearer. Presently banking arose in England. During the 17th century the London goldsmiths, whose business with precious metals made strong boxes necessary, were resorted to more and more frequently by merchants and other wealthy men for the safekeeping of moneys. The goldsmiths who accepted deposits found that they were never required to

[1] Dr. Harriett Bradley in *The Enclosures in England*, New York, 1918, cites evidence to show that wool growing became more profitable than wheat raising only on lands whose fertility had been depleted by long continued cropping. The price of wool was low in comparison with the price of wheat during the enclosure period of the 15th and 16th centuries. See chapter ii. and pp. 97-100.

pay back more than a fraction of the total in any day or week. They could make profits by lending part of the sums in their hands. To increase the funds which they could lend, they presently began to pay interest upon deposits. Soon they discovered that it was as easy to lend their promises to pay as it was to lend coin. Goldsmiths' notes became familiar currency among well-to-do people, and London had a flourishing set of banks of deposit, lending, and issue some decades before the Bank of England was established in 1694.

With the increased scale and growing intricacy of business dealings, there was need for more accurate bookkeeping. On large estates the stewards had perforce kept simple accounts of the work done and the commodities received from the numerous tenantry. Doubtless merchants and many craftsmen had made more elaborate records of their transactions. But the mystery of double-entry bookkeeping—an Italian invention first published in 1494—was both a marked technical advance in itself and an incitement to the further improvements which led to modern accounting. That mystery the mercantile classes of England began to acquire in the 16th century.

Commerce came home to the mass of English people while it was extending to the ends of the earth. The periodical markets and fairs, which made such a picturesque feature of medieval life, became inadequate to meet the needs as communities became less self-sufficient. Weekly markets became common, then daily markets, then retail shops. By 1700 not only London but also several other towns had a variety of shops doing business with a wide clientele.

Lagging not very far behind the development of new economic practices came their recognition and enforcement at law. Through their dealings with foreign traders abroad and at home, English merchants early became acquainted with the law merchant—a highly developed commercial code which had grown up during the Middle Ages in the great continental fairs. In his *Legal Foundations of Capitalism,* Professor John R. Commons has shown how the English judges gradually reshaped the old feudal conceptions of suzerainty to fit the nascent conception of private property in land; how side by side with the law of prerogative they built up the common law to regulate the relations among individuals; how they legitimized property in promises to pay, in good will, in going concerns. The great development of mercantile law by Chief Justice Mansfield came in the middle of the 18th century.

Trade, and to a less extent mining and colonial schemes, had been

the favorite field of what business enterprise appeared in the 16th and 17th centuries. Manufacturing, banking and insurance were added to this list in the 17th and 18th centuries. Capitalistic organization of various industries, as opposed to the earlier craft organization, developed with the widening of markets, and the consequent opportunity for mass production and standardization of products. Thus it antedated the "Great Inventions" by two or three generations. But the introduction of power machinery and the building of factories quickened and broadened the process. Adam Smith could take it for granted that a capitalist employer was the typical figure in industry, just as he took it for granted that a capitalist farmer paying money rent was the typical figure in agriculture. The proportion of men working on their own account shrank in all fields of enterprise, as did the number who consumed their own products, while the proportion of men working for wages increased.

As the scale of business undertakings grew, the one-man enterprise, and even the partnership, became inadequate. Large and hazardous ventures in foreign trade were carried on in the 15th and 16th centuries commonly by "regulated companies" enjoying certain privileges conferred by government, but composed of merchants each of whom traded on his own account. In the latter half of the 16th century, the joint-stock form of organization began its conquering career in England with the Russia Company and the Adventurers to Africa. The Bank of England (preceded by several continental institutions) adapted this form to banking and it spread slowly to other fields. But in 1776 Adam Smith argued that, in most lines of business, the joint-stock company was necessarily less efficient than the simpler organization in which one man or a few partners were giving strict attention to their personal interests. The enlarged capital needs of factories, however, the coming of railroads and the rapid growth in the volume of business, so altered the situation that within a century after the *Wealth of Nations* was published the joint-stock company in some of its proliferating variants became the dominating form of business organization outside of farming, retail trade, and the professions. The spread of this form was much more rapid after 1862, when Parliament accepted the principle of limited liability of stock holders.

An investment market evolved with the growth of capital. Stockbrokers had long been known in London before the great outburst of speculation in the shares of the South Sea Company in 1720. The

development of their business owed much to the rise of high-grade investments, particularly the manifold forms of government obligations. In 1773 the London brokers organized the Stock Exchange, and so had the financial machinery ready to handle the great increase of investment and speculative transactions in securities which came with the Napoleonic Wars, the spreading of joint-stock companies, and the building of railways. These facilities gave a stronger impetus and a wider scope to two processes already familiar to Englishmen. A new leisure class of people who had inherited "money" developed in each generation from the families of successful business men, and the old leisure class of landowners could strengthen their position by participating silently in business ventures or by intermarrying with the new rich.

When European settlers came to America they brought with them the monetary usages of their various home countries in the 17th century. But under the rough conditions of frontier life the colonists suffered a temporary recession to simpler forms of organization. They were short of coin and had to use commodity currencies at times—tobacco, wampum, beaver skins. They had to live more on their own, somewhat after the fashion of medieval villagers; the differentiation of occupations was simpler; financial machinery was scarcely needed and scarcely existed; the chief business of life was to get enough food and clothing, to build houses and clear land, to keep off the Indians.

This recession was relatively short-lived on the Atlantic seaboard, but it remained characteristic of life on the westward-moving frontier as long as the frontier lasted. Always the fur traders, the trappers and hunters, the early settlers, had to get or make much of what they consumed, though they could draw upon trading posts for their arms, tools and firewater, and barter or sell such of their products as were easily transportable. Even the more thickly-settled Eastern colonies, despite their rapid progress in economic matters, continued to lag behind England in the drastic thoroughness with which they practiced monetary habits, and the refinement with which they developed financial organization. It was not until late in the nineteenth century that the United States drew fairly abreast of the mother country in this respect. Even to-day our farming is not quite so business-like as the English, except for our large-scale ventures in coöperative marketing of agricultural products. Our investors have not evolved or borrowed all of the British institutions to look after their interests

our foreign financial connections are less perfect, and our technique in foreign trade is inferior. But on the other hand, retail trade on the whole is more highly organized than in England, and our industrial corporations probably excel the English not only in the scale of their operations but also in systematic organization.

This sketch is all too brief and too simple to give an adequate impression of the way in which the developing uses of money have altered the life of mankind, and how they have fitted into the growth of other institutions, checking some and stimulating others. Still less does it show how the development of monetary practices in England was related to the larger growth in Europe. But with all its omissions, the sketch suggests how "fearfully and wonderfully made" is the complex of pecuniary practices which seems to us so natural. The commutation of feudal dues into money payments, the corresponding commutation of labor and commodity rents into money, the development of crafts with exchange of products, the rise of towns as trading centers, the invention of banking, the growth of retail shops, the excogitation of business law, the organization of joint-stock companies and their rise to dominance in most fields of business enterprise, the adoption of accounting as the technique for controlling economic ventures, the evolution of special organizations to provide for investment and speculation, the differentiation of the whole population into those who live on wages, on profits, on income from investments, or on an income which combines these types, the shifting of power from men of prowess or high birth to men of great wealth or marked business ability, the discomforting of those whose talents are not such as to command considerable incomes in a money-making world—all these developments have combined to produce the current form of business economy. Nor can we assume that this current stage is the final pattern. On the contrary, it is probable that pecuniary institutions are now changing as rapidly as at any period of their long history.[2]

[2] Although the literature of money is reputed to be more extensive than that upon any other branch of economics, we have no comprehensive treatise upon the development of pecuniary institutions. In default of adequate guidance, I have had to compose the best sketch I could by piecing together bits drawn from many sources. To give a list of the books used would take much space and render little help to anyone acquainted with economic history. My heaviest obligations are to Dr. Edwin F. Gay who made many critical and constructive suggestions concerning my first draft.

I hope that better equipped investigators will presently take up the study of this subject, which is as fascinating as it is important, and which promises large returns to

4. When Business Cycles First Appear.

It is not until the uses of money have reached an advanced stage in a country that its economic vicissitudes take on the character of business cycles.

This remark does not mean that the economic life of communities with simpler organization is free from crises, or from alternations of good and bad times. On the contrary, life seems to have been more precarious, economic fortune more fluctuating, in a medieval town than in a modern city. But until a large part of a population is living by getting and spending money incomes, producing wares on a considerable scale for wide markets, using credit devices, organizing in business enterprises with relatively few employers and many employees, the economic fluctuations which occur do not have the characteristics of business cycles described in the preceding chapter.

If the coming of business cycles depends upon the gradual development of a specific form of economic organization, it must be difficult to date their first appearance in any country with precision. And so it is. To take the best explored case: Dr. William Robert Scott of St. Andrews has made a minute study of British business records in manuscripts, official reports, books, pamphlets and newspapers from the middle of the 16th century to 1720. From these materials he has compiled a summary showing the periods of good and bad trade and of crisis during the 163 years he has covered. The table on pages 76 and 77 gives Scott's list of crises, and his "remarks" concerning each. In a few cases where his entries are very brief, I have added in brackets explanations drawn from his text. Also, I have inserted a column showing the number of years from the beginning of one crisis to the beginning of the next.

With Dr. Scott's remarks upon English crises from 1558 to 1720, we may compare Dr. Willard L. Thorp's concise descriptions of English crises from 1793 to 1925, published in the National Bureau's volume of *Business Annals*. Several differences appear.

competent workers. Anyone who contemplates an investigation will find that Georg Simmel's *Philosophie des Geldes* (2d ed., Leipzig, 1907) is a most suggestive book to read before plunging into the historical sources. An interesting sidelight upon developments in Europe is thrown by a forthcoming monograph in the Columbia University Studies in History, Economics and Public Law: *The Penetration of Money Economy in Japan and its Effects upon Social and Political Institutions*, by Matsuyo Takizawa.

A List of Crises in England from 1558 to 1720

From William R. Scott, *The Constitution and Finance of English, Scottish and Irish Joint-Stock Companies to 1720*, vol. i, Cambridge, 1912, pp. 465–467.

"Serious crises" are marked with an asterisk

The "number of years between crises" is counted from the beginning of one crisis to the beginning of the next.

Dates of Crises	No. of Years between Crises	Remarks
1558–9	..	Famine 1556–8.
1560	2	English bills refused abroad [because of the financial difficulties of Government].
1563 (Aug.) to 1564 (Aug.) *	3	Plague (the number of deaths said to be 20,000), interruption of trade with Flanders, famine.
1569 (Jan.) to 1574 *	6	Seizures of English goods in Flanders, January, 1569, followed by failures. Norfolk's insurrection, December, 1569, followed by failures. Bad harvests from 1571 to 1574. It is slightly uncertain whether the years 1570–4 should be classed as a part of the crisis or of the subsequent depression.
1586–7 *	17	Babington plot, failures, bad harvest, 1587.
1596–7 *	10	Famine, 1595–8.
1603 *	7	Plague, deaths in London, 30,561.
1616–17	13	Crisis in cloth trade [disorganized by manipulations of James I].
1620–5 *	4	Effects of crisis in cloth trade, Dutch competition in foreign trade, default of East India and Russia companies, bad harvests, plague, deaths in London, 35,403.
1630 *	10	Famine, tonnage dispute, plague, deaths in London, 1,317.
1636–7	6	Depression through the monopolies of Charles I, plague, deaths in London, 10,400.
1640 *	4	Seizure of bullion by Charles I. (July), of pepper (Aug.), plague, deaths 1,450.
1646–9 *	6	Exhaustion of the country through the Civil War, great dearth, high taxation.
1652–4	6	Losses of shipping in the Dutch War, possibly too effects of the Navigation Act.
1659–60	7	Losses in Spanish War, especially in cloth trade, strain of continued high taxation.
1664 (Winter) to 1667 (July)*	5	Dutch War, plague (deaths 68,596), Great Fire, Dutch fleet in the Thames, 1667. Run on bankers.
1672 *	8	Stop of the Exchequer, failure of bankers.
1678	6	Prohibition of trade with France, expectation of war with Holland, run on bankers.
1682	4	Run on bankers occasioned by state of home politics foreign trade little affected.

A LIST OF CRISES IN ENGLAND FROM 1558 TO 1720—*Continued*

Dates of Crises	No. of Years between Crises	Remarks
1686	4	Depression in cloth trade, failure of Corporation bank [1685, on news of Monmouth's rebellion], foreign trade still fairly prosperous.
1688	2	Revolution—run on bankers.
1696–7 *	8	The financial strain of the war, exaggerated ideas of the nature of credit, bad harvests, suspension of cash payments by Bank of England, failure of Land bank schemes.
1701 (Feb.) *	5	Tension between East India companies, political situation, run on banks and consequent failures.
1704 (Oct.) to 1708 (Feb.) *	3	Losses in the war, financial strain, tension between England and Scotland, fears of a French invasion, run on Bank of England.
1710–11 (Winter)	6	Financial strain of the war, change of ministry.
1714 (Jan. to April)	4	Fears as to the succession, reported death of Anne, run on Bank of England.
1715 (Oct.)	1	Rebellion.
1717 (Jan. to March)	2	Walpole's conversion scheme.
1718 (Oct.)	1	Fears of an invasion.
1720 (Sept.) *	2	Panic, following the collapse of speculation [South Sea Bubble].

(1) Dr. Scott connects almost all of the early crises with famines, outbreaks of the plague, wars, civil disorders, irregularities of public finance, or high-handed acts of Government. Dr. Thorp notes the occurrence of bad harvests, epidemics, wars, political unrest, and changes in public policy from time to time in 1790-1925, and now and then suggests a connection between such events and a crisis. But disasters of non-business origin, which occupy the foreground in Dr. Scott's remarks, recede into the background of Dr. Thorp's account. They continue to influence economic activities; but the sources which Dr. Thorp condenses put developments within the world of business foremost among the factors responsible for crises.

It may be that, because of shortcomings in his sources, Dr. Scott over-stresses the influence of "disturbing causes." He has checked contemporary opinions by actual business records and by such statistics as he could find. But these materials are less abundant in his period than they have since become, and he must depend in part upon commentators who were prone to hold Government or nature responsible for whatever went amiss. To make sure that our con-

clusions concerning the character of earlier and of later English crises are not warped by differences between the economic insight of observers in 1558-1720 and of observers in 1790-1926, we may note further contrasts between the pictures drawn by Scott and Thorp.

(2) Dr. Scott represents a fifth of his crises as lasting three years or more—1569-74, 1620-25, 1646-49, 1652-54, 1664-67, and 1704-08. Since periods of "depressed trade" are entered in a separate column of Scott's summary, the implication is that trade continued to be not merely dull, but seriously disturbed during the periods cited. Reference to the fuller accounts given in Scott's earlier chapters justifies this interpretation. In Thorp's annals, it is difficult to find a parallel to these long crises.

(3) In modern business cycles, the crisis or recession follows a period of prosperity. It still happens occasionally, that a season of acute strain, such as Dr. Scott presumably would enter as a crisis, occurs in a period of depression. The most striking recent instance is the trouble caused by the outbreak of war in 1914—an episode which Dr. Thorp does not list as a crisis, just because it came in the trough of a cycle which had culminated in 1913.[1] In Scott's summary, no less than 12 out of 30 crises listed were preceded by periods, not of prosperity, but of "depressed trade."

Of course, this difference between the earlier and the later crises is connected with that first noted. It confirms Scott's conclusion concerning the dominant rôle played in business fluctuations of 16th- to 18th-century England by non-business factors. Crises which are due primarily to such economic processes as are considered in Chapter I can occur only after prosperity has produced certain stresses within the business system. Crises which are dominated by events of a non-business character can occur equally well in any phase of a cycle. Whether crises due to wars, famines, epidemics, or the like will occur more often when trade is good or when trade is poor, must depend in the long run upon the relative number of fat and lean years. The number of crises listed by Scott as following years of depressed trade is greater than the ratio of lean years to fat years would lead one to expect.[2]

[1] For other cases of financial strain occurring during depressions, see below, Chapter IV, section iii, 4.

[2] As closely as I can reckon from Scott's table, the periods of good trade in 1558-1720 covered about 64 years, the periods of depressed trade about 38 years. On this basis, the crises breaking out when trade is good should have exceeded in number the crises breaking out when trade was bad by 1.8: 1. The actual excess was not over 1.5: 1.

This computation cannot be made with precision. Scott does not report the con-

(4) Dr. Scott calls attention to the fact that

> a time of good trade tended to persist, once it had set in, with a long interval between crises, while in the converse case the interval between them was reduced. For instance, in the eleven good years from 1575 to 1585, there was, as far as is known, no crisis, again in seventeen prosperous years (1603 to 1620), there was only one, whereas in an equal number of bad years (1586 to 1603) there were three, and again from 1696 to 1708, there were only four years free from very great disturbances of trade.[3]

Modern business history does not run in such considerable stretches of good times free from crises, serious or mild, and of bad times in which serious crises crowd one another. The longest period of prosperity revealed in Thorp's English annals for 1793-1920 lasted only four years. Nowadays it is periods of depression which "tend to persist"—if that expression is permissible at all. Yet the longest English depression in our record lasted less than six years.[4]

(5) The intervals between the beginnings of crises in Scott's list and the intervals between recessions (which include both mild and severe crises) in Thorp's annals give similar averages: 5.6 years in 1558-1720, 5.8 years in 1793-1920. But the intervals are decidedly more irregular in the earlier period. They run from 1 to 17 years in Scott's list, from 2 to 10 years in Thorp's. The coefficient of variation—perhaps the best measure of variability for this comparison—is 63 per cent in the one case and 39 per cent in the other.[5]

(6) In a business cycle, the order of events is crisis, depression, revival, prosperity, and another crisis (or recession). That Scott does not enter revivals separately in his summary means little; for scant attention has commonly been given to that least dramatic phase of the recurrence. But it is significant that in only 5 cases out of his 29 does Scott report a crisis as followed by depression, prosperity

dition of trade preceding the first of his crises, 1558-9; he does not always show the month or quarter of a year when business conditions changed; there are several intervals scattered through his summary, totaling some 7½ years, for which he makes no report.

The time covered by Scott's 30 crises is 49 years—more than all his periods of depressed trade put together.

[3] W. R. Scott, *Constitution and Finance of English, Scottish and Irish Joint-Stock Companies to 1720,* vol. i, Cambridge, 1912, p. 470.

[4] Chapter IV, section iv, below, "The Duration of Business Cycles."

[5] The coefficient of variation in a statistical array is the standard deviation expressed as a percentage of the arithmetic mean. On the standard deviation see Chapter III, section v, 1, "The Amplitude of Cyclical-Irregular Fluctuations."

and another crisis, in the modern order. Eleven of his intervals between crises contain no period of "good trade"; 12 intervals contain no period of depression; one interval runs: crisis, "good trade," "depressed trade," crisis. No reasonable discount for the stereotyping influence which the concept of business cycles exercises upon the minds of modern business annalists will reduce the record of English business since 1790 to such irregularity of sequence as Dr. Scott records.

It seems clear, then, that the English crises of 1558-1720 were not business crises of the modern type, and that the intervals between these crises were not occupied by business cycles.[6]

Were Dr. Scott's investigations carried backward in time, they would doubtless continue to show frequent crises of a sort as far as records of business transactions could be followed in England. And since England lagged behind other countries in developing business traffic, crises of the type Scott describes must run back to earlier times in the Low Countries, France, Southern Germany, and the Italian towns.[7] Still earlier chapters in the same story appear in the economic histories of Constantinople, of Rome, of Athens. Indeed, we may feel sure that crises, in the sense of serious trade disturbances, are just as old as trade itself. They must have been familiar phenomena in ancient Babylonia and ancient Egypt. But if the crises of 17th- and even 18th-century England differed from the crises of 19th- and 20th-century England as much as Dr. Scott's results suggest, it seems most improbable that the crises of earlier date in any country resembled recent crises closely. Such accounts as I have read of early crises strengthen the inferential doubt. In certain respects interest-

[6] In view of the differences pointed out in the text, it is not surprising that Dr. Scott finds the modern theories of crises inapplicable to his period. "Occurrence of the unforeseen" is the explanation which best fits the facts in his opinion.

> It is when the forecast of the majority of traders is in error that a crisis results. The cause of the miscalculation may lie either mainly in the men who judge or in the events to be judged. . . . At later periods the importance of man's judgment and calculation becomes marked in the period of speculative activity which precedes a crisis. But, prior to the development of banking, such intense activity is scarcely to be expected. . . . Analyzing the crises up to 1720 . . . it will be seen that, owing to defective intelligence in the form of news or to bad government, the objective aspect tends to predominate.

See *Joint-Stock Companies*, vol. i, pp. 469-471.

[7] For example, the second volume of Richard Ehrenberg's *Das Zeitalter der Fugger* gives a most interesting account of the great 16th century crises in Antwerp and Lyons, precipitated by the debt repudiations of the Spanish, French and Austrian monarchs. Not less vivid is Alfred Doren's history of the checkered fortunes of business in Florence at the height of her prosperity in the 13th and 14th centuries. *Studien aus der Florentiner Wirtschaftsgeschichte*, Stuttgart, 1901; *Entwicklung und Organisation der Florentiner Zünfte in 13. und 14. Jahrhundert*, 1896.

ing parallels can be drawn between the business difficulties with which we are familiar, and the business difficulties of which we read in early modern times, in the Middle Ages, or even in classical antiquity. But the differences are striking—most obviously, the difference in the rôle played by events of a non-business type.

The difficulty of deciding when the transition from crises dominated by crop failures, epidemics, wars, public finance and political struggles, to recurrent cycles dominated by business processes took place in England is increased by a gap in our detailed knowledge. There is no adequate record for the years between 1720, when Dr. Scott stops, and 1790, when Dr. Thorp begins. Jevons' list of English crises in the 18th century is too meager and too uncertain to be of much service.[8] The chief study of later date, Mentor Bouniatian's *Geschichte der Handelskrisen in England, 1640-1840*, is based on no such thorough examination of the original sources as Scott made, and mentions only the most impressive cases.[9] Possibly a close year-by-year record of developments would give a more modern impression than does an account limited to half-a-dozen dramatic episodes. That must remain uncertain until some thorough investigator closes the gap between Scott and Thorp. Meanwhile, we have Bouniatian's opinion that no crisis of really modern type can be found before the close of the 18th century.

According to this authority, the next memorable crisis after 1720 occurred in 1745, when the Pretender with his Highlanders got within 120 miles of London. The end of the Seven Years War was followed in 1763 by lively speculation and collapse. Again in 1772, England and Scotland suffered a banking crash after a period of wild speculation—a crash which extended next year to Holland, Hamburg and other continental centers of trade. Six years later, losses brought on by war with the American colonies caused serious difficulties in England. When the war ended in 1783, peace once more gave rise to a sudden expansion of business, and expansion led to a crisis. Finally, in 1793, came what Bouniatian ventures to call the first of England's great industrial crises, followed by depression in general business.[10]

[8] "The Periodicity of Commercial Crises and Its Physical Explanation," 1878. See W. S. Jevons, *Investigations in Currency and Finance*, London, 1884, pp. 207-215.

[9] Bouniatian's book was published at Munich in 1908. During the period treated by both Bouniatian and Scott (1640-1720), the former includes only five crises, the latter nineteen.

[10] Bouniatian, as cited above, p. 171.

As further evidence of the historical connection between business cycles and an advanced stage of pecuniary organization, I may refer to the National Bureau's collection of *Business Annals* at large. These annals show that in the countries which lag furthest behind in pecuniary organization—China, India, Brazil, South Africa, Russia —the vicissitudes of economic life have least of business character. Droughts and floods, epidemics among men and cattle, or civil disorder are responsible for a large part of the economic troubles which are recorded. Indeed, Thorp's record for China in 1890-1925 is curiously like Scott's record for England in, say, 1558-1660. Such misfortunes have consequences more serious in the less business-like communities than similar events have in western Europe or in North America. But, mingling with these phenomena of the natural economy, we find even in China indications that the nascent business activities of the people are subject to fluctuations arising from other sources. The merchants of the coast cities, at least, have their share of troubles with fluctuating commodity prices and exchange rates; some producers find the export demand for their produce falling and rising with conditions in other countries; the banks feel the reaction of developments in Lombard and Wall Streets. Thus the beginnings of business cycles in the laggard countries appear largely as reflections of the cycles in more advanced countries, and are perhaps overemphasized by foreign observers. But these beginnings promise to grow in significance as the backward lands organize a larger and larger part of their economic life on the basis of making and spending money incomes.

II. The Modern Organization for Making Money.

1. The Money-Making Population.

Table 1, compiled from the Fourteenth Census eked out by an estimate, shows broadly how the American people use their time.

Children under ten years of age form more than a fifth of the population. Their chief business is to develop into future citizens; for the time being they must be cared for and trained by adults in the family and the school. Any contributions they may make toward the community's support are incidental.

Leaving out this group of young children, the census indicates that 95 people in the hundred are either getting educated, or are

contributing to the country's real income. The money makers form 50 per cent of this group, the home makers form 27 per cent, the students form 17 per cent, and those not accounted for in the table form 5 per cent.

The 4,610,000 persons not accounted for include some 400,000 children over 9 neither at school nor at work, a much larger number of the infirm in body or mind,[1] the "leisure class" among the rich and among the poor, those reported as following disreputable occupations, together with workers concerning whom the enumerators learned nothing but their names and residences.

TABLE 1

A CONSPECTUS OF THE POPULATION OF THE UNITED STATES IN 1920

	Total Number	Attending School	Keeping House (estimated)	Gainful Workers	Not accounted for, 10 years of age and over
Totals	105,700,000	21,800,000	22,500,000	41,600,000	4,610,000
Under 10 years of age					
Under 5 years	11,600,000				
5–9 years	11,400,000	7,800,000			
10–19 years of age					
10–14 years	10,600,000	9,800,000		600,000	200,000
15–19 years	9,400,000	3,700,000	1,100,000	4,400,000	200,000
20–64 years of age					
Males	29,800,000	280,000		28,300,000	1,220,000
Females	28,000,000	210,000	20,100,000	6,600,000	1,090,000
Over 64 years of age					
Males	2,500,000			1,500,000	1,000,000
Females	2,400,000		1,300,000	200,000	900,000
In Percentages of the Total Population					
Totals	100.0%	20.6%	21.3%	39.4%	4.4%
Under 10 years of age					
Under 5 years	11.0				
5–9 years	10.8	7.4			

[1] "The Department of Commerce announces that on or about January 1, 1923, there were 893,679 persons confined in Federal, state, city, county and private institutions for defectives, dependents, criminals, and juvenile delinquents, hospitals for mentally diseased, institutions for feebleminded and epileptics, homes for adults and dependent or neglected children, institutions for juvenile delinquents, penal institutions and almshouses." Of this total 229,780 were children. Needless to say a large, though unknown, number of the infirm in body or mind are cared for by their families and do not appear in a census of institutions. The quotation is from an official press release of July 14, 1924.

TABLE 1 — *Continued*

A CONSPECTUS OF THE POPULATION OF THE UNITED STATES IN 1920

	Total Number	Attending School	Keeping House (estimated)	Gainful Workers	Not accounted for, 10 years of age and over
10–19 years of age					
10–14 years	10.0	9.3		.6	.2
15–19 years	8.9	3.5	1.0	4.2	.2
20–64 years of age					
Males	28.2	.3		26.8	1.2
Females	26.5	.2	19.0	6.2	1.0
Over 64 years of age					
Males	2.4			1.4	.9
Females	2.3		1.2	.2	.9
In Percentages of the Age and Sex Classes					
Under 10 years of age					
Under 5 years	100.0				
5–9 years	100.0	68.4			
10–19 years					
10–14 years	100.0	92.4		5.7	1.9
15–19 years	100.0	39.4	11.7	46.8	2.1
20–64 years of age					
Males	100.0	.9		95.0	4.1
Females	100.0	.7	71.8	23.6	3.9
Over 64 years of age					
Males	100.0			60.0	40.0
Females	100.0		54.2	8.3	37.5
In Percentages of the Occupation Classes					
Totals	100.0%	100.0%	100.0%	100.0%	100.0%
Under 10 years of age					
Under 5 years	11.0				
5–9 years	10.8	35.8			
10–19 years of age					
10–14 years	10.0	45.0		1.4	4.3
15–19 years	8.9	17.0	4.9	10.6	4.3
20–64 years of age					
Males	28.2	1.3		68.0	26.5
Females	26.5	1.0	89.3	15.9	23.6
Over 64 years of age					
Males	2.4			3.6	21.7
Females	2.3		5.8	.5	19.5

Persons of unknown age are included in the group 20–64 years of age.

Notes on Table 1 continued on page 85.

The 14,000,000 students 10 years of age and over are made up mainly of children under 15. About that age half or more of the children drop out of school and begin earning money or helping with housework. Less than half a million persons over 19 years are reported as attending school, and not a few of them are also doing other work.

The 22,500,000 housewives are mainly women in the middle years of life; but there seem to be over a million girls and a somewhat larger number of elderly women who devote themselves primarily to maintaining homes for their families.

Finally, the 41,600,000 money earners include nearly half of the children between 15 and 19 years, not quite a quarter of the women of 20-64, nearly all of the men within these ages, more than half of the older men and a small part of the older women. Arranged in another way, the data show that of the gainful workers 12 per cent are under 20 years, 16 per cent are adult women, and 72 per cent are adult men.

Our concern, as students of business cycles, is mainly with this group of money makers. But we must not conceive the money makers as "supporting" the whole population; housewives contribute a large slice of real income. For the matter of that, the work young people do in school is of vital concern to economic welfare in the long run. And as consumers, the whole population comes into our reckoning.

Notes on Table 1 continued:

The number of women entered as "keeping house" without pay is based on estimates kindly made at the writer's request by Dr. Alba M. Edwards of the Bureau of the Census and by Dr. Ralph G. Hurlin of the Russell Sage Foundation. One of Dr. Edwards' methods, utilizing various population returns, yielded 23,000,000 housewives; the second, starting with the number of "homes" reported by the census, deducting for institutions enumerated as homes, and for family homes maintained by single men, paid housekeepers and by women having gainful occupations, and adding for homes managed by two women, yielded 22,300,000 housewives. Dr. Hurlin also tried two ways of approximating the number of unpaid housewives. His first method was to estimate the number of women occupied in other ways; by elimination, there seemed to be some 21,900,000 housewives. A second method, which Dr. Hurlin prefers, applies the American ratio of private to census families in 1900 and the British ratio of private families to "all occupiers" in 1911 to the 1920 count of homes, and after deductions for homes not managed by unpaid women, yields 22,500,000 housewives. The round figure adopted in the table is a little higher than the mean of these four estimates.

Some persons are reported both as attending school and as having gainful occupations. These cases are counted twice in the table. Their number is not known; but probably is not large enough to affect the results seriously. The gainfully-occupied women who also keep house are not counted as housekeepers.

The gainful workers include persons temporarily unemployed, and inmates of institutions who have specific work to perform. They do not include people of independent means who report no regular money-making occupation.

2. The Business Enterprise.

In spending money, the family is still the dominant unit of organization. But as the dominant unit of organization for making money, the family has been definitely superseded by the business enterprise, except perhaps in farming, petty trade, and the professions. The business enterprise commonly draws its members from several or many families, paying each individual a money income, and welding them into a new unit organized to make profits.

A business enterprise is an organization which seeks to realize pecuniary profits upon an investment of capital, by a series of transactions concerned with the purchase and sale of goods in terms of money.[1] The goods dealt in may be commodities of any vendible kind from coal to newspapers; they may be services, such as transportation, storage, or technical advice; they may be rights, such as bank credit, securities, or insurance against specified risks. The enterprise may "produce," or fabricate, or store, or transport, or distribute, or merely hold the title to the goods in which it deals.

3. The Size of Business Enterprises and Business Cycles.

Business enterprises of a highly organized type have come to occupy almost the whole field in railway and marine transportation. They dominate mining, lumbering, construction work, warehousing, most branches of manufacturing, the public utilities not managed by government, wholesale trade, insurance, banking and finance at large. They play an important, if not a controlling, rôle in retail trade, journalism, market gardening, fishing, hotel keeping, and various amusement trades. They are invading dairying, fruit raising, general farming, and the learned professions—engineering, architecture, law, education, medicine.

Of course, everyone who is working on his own account—the peddler, the cobbler, the farmer, the doctor and lawyer, the boarding-house keeper, the newsboy—may be regarded as running a business enterprise. All these people, and those whom they suggest, get their money incomes by buying and selling goods, or by selling their services to numerous buyers. But there are broad differences between the

[1] Compare Werner Sombart, *Der Moderne Kapitalismus*, 1st ed., Leipzig, 1902, vol. i p. 195.

industries dominated by small-scale and those dominated by large-scale enterprises. In commercial alertness and business method, in complexity of organization, in dependence upon the money market, the typical farm, repair shop, neighborhood store, and boarding house are in a different class from the enterprises typical of mining, manufacturing, commerce and finance. Most professional men engaged in private practice hold, what some business men deny, that there is also a significant difference between professional and commercial aims.

In the study of business cycles, this uneven development of business enterprise in various fields is important. It is within the circle of full-fledged business enterprise that the alternations of prosperity and depression appear most clearly and produce their most striking effects. All of the authorities whose theories were reviewed in Chapter I seem to agree tacitly, if not explicitly, upon this fundamental point. They deal primarily with processes that run their rounds within the centers of commerce, industry, construction work, transportation, and finance. Farming, the professions, personal service, repair work, and petty trade are in the background of the picture. Even the writers who regard changes in crop yields as the cause of business fluctuations are no real exception; for while they hold that cyclical fluctuations arise in agriculture, they recognize that these fluctuations manifest themselves chiefly in commercial dealings, manufacturing activity, transportation, and financial operations.

Statistical evidence for this view that business cycles are primarily phenomena of large-scale enterprise was provided incidentally in 1923 by one of the investigations made by the National Bureau of Economic Research for the President's Conference on Unemployment. The pertinent results are assembled in Table 2. While the figures in this table are estimates based upon rather slender samples; while they refer to but one cycle in one country, and cover but one aspect of business—shrinkage in the hours worked by employees in depression—they give the most comprehensive statistical view yet presented of the relation between scale of organization and degree of cyclical fluctuations.

Two conclusions are indicated by the table. (1) When arranged according to the severity of the decline in employment after the crisis of 1920, the leading industries form three groups. Manufacturing, railroading, mining, and construction work were most disastrously affected by the depression. A second group, in which the shrinkage

of employment was far less serious, but substantial, included finance. wholesale trade, and transportation other than by railroad. These two groups of industries constitute the sphere of business par excellence. The remaining industries, among them agriculture and retailing, are characterized by small-scale organization, or by the prominence of non-commercial aims, or by both features. These industries

TABLE 2

CYCLICAL DECLINE IN THE VOLUME OF EMPLOYMENT OFFERED BY DIFFERENT INDUSTRIES, AND BY ESTABLISHMENTS OF DIFFERENT SIZES, FROM THE PEAK OF PROSPERITY IN 1920 TO THE TROUGH OF DEPRESSION IN 1921–22.

	All establishments Per cent decline	Establishments with 0–20 employees Per cent decline	Establishments with 21–100 employees Per cent decline	Establishments with over 100 employees Per cent decline
All Industries	16.50	3.08	13.84	28.23
All Factories	29.97	8.21	19.21	38.56
Steam Railways	29.68	[a]	[a]	29.68
Extraction of Minerals	29.66	[a]	[a]	30.18
Building and Construction	18.92	14.66	[a]	[a]
Finance	7.14	0.00	0.00	25.58
Transportation other than railways	6.77	3.72	9.80	8.17
Wholesale Trade	5.64	0.00	12.31	7.77
Public and Professional Service	4.57	[a]	[a]	[a]
Domestic and Personal Service	4.11	5.40	4.48	3.92
Agriculture	3.18	2.15	[a]	[a]
Retail Trade	2.75	1.31	4.66	10.84
Hand Trades other than Building	0.00	2.11	4.67	[a]

[a] Reports received from less than 20 enterprises.

The comparisons are based upon quarterly reports from 9,289 enterprises, and cover the full years 1920 and 1921, and the first three months of 1922.

Adapted from Willford I. King, *Employment, Hours and Earnings in Prosperity and Depression. United States, 1920–1922.* National Bureau of Economic Research, New York, 2d ed., 1923, pp. 55–58, 60. (I have corrected a misprint in the source.)

reduced the amount of employment offered but slightly. (2) The correspondence between scale of organization and violence of fluctuations holds not merely among industries as wholes, but also among the establishments within an industry. As a rule, large establishments were more affected by the depression than medium-sized establishments, and the latter were more affected than small establishments.

These conclusions cannot be regarded as definitely proven, until they have stood the test of further investigations. They harmonize, however, not only with the assumptions of theoretical writers, but

also with what is known about the fluctuations of prices, production, stocks, and the like in different industries. At a later stage, these fluctuations will be analyzed at length. In the meantime it is important to inquire what proportion of economic activity is exposed to a large business-cycle hazard and what part to a slight one.

Well over one-half of all employees in the United States seem to depend for work upon manufacturing, mining, railroading and building and construction, the industries in which the cyclical oscillations appear to be most violent.[1] Within these industries probably three-fourths or more of the employees are in concerns which have over 100 hands—the subdivision most exposed to the business-cycle hazard.[2] The middle group of industries shown in Table 2 has a much smaller body of employees, perhaps as much as one-tenth, perhaps as little as one-twentieth of the total. There remain in the industries least exposed to cyclical fluctuations something like a third or two-fifths of all wage and salary earners. And a large majority of these workers are employed in the smallest and least-affected class of enterprises.[3]

Very different is the distribution of men working on their own account. Estimates based upon the 1920 census of occupations indicate that the number of such persons in the United States was a little more than 10,000,000.[4] Certainly less than one-tenth, perhaps not

[1] See Dr. King's estimate of the number of employees working in various industries in 1920, *Employment, Hours and Earnings*, p. 20.

[2] The Fourteenth Census gives definite data for manufactures, mines, and quarries, which may be summarized thus:

MANUFACTURING ESTABLISHMENTS AND MINES AND QUARRIES: CLASSIFIED ACCORDING TO NUMBER OF EMPLOYEES: UNITED STATES, 1919

Number of Employees per Establishment	Manufacturing Establishments		Mines and Quarries	
	Per cent of Number	Per cent of Total Employees	Per cent of Number	Per cent of Total Employees
20 or less	81	10	73	6
21–100	13	19	17	18
Over 100	6	71	10	76
	100	100	100	100
Actual numbers	290,000	9,096,000	21,300	982,000

Compiled from *Fourteenth Census of the United States*, vols. viii, *Manufactures*, p. 90, and xi, *Mines and Quarries*, p. 31.

All the operating railroads, of course, employ more than 100 men. Concerning building and construction, the data are meager; but Dr. King has made a very rough estimate that in 1920, not quite one-third of the employees were working for concerns having more than 100 persons on the payrolls. See *Employment, Hours and Earnings*, p. 20.

[3] Once more see Dr. King's estimates on p. 20 of *Employment, Hours and Earnings*.

[4] See the three estimates compared by Dr. Leo Wolman in *The Growth of American Trade Unions, 1880-1923*. New York, National Bureau of Economic Research, 1924, pp.

one-twentieth, of these enterprisers [5] were in those branches of business most exposed to the business-cycle hazard. About nine-tenths, on the other hand, were in the least exposed group of industries,—farming, retail trade, and professional, domestic and personal service.[6]

4. Economic Resources and the National Dividend.

Of the vast array of natural resources and man-made equipment used by our 41,600,000 money-earners and our 22,500,000 housewives —to keep the 1920 census figures of Table 1—many writers upon business cycles have emphasized one category, and taken the others for granted. Hobson's theory of over-savings and over-investment in industrial equipment, Tugan-Baranovski's theory of the alternate accumulation and exhaustion of loan-funds, Hull's theory of the changing costs of construction work, the numerous theories which stress the effects of extending plant capacity, Foster and Catchings' theory of the inability of consumers to buy the goods offered them, all build in one way or another upon a contrast between the process of supplying current income and the process of increasing the appliances for future production.[1]

To lay a factual basis for testing these views, we should find out what we can about the relative magnitude of (1) the value of the equipment with which the population works, (2) the income produced, and (3) the annual additions made to working equipment out of income. The present section deals with the first two magnitudes; a later section will deal with savings.

For summaries of the resources which the population uses in its work, we must turn to inventories of the national wealth. Two esti-

78-81. Mr. Carl Hookstadt's figures cited here are raised well above 10,000,000 by including 1,850,119 "home farm laborers" with the employers. *Monthly Labor Review*, July, 1923, vol. xvii, p. 2, footnote.

[5] Of the various aliases under which the man who is doing business on his own account passes in current economic literature (entrepreneur, undertaker, capitalist-employer, business man), the name enterpriser seems least objectionable. It is an old English word, recently brought back into current use at almost the same time by Professors Frank A. Fetter (*Principles of Economics*, New York, 1904), and H. Stanley Jevons (*Essays on Economics*, London, 1905).

[6] Compare the estimates given by Dr. W. I. King in the first chapter of Dr. Maurice Leven's *Distribution of Income by States*, New York, National Bureau of Economic Research, 1925, and by Dr. Leo Wolman in his monograph cited above, p. 77.

[1] See the references to the writers named in Chapter I, section iv. Among the men who assign much importance to the construction of additional equipment are Veblen, Spiethoff, Bouniatian, Aftalion, J. M. Clark, Robertson, Cassel, and A. B. Adams.

mates for the United States as of December 31, 1922, have recently been made by the Bureau of the Census and the Federal Trade Commission. Both organizations recognize that their results are rough approximations at best. The concept "national wealth" is so vague that statisticians differ about the items to be included, and about the proper methods of ascertaining values. Also, the data with which they must work leave much to be desired in comprehensiveness and accuracy. Under such circumstances, it is not to be expected that different estimates will agree closely, or that any estimate can command full confidence. The Federal Trade Commission's total for 1922 is some 10 per cent greater than that of the Census, primarily because the Commission includes "land and improvements in streets and public roads," which the Census omits, and because the Commission values "public service enterprises" at 46 billion dollars, while the Census values them at 35 billions.[2] But the 10 per cent difference between the two totals does not represent the margin of uncertainty surrounding both results. Accordingly, I shall use the figures only in the broadest fashion to indicate the great classes of resources with which the population works, the order of magnitude among these classes, and the relative value of man-made equipment and of annual income.

[2] See *Estimated National Wealth*, Bureau of the Census, Washington, 1925; *National Wealth and Income, A Report by the Federal Trade Commission* (Senate Document No. 126, 69th Congress, 1st session), Washington, 1926. The Federal Trade Commission's estimate is rather a reworking of and supplement to the basic Census figures than an independent investigation of the whole field.

With these official estimates compare the inventory of "Physical Property in the United States" in 1920, made by Dr. Walter Renton Ingalls, *Wealth and Income of the American People*, 2d ed., York, Pennsylvania, 1923, p. 79. Dr. Ingalls' total of 273 billion dollars is 18 per cent less than the Census total and 29 per cent less than the Federal Trade Commission total. These differences are smaller than one would expect in view of the facts that (1) Ingalls' estimates are for 1920, the Census and Commission estimates for the end of 1922; (2) Ingalls used 1913 values, so far as possible, the Census and Commission tried to use current values; (3) Ingalls made relatively freer use of estimates as contrasted with enumerations, than did the Census and Commission. (For example, to arrive at the value of manufacturing machinery, Ingalls estimated that 7,750,000 workers used plant of average cost of $2,000 per worker, while the Census summed up many thousands of reports from manufacturing enterprises concerning the value of their machinery.) On the other hand, it should be noted (1) that the period 1920-22 included a severe crisis and depression, during which the increase of wealth was retarded; (2) that the money values of real estate, buildings, heavy machinery, and the like were far less affected by price fluctuations than our current index numbers might lead one to think, and that none of the estimators can hold rigorously to values of a given date; (3) that several of the items must be guessed at, and it may make little difference (as in the machinery item) whether the guess is based on elaborate study of a sample, or on the estimate of an expert who has had long experience in valuation work. Needless to say, in some items the percentage differences among the three estimates are far larger than the differences among the three totals. But it is not feasible to enter into details in this place.

Since our national inventories refer to the end of 1922, it seems well to compare them with the mean income of the two calendar years, 1922 and 1923. For national income in these years, we have three estimates, one made by the Federal Trade Commission, one made by Dr. W. R. Ingalls, and preliminary figures made by Dr. W. I. King for the National Bureau of Economic Research. These estimates are not strictly comparable; for the Federal Trade Commission and Dr. Ingalls omit two items which Dr. King includes—the rental value of homes occupied by their owners and interest upon the value of consumers' goods owned by families. Since the inventories we are using include both family dwellings and personal effects as considerable items of national wealth, consistency requires that we include the services rendered by these goods in the income estimates which we compare with the wealth estimates. This consideration points to the use of King's figures. But King's figures for 1922-23 are preliminary estimates, while the Federal Trade Commission's figures are the result of elaborate investigation. It seems best, therefore, to use the Commission's estimate as basic, but to add King's figures for the two items in question. This procedure gives 70 billion dollars as the average income for 1922-23.[3]

We may begin our canvass of economic resources with an item on which no one can set a price—the knowledge which enables men to use other resources as they now do. What count here are not merely the engineering applications of modern science, but also the organiz-

[3] For the three estimates, see Walter Renton Ingalls, "An Estimate of National Income for 1925," *The Annalist*, September 24, 1926, p. 395, and the National Bureau's *News-Bulletin*, February, 1927.

The figures for 1922-23 are as follows:

Estimates of National Income in the United States
In billions of Dollars.

	Ingalls	National Bureau	Federal Trade Commission
1922	60.5	65.6*	61.7
1923	71.9	76.8*	69.8

* Preliminary estimates, subject to revision.

King's estimates for the two items omitted by the other authorities are, in billions of dollars:

	Rental value of homes occupied by owners.	Interest upon value of consumers' goods owned by consumers.
1922	1.8	2.6
1923	1.9	2.8

The addition of these items to the Federal Trade Commission estimates brings their average for 1922-23 within 1¼ per cent of King's corresponding figure (70.3 billions in one case and 71.2 billions in the other).

ing capacity of business men, the skill of mechanics, the ability of housewives as both managers and manual workers—indeed the whole mass of commonplace and of specialized knowledge which enables people to work in disciplined harmony for each other and to make use of each others' products.

In a discussion of secular trends in economic life, past or future, this resource would take first place. Man's ability to multiply and to raise his standard of living, in a world where many natural resources appear to be exhaustible, depends upon the progress of his knowledge. In treating business cycles we need not face this issue at large. Yet several of the working hypotheses which other investigators have suggested show that we cannot set knowledge aside as a factor of no concern to us. Vogel, Schumpeter, Mrs. England, and Cassel regard business cycles as by-products of progress in the arts of production and of business organization.[4]

Though we cannot value the inestimable, we can make contact between the maintenance cost of knowledge and our measuring stick, the national income. Knowledge is one of the resources which must be continuously renewed. According to the occupation tables, one money-earner in every fifty is a school or college teacher, and according to the Educational Finance Inquiry one fiftieth of our national income is spent upon schools.[5] But these figures give a most inadequate impression of the effort we make as a nation to educate ourselves. The census figures of Table 1 show that more than a fifth of the total population are attending school. For every two persons earning money, one person is studying. The discount upon this comparison for the brevity and irregularity of school attendance by many children is partly offset by the irregularity of the work done by many adults. It is a common aim of state laws to give every child eight or nine years of schooling. There must be several millions of Americans who have spent fifteen years or more primarily in study.[6] Nine years make a fifth, and fifteen years make a third of an active working life of 45 years. And besides the years we devote to formal training, each

[4] See Chapter I, section iv.

[5] Mabel Newcomer, *Financial Statistics of Public Education in the United States*, (Educational Finance Inquiry, vol. vi) New York, 1924, pp. 11-29.

Dr. Newcomer estimates the governmental expenditures upon schools (1.220 million dollars in 1920) at 1.6 per cent of the national income in 1910, 2.0 per cent in 1915, and 1.7 per cent in 1920. No one knows how large are the educational expenditures of endowments and private schools. I take one-fiftieth of the national income to indicate merely the order of magnitude of the money outlay upon this item.

[6] Table I shows that in 1920, 490,000 persons over 19 years of age were reported as "attending school."

of us spends much time in learning and in teaching others how to do specific jobs at home or where we are employed.

To all this effort spent upon imparting our inherited store of knowledge must be added a further item, much smaller in amount, but doubtless involving a direct money outlay of hundreds of millions annually upon efforts to improve and extend knowledge. Here belongs all the energy put into research proper, and the endless experimenting with new devices and methods for doing the world's work.[7]

To come to the tangible resources: (1) In the national inventories for 1922, an item of nearly 40 billion dollars is entered as "furniture and personal effects." If we add a rough figure for pleasure automobiles, this item rises to 42 or 43 billions—say two-thirds of one year's national income.

How rapidly the goods in question are worn out and replaced on the average, we do not know. But family budgets throw some light on that problem. In 1924, the Federal Bureau of Labor Statistics published tables summarizing the expenditures of over 12,000 white families living in 92 industrial centers, and having incomes which averaged about $1,500. Of their total outlays, 23 per cent was spent for clothing, furniture, furnishings, and miscellaneous items which can be classified as "personal effects." [8] The representative value of these figures is open to question. Negro and farm families probably spend a smaller proportion of their money for clothing and personal effects than do white urban families; but well-to-do families probably spend more than wage-earners.[9] Also, the period covered by the Bureau of Labor Statistics' budgets—mainly the calendar year 1918—was peculiar in several ways. Hence we cannot trust wholly the

[7] Secretary Hoover has recently ventured the following estimates:
"We are spending in industry, in government, national and local, probably $200,000,000 a year in search for applications of scientific knowledge—with perhaps 30,000 men engaged in the work . . . the whole sum which we have available to support pure science research is less than $10,000,000 a year, with probably less than 4,000 men engaged in it, most of them dividing their time between it and teaching."
Herbert Hoover, "The Nation and Science," *Science,* January 14, 1927, vol. lxv, pp. 26, 27.

[8] See "The Cost of Living in the United States," *Bulletin of the U. S. Bureau of Labor Statistics,* No. 357, p. 5, and last section of Table G. The largest miscellaneous item is "automobiles, motor cycles, bicycles." The budgets were collected in 1918-19 from places scattered over 42 states.

[9] In the Bureau of Labor Statistics' table the percentages of outlay for clothing furniture and furnishings, and miscellaneous objects all rise with family income. Also see the table on p. 26 of the National Bureau's report on *Income in the Various States,* 1925. These figures, compiled by Dr. King, indicate that expenditures on automobiles

conclusions that upwards of a quarter of family income is spent for quasi-durable consumers' commodities, and that the stock of these commodities on hand is between two and three years' purchases. But such are the indications of what data we have.

(2) At all times there is a huge stream of raw materials, partially-fabricated products and finished goods flowing through the country's industrial and commercial enterprises on its way toward family or business consumers. The 1922 inventories value this flow at about 36 billion dollars. That sum is equivalent to half of the national income in the year concerned, and is not much smaller than the value assigned to the furniture and personal effects owned by families.

The contrast drawn by writers like Henry S. Dennison, Lawrence K. Frank, T. W. Mitchell, and Simon S. Kuznets between the fairly even pace of consumer purchasing and the fluctuating course of production suggests that the volume of merchandise and materials on hand, on wheels, and in process, undergoes large changes. The rough comparison which the national inventories let us make between the value of "products, merchandise, etc." at a given time and the national income for one year indicates that a check upon production need not check consumption at once. But we need more continuous, specific, and reliable data than an occasional inventory can give. Fortunately, we have a clear view of the flow of goods in at least one industry.

By checking the input of copper by smelters against the deliveries of copper by refiners, the American Bureau of Metal Statistics is able to make a continuous record of the flow of copper through the metallurgical system. This record commands the confidence even of its compilers—a virtue rare in industrial statistics. The reports show for the first of each month the quantity of copper at five successive stages of its trip toward consumers—blister at smelteries, blister in transit, blister at refineries, metal in process of being refined, and refined copper on hand at refineries. The total tonnage reported at these five stages month by month varies considerably—for example, it shrank in 1922 from 427,000 tons at the beginning of the year to 344,000 tons at the close. The general level of the tonnage in this flow is about one-third to one-half of the annual output of virgin copper.

(including tires), books, clothing, diamonds, furs, house furnishings, and pianos made up about 28 per cent of the outlays of urban employees, 29 per cent of the outlays of families spending $5,000 annually, and 32 per cent of the outlays of families spending $25,000 annually.

All this refers solely to the metallurgical system, which is construed as ending at the exit gates of the refineries. After passing through these gates into the manufacturing system, copper travels to mills wherein by itself, or as brass, bronze, or nickel silver, it is made into sheets, rod, wire, tubing, or castings. From the mills, basic fabricated products go partly into direct consumption (for example, electrical transmission wire), but more largely to other manufacturers who make finished goods, such as electrical motors and automobiles. Many products (for example, hardware and house fittings) pass from secondary manufacturers through jobbers to the shelves of retailers. A complete report would show copper in transit, in stock, in process, and ready for delivery at each of these supplemental stages before it passes into actual use in a myriad of forms. Moreover, in the manufacturing processes a considerable proportion of the copper worked up passes into scrap, turnings, borings, etc. This scrap is reworked, so that an appreciable fraction of our copper is continuously going round and round in the manufacturing system. It is computed that in 1923 the quantity of such scrap was about one-third of the manufacture, which would mean a lockup of about four months' supply in this form alone, in addition to the lockup of from three months' to six months' supply in the metallurgical system. The copper in transit, in processes, and in stock in the manufacturing and distributing systems, for which there is no statistical accounting, should be added. The director of the American Bureau of Metal Statistics, Dr. W. R. Ingalls, believes that "the normal stock of copper in the United States is equivalent to something between six months' and twelve months' production, and more nearly the latter than the former." [10]

How representative the copper industry is in this respect, we shall not know until other industries develop similar statistical services. Meantime, we may take this case as illustrating, though not as measuring, a feature of economic activity too often overlooked.

(3) Business-cycle theorists have concentrated their attention primarily upon the next item—movable equipment—though its value in the inventory is a little smaller than the value of "furniture and personal effects," and only a little larger than the value put on "products, merchandise, etc." As movable equipment we count some 16 billion dollars worth of manufacturing machinery, tools, and im-

[10] See W. R. Ingalls, *Wealth and Income of the American People*, 2d ed., 1923, p. 150. It is to Dr. Ingalls that I am indebted for information concerning the work of the American Bureau of Metal Statistics

plements; 11 to 14 billions of public service equipment (apart from improvements upon land); 6 billions of live stock; 2½ billions of farm implements and machinery, and 1 or 2 billion dollars worth of motor trucks and cars used wholly or largely for business. The total runs to about 37 billion dollars according to the Census, and to about 40 billions according to the Federal Trade Commission—somewhat over half of one year's national income.

(4) The value of "improvements upon land," including much besides buildings, is a highly conjectural figure.[11] Doubtless we are safe in accepting the conclusion that this item is much larger than any of the preceding, and is every year larger than the current national income. The Census figures give a total of 89 billion dollars; the Commission figures mount to 108 billions.

(5) The value of land itself is estimated by the Census method at 112 billion dollars in 1922, and by the Commission method at 122 billions. With these imposing sums we have little concern. Land values are unquestionably influenced by changes in business activity, and excited real-estate speculation is a familiar feature of "booms." But what men get out of land year by year, and what improvements they make upon it, are matters of greater moment in the study of business cycles than are the money values imputed to land.

One point, however, we should notice. On the face of the returns, agriculture is capitalized at a higher figure than manufacturing. According to Dr. King's figures, by 1920 the number of money-earners who depended upon manufactures for their living had become decidedly larger than the number who depended upon agriculture—11,500,000 persons against 8,900,000.[12] Of machinery and implements, the factory workers used in 1922 a value six times that of the farm workers—15.8 billion dollars against 2.6 billions. Adding 5.8 billions for live stock still leaves the farm workers with far less movable equipment. But the value assigned to farm real estate is more than double that assigned to the real estate used in manufacturing—53 billion dollars against 24 billions. Of course, the farm is a home as well as an income-making enterprise; but even if we subtract a fifth from the real-estate value of farms to cover this item, we have left a difference of 17 or 18 billions between agricultural and manufacturing real estate—more than enough to offset the excess in the value of

[11] On its derivation, see the Federal Trade Commission's report on *National Wealth and Income*, pp. 31-34.

[12] See his introduction to *Income in the Various States*, National Bureau of Economic Research, 1925, pp. 21 and 23.

movable equipment used in manufacturing.[13] Of the real estate used in these two great branches of industry, it is safe to assume that improvements constitute a larger percentage in manufacturing than in farming. Thus the high capitalization of agriculture is due wholly to the greater value imputed to land itself. If we could separate the value of all man-made equipment (including live stock) from the value of natural resources, we would find that the average factory worker uses a far larger stock of the first in his work than does the average farm worker, but that the nominal value of the average farm worker's total equipment is the greater.

(6) Finally, our inventories include a small item, 4.3 billion dollars, representing the value of gold and silver coins and bullion. From the national viewpoint, this resource must be regarded as part of the permanent equipment for production. But it is a peculiar type of equipment. It renders its service as it changes ownership, or as it lies in vaults as a "reserve" supporting a larger volume of credit currency. It is one of the most durable man-made resources, so that the supply consists mainly of past accumulations. The changes in any country's stock during a year are usually due more to a redistribution of the world stock than to fresh production minus wastage. Both the redistribution and the annual production of the precious metals bear upon price fluctuations. That fact secures this item, small as it is in comparison with other resources, a leading place in studies of business fluctuations.

The chief conclusion to be drawn from this survey of economic resources is that the physical, man-made equipment with which the American population works represents a value equivalent to between three and four years' effort of its money-earners. Barring land, the

[13] The estimates used are given in a footnote on p. 29 of the Federal Trade Commission's report on *National Wealth and Income*. Even the 1920 Census figure of 44 billion dollars for the "capital" of manufacturing establishments—a figure against which the Bureau of the Census itself warns us—falls far short of the value of farm property minus an allowance for farm homes. A third figure showing the "estimated value of wealth used in *corporate* business" by manufacturing industries (33.7 billions of dollars) is derived by the Commission from tax reports made to the Bureau of Internal Revenue (see p. 135 of *National Wealth and Income*). According to the Census of Manufactures in 1920, incorporated enterprises produced 87.7 per cent of the total value of manufactured goods. If we apply this ratio to the above estimate of "the value of wealth used" by manufacturing corporations, we get some 38 billion dollars as "the value of wealth used" by all manufacturing enterprises. That figure agrees fairly well with the estimates used in the text (15.8 billion dollars worth of movable equipment, plus 24 billion dollars worth of real estate).

The estimate of the value of farm real estate in 1922 (53 billions) was made by the Department of Agriculture.

Bureau of the Census values our tangible man-made resources at 209 billion dollars in 1922. The Federal Trade Commission puts the figure at 231 billions.[14] To raise the first estimate to three times the national income of 1922-23, we should have to add to it a billion dollars. To raise the second estimate to four times the national income we should have to add 49 billions. But though our conclusion is protected by these margins (one of which is narrow), we should view it as no more than a rough approximation based upon imperfect data.[15]

[14] A tabular recapitulation of the figures may be useful. I have rearranged the items to serve the present purpose, but have not altered the figures. The slight discrepancies between the totals entered and the sums of the items are due to the dropping of fractions.

ESTIMATES OF THE NATIONAL WEALTH OF THE UNITED STATES IN 1922
In billions of dollars

	Census		Federal Trade Commission	
Land		112		122
Improvements on land		89		108
Movable equipment				
Live stock	5.8		5.8	
Farm implements and machinery	2.6		2.6	
Manufacturing implements and machinery	15.8		15.8	
Public service equipment	10.6		13.6	
Motor cars and trucks	2.0		2.0	
		37		40
Products and merchandise		36		36
Furniture and personal effects (including automobiles)		42		42
Gold and silver coin and bullion		4		4
Total man-made equipment		209		231
Grand Total		321		353

For more detailed estimates, see the Federal Trade Commission's report on *National Wealth and Income*, 1926, pp. 28 and 34.

[15] One would expect to find the accumulated stock of wealth larger in proportion to current income in western Europe than in the United States. This surmise is supported by computations based on the data collected by Sir Josiah Stamp in "The Wealth and Income of the Chief Powers," *Journal of the Royal Statistical Society*, July, 1919, vol. lxxxii, pp. 441–493. From Sir Josiah's summary table (p. 491) and from land values given in his text (pp. 455, 467 and 475), the best figures I can make run as follows:

RATIO OF ONE YEAR'S NATIONAL INCOME TO:

		National Wealth	National Wealth minus value of land
United Kingdom	1914	1:6.4	1:5.9
Germany	1914	1:7.7	1:6.1
France	1914	1:8.0	1:5.9
Australia	1914	1:5.9	....
United States	1914	1:5.8	....
United States	1922–23	1:5.0	1:3.3

Although the results answer expectations, and although I have included only the countries for which tolerably good estimates of wealth and income are available, the comparison is hazardous. In particular, it seems that the valuation of lands must be

The possession of this equipment gives a modern community not only vastly enhanced power of producing income, but also power to consume for a time more than it produces. Even a private family can fall back at need upon its store of "furniture and private effects" —a store which our estimates make equal to nearly two-thirds of a year's income on the average. They can suspend renewals and repairs upon such goods, and even turn some goods into food at a pinch—though seldom without heavy loss. A farmer can sell part of his live stock, let his buildings run down, and make shift with his old implements—not to speak of depleting the fertility of his land. A business enterprise can pursue the same policy—particularly it can reduce its inventories of materials, products or merchandise on hand. Of course, neglect of maintenance usually incurs heavy economic penalties; but there are times when families and business men have no choice in the matter. They must live "on their fat" for a while.

Nor is that all. While current net additions to man-made equipment are probably smaller in value one year with another than are current renewals, these additions can be nearly suspended at need, and made in large volume when conditions are favorable. In practice, the fluctuations in extension and betterment work doubtless have far larger amplitudes than the fluctuations in repairs and renewals. Added to the latter, they make the cyclical swings in production considerably greater than the cyclical swings in consumption.

What the present section adds to common knowledge is that, in dealing with business cycles, (1) attention should be paid to several types of resources besides buildings, machinery, and public-utility equipment, (2) account should be taken of fluctuations in outlay upon maintenance, as well as of fluctuations in outlay upon extensions, and (3) the value of all tangible man-made resources in use at a given time seems in the United States to be less than four times the value of one year's national income, as that income is usually reckoned.

5. The Interdependence of Business Enterprises.

Every business enterprise for which a set of books is kept may be treated as an independent unit. Indeed, the Bureau of the Census

made on different principles in the four countries for which figures are given. On the face of the figures, land values make 8 per cent of total wealth in the United Kingdom, 21 per cent in Germany, 26 per cent in France, and 35 per cent in the United States. Probably the ratios of income to total wealth are less reliable approximations than the ratios of income to wealth minus land values.

accepts this test of separate bookkeeping as its chief criterion in deciding how many "establishments" to recognize in its enumerations of mines, factories and farms. Yet all business 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 an industrial plant handling commodities, the typical enterprise is one wheel in a great machine. Our wants are supplied by series of nominally independent plants which pass on goods to each other in succession. One series, for example, embraces wheat farms, elevators, railways, flour mills, wholesale dealers in provisions, bakeries, and retail distributors. 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, as grain, flour and bread, flows through the successive sets of enterprises in an unceasing stream, though the volume of flow is far from steady.

Further, no industrial series is self-sufficing. Each set of enterprises in the example, from farms to retail shops, is dependent upon other industrial series for buildings, machinery, fuel, office supplies, transportation, insurance, professional services, and sundries. An especially intimate dependence exists between all other industrial enterprises and the railways. Coal mining and the steel trade also serve almost all industrial enterprises in one way or another. So far, indeed, have 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." [1]

To the public the unbroken flow of goods from plant to plant until they finally reach consumers is the matter of prime concern. But business men are concerned more with the commercial than with the industrial aspects of this flow. The movement of goods through successive sets of enterprises which form industrial series, and between enterprises which belong to different industries, is maintained by purchase and sale. Hence the commercial bonds which unite business enterprises to one another in varying degrees of intimacy. Each enterprise is affected by the fortunes of its customers, its competitors, and the purveyors of its supplies.

[1] Thorstein Veblen, *Theory of Business Enterprise,* New York, 1904, p. 7.

Financial interdependence is in part but a third aspect of these industrial-commercial bonds. Complicated relationships of creditor and debtor 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 of their operations, the banks bear a relation to all other enterprises not unlike that which the railways bear on the industrial side; for most enterprises need bank credit not less than they need freight service. As a serious congestion of railway traffic applies the brake to industrial operations, so any hampering of banking operations applies the brake to business dealings.

There is a further set of financial bonds which need not run parallel with industrial-commercial relationships. The corporate form of business organization facilitates the acquisition of common ownership in enterprises nominally independent of each other. The same capitalist or group 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 open his own retail stores, or buy stock in a competing company, or secure his raw materials by taking over timber lands or mines; the large capitalist may invest in steel and real estate, in railways and banks, in newspapers and hotels, in mines and moving pictures. Thus also we have our chain shops, chain banks, chain newspapers, chain theaters, chain lumberyards, and the like. Often the financial bond is made less personal, but more direct, by one corporation holding stock in tributary or even in rival companies.

How dominant the corporate form of organization has become in certain fields, the census shows. In 1920 corporations owned 32 per cent of American manufacturing establishments, employed 87 per cent of the wage-earners and turned out 88 per cent of the value produced. In mining, corporations were even more important, owning 51 per cent of the mines, employing 94 per cent of the men, and producing 94 per cent of the product.[2] Of course in railway transportation corporations cover the whole field, and they probably do more than half of the business in all branches characterized by large-scale organization. In 1920, 345,600 corporations filed tax returns showing an aggregate gross income of some $126,000,000,000.[3] Even

[2] *Fourteenth Census of the United States*, vol. viii, *Manufactures*, p. 119, and vol. xi, *Mines and Quarries*, p. 29.

[3] *Statistics of Income from Returns of Net Income for 1920*. United States Internal Revenue, p. 61. The gross income of all corporations has been increased as suggested on

in agriculture, retail trade, domestic, personal and professional service, corporations cut an appreciable figure.[4]

The tangle of financial relationships among business enterprises which has arisen from the prevalence of corporate organization is so complicated that it never has been, and perhaps cannot be, adequately represented in figures. Many corporations are owned, in whole or in large part, by some parent company or holding concern. In other cases, formerly independent enterprises have cemented a financial alliance by exchanging stocks. In still other cases, two or more companies are owned largely by a common group of stockholders. Some of these financial bonds are close and permanent, others are loose and shifting. The reasons for the financial alliance, whatever its form, are sometimes far from obvious—business makes strange bed fellows as well as politics.[5] The alliance may be used to safeguard the interests of all the participants, or it may result from and be used to enhance the power and profit of some preponderating interest. Under the corporate form of organization an investor may reduce his risks by spreading his holdings among numerous enterprises and industries; a corporation may enlist the interest of thousands of customers or employees in its welfare by seeking a wide distribution of its shares; a group of financiers which has won prestige may control the use of business capital far larger than its members own; unscrupulous managers may run an enterprise primarily for their personal advantage through stock-exchange operations in its securities or through corrupt bargains with other concerns in which they hold shares. These are indeed but suggestive examples of the many opportunities, wholesome or injurious, which the rise of joint-stock companies has brought to the denizens of a business economy.

The one fact of commanding importance for the present purpose which emerges from this tangle of relationships and opportunities is that interlocking ownership organizes many nominally independent enterprises into communities of interest. While such bonds are far less comprehensive than the industrial-commercial-credit bonds which

p. 8 of this document, to correct the incomplete returns of railroad and other public utility corporations.

[4] The number of corporations reporting in these fields were as follows: farming, 12,376; retail trade, not including department stores, 50,604; domestic service, 7,298; amusements, 5.258; professional and other service. 10.510. See as above, pp. 62-69.

[5] Compare the diverse reasons found by Dr. Willard L. Thorp for the formation of "central-office concerns"—groups of industrial establishments operated from a single office. *The Integration of Industrial Operation,* Census Monographs, iii, Washington, 1924, pp. 159-265.

embrace practically all enterprises, they are important, both because they affect particularly the largest corporations, and because they give to close-knit groups enhanced strategic influence upon business activity as a whole.

Besides the close bonds based upon commercial dealings, credit arrangements and ownership, there are looser ties which make the fortunes of business enterprises interdependent.

(1) Business enterprises must buy what they need in a common market, and compete against each other for possession of the common stock of the numerous goods which almost every enterprise requires. Among these goods we must list not only railway transportation, coal, steel and bank credit, but also many other widely used commodities, investment funds, land, common labor, and certain highly skilled services, for example, those of business executives, salesmen, engineers, lawyers, and accountants. When business is slack this interrelation through dependence upon a common source of supply is scarcely noticed; but at the peak of an intense boom its importance becomes manifest.

(2) Business enterprises must also sell in a common market, bidding against each other for the money of customers. This tie becomes closest in periods of depression. It is not simply that the clothier feels the competition of his trade rival, but also that the clothing industry feels the competition of the automobile industry, theaters fear the inroads of motion pictures and radios upon their market, insurance companies find their claims upon family incomes endangered by the claims of landlords, labor unions and the makers of automatic machines contest for the same work, and so on.

(3) If in these two respects the relations of business enterprises are competitive, it is not less true that business enterprises draw their support from one another. All business depends in the last resort upon the demands of personal consumers—even the enterprises which make products like mining machinery or bank equipment. And the bulk of the incomes which enable consumers to buy are incomes disbursed by business enterprises as wages, rents, interest or profits. Any serious reduction in the flow of incomes from business enterprises to consumers reacts promptly upon the concerns which provide consumers' goods and through them upon the concerns which cater to business needs.

All the interrelations among business enterprises here spoken of are matters of common knowledge. But since the study of business cycles is concerned with the spreading of given changes from their points of origin, it is well to note explicitly the variety of the bonds which unite all the enterprises of a country into a loose system. For these bonds are also channels through which the quickening or slackening of activity in one part of a business economy spreads to other parts.

6. Profits as the Clue to Business Fluctuations.

Not less important for the present purpose than the interrelations among all business enterprises, is the relation between the making of goods and the making of money within each enterprise. A business enterprise can serve the community by making goods only on condition that, over a period of years, its operations yield a profit.[1]

The subordination of service to money-making is not grounded in the mercenary motives of business men, but is one of the necessary results of pecuniary organization. A business man may be as public spirited or as scientifically minded as any one in the community, he may get his personal satisfaction chiefly from the contribution his enterprise renders to human well-being; yet he must so order affairs that his receipts exceed his expenses, or he will be put out of business and lose his chance to render service. Probably in the long run scrupulous maintenance of quality of output, avoidance of all misrepresentation, fairness in dealing with customers, liberal treatment of employees, and similar policies conducive to well-being are more profitable in dollars and cents than are sharp practices. Probably the man who thinks of little else than the money he is making on each deal is less likely to achieve large business success than the man who thinks much about the wants of others and how they can be satisfied. But the fact remains that the survival or extinction of a business enterprise or policy is determined by a financial test. Only Government and philanthropy can provide services which do not

[1] Of course there are ways of making money which contribute nothing toward human welfare, and ways which are detrimental to welfare. Business men themselves, social reformers, legislators, and the courts are continually striving to check abuses as they develop, or as they are recognized, by amending the rules of the business game. In this process of modifying the business economy, the results of economic analysis play a rôle. But in trying to understand how business cycles develop, it is confusing to mix considerations of welfare with considerations of process.

pay. In business the useful goods produced by an enterprise are not the ends of endeavor, but the means toward earning profits. And the business economy ruthlessly enforces that subordination.

The profits which count in determining solvency are not merely the profits or losses realized in the recent past, but also the profits anticipated in the near future. Indeed, business looks forward more than it looks backward. Even a concern which has been losing money for several years is likely to get the financial support required for continued operations, if its principals and backers believe that its fortunes will mend. And anticipated profits play the decisive rôle in fixing the direction to be taken by business expansion. It is the enterprises with faith in their future which finance extensions out of their own funds or out of funds borrowed from investors. Among the new ventures continually being organized by promoters, it is the ones which people with money to invest think likely to prove most profitable that get beyond the paper stage.[2] Finally, it is at those stages of business cycles when the profits anticipated from such operations are most attractive that extensions of old and launchings of new enterprises reach their highest points.

It follows that an account of economic fluctuations in a business economy must deal primarily with business conditions—with the pecuniary aspect of economic activity. This conclusion runs counter to one of the traditions of economic theory. Most economists have explicitly subordinated the pecuniary aspect of behavior, 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 in disorder.[3] The classical masters and the masters of utility analysis thought that they were delving deeper into the secrets of behavior when, with scarcely a glance at the "money surface of things," they took up the labor and commodities, or the sacrifices and utilities, which they held to be the controlling factors. When followed in the present field of study, this practice diverts attention

[2] Men can often be induced to put money into ventures in public welfare which promise only a meager return—for example, model tenements or liberty bonds;—but such mixing of philanthropy or patriotism with business is limited in scale, except in great national crises.

[3] Compare John Stuart Mill's dicta to this effect, *Principles of Political Economy*, book iii, chapter vii (Ashley's edition, 1909, pp. 483-488). See also Wesley C. Mitchell, "The Rôle of Money in Economic Theory," *American Economic Review*, Supplement, March, 1916, vol. vi, pp. 140-161.

from the way in which business cycles come about, and concentrates attention upon alleged non-business causes of fluctuation.

Of course, business prospects are continually being influenced by changes in crops, and in methods of manufacturing, storing, shipping and distributing goods—as well as by changes in politics, fashion, education, recreation, and health. But it is only as these changes affect the prospects of making money that they affect business activity. To take profits as the leading clue to business cycles does not rule out in advance causes of fluctuation which arise from non-business sources; what it does is to focus attention upon the process through which any cause that stimulates or retards activity in a business economy must exercise its influence. And that is a desirable result. For it is only by study of the processes concerned that we stand much chance of discovering how recurrent business fluctuations come about.

7. Factors Affecting Business Profits.

Economic activity in a money-making world, then, depends upon the factors which affect present or prospective profits. Profits are made by connected series of purchases and sales of goods—whether in merchandising or manufacturing, mining or farming, railroading or insurance. Accordingly, the margins between the prices at which goods can be bought and products sold are one fundamental condition of business activity. Closely connected with price margins is the second fundamental condition—the present and prospective volume of transactions.

Just as the ever-recurring changes in priees affect business activity and through it the volume of goods produced and distributed, so do changes in the volume of business react upon prices. A period of expansion starts 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 lead to new changes in the volume of trade. As the latter changes take place, the whole process keeps starting over again. Prices once more undergo an uneven readjustment, prospects of profits become brighter or darker, the volume of transactions expands or contracts, prices feel the reflex influences of the new situation—and so on without end.

III. The System of Prices.

The prices ruling at any moment for the infinite variety of commodities, services, and rights which are being bought and sold constitute a system in the full meaning of that term. That is, the prices paid for goods of all sorts are so related to each other as to make a regular and connected whole. Our knowledge of these relations is curiously inexact, for a matter so important and so open to investigation.[1] What follows is merely a sketch designed to indicate the organic character of the relationships among different parts of the system of prices.

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.

For most commodities in a given market at a given time, there is not a single retail price, but a variety of retail prices. It is only by an elaborate policy devised for the purpose, that a uniform price can be maintained, and the frequent infractions of price-maintenance schemes attest the strength of the commercial forces which make for price variety. Yet the differences among the prices charged for the same article by various shops are kept within fairly definite limits. For inexpensive articles, the differences may form a large percentage of the mean price, but they seldom amount to many cents. For costly articles, the differences may amount to many dollars, but they seldom form a large percentage of the mean. In other words, though the retail prices at which a given article is sold by different shops on the same day in the same town are not identical in the majority of cases, they are closely related to each other.

A much looser, but still significant, bond connects the retail prices charged for goods of unlike kinds. An advance in the price of any commodity usually diverts a part of the demand for it to other commodities which can be used as substitutes in certain of its uses, and thus creates business conditions which favor an advance in the price of the substitutes.

[1] At the present time, the National Bureau of Economic Research is carrying on certain studies in this neglected field. The investigator in charge, Dr. Frederick C. Mills, hopes to have his first results ready for submission to the directors with a view to publication before the end of 1927.

Retail prices are also related to the prices for the same goods which shopkeepers pay to wholesale merchants and the latter to manufacturers. In most cases, the wholesale prices for a given article, also constitute arrays rather than single quotations. The series of successively smaller prices for the same commodities in different hands often has more or less than three members, because of the intervention of more than one wholesaler or jobber, or of an importer in the traffic, or because of direct selling by manufacturers to retailers or even to consumers.

There is wide diversity in the margins between the successive prices in these series. The margins are generally wider in retail than in wholesale trade; wider in "charge-and-deliver" than in "cash-and-carry" shops; wider on goods limited in sale, slow in turnover, perishable, sold in small lots, requiring a large assortment, subject to changes in fashion or season, than on durable, standardized staples handled in bulk.[1] A manufacturer who sells directly to consumers must charge a wider margin than does any one of the several dealers who commonly intervene. Perhaps also the margins average wider when a large advertiser or quasi-monopolist dominates a trade than under conditions of keen competition; that is not certain, for competition may be carried to a pitch which leaves each enterprise with so small a volume of business, or with such heavy selling expenses, that wide margins between buying and selling prices are made necessary for all concerned. It is notorious that wide margins do not always mean large profits.

These diversities in the margins are themselves established and kept tolerably regular by the quest of profits. Controlled in this way, the margins between the successive prices in the series for each kind of consumers' commodities form a feasible basis for making money out of the process of supplying the community with the goods it uses.

[1] Recent investigations by the Bureau of Agricultural Economics and the Port of New York Authority have shown that the factor of chief moment in fixing retailers' margins upon perishable food products is the average size of the package sold. Seemingly, the retailer must impose a service charge, which varies little from the mean, 10 cents, upon every package handed to a customer. On goods usually sold in small lots, for example fresh onions, this service charge constitutes a much larger percentage advance upon the jobbers' price, than on goods (like potatoes) sold in larger lots. Perhaps this generalization will be found to apply to many other branches of retailing. See Dr. Charles E. Artman, *Food Costs and City Consumers* (Columbia Studies in History, Economics and Public Law, No. 280), New York, 1926, chapter iii.

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

The business enterprises engaged in squeezing money profits out of these price margins are seldom, if ever, able to keep the whole differences between their selling and buying prices. From retailers back to manufacturers, unless they are operating on a minute scale, they must purchase various commodities, services and rights for the efficient conduct of their business. For such producers' goods they have to pay out prices which commonly absorb the greater part of the price margins on the consumers' commodities in which they deal. The most important classes of these producers' goods are raw materials and such current supplies as coal and stationery, buildings with proper machinery or other equipment, manual and clerical labor, loans, leases, transportation, advertising and insurance.

To all business enterprises, the prices which they pay for these producers' goods are important factors in fixing the margins between the buying and selling prices of the commodities in which they deal. But, save in the case of transportation and certain kinds of labor, men who handle a variety of goods require elaborate accounting systems to connect the prices which constitute costs with the margins upon which they sell particular goods. For the cost prices of producers' goods are paid for the advantage of the enterprise as a whole, and the accruing benefits extend to many transactions and often cover a long time.

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

With the exception of labor, producers' goods are provided, like consumers' commodities, chiefly by business enterprises, large or small, operating on the basis of margins between buying and selling prices. Hence the price of any given producers' good is related not only to the prices of the consumers' commodities to the production or distribution of which it must finally contribute in some way, 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 end the series of price relationships; at most they begin new series of relationships, which run backward with countless rami-

fications and never reach definite stopping points. Even the prices of raw materials in the hands of first "producers" are related systematically to the prices of the labor, current supplies, machinery, buildings, land, loans, leases, and so on, which the farmers, miners, quarrymen, lumbermen, and fishermen 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, advertising, transportation, insurance—require but a word. They are the subjects of an organized business traffic, in which price margins play the same rôle as in the buying and selling of commodities. Therefore, the prices charged by the bank, the advertising agency, 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, use publicity, ship goods and carry insurance.

The prices of labor—manual, clerical, professional and managerial —may seem to bring the series to a definite stop, at least along one line. For men do not have a business attitude toward the production of their own energy, and not wholly a business attitude toward the acquisition of their own training. But the prices which wage- and salary-earners can command are indubitably connected with the prices of the consumers' goods which established habit has made into standards of living for the classes to which they belong, as well as with the prices of the goods they help to make. Along this line, therefore, analysis of the interrelations among 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.

Connected with the prices of consumers' commodities, of raw materials, and of other producers' commodities or services, are the prices of business enterprises.

Occasionally, established business enterprises are sold outright as going concerns. Promoters are also constantly offering for sale new business organizations or reorganizations of old enterprises. But far the most numerous transactions of this type are dealings in the shares of corporations.

Closely associated with the prices of such shares are the prices of

corporate notes, bonds and debentures. Theoretically, a sharp line may be drawn between ownership of common stock in an enterprise (carrying no right except to vote at its meetings, and to share in its dividends, if any), and ownership of its mortgage-assured bonds. But many types of securities have been invented intermediate between these extremes—stocks "preferred" in various ways, convertible bonds, voting bonds, bonds secured by second or third mortgages, and so on through a long list. All of these securities carry an interest in the corporation with them, some risk, and the possibility of having to assume control under certain contingencies. Indeed, the common stocks of some corporations are rated a safer investment than the first-mortgage bonds of others. An effort to classify all these securities on logical lines would involve much elaboration. In a summary view of the system of prices it is permissible to pass over such details and treat the traffic in corporate securities of all kinds under one head.

That the prices of whole business enterprises, of shares in them, and of their promises to pay are intimately related to the prices already discussed, is clear. For the value of an enterprise is determined primarily by capitalizing its present and prospective profits. Profits depend primarily upon price margins times the volume of business transacted. The rate of interest at which prospective profits are capitalized is determined by the going price for the use of investment loan funds, and as such is related to the whole complex of prices which affect the investment markets.

5. The Prices of Services to Persons.

There remains one other grand division of the system of prices—a division which has much in common with the price of consumers' commodities on the one hand, and with the prices of personal services to business enterprises on the other hand. It consists of the prices of the heterogeneous services which are rendered to persons. Here belong the prices of domestic service, medical attendance, most life insurance, much instruction, some legal advice, many forms of recreation, passenger transportation, hotel accommodation, and so on.

In part, this field is cultivated by large-scale business enterprises, conducted methodically for the profit to be made out of price margins. Hotels, amusement places, travel bureaus, life-insurance companies, standardize their goods, watch their operating expenses, and com-

pete for custom on a price basis in much the same way as department stores. But in other parts of the field, business traffic can scarcely be said to exist. Contacts are made and maintained largely on a personal basis, the services are not and often cannot be standardized, the sellers often deprecate commercial motives, and prices are often varied according to the individual buyer's capacity to pay. Consumers do not shop about for the services of family lawyers, doctors, or even cooks, as they shop for shoes. Hence, the prices of non-business services to persons form the most loosely organized and irregular division of the system of prices.

6. The Interrelations Among Prices.

The aim of this classification of prices is not to set up different categories, but rather to emphasize the relations which bind all prices together and make of them one system. The close relations (1) between the prices of consumers' commodities in the hands of retailers, wholesalers and manufacturers; (2) between these prices and those of producers' goods, whether used directly or indirectly in making consumers' commodities, and (3) between the buying and selling prices in any branch of trade and the prices of securities of the business enterprises engaged in it, are sufficiently clear, and enough has been said about (4) the looser bonds which unite the prices of services to persons with the larger field of business dealings. But several other lines of relationship should be called to attention.

(5) On the side of demand, almost every good has its possible substitutes in some or in all of its uses. Through the shiftings of demand among commodities thus made possible, changes in the price of one commodity are passed on to the prices of its substitutes, from the latter to the prices of their substitutes, and so on. An initial price change usually—though not always—becomes smaller as it spreads out over these widening circles.

(6) Similarly, on the side of supply, almost every good has genetic relationships with other goods, made from the same materials, or supplied by the same set of enterprises. Along these genetic lines also, price changes radiate from the points of disturbance over a wide field. Particularly important because particularly wide are the genetic relationships arising from the use of certain producers' goods in many lines of business. Land, loan funds and transportation most of all; with somewhat less universality, coal, steel, certain types of

labor, and insurance enter into the cost of most commodities. Accordingly, a changed price established for one of these well-nigh universal producers' goods in any important use will extend to a wide variety of other uses, and may produce further price changes without assignable limit.

(7) Closely connected with this genetic relationship through common producers' goods, is the relationship through business competition, both actual and potential. Price margins which make one trade decidedly more or less profitable, all things considered, than other trades in the same market area cannot long continue in the lines of business which anyone controlling capital really can "break into" if he so desires. For, after a time which varies with technical and business conditions in the trade which is out of step, the influx or efflux of capital changes the supply of commodities in question and brings the price margins into closer adjustment with those prevailing in other trades.

This familiar proposition does not mean that competition tends to bring the price margins on which all goods are handled to a common level. On the contrary, the tendency is to make these margins differ from each other,—differ in whatever way is necessary to keep the prospects of return to capital and enterprise, everything considered and over whatever periods men think of in planning their ventures, so nearly alike that no one of the lines open to investment seems much more attractive to the average enterpriser than its alternatives.

Nor does this proposition imply that there is a tendency toward an equality of profits in business. Whatever such tendency exists is limited to equalizing the prospective opportunities for making profits on fresh investments. In every branch of business followed by numerous enterprises, and in every year, experience shows a marked diversity of returns, running from liberal profit percentages to substantial losses. There seems to be no tendency for these divergencies to disappear, except perhaps when a trade becomes concentrated in the hands of very few concerns. Where there are many concerns, the tendency toward equalizing the prices of similar producers' goods and similar products—and in the given market areas this tendency is real—makes profits depend upon the skill of managements and the particular circumstances under which each management operates. Since neither skill nor circumstances are uniform, the differences in profit rates which they produce tend to recur indefinitely.

(8) Present prices are affected by prices of the recent past and also by the anticipated prices of the near future. Indeed, present prices are determined largely by past bargains, many of which established time contracts still in operation. Over a wider field, our ideas of what is a "fair price" to ask come from past experience to affect present and future conduct. Thus the price system has no definable limits in time. No analysis can get back to the earliest term in the endless series of bargains which helped to make the prices of to-day, nor can anyone say how much influence is exerted to-day by the anticipations of what prices will be to-morrow, or how many to-morrows are taken into business reckonings.

(9) Nor has the price system any logical beginning or end. At whatever point analysis may begin tracing the interlocking links of the price chain, to that point will it come round again if it proceeds far enough. The above analysis, for example, started from the prices of consumers' commodities at retail. These prices are paid out of personal incomes. But personal 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 differences which yield profits.

Thus all the prices in a business economy are continually influencing one another. To account for any one item in the system, one must invoke the whole. Realization of that fact has made economic theorists dissatisfied with efforts to explain the prices of particular goods in terms of their respective costs, or utilities, or supply and demand. In 1874 Léon Walras showed how any number of prices can be conceived as simultaneously determined, under certain imaginary conditions. Mathematical economists are now seeking to make his method of approach (the use of several sets of simultaneous equations equal in number to the number of the "unknowns") applicable to real life.[1] These efforts may provide students of business cycles with a better technique than they now possess for treating the problem of price changes. But even as matters stand, we can trace the main channels through which price fluctuations propagate themselves by using statistical data in ways suggested by the preceding analysis.

[1] See Walras, *Éléments d'Économie Politique Pure,* 1874; 4th ed., Lausaunne and Paris, 1900; Gustav Cassel, *Theory of Social Economy,* New York, 1924; Henry L. Moore, "A Theory of Economic Oscillations," *Quarterly Journal of Economics,* November, 1926, vol. xli, pp. 1-29.

Among writers who make no use of mathematical symbols, Herbert J. Davenport has faced the mutual interdependence of all prices perhaps more frankly than anyone else. See his *Economics of Enterprise,* New York, 1913.

7. The Rôle of Prices in Economic Life.

Prices, then, form a system—a highly complex system of many parts connected with one another in divers ways, a system infinitely flexible in details yet with a fairly stable equilibrium among its parts, a system like a living organism in its capacity to repair the serious disorders into which it recurrently falls.

So much for the structure of the system of prices; concerning its functions in economic life a few words must be added. The system of prices is our mechanism for regulating the process of producing, and distributing goods. Prices make possible the elaborate exchanges, and the consequent specialization and coöperation in production which characterize the present age, and so are one of the factors contributing to its relative comfort. They are the means by which all consumers in concert make known what goods the community wants and in what quantities; the signs which enable all business enterprises in concert to come as near as they do toward achieving a satisfactory allocation of productive energies amidst the million channels into which these energies might flow. Prices 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 jaws of the vise in which the family feels itself squeezed—are aggregates of prices. Prices also render possible the rational control of economic activity by accounting; for accounting is based upon the plan of representing all the unlike commodities, services and rights with which an enterprise is concerned as buyer or seller in terms of a money price. Most important of all for the present purpose, the margins between different prices within the system hold out that prospect of money profit, which is the motive power that drives our business world.

IV. The Monetary Mechanism.

Monetary and banking systems are such obvious features of the business economy that they require little attention here. It is well, however, to state the sense in which certain terms will be used, to note the relative magnitude of important variables, and to indicate the bearings of a famous controversy upon the problem of business cycles.

1. Ambiguity of the Terms "Money" and "Currency."

Business men, economists at large, and writers upon business cycles in particular, use the word money in a confusing variety of meanings. The variants important here are illustrated by Professor Irving Fisher on the one side and by Messrs. Foster and Catchings on the other. Fisher defines money as "what is *generally* acceptable in exchange for goods," thus distinguishing money from bank deposits subject to check. "Currency" is Fisher's broad term for all the common media of exchange. On the contrary, Foster and Catchings use the word money in the broad sense assigned by Fisher to currency, and the word currency in the narrow sense assigned by Fisher to money.[1]

Needless to say, both of these opposing usages can be defended by abundant precedents, drawn from the world of books and from the world of affairs. To follow either usage, however, is to invite misunderstanding by those accustomed to the other. Care in stating definitions in one chapter and consistency in adhering to them in later passages may be a logical defense against the misinterpretations of readers who have "skipped" or forgotten the formal definitions; but it is better to give no opening for mistake when that is feasible. The shortest unambiguous term for what Fisher calls money and what Foster and Catchings call currency seems to be "coin and paper money." We must choose between the unattractive alternatives of using some such cumbrous expression or of facilitating misunderstanding. Of these two evils, the latter seems the greater.

Accordingly, in the chapters which follow, the terms "coin and paper money" and "deposit currency" will be used. All the common means of making monetary payments taken together will be called the "circulating medium."

2. The Relative Importance of Checks and of Coin and Paper Money in Making Payments.

Our knowledge on this head has not been advanced materially since 1909, when Professor (now President) David Kinley of the University of Illinois superintended an investigation made by the Comptroller of the Currency for the National Monetary Commis-

[1] See Irving Fisher, *The Purchasing Power of Money*, New York, 1911, pp. 8-13; W. T. Foster and Waddill Catchings, *Money*, Boston and New York, 1923, pp. 17-18.

sion. The Comptroller secured reports from some 11,500 banks of all kinds concerning the character of the funds deposited with them on Tuesday, March 16, 1909, by retail merchants, wholesale merchants, and customers of other occupations. From these returns, supplemented by estimates of deposits in the non-reporting banks and vaguer approximations to the transactions of people without bank accounts, Kinley concluded that we may "safely accept an average of 80 to 85 per cent as the probable percentage of business in this country done by check." In wholesale trade the percentage was above 90, in the business of non-mercantile depositors it was "close up to that of the wholesale trade," in retail trade it was 50 to 60 per cent, and even of the pay rolls made up by banks 30 per cent were in checks. On comparing the 1909 returns with those secured in a similar investigation which he had supervised in 1896, Kinley also concluded "that the percentage of the volume of ordinary payments made by check has been increasing somewhat." [1]

Of course estimates based upon the transactions of a single day are especially unsatisfactory to students of business cycles, since they are much concerned with the magnitude of seasonal, cyclical, secular and random fluctuations in business processes. Probably the percentage of payments made by checks is higher on dates when rents, salaries, dividends, bond coupons, and income taxes are being paid in large amounts than on a mid-month day, like March 16th. Full records over a period of years might show fairly regular seasonal variations in the percentage, corresponding in timing to the seasonal variations in bank clearings. There may also be cyclical fluctuations in the relative use of checks and coin or paper money, as well as a rising secular trend for the first and a declining secular trend for the second. But all this is surmise. What we know with certainty is that the great bulk of payments in the United States is made with checks. Probably coin and paper money do not more than a tenth or at most a fifth of the "money work." The figure intermediate between these limits, 15 per cent, seems to fit well with the run of the estimates presented in the following sections.

[1] David Kinley, *The Use of Credit Instruments in Payments in the United States.* National Monetary Commission. 61st Congress, 2d session, Senate Document 399, Washington, 1910, pp. 197-201. (The critical reader may be warned that the percentage of pay rolls in checks is misstated on p. 200; the correct figures are given on p. 103). Kinley gives percentages for checks on p. 198 which run somewhat higher than his final conclusions quoted above. It is these higher figures which Professor Irving Fisher uses in his *Purchasing Power of Money,* revised ed., p. 491, to support his own estimate that 91 per cent of all business in 1909 was done with checks.

3. The Elasticity of the Circulating Medium.

How far the money mechanism responds to the changing requirements of business from phase to phase of a cycle, and how far the money mechanism may start, augment or limit business fluctuations, are among the problems raised in Chapter I. Presumably, these problems have no single solution, since so much depends upon what the changing requirements of business are, upon how the money mechanism is arranged, and upon the skill with which it is managed. All three conditions differ from country to country, and in any one country they may differ from time to time. Close attention must be paid to this factor in business cycles later on. At present it will suffice to show that the currency which the business community provides for itself through the banks rises and falls with the activity of trade more regularly than coin and paper money provided through government agencies.

The fluctuations in the amount of gold in monetary use in any country during a given year depend mainly upon (1) the current output of such gold mines as it possesses, (2) the country's gain or loss of gold by international shipments, and (3) the quantity of gold which goes into industrial uses. No one of these factors can be depended upon to increase the supply of gold currency when trade is brisk, or to diminish the supply when trade is dull.

(1) Changes in gold production are controlled mainly by the discovery and exhaustion of deposits, by improvements in the arts of mining and metallurgy which make it possible to work lower grade ores at a profit, and by conditions which facilitate or hinder industrial operations in the mining districts. None of these factors are organically related to business fluctuations. Of secondary importance are financial conditions which affect the raising of capital for investment in gold mining, and price conditions which affect the cost of operating mines. Prosperity facilitates the raising of capital, but increases operating costs. In turn, high operating costs give mining engineers a stronger incentive to develop improved methods of work, and thus may lead presently to increased output. All in all, one would not expect a close correspondence between business cycles and gold production, and when one examines the statistics over a period of years this negative expectation seems to accord with experience.

Over periods much longer than those typical of business cycles,

however, there seems to be an organic relation between gold production and the rate of economic expansion. The periods of large additions to the world's gold supply have been accompanied or followed by periods in which the prosperous phases of business cycles have been relatively long and intense and the depressed phases have been relatively short. The reverse also seems true: periods of declining gold production have been accompanied or followed by periods in which the phases of prosperity have been relatively short and the phases of depression relatively long. Thus the fluctuations of gold output are important in the study of business cycles; but important as a part of the economic environment in which cycles run their course, rather than as part of the cycles themselves. But this relationship we can study to better advantage after we have won such insight as we can into the character of cyclical fluctuations.

(2) The industrial demand for gold is decidedly sensitive to business conditions; it rises in prosperity and falls in depression. Since the general level around which this percentage fluctuates seems to approximate a quarter of the annual output, and since the plus and minus departures from this average are considerable, we have here a not unimportant factor of "perverse elasticity" in the monetary supply of gold.

(3) The amount of gold shipped into and out of any country in the course of a year is the net resultant of a multitude of factors. Among the more important are the relative magnitudes of payments and receipts on merchandise account, freight account, travelers' account, migration account, and banking account. While every one of these items may be directly affected by the state of trade in the country in question, it is hard in most cases to be sure whether the state of trade will affect the credit side more than the debit side of that item. Moreover, the problem is never limited to the influence exercised by the state of trade in any one country; it includes also the influence exercised by the state of trade in every one of the other countries with which the first has extensive dealings. Of especial importance to the Western world is the highly variable flow of gold to the Orient, especially to British India—a flow which depends less upon business conditions in the West than upon conditions in the East. The net resultants of all these complicated factors, as summed up by official statistics, show that no simple conclusion can be drawn concerning the relation between international gold movements and business conditions, except in severe crises.

The exception is important. In times of peace, any nation menaced by a credit collapse has usually been able to secure within a few weeks a large inflow of gold from the "free gold market" of London, or, in recent years, New York. International business has developed a rudimentary centralized gold reserve, which any commercial nation can draw upon, after negotiation and somewhat tardily, to meet emergencies. Perhaps this constitutes the world's most considerable achievement toward adjusting the supply of gold currency to the demands of business.

As for government paper money, it is notorious that the large changes in issues are controlled by the exigencies of public finance. Paper standards occur as episodes in monetary history. The suspensions of specie payment, by which they are ushered in, are usually forced by wars, political revolutions, or national bankruptcies. A return to specie payments becomes an aim of fiscal policy after the emergency has passed, though an aim which is often pursued in a wavering and dilatory fashion. Of course, the developments which lead to suspensions, the depreciation of the monetary unit which usually follows suspensions, and the appreciation which usually precedes resumption, all influence the activity of trade. But these influences, like the influence exerted by marked changes in the rate of gold production, must be classed among the "disturbing causes," by which theorists explain the divergencies characteristic of different business cycles.

Government paper money as an element of monetary systems having a metallic standard is seldom controlled in such a way as to make its volume regularly responsive to changing needs. But much as the gold supply of a country has often been increased in severe crises by huge importations, so governments have sometimes aided business in emergencies by increasing their paper issues, or by shifting paper money from the public treasury to the banks.

The broad conclusion from the preceding analysis is that, except in severe crises, business must depend primarily upon bank notes, checking deposits, and bills of exchange to keep the supply of the circulating medium adjusted to its changing pace.

This adjustment is made possible within certain limits by the fact that bank notes are issued and bank deposits created chiefly by the granting of bank loans, while bank notes are retired and bank deposits are canceled chiefly by the repayment of bank loans. The

drawing of a check against his deposit by the customer of a bank no more reduces the volume of deposit currency than the payment of a bank note by one man to another reduces the volume of notes in circulation. In both cases a part of the circulating medium is merely transferred from one holder to another—unless the check or note is used to repay bank loans. Now a period of prosperity, during which production expands, prices rise, and profits swell, increases the money value of the security upon which banks make their loans, and so provides a basis for the increase of bank currency which is required by trade. A period of depression, on the contrary, diminishes the business demands for bank loans, and through their repayment contracts the volume of notes and deposit currency as the requirements for means of payment decline. The qualifications to which these sweeping statements must be subjected in later chapters prevent the adjustment of bank currency to the needs of business from being always prompt and precise; but the broad contrast between the responsiveness to changes in business activity of bank currency and the unresponsiveness of coin and government notes remains valid.

Of course, the limits within which bank notes, checking deposits, and bills of exchange can be thus adjusted to the changing volume of trade depend upon the organization and management of a country's banking system. Mistakes in adjustment disastrous to business can be made within these limits, as well as by failure to heed them. Hence we may expect to find that the development of banking legislation and of banking practice has played an important rôle in the history of every country's business cycles.

4. The Velocity of Circulation.

Fluctuations in the activity of business lead to changes not only in the volume of deposit currency and bank notes, but also in the average rate at which all forms of circulating media pass from hand to hand. An increase in the volume of payments can be effected in either of these ways, and in practice is usually effected both by an expansion in the quantity of bank currency and by a quicker turnover of coin, paper money and deposits. Changes in the velocity of circulation are not limited by technical factors as are changes in the quantity of the circulating medium. Broadly speaking, anyone in receipt of current funds can spend them again as quickly or as slowly as suits him. But like most phenomena produced by the actions

of millions of men, the average velocity of circulation is markedly regular in its changes.

It is only of late that we have attained even rough measurements of this factor in business processes. In 1907 Professor E. W. Kemmerer summed up a few preceding studies and made the best estimate of velocity which the data then permitted. Kinley's study of credit instruments for the National Monetary Commission enabled Irving Fisher in 1911 to improve upon Kemmerer's results. In turn, certain recent investigations of the Federal Reserve Bank of New York have made it possible for Dr. W. Randolph Burgess to supersede Professor Fisher's figures.[1]

The New York Reserve Bank has collected monthly data concerning the volume of individual demand deposits and the debits to individual accounts in the banks of eight cities, ranging in size from New York to Syracuse and in location from Boston to San Francisco. The data, beginning in January, 1919, and extending by months to February, 1923, when they were analyzed by Dr. Burgess, covered somewhat more than one full business cycle, and so gave a basis for approximating not only the mean velocity of bank deposits but also the variations about the mean.

Dr. Burgess found that there is a close relationship between the amount of bank deposits in a city and the rapidity of their turnover. In New York the velocities ran six to eight times as high as in Syracuse. Between these extremes, the velocities in other towns (excepting Albany) varied so neatly with the volume of deposits that it seemed justifiable to use this relationship as a basis for estimating the average velocity of deposits in the United States. Computations following the line thus suggested indicated that a reasonable estimate would place the velocity of circulation for the country as a whole at a rate somewhere between 25 and 35 times a year, and probably under rather than over 30.

Not less important for our purpose than the general average reached by Dr. Burgess, are the seasonal and cyclical variations which he found to characterize deposit velocities. The seasonal swings ranged from 12 per cent of the annual mean in San Francisco and 14 per cent in Chicago to 29 per cent in Boston and 31 per cent in Albany. After these seasonal changes had been eliminated from the

[1] See E. W. Kemmerer, *Money and Credit Instruments in their Relation to General Prices*, New York, 1907, pp. 108-119; Irving Fisher, *The Purchasing Power of Money*, New York, 1911, pp. 441-477; W. Randolph Burgess, "The Velocity of Bank Deposits," *Journal of the American Statistical Association*, June, 1923, vol. xviii, pp. 727-740.

series, the cyclical swings remaining were even larger. They ranged from 22 per cent of the average value for the whole period in Chicago, and 26 per cent in San Francisco to 63 per cent in Syracuse and 68 per cent in Albany. New York, which is often thought of as subject to exceedingly wide seasonal and cyclical variations in all financial matters, was near the center of the range in both the seasonal and cyclical array.[2]

Certain of Dr. Burgess' results can be tested by using other recent data. The Federal Reserve Board now compiles the total "debits to individual accounts" in the banks of many cities. These figures come far closer to showing the volume of payments made by check in the United States than do any earlier data:—among other advantages, debits include the millions of checks which are deposited in the banks against which they are drawn, and which therefore do not pass through a clearing house. By careful analysis of these returns from 240 cities in 1922, Mr. Carl Snyder has shown that the total debits for the whole country in that year were about 534 billion dollars. This is probably a close approximation as such matters go; for the actually recorded amounts not only cover banks holding more than

[2] The leading results of this important paper may be presented in tabular form as follows:

VELOCITY OF BANK DEPOSITS, JANUARY, 1919, TO FEBRUARY, 1923

	New York	Albany	Buffalo	Rochester	Syracuse	Boston	Chicago	San Francisco
Original data								
Average	73.7	29.9	19.7	20.2	9.9	34.1	46.1	39.9
Maximum	91.3	49.0	25.1	23.6	15.3	47.6	51.5	44.9
Minimum	62.1	21.6	16.1	16.7	7.0	24.7	38.4	34.0
Range	29.2	27.4	9.0	6.9	8.3	22.9	13.1	10.9
Range as per cent of average	39.6	91.6	45.7	34.2	83.8	67.2	28.4	27.3
Seasonal Fluctuations								
Average month	100	100	100	100	100	100	100	100
Maximum	112	117	112	109	113	113	106	106
Minimum	91	86	92	92	89	84	92	94
Range	21	31	20	17	24	29	14	12
Cyclical Fluctuations (Seasonals eliminated)								
Average	73.7	29.9	19.8	20.2	9.9	34.1	46.0	40.0
Maximum	84.8	43.0	26.1	22.8	13.5	42.1	52.0	45.9
Minimum	63.4	22.7	16.3	16.9	7.3	29.0	41.7	35.5
Range, per cent of average	29.0	67.9	50.0	29.2	62.6	38.4	22.4	26.9

W. Randolph Burgess, "Velocity of Bank Deposits," *Journal of the American Statistical Association*, June, 1923, vol. xviii, pp. 727–740.

All of the velocities in this table are computed on a yearly basis.

four-fifths of the total deposits, but also afford a good basis for making estimates for the missing banks.[3] If we had equally trustworthy figures of the average volume of deposit currency to compare with this total, we could compute its velocity of circulation with confidence. Once a year the Comptroller of the Currency does compile a nearly complete table of deposits in all kinds of banks in the country; but the portion of these deposits subject to check is not stated for all kinds of banks and must be estimated in part. Then these partially estimated figures for June 30th must be made into annual averages as well as may be by using an index based upon a comparison between the individual deposits of the National Banks on June 30th and the average of such deposits in the five (or four) reports to the Comptroller. Figures made in this fashion must be accepted as subject to a margin of uncertainty; but an error of a billion dollars one way or the other would not make 5 per cent of the total. Indeed, this method of approximating the velocity of deposit currency involves less estimating than Dr. Burgess' more elaborate method, which builds upon returns that are more precise, but include only 8 cities.

Table 3 shows that the results to which this method leads agree well with Dr. Burgess' conclusion that the average turnover of deposit currency for the country as a whole is somewhere between 25 and 35 times a year, and probably under rather than over 30. In view of its firmer foundation, this estimate has better claim to acceptance than the pioneer figures of Professor Irving Fisher, who had set the velocity of bank deposit currency at nearly 37 in 1896, 53 in 1909 and 96 in 1918.[4] The table also confirms the conclusion that the velocity of deposit currency rises and falls with business activity, though of of course these annual figures do not move through nearly so wide a range as the data which Dr. Burgess presents by months.

If 80-85 per cent of the country's payments are made with checks, if the volume of checking deposits rises and falls with the activity of trade, and if the circulation of these deposits is quickened in prosperity and retarded in depression, it may seem that the money

[3] Compare Carl Snyder, "A New Index of the General Price Level from 1875," *Journal of the American Statistical Association*, June, 1924, vol. xix, pp. 189, 190.

[4] See his *Purchasing Power of Money*, New York, 1911, p. 304, and "The Equation of Exchange for 1918," *American Economic Review*, June, 1919, vol. ix, p. 407. Even before the Federal Reserve Bank data on bank-deposit velocity were gathered, Professor Fisher had become skeptical of his own values, at least for years far from his basing points, 1896 and 1909. See the article just cited.

TABLE 3

THE VELOCITY OF DEPOSIT CURRENCY, ESTIMATED FROM TOTAL PAYMENTS BY CHECK AND AVERAGE DEPOSITS SUBJECT TO CHECK

The United States, 1919–1926

	Estimated Volume of Payments made by Check Billions of Dollars	Estimated Average Volume of Deposits Subject to Check Billions of Dollars (As of July 1st)	Estimated Average Velocity of Deposits
1919	546.8	18.99	28.8
1920	587.7	21.08	27.9
1921	484.0	19.63	24.7
1922	533.9	20.47	26.1
1923	570.3	22.11	25.8
1924	600.1	23.53	25.5
1925	653.4	25.98	25.1
1926	695.3	25.57	27.2

NOTE: The data used in this table were supplied by Mr. Carl Snyder of the Federal Reserve Bank of New York. For the 1922 estimate of payments by check, see text. The figures in other years for the country outside of New York were made from the 1922 estimate by means of an index based upon debits in 140 cities. Mr. Snyder believes that the margin of error in these estimates may be 10 per cent.

economy has developed a mechanism adequate to the changing requirements made upon it from phase to phase of business cycles. Whether this impression is sound depends, of course, upon the relative magnitudes involved. And these magnitudes vary from cycle to cycle and from country to country. Here, then, is another problem which we must treat on a quantitative basis, with the expectation that the results will not be the same in all cases, or in all phases of the cycle.

While the payments made in coin and paper money seem not to exceed one-tenth or one-fifth of the total, these payments must be made, and they cannot be made in checks without a mass change in monetary habits and arrangements. The velocity of coin and paper money is, therefore, a highly important variable. Concerning its average magnitude and its limits of fluctuation scarcely anything has been learned since 1911 when Professor Fisher was studying the equation of exchange. His final result for 1909 was that coin and paper money changed hands against goods on the average 21.1 times, as compared with 52.8 times for deposit currency.[5] Our next problem is whether the first of these figures is as far out of the way as later data show the second to be.

[5] *The Purchasing Power of Money*, p. 304.

Professor Fisher's method of approximating the velocity of coin and paper money involved (1) an estimate of the amount of coin and paper money flowing into and out of the banks in a year—an estimate built up from the deposits made in a part of the banks in one day; (2) an estimate of the sums withdrawn from the banks which are paid to non-depositors, and (3) estimates of the average number of times the cash received by depositors and by non-depositors exchanges against goods before it is redeposited in banks. Fisher's final picture of the circulation in 1909 is as follows:

Coin and paper money withdrawn from banks	Use made of the funds withdrawn	Average circulation of the funds withdrawn before they are redeposited	Volume of payments made outside of banks by coin and paper money
8 billions	Paid to depositors	Once	8 billions
12 "	Paid to non-depositors	Twice	24 "
1 "	Paid to non-depositors	Three times	3 "
21 billions			35 billions

To get the average velocity of coin and paper money in this year, he divided this total of 35 billions by his estimate of the amount of money in circulation, 1.63 billions, and thus got 21.5—a figure which he scaled down in the final adjustments to 21.1.[6]

Little confidence can be felt in results resting upon so many conjectural estimates. And the best test that we can make by the use of later data, while somewhat less conjectural, yields but vague results. As said above, Mr. Snyder has shown that the check payments in the United States in 1922 totaled about 534 billion dollars. If we accept Kinley's estimates that payments made by check constitute 80-85 per cent of all payments, then we must put the payments made by coin and paper money in 1922 at from 94 to 133 billions. If, as Professor Fisher thinks proper, we take at least 90 per cent as the proportion of payments by check, the payments in coin and paper money shrink to 59 billions. The average amount of money in circulation that year outside of the treasury and the banks was 3.67 billion dollars.[7] Division gives the average velocity of coin and paper money

[6] For the details of this elaborate computation, see *The Purchasing Power of Money*, pp. 448-477.

[7] On the assumption that the coin and paper money in all commercial banks on June 30th, bore the same ratio to the average for the year as is borne by the coin and paper money outside the Treasury and the Federal Reserve System to the average for the year.

in 1922 as 16, 26, or 36 times, according as we take 90, 85, or 80 as the percentage of payments by check. Professor Fisher's figures—21.1 in 1909 and 30 in 1918—fall within this range. There seems to be no such difference as he surmised between the velocity of deposit currency and of paper money and coin. The middle figure in the range, 26, seems the most plausible. It coincides with the velocity of deposit currency in 1922 shown by Table 3. But of course this is a most uncertain guess. Whatever figure we accept as representing the average velocity of coin and paper money, we may suppose that the annual rate rises and falls with the activity of trade, though probably in less degree than the velocity of bank deposits.

5. The Quantity Theory and Business Cycles.

So far we have been concerned with the way in which the circulating medium responds to the changes which business cycles bring in the volume of trade. We cannot leave this topic, however, without noting the contention that fluctuations in the quantity of the circulating medium are causes of price changes and so of business cycles, rather than adaptations to the needs of business. This view is most picturesquely put in the title of one of Professor Fisher's recent articles, "The Business Cycle Largely 'A Dance of the Dollar.'" [1]

The problem can best be presented by using the equation of exchange as formulated by Fisher: $MV + M'V' = PT$. M stands for the quantity of coin and paper money in circulation and M′ for the amount of deposits subject to check. V and V′ are the respective velocities at which these media are exchanged for goods. P represents the price level and T the physical volume of goods exchanged. Thus the equation means that the total volume of payments made in coin, paper money and checks in a given time equals the money value of the goods bought and sold.

For the moment we are not concerned with the conditions under which this equation is valid, but with the causal relationship among the several magnitudes represented in the equation. Professor Fisher holds that

> *The price level is normally the one absolutely passive element in the equation of exchange.* It is controlled solely by the

[1] See *Journal of the American Statistical Association*, December, 1923, vol. xviii, pp. 1024-1028.

> other elements and the causes antecedent to them, but exerts no control over them.[2]

In this proposition the word "normally" is important: for Professor Fisher admits that "*to a limited extent during transition periods, or during a passing season* (e.g. *the fall*)" the "price level is an independent cause of changes" in other magnitudes in the equation.[3]

What, then, are "transition periods," and what fraction do they make of time? Professor Fisher's answer begins as follows:

> The change which constitutes a transition may be a change in the quantity of money, or in any other factor of the equation of exchange, or in all.[4]

The discussion of transition periods, thus introduced, gives him occasion to expound a theory of "credit cycles," which stresses the lag in the adjustment of interest rates to changes in the price level. And

[2] *The Purchasing Power of Money*, p. 172. Italics as in original.

Through a most ingenious statistical study, of which some account will be given in the next chapter, Professor Fisher has recently come to the "conclusion that changes in price level almost completely explain fluctuations in trade, for the period 1915-23," and that they "dominate" fluctuations in trade from 1877 to 1914 See "Our Unstable Dollar and the So-called Business Cycle," *Journal of the American Statistical Association*, June, 1925, vol. xx, pp. 191 and 201.

Without inquiring for the moment into the significance of Professor Fisher's statistical researches, it is pertinent to ask whether his two conclusions (1) that the price level is normally "absolutely passive" and "exerts no control over" other elements in the equation of exchange, and (2) that changes in the price level "dominate" fluctuations in the volume of trade, are consistent with each other.

The two conclusions can be reconciled formally by putting a strict construction upon the word "normal." My understanding is that Professor Fisher draws a sharp line between what is normally true and what is historically true. What is normally true is that which would happen under certain hypothetical conditions which are never fulfilled absolutely. What is historically true is that which actually happens under conditions which combine the factors represented in the theorist's imaginary case with a continually changing host of other factors. Hence relations which hold normally may never be realized historically.

Granted the logical validity of this distinction, the question remains how an investigator should choose the hypothetical conditions to be assumed in his theorizing. One who is interested in pure theory for its own sake may choose any hypothetical conditions which provide the basis of an interesting argument, whether that argument will illuminate experience or not. But I take it Professor Fisher is not interested in pure theory for its own sake; he desires that his theorizing shall give insight into actual experience. On this interpretation, it seems doubtful whether hypothetical assumptions are well chosen for his purposes when they lead to conclusions concerning what is normally true which run counter over long periods to the results of his statistical studies of historical processes. By altering the assumptions underlying his theorizing about the relations among the factors in the equation of exchange, Professor Fisher might draw a different set of conclusions concerning what is normally true which would harmonize better with his version of historical truth.

[3] *The Purchasing Power of Money*, p. 169. Italics as in the original.

[4] The same, p. 55.

while he is dealing with this subject, Professor Fisher observes that "periods of transition are the rule and those of equilibrium the exception." [5]

On this showing, there seems to be no reason from the viewpoint of a quantity theorist, why a student of business cycles should treat the price level as a "passive element" in the equation of exchange. His business is with "transition periods," these periods are "the rule," and during them the price level may be "an independent cause of changes" in other factors of the equation of exchange. Thus, the quantity theory interposes no bar to following any leads which the analysis of business dealings may suggest.

We cannot rest content, however, with so negative a conclusion. What we need is insight into the relations between changes in prices and changes in the circulating medium under modern business conditions. Our best chance of getting such insight is to follow the process of determining prices, transferring goods, and making payments.

The three quantities represented in the equation of exchange as simultaneous—payments, prices, and physical volume of trade—are in fact three stages through which business transactions pass in time. When a sale is made, the parties agree, tacitly or explicitly, upon the price, upon the quantity of goods to be transferred, upon the date of delivery, and upon the date when payment is due. In retail trade, all three stages are frequently completed in a few minutes—the customer assents to the price, receives his bundle, and pays cash. But delivery is deferred when consumers' goods are made to order, and payment is often deferred to the end of the month, or spread over several months on some "installment plan." In wholesale trade, weeks or months commonly elapse between the date when a sale is made at an agreed-upon price, the date when the goods are delivered to the buyer, and the still later date when the seller receives a check. In other types of business the time relations between the three stages present a wide variety, ranging from prepayment for goods to be delivered in the future to long deferred payments for goods delivered in the past. How long are the average lags of deliveries behind price agreements, and of payments behind deliveries; how these lags vary from trade to trade, from district to district and from period to period, are matters about which little is known; but that such lags play a prominent rôle in business planning is certain. Time is therefore a

[5] The same, p. 71.

factor which cannot be disregarded in studying the relations between prices and the circulating medium.

In terms of the equation of exchange, these observations mean that of the payments (MV + M'V') made to-day, the bulk are payments for goods transferred (T) some time ago, at prices (P) most of which were agreed upon still earlier; a considerable fraction are payments for goods transferred to-day at prices now agreed upon; a minute fraction are payments for goods which will be transferred later. Similarly, of the goods transferred (T) to-day, a few have been paid for in advance, more are paid for now, but the bulk will be paid for in the future. Once more, of the prices (P) agreed upon to-day, a part are paid at once, but a larger part will be paid in weeks, months, and years to come.

Though merely a suggestion of the complications of business practice, what has been said suffices to show that on every business day the payments then made, the transfers then effected, and the prices then agreed upon refer to three different aggregates of transactions. In other words, the day-by-day relations between MV + M'V' and PT are indeterminate—the payments made to-day are most unlikely to equal the prices quoted to-day multiplied by the goods exchanged to-day.[6] The only way to maintain the equation for such brief intervals is to interpret the PT of a given day as meaning the exchanges for which payments are then being made, instead of the current exchanges and prices. But on that interpretation, the relation between the time intervals covered by the two parts of the equation becomes indeterminate. An expression which shows nothing about time gives slight help toward solving problems in which time relations are important.

Quite different is the position when we test the equation of exchange as summarizing the transactions of a large community for some such interval as a year—the longer the interval, the better for the equation. On that basis, we can say both that the payments, prices and transfers represented all refer to approximately the same period of time, and that the two sides of the equation are nearly equal in fact. To be concrete, the payments made each year in the United

[6] Indeed, on a day-to-day basis the expression PT is nonsense; for only a part of the goods which change hands on a given day change hands at the prices which are current on that day—the P's then quoted refer in large part to T's which will come later. Also the expression MV + M'V' may have a different interpretation on a day-to-day basis from that assigned it on an annual basis. Of course, the equation was not made to represent the transactions of a single day, and its inadequacy for that purpose is not surprising.

States are mainly payments for goods transferred within that year at prices then current. Some tranfers and some payments are made under price agreements entered into before January 1st; some price agreements are made before December 31st in transactions which are not completed by transfers and payments until the following year or later. But the difference between these two "carry overs" is small in comparison with the aggregate volume of transactions completed within the year.

So much seems clear. The critical question is: What period of time should we consider in trying to discover the relations between prices and the circulating medium? If we consider periods of a year's duration, we shall have the equation of exchange to aid us. But we cannot follow business processes in annual summations. To learn how changes in prices, physical volume of trade, and dollar volume of payments are related to each other, we must watch these changes going on as they go on in every hour of every business day. Accordingly we must concentrate attention upon what happens in, or rather through, brief intervals of time. If an analysis of the day-by-day processes of agreeing upon prices, transferring goods, and making payments is sound, we can be sure that it will prove consistent with the relations which the equation of exchange reveals over longer periods.

Consider, then, a business man buying raw materials or goods for resale—one of those commercial transactions which reach a money total far exceeding the volume of retail trade. How are such a man's decisions regarding prices related to the quantity of coin, paper money and deposit currency in his possession?

The one definite remark we can make in answer is that, if our business man must pay in cash and cannot borrow, the means of payment in his possession set an upper limit upon the dollar volume of his purchases. Note that the price he can offer per unit is not limited, unless the price of a single unit would exhaust his funds. Nor is the number of units he can buy limited, with the same exception. The limit is imposed not upon prices as such, nor upon physical volume of trade as such, but upon prices times physical volume. Below this limit, even our cash-paying, non-borrowing business man has free play for judgment concerning what price to pay and how much to buy. His range of discretion is further enlarged by the factor of time. He can increase or diminish the scale of his purchases according as he thinks prices will rise or fall in the near future; he need not

spend his funds as he receives them, but can buy on a hand-to-mouth schedule for a while and wait for a favorable opportunity to make a large purchase. Yet we must note, also, what our business man is not likely to forget, that the more goods he can buy and sell at given margins the more money he will make. Thus he has a standing incentive to expand his transactions to the limit set by his circumstances. These limiting circumstances are numerous and shifting; but among them the amount of his funds is a factor of the first rank under the conditions we are discussing.

Of course, these conditions are not typical; nearly every business man can both buy on time and borrow. That fact makes the relations between prices and the quantity of the circulating medium still more elastic. The upper limit upon an individual's purchasing power is set by the funds in his hands plus the credit he can get from sellers and banks. The credit he can get depends not merely on his financial position at a given moment, but also on his financial prospects over a period which varies considerably from case to case, and on the financial position and prospects of those from whom he seeks credit. Thus the consideration of an individual business man's ability to buy widens out into consideration of the business community's ability to provide him with the means to pay.

If the financial positions and prospects of both seekers and grantors of credit are important factors in determining the purchasing power of business men, then the problem of prices and the circulating medium will change its complexion as these positions and prospects shift. For the business community as a whole, we know that the financial position and prospect changes from phase to phase of business cycles. Therefore in dealing with the problem of prices and the circulating medium, we must not merely consider brief intervals of time, but must recognize also that what is true of one brief interval may be false of another. What present knowledge enables us to do is to discuss the problem with reference to intervals characterized by business depression, revival, prosperity, and recession. Of the facts required for such a discussion, the more important have been suggested by the preceding sections, or by the "banking theories" of business cycles summarized in Chapter I.

During a period of depression, the quantity of coin and paper money which was in hand-to-hand use toward the close of the preceding period of prosperity, exceeds current requirements. The velocity

of circulation declines; "idle money" accumulates in the banks, swelling their cash reserves; if the bank-note currency is elastic, it is contracted; if business remains more active in other countries, gold is likely to be exported. What happens to coin and paper money happens also to deposit currency and to commercial credits. Business men turn over their funds less rapidly, require less working capital, repay part of their bank loans (despite the lower discount rates), and reduce their accounts payable. The reduction of bank loans commonly exceeds the net flow of idle cash to the banks, so that deposits subject to check decline somewhat. Accordingly, the limit upon coin and paper money in circulation is fixed, not by the monetary stock and bank-note policy, but by the current demands of trade. Similarly, the limit upon deposit currency is fixed, not by what the banks can provide, but by what business men care to use. In Professor Fisher's terms, the fall of prices and the concomitant shrinkage in the physical volume of trade are, for the time being, the "active" factors in the equation of exchange. To the conditions which they produce, the monetary and banking factors adjust themselves in whatever way the organization of the monetary and banking systems permits.

These banking and monetary adjustments to business depression are among the developments which facilitate a revival of activity. The low discount rates, the reserve lending-power of the banks, the redundant quantity of coin and paper money, the low velocities of circulation mean that an increase in business transactions will encounter no check from the inadequacy of the circulating medium. Business men who see a prospect of profit in enlarging their purchases have no difficulty in securing means of payment if their bankers share their confidence. The physical volume of trade and prices can enter an ascending spiral, every increase in the one promoting an increase in the other. As the dollar volume of business expands, a new series of adjustments is worked out in the distribution of coin and paper money between the banks and the public, in the issue of bank notes, perhaps in the international distribution of gold, certainly in the volume of deposits subject to check, and in the velocities of circulation. Monetary and banking conditions may be said to "permit" these developments, and even to "favor" them; but the "active" rôle is still played by prices and the physical volume of trade.

Not until the dollar volume of business has grown so large that it taxes the elasticity of the monetary and banking system, do the

monetary factors in the equation of exchange begin to dominate business transactions. That point is sure to be reached in business cycles, however, provided some non-monetary factor does not put an earlier close upon the expansion of trade. Even in the centers of finance, the velocity of circulation cannot be increased indefinitely. There is little assurance that the monetary stock of gold will grow with the need of bank reserves, and there is full assurance that prosperity will draw an increasing quantity of coin and paper money into hand-to-hand circulation. If bank reserves do not decline, at least they fail to expand as rapidly as do demand liabilities. There are limits, more or less definite, fixed partly by law, partly by practical experience, upon the minimum ratios between bank reserves on the one hand and bank notes and deposits on the other hand. When these minima are approached, bankers must check the expansion of loans. On the development of such conditions it ceases to be true that the business man can count upon obtaining funds to finance what promise to be profitable transactions. It then becomes true that both prices and the physical volume of trade are "passive" factors, controlled for the time being by monetary and banking conditions. And this domination becomes more absolute if the stringency develops into a financial panic, and many business men fear lest they cannot obtain funds to meet their maturing obligations.

In numerous business cycles, we shall find that prosperity wanes from other causes before the dollar volume of trade has attained dimensions which overtax the monetary and banking systems. Many recessions show slight traces of monetary stringency. Thus the periods when monetary and banking factors dominate prices and the physical volume of trade are brief, and they recur less regularly than the periods of depression, revival, and moderate prosperity, when prices and the physical volume of trade play the "active" rôles. Nevertheless, the intervals of monetary domination have had critical importance in the history of prices.[7] How that has come about may be stated in terms of the foregoing analysis, though not without some repetition.

The net shifts of price levels between two dates separated by decades depend upon the relative duration of the several intervening periods of prosperity and the corresponding periods of depression,

[7] This whole discussion relates to metallic-standard monetary systems, supplemented by banks of deposit and issue. Inconvertible paper-money standards present certain special problems which it is not necessary to consider here.

together with the rates at which prices rise in the first set of periods and fall in the second set. Hence, a factor which helps to lengthen the prosperous periods of successive cycles, to shorten the periods of monetary stringency, and to provide financial conditions which favor early revivals, tends to give the undulating curve of prices a rising secular trend. Under gold-standard monetary systems, an increase in the current output of gold is such a factor. A large flow of gold into bank reserves and general circulation postpones the time when an expansion in the pecuniary volume of trade will overtax the monetary and banking resources for making payments. When a monetary stringency does occur, such a flow brings quicker relief, and hastens the day when a revival of activity becomes financially possible. A dwindling of the current additions to the monetary stock of gold has the opposite effects, and tends to give the undulating course of prices a declining secular trend. We now have index numbers of wholesale prices covering some century and a half in countries which most of that time have had gold standards. The correspondence between the secular trends of these index numbers and the secular trends of gold production has been fairly close. When the world output of gold has been increasing rapidly, or has been fluctuating about a high level, prices have moved up and down with the alternations of business prosperity and depression; but they have risen more than they have fallen. When the annual output of gold has declined, remained on a relatively low level, or increased slowly, prices have continued their cyclical oscillations; but the declines have exceeded the advances.[8]

To sum up: the lag of deliveries behind price agreements, and of payments behind deliveries, gives business men time to arrange the financing of their transactions. In periods of depression, revival, moderate prosperity, and even mild recession, the man who buys skillfully knows that the possession of goods which can be sold at a profit will help him to borrow part of the funds wherewith to make pay-

[8] To enter into further details concerning this well-known correspondence would divert attention from what is at present the main issue. Yet it may be noted that there are grounds for hoping that men may free themselves from dependence upon fortuitous changes in the annual output of gold by more skillful management of their monetary and banking systems. Whether such policies as have recently been adopted by the Federal Reserve Banks of the United States to prevent a huge supply of gold from producing such an inflation of prices as might have been expected from historical precedents can be generally applied and further developed is a matter for the future to determine. Seen in historical perspective, these experiments appear as the current stage in that long and gradual process by which men are learning to keep money, the good servant, from becoming at times a bad master.

ment. It is the current and prospective money value of merchandise that counts to the credit man. Thus an increase of P, which swells the value of inventories, becomes a basis for an increase of M′, and of that part of M which consists of bank notes. An increase of T (physical volume of trade) plays the same rôle, unless it is offset by a decline of prices. Usually, though not always, these two factors rise and decline together—a close study of their shifting relations from phase to phase of business cycles is one of the leading problems for later chapters. When the pecuniary volume of business expands, it not only swells the volume of credit currency, but also quickens the velocities of circulation. Thus, most of the time, P and T are the "active" factors in the equation of exchange; they bring about changes in M′, V and V′; to a less extent they affect even M.

Modern monetary and banking systems provide a considerable measure of elasticity in all the factors which affect payments, except gold and certain types of government paper money. Gold is particularly important because under monetary systems of the approved type it provides the critical reserve for M′. The free movements of P and T are confined within the range provided by this elasticity. When the pecuniary volume of trade has reached limits which tax $MV + M'V'$, then monetary and banking factors assume the "active" rôle, and force a reduction in PT. Not every business cycle reaches a pitch of intensity which brings on a financial stringency. But in the past that point has been reached with regularity sufficient to let the secular trends of gold production control the secular trends of wholesale prices.

These conclusions may be repeated in slightly different form: Because of the lag of deliveries behind price-agreements and of payments behind deliveries, the payments made on a given day are most unlikely to equal the prices then current times the transfers then in process. But in buying goods, business men must plan to pay for them by the dates set by trade practices or formal contract. This means that the equation of exchange, which, as commonly interpreted, does not hold for short periods, is substantially valid for periods such as a year or more. Nor does it matter whether the years be years of depression or prosperity, crisis or revival, save that the proportion of bad debts may become appreciable in a year of severe crisis. All the time, business men have an incentive to buy as many goods as they can resell at a profit, and to charge prices as high as the traffic will bear. In depression, revival, moderate pros-

perity and mild recessions, the effective limit upon their transactions is set by commercial demand. Monetary and banking conditions would permit a larger volume of business. But in intense booms, the commercial demand may become so active that transactions reach the limit set by the monetary and banking systems. Over long periods of time, prices and the physical volume of trade have tended to expand up to these limits—not steadily, but in recurrent spurts of activity. And that fact has given changes in the annual output of gold a dominant influence upon the secular trends of wholesale prices, and seemingly some influence upon the secular trends of the physical volume of trade.

Time, then, is of the utmost consequence in considering the relations between prices and "the quantity of money." Relations which hold in long periods do not hold in short ones. Nor are all short periods alike; what is true in certain phases of business cycles is not true in all phases. Yet most of the seemingly contradictory statements which fill the long controversy over this problem can be reconciled when put in their proper relation to time. For example, I do not think that anything said here is incompatible with Professor Fisher's exposition of the causal relations between the factors in his equation of exchange, provided his term "normally" is not taken in the sense of usually. Nor is the present discussion inconsistent with the celebrated theorem: "Other things being equal, prices vary directly as the quantity of money in circulation." That theorem is formally valid. Equally valid are a number of other theorems similar in form: for example: "Other things being equal, the quantity of the circulating medium varies directly as prices:" "Other things being equal, the quantity of the circulating medium varies directly as the physical volume of trade." Any of these propositions can be developed into an adequate theory of the "relations between money and prices" by analyzing the "other things" which are supposed to remain equal. Yet it is an awkward way of working to start with a proposition which suggests so limited a view of the problem, and it is misleading to end with a proposition which contains so limited a version of the truth. The orthodox formulation of the quantity theory owes its prominence to the fact that economists have given most attention to the long-period relations between gold-supply and prices at wholesale. For that particular problem, the proposition "other things being equal, prices vary directly as the quantity of money in

circulation" is both valid and important. But for the periods with which the theory of business cycles is concerned, we need a far more discriminating statement of the relations among prices, the physical volume of trade, the quantity and the velocity of the circulating medium—a statement which takes into account changes in these relations produced by depression, revival, prosperity and recession.[9]

V. The Flow of Money Payments.

1. Production and Purchasing Power.

To make the business economy function smoothly, it is necessary not only that the volume and velocity of the circulating medium shall respond to the changing pace of business, but also that coin, paper money, and deposit currency shall keep flowing through the hands of business enterprises and individuals in exchange for goods. The flow, moreover, must be kept adjusted to the counterflow of goods offered for sale, in detail as well as in gross. If the dollar volume of any kind of goods flowing to market exceeds the flow of purchasing power which the prospective buyers are receiving and expending for that kind of goods, business troubles result—troubles that are trifling or grave as the quantities involved are small or large.

As we saw in Chapter I, two sets of theorists have found an explanation of cyclical fluctuations in this feature of the business economy. The Pollak Foundation group contend that in prosperity the flow of money incomes to consumers, and from consumers to the sellers of consumers' goods, lags behind the dollar volume of the consumers' goods poured into the markets. Mr. P. W. Martin holds a similar thesis with regard to money incomes at large and goods of all kinds. The over-production theorists look at the process from the other side; they offer a variety of reasons why the flow of goods to market exceeds the markets' ability or willingness to buy at profitable prices. To make use of these hypotheses in interpreting business

[9] Much the best survey of the literature concerning the quantity theory of the value of money known to me is given by Professor James W. Angell's recent treatise on *The Theory of International Prices,* Cambridge (Massachusetts), 1926. Although he shows that attention has frequently been called to the factor of time in discussions of the relations between money and prices, Angell notes that writers upon monetary theory have neglected the problems presented to them by cyclical fluctuations in trade. (See pp. 127, 134, 181.) The leading exception is Mr. R. G. Hawtrey, whose *Currency and Credit* (2d ed., London, 1923) deals acutely with the topic. Writers upon business cycles have done little to supply what the monetary theorists have omitted.

activities we need to know the basic facts about the flow of purchasing power.

Our knowledge on this head is just beginning to attain quantitative form. Every year, the volume of monetary payments vastly exceeds the money value of the goods produced—that is a matter of course. Some progress has been made toward tracing and measuring the currents which are parts of this general circulation. One current of especial importance is the disbursement of money incomes to consumers and the spending of these incomes by consumers. Large as it is, this current is but a minor part of the total circulation of purchasing power. Much greater are the payments made by business enterprises to each other, as they pass products through the successive links of the chains which connect producers of raw materials with retail shops, or with final business buyers. Even the "savings" of individuals and business enterprises are almost all paid out for goods in some form, constituting another current of strategic interest. There are also the payments from one individual to another for personal service, and the payments involved in collecting government revenues and making government disbursements. Finally, not only current products and services, but also a portion of the accumulated property rights in real estate, business enterprises, government loans and the like change hands each year. So huge is the aggregate value of these properties, that a shift of ownership in a minor fraction creates a current of payments running in the tens of billions of dollars.

2. The Flow of Money Incomes to Individuals.

The magnitude we have now to measure as best we may—incomes received by individuals in money—is considerably smaller than the country's income as estimated by the National Bureau of Economic Research. It does not include the value of their own produce consumed by farm families; commodity income from family gardens, poultry and cows; the rental value of homes occupied by their owners, or any allowance for the use of household furnishings and personal effects. As estimated by Dr. King, these items have an aggregate value which ranges from nearly 7 to slightly over 8 billion dollars per annum in 1919-26. By subtracting the sums in question from the corresponding estimates of current income, we get estimates of income received in money. Table 4 shows these results, together

with King's estimates of total payments to employees as wages, salaries, pensions, compensation for injuries, and the like. It should be noted that all the figures for 1922-26 are preliminary, and subject to revision on the basis of a more detailed analysis of the underlying data, which is now being made in the National Bureau.

TABLE 4

ESTIMATES OF INCOME RECEIVED IN MONEY BY INDIVIDUALS
UNITED STATES, 1919–1926

	Total Income Received in Money Billions of Dollars	Payments to Employees Billions of Dollars	Percentage of Total Paid to Employees
1919	59.9	34.8	58 per cent
1920	65.9	41.6	63 " "
1921	55.4	34.7	63 " "
1922	58.9 *	35.3 *	60 * " "
1923	69.7 *	39.4 *	57 * " "
1924	72.0 *	39.6 *	55 * " "
1925	78.9 *	43.0 *	54 * " "
1926	82.1 *	44.5 *	54 * " "

* Provisional figures, subject to change.
All the entries are estimates made by the National Bureau of Economic Research under the supervision of Dr. Willford I. King.

According to these estimates, payments to employees must be by far the largest of the income streams. Supplementary studies of the National Bureau indicate that salaries of officials average between 7 and 9 per cent of total payrolls in the highly organized branches of trade (where they are most important), and probably less than 3 per cent of all income received in money.[1] Even if we subtract such salaries from payrolls, the remainder exceeds all the other money-income streams put together. Another conclusion of importance for students of business cycles is that the ratio of wages and salaries to total income paid in money rises decidedly in depression and declines in prosperity.

A less comprehensive, but more detailed, view of the relative magnitude of the several money-income streams can be had from the statistical reports of the Tax Division of the Bureau of Internal Revenue. Table 5 summarizes the pertinent data. Of course these figures must be considered critically. (1) They include less than half of the aggregate money incomes of individuals, according to

[1] See *Income in the United States*, vol. i, p. 99, National Bureau of Economic Research, 1921.

the estimates of the National Bureau, mainly, though by no means solely because tens of millions of small incomes are exempt from the tax, and are not reported to the federal authorities. (2) Since these small incomes are composed largely of wages, the percentages of wages and salaries in Table 5 run somewhat lower than in Table 4, though not so much lower as one might expect. (3) Relatively few farmers and other small business men report. The deficiency in profits which results is believed to be offset in part by the inclusion under this head of considerable interest payments. (4) Interest is rather low, not only for the reason just suggested, but also because interest upon the large sum of tax-exempt bonds is not reported fully. (5) Finally, efforts to avoid and to evade taxation distort the

TABLE 5

PERSONAL INCOMES REPORTED TO THE UNITED STATES BUREAU OF INTERNAL REVENUE, CLASSIFIED BY SOURCES

1919–1924

Billions of Dollars

	1919	*1920*	*1921*	*1922*	*1923*	*1924*
Total	22.4	26.7	23.3	24.9	29.3	29.6
Salaries, wages, commissions, bonuses, directors' fees, etc	10.8	15.3	13.8	13.7	14.2	13.6
Business, trade, commerce, partnerships, farming, and profits from incidental sales of property	6.7	5.9	4.2	5.3	7.6	8.0
Dividends	2.5	2.7	2.5	2.7	3.1	3.3
Rents and royalties	1.0	1.0	1.2	1.2	1.8	2.0
Interest, investment, and fiduciary income	1.5	1.7	1.7	2.0	2.6	2.6

Percentages of the Total

	1919	*1920*	*1921*	*1922*	*1923*	*1924*
Total	100	100	100	100	100	100
Salaries, wages, commissions, bonuses, directors' fees, etc	48	57	59	55	49	49
Business, trade, commerce, partnerships, farming, and profits from incidental sales of property	30	22	18	21	26	27
Dividends	11	10	11	11	11	11
Rents and royalties	4	4	5	5	6	7
Interest, investment, and fiduciary income	7	6	7	8	9	9

Compiled from *Statistics of Income from Returns of Net Income for 1924*, Washington, 1926, pp. 8, 32–33.

income returns to an unknown extent, and one which may vary appreciably with changes in tax rates, efficiency of administration, and perhaps with business conditions.

Even in incomes large enough to be subject to the federal tax, wages and salaries average slightly more than half of the total one year with another. Profits come second, despite the omission of nearly 99 per cent of the farmers, and equal or exceed dividends, rent and interest added together in the years of business activity. Interest payments are smaller than dividends, but that appearance may be due to a difference in the degrees of under-reporting. Finally, of the commonly recognized sources of incomes, rent is the smallest according to these figures.

A second question can be answered in general terms by rearranging the data in Table 5: How are the money incomes of individuals from different sources affected by business cycles? If we reduce the yearly figures for the various income streams to relatives based upon their respective average values, and also compute the percentage change from one year to the next, we can see which streams have been fairly steady and which have been highly variable. Table 6 serves this purpose.

In view of the extraordinary price gyrations of 1919-21, the figures in Table 6 have no claim to stand as typical of the changes in money incomes which accompany the business cycles of less disturbed times. A supplementary table covering pre-war years would be useful; but the data for making estimates of money income command less confidence prior to 1914 than the data for recent years, and the latter require confirmation. Under these circumstances, we must make the most of the fact that a case which magnifies the changes has its advantages.

When an individual is considering the investment of his funds, he thinks of bonds as yielding a fixed rate of interest (in dollars), and of stocks as yielding dividends which may change in any quarter year. If he buys real estate, he may be expecting an income fixed by a long lease as rigidly as interest on a bond; or he may be expecting an income subject to many fluctuations—all depends upon the character of the property he acquires. If he goes into business on his own account, he expects a higher average return upon his investment than he could get from income yielding bonds, stocks or

TABLE 6

RELATIVE VARIABILITY OF THE FLOW OF MONEY INCOMES FROM DIFFERENT SOURCES UNITED STATES, 1919–1924

Based upon Table 5

Percentages of the Average Values during the Period Covered

	Average Values in Billions of Dollars	Percentages of the Average Values					
		1919	*1920*	*1921*	*1922*	*1923*	*1924*
Total	26.0	86	103	90	96	113	114
Salaries, wages, commissions, etc.	13.6	80	113	102	101	105	100
Business, trade, profits on sales of property, etc.	6.3	107	94	67	84	121	127
Dividends	2.8	89	96	89	96	111	118
Rents and royalties	1.4	73	73	88	88	132	146
Interest, investment, and fiduciary income	2.0	74	85	85	99	129	129

Percentage Rise (+) or Fall (−) from Value in Preceding Year

	1919–1920	*1920–1921*	*1921–1922*	*1922–1923*	*1923–1924*
Total	+19%	−13%	+7%	+18%	+1%
Salaries, wages, commissions, etc.	+42	−10	−1	+4	−4
Business, trade, profits on sales of property, etc.	−12	−29	+26	+43	+ 5
Dividends	+ 8	− 7	+ 8	+15	+ 6
Rents and royalties	0	+20	0	+50	+11
Interest, investment, and fiduciary income	+13	0	+18	+30	0
Total income from dividends, rents, and interest	+ 8	0	+ 9	+27	+ 5

The percentages have been computed from figures carried to more places than are shown here.

real estate; but he must expect that his profits will vary widely from year to year.

These expectations regarding the relative steadiness of incomes from interest, dividends, rents, and profits are based upon the returns per dollar invested in different ways. That is not what Table 6 shows. It purports to give changes in the total incomes received under various captions by all individuals who report to the Internal Revenue. The total receipts are affected each year by the investment of new funds in bonds, stocks, real estate, and business. More than

that, the tax returns include "investment income" and "fiduciary income" with interest, they include royalties with rents, and they include gains from the shifting of investments with business profits. Hence differences between prevailing opinions regarding the relative steadiness of returns upon investments of the various sorts on the one hand, and the conclusions suggested by the totals on the other hand, need not be taken as discrediting either the opinions or the statistics. In studying the flow of incomes to individuals, we are concerned with the total payments, rather than with the returns per dollar invested.

(1) Profits appear to be, as one expects, much the most variable type of income. They fall nearly 30 per cent in one year and increase over 40 per cent in another year. (2) Rents and royalties rank next in average variations; but these figures may not be representative, because, during the years covered, rents seem to have been undergoing a belated adjustment to the change in the general level of prices brought about by the war. They make spasmodic advances in 1921, 1923 and 1924, while in two other years they show no change. (3) Interest, investment and fiduciary income varies much more than one would expect. All the changes are increases. Even in the severe depression of 1921, interest receipts did not fall off. (4) Dividends, while moving up or down every year, proved decidedly the stablest type of money income in this period. That is, the changes, though frequent, were small in comparison with the maximum changes in the other types of income. Particularly striking, and particularly important for our problem, is the contrast between the extreme variability of profits and the relative steadiness of dividends. Nor does Table 6 bring out this contrast in full. The profits there shown are the profits of individuals and partnerships, while dividends are paid by corporations. If we subtract the deficits reported each year to the Internal Revenue by the corporations which lost money from the profits reported by the corporations which made money, we get net corporate incomes of 8.4 billion dollars in 1919, 5.9 billions in 1920, 0.5 billions in 1921, 4.8 billions in 1922, 6.3 billions in 1923 and 5.4 billions in 1924.[2] Dividends reported by individual taxpayers were far less than net corporate incomes as computed here in the relatively good business years, and far more than net corporate incomes in 1921.

[2] See the appropriate text tables in the official *Statistics of Income* for these years.

While the differences in variability of dividends, interest, and rent are interesting, they are not of great importance to us. Most men of property diversify their investments, holding some bonds, some stocks, and perhaps some real estate. Hence the changes in the money incomes of the investing classes are best ascertained by adding together interest, dividends and rents. On so doing we get an income stream whose average volume (according to the Internal Revenue figures) is about equal to the volume of profits, but which varies not much more than dividends. This is the flow which we should compare with profits on the one hand and wages on the other.

That comparison indicates that the largest of the income streams, payments to employees, as wages, salaries, commissions, bonuses, pensions, and the like, was decidedly less variable than profits in 1919-24, and decidedly more variable than income from investments in securities and real estate. More precise statements would have little meaning, because we know that our data are open to question and that the period covered is peculiar. But it seems improbable that the variations of wages and salaries in this period were more exaggerated than the variations of interest and rents. Thus the conclusion is probably valid that the largest of the money-income streams are also the most variable in flow. According to Table 6, wages, salaries and profits, added together, make over three-quarters of taxable income; of total income received in money they probably make four-fifths. And their aggregate volume may change by 15, or 20 per cent, or, in extreme cases even more, in a single year.

3. The Outflow of Personal Incomes.

All business enterprises disburse money incomes directly to individuals; but only a few classes of enterprises share directly in the reflow of purchasing power from individuals. By far the greatest collectors of consumers' funds are the retail merchants. A much smaller stream flows to the landlords, who may or may not be business enterprises, and still smaller streams to enterprises which render personal services of various descriptions, and to public utilities.

Our most detailed information on this head comes from the analysis of family expenditures. In 1918-19 the United States Bureau of Labor Statistics collected budgets from over 12,000 families. On rearranging the data according to channels of expenditure, we get the following results:

TABLE 7

CHANNELS THROUGH WHICH FAMILY EXPENDITURES FLOW. BASED UPON BUDGETS OF 12,096 AMERICAN FAMILIES IN 1918–19, COLLECTED BY THE U. S. BUREAU OF LABOR STATISTICS.

	Average Expenditures	Percentage of Total
Payments made to		
Retail shops	$994.37	66.1
Service agencies (insurance, laundry, amusement, etc.)	83.03	5.5
Public utilities	56.07	3.7
	$1,133.47	75.3
Landlords	186.55	12.4
Professional men (doctors, dentists, nurses, etc.)	43.42	2.9
Organizations (churches, trade unions, lodges, etc.)	18.22	1.2
Servants	4.01	.3
Government (postage, taxes)	3.62	.2
Undistributed ("patriotic," gifts, vacations, etc.)	36.98	2.5
Surplus	78.93	5.2
Total	$1,505.20	100.0

Compiled from *Cost of Living in the United States,* Bulletin of the U. S. Bureau of Labor Statistics, No. 357, Washington, 1924.

While these data are doubtless representative of the important class whose expenditures the Bureau of Labor Statistics wished to cover (white families in industrial centers, depending mainly upon wages or small salaries), they are certainly not representative of the population as a whole. The budgets collected by Dr. King for the income studies of the National Bureau indicate that, as incomes increase, families devote larger percentages of their expenditures to housing, to domestic service, to travel and amusement, and smaller percentages to purchases from retail shops and public utilities. The expenditures of farmers probably follow still a different pattern, but the data available do not suffice to show details.[1] In short we lack budgets representative of the population as a whole.

We can, however, get at the point most important for us—the proportion of money income spent at retail shops by the population as a whole—in a different way. Mr. Lawrence B. Mann, formerly of the Federal Reserve system, Professor Paul H. Nystrom of the Retail

[1] See the weights used in making index numbers of the prices of consumers' goods bought by families which expend $25,000 per year and $5,000 per year; by families of urban employees, and by farm families; introduction to *Income in the Various States,* National Bureau of Economic Research, 1925. These figures do not profess to be complete budgets; but they do cover the main heads of family expenditure, and justify the statements made in the text.

Research Bureau, and the Federal Trade Commission have made estimates of the money volume of retail trade in the United States, estimates which we can compare with the estimates of money income made by the National Bureau. The results, given in Table 8, show what the preceding paragraph makes one expect—that the proportion of money income which flows to the retail shops is somewhat smaller in the case of the whole population than in the case of urban wage earners.

TABLE 8

ESTIMATED PROPORTION OF INCOME RECEIVED IN MONEY SPENT IN RETAIL SHOPS
UNITED STATES, 1919-23

	Estimated Income Received in Money	Estimated Volume of Retail Trade		Percentage of Money Income Spent in Retail Shops	
	Billions of Dollars	Billions of Dollars		Per Cent	
	Billions of Dollars From Table 4	Nystrom-Mann	Federal Trade Commission	Nystrom-Mann	Federal Trade Commission
1919.....	59.9	32.6	34.8	54	58
1920.....	65.9	38.3	38.3	53	58
1921.....	55.4	33.6	30.7	61	55
1922.....	58.9 *	33.5	32.5	57	55
1923.....	69.7 *	35.0	38.2	50	55

* Provisional figures, subject to change.

NOTE: I have taken Paul H. Nystrom's figure for 1923 (35 billion dollars) as basic, and used Lawrence B. Mann's figures for 1919–22 as an index for carrying the series backward. The connecting link is an estimate, which Professor Nystrom made at my request, that the volume of retail trade was 4 or 5 per cent larger in 1923 than in 1922. See Mann, "The Importance of Retail Trade in the United States," *American Economic Review*, December, 1923, vol. xiii, pp. 609–617; Nystrom, "An Estimate of the Volume of Retail Trade in the United States," *Harvard Business Review*, January, 1925, vol. iii, pp. 150–159. The Federal Trade Commission's estimate is part of their report upon *National Wealth and Income*, Senate Document No. 126, 69th Congress, 1st Session, Washington, 1926 pp. 306–313.

Of the three estimates, Professor Nystrom's seems to rest upon the broadest study of the relevant materials. The Federal Trade Commission figures are built up by a bold combination of various bits of evidence which may not be an adequate foundation for the superstructure. It seems improbable that the percentage of money income spent at retail shops fell off in the bad year 1921, as the Commission figures indicate. An increase in this percentage, such as Mann's estimates show, is more plausible.

The general conclusions which seem justified by the data may be put in this form: (1) More than half of the money incomes received by individuals flow back to the world of business through retail merchants, (2) probably this proportion rises somewhat in dull times,

(3) other business enterprises, such as public utilities and service agencies, collect probably less than a tenth of the money income, (4) more than a quarter, perhaps nearly a third, is paid to landlords (some of whom are corporations), professional men, voluntary organizations, servants, and the government, or is invested as savings.

4. The Flow of Payments Among Business Enterprises.

Business-cycle theorists have concerned themselves more with the circuit flow of payments from business enterprises to consumers and from consumers back to business enterprises than with the flow of payments from one enterprise to another. Yet the latter flow is certainly several times as great as the former. In preceding sections we have obtained rough estimates for recent years of the payments made by check in the United States, of the volume of money income, and of the volume of retail trade. These figures, supplemented by a new (and hazardous) estimate of payments made in coin and paper money, are assembled for comparison in Table 9.

Inspection of these figures may inspire more confidence in their accuracy than is merited. The percentage relationships among the quantities are fairly stable; but such is likely to be the case when one expresses any set of figures as percentages of much larger sums. A considerable margin of uncertainty surrounds every series in the table—a margin which is broadest in the estimates of payments made in coin and paper money. Yet the estimates are probably trustworthy concerning the order of magnitude of the three quantities, and that is the point at issue.

On the face of the figures, retail sales account for not much more than one-twentieth of the aggregate volume of payments, and the payment of money incomes to individuals for about one-tenth. Even the round-flow of money incomes to individuals and from individuals seems to make only a fifth of the aggregate payments in average business years. While these rather precise ratios may be faulty, it seems certain that the payments arising from other business transactions are several times the volume of payments involved in receiving and spending personal incomes.

All business is said to depend in the last resort upon consumers' demand, and the statement is doubtless valid in a broad sense. Yet there is no mystery in the fact that retail trade itself is but a small

TABLE 9

COMPARISON OF THE ESTIMATED VOLUME OF PAYMENTS, INCOME RECEIVED IN MONEY, AND VOLUME OF RETAIL SALES

UNITED STATES, 1919 TO 1923 OR 1926

	Estimated Volume of Payments			Estimated Incomes Received in Money	Estimated Retail Sales	Percentages of the Estimated Total Volume of Payments	
	in Checks	in Coin and Paper Money	Total			Income Received in Money	Retail Sales
	Billions of Dollars	Billions of Dollars	Billions of Dollars	Billions of Dollars	Billions of Dollars	Per Cent	
1919.....	547	106	653	59.9	32.6	9.2	5.0
1920.....	588	121	709	65.9	38.3	9.3	5.4
1921.....	484	97	581	55.4	33.6	9.5	5.8
1922.....	534	93	627	58.9 *	33.5	9.4	5.3
1923.....	570	102	672	69.7 *	35.0	10.4	5.2
1924.....	600	98	698	72.0 *		10.3	
1925.....	653	95	748	78.9 *		10.5	
1926.....	695	105	800	82.1 *		10.3	

* Preliminary estimates, subject to revision.

The estimated payments in checks are taken from Table 3.

The estimated payments in coin and paper money are computed by assuming that the average volume of these media outside of the Treasury and the banks has the same velocity of circulation each year as is shown by the estimates of deposit velocity in Table 3. This assumption is as plausible as any other, but it may be considerably in error. The results it yields happen to agree with the view that 85 per cent of American payments are made in checks. That is, sums of the above estimates for 8 years make the payments in coin and paper money 14.9 per cent of the grand totals. On Mr. Carl Snyder's advice, I have used the official statements of coin and paper money in circulation, except in 1919 and 1920. Adjustments of the official figures for certain bank holdings of coin and paper money give respectively 3.67 and 4.33 billion dollars in these two years.

The estimated incomes received in money are taken from Table 4.

The estimated retail sales are the Nystrom-Mann figures from Table 8.

fraction of business. In most cases the components of the goods which the consumer finally buys have been bought and sold several times over by wholesale merchants, jobbers, manufacturers, and producers of raw materials. These successive turnovers much more than counterbalance the higher prices which consumers pay.[1] Then there

[1] Kinley found the deposits of wholesalers to be more than twice the deposits of retail dealers—$124,824,000 against $60,447,000 on March 16, 1909. He also found that "all other deposits" were upwards of three times the volume of retail and wholesale deposits added together—$502,817,000. *The Use of Credit Instruments in Payments in the United States* (Senate Document No. 399, 61st Congress, 2d session). Washington, 1910; pp. 85, 133, 171.

Building upon admittedly questionable taxation returns from Pennsylvania, the Federal Trade Commission estimates the dollar volume of wholesale trade at 63.22 per cent of the dollar volume of retail trade in 1923. Presumably this estimate takes account only of the sales by wholesale merchants to retailers. See *National Wealth and Income*, 69th Congress, 1st Session, Senate Document No. 126, pp 308, 314, 315

are all the incidental payments involved in running an enterprise which deals in consumers' goods, from freight and insurance to repairs and credit transactions. Next we must add in the business in producers' goods, including the construction of industrial equipment. Changes in the ownership of securities and real estate call for another vast sum of payments. So also does the investment of fresh savings, and the making and repaying of loans. These items are not independent of each other—for example, the investing of fresh savings is largely the paying for new industrial equipment—and we cannot measure them as yet. But the list, though incomplete, shows that there is no reason to discredit the conclusions drawn from Table 9.

For the smooth working of the business economy it is as necessary that the immensely larger flow of payments among business enterprises shall be maintained as it is necessary that the smaller flow of payments from consumers to retail merchants shall continue unchecked. The strategic importance of the two flows, however, cannot be judged from their relative volumes. Indeed, the greater the volume of all business payments in comparison with the volume of retail trade, the more delicate may become the equilibrium, if all types of business are really concerned indirectly with satisfying personal wants. Here we have developed yet another problem which we must face when we come to study the interrelations among the processes of business expansion and contraction.

5. Saving and Spending.

We commonly think of spending money and saving money as activities the opposite of each other. But every kind of saving except actual hoarding involves spending. In the business economy, indeed, the process of saving is one current in the flow of money payments.

This process, also, has been made to yield theories of business cycles. Professor Tugan-Baranovski contends that crises come because people do not save enough money to meet the huge capital requirements of prosperity. Professor Spiethoff holds that crises come because people put their savings into too much industrial equipment and not enough consumption goods. Mr. Hobson says simply that, when incomes expand in prosperity, rich people save too much, and by their investments in productive enterprises overstock the markets with wares.

Data concerning saving are among the most difficult of economic

records to obtain with precision. The very word "saving" has half a dozen different meanings. The most ingenious effort so far made to surmount these difficulties, conceptual and statistical, is that of Dr. Willford I. King. Taking as his basic data the doubtful census returns of wealth, and subtracting or adding the estimated foreign debits or credits of the country, Dr. King finds a total increase of wealth between 1909 and 1918 of 122 billion dollars. But correction for price fluctuations reduces that huge sum to 46 billions. These savings equal 14 per cent, or one-seventh of the estimated income of the country during this nine-year period. We might doubt this result because of the admitted inaccuracies of the census data, inaccuracies which may or may not be sufficiently different in the reports for 1909 and 1918 to make the estimate of increase in wealth far wrong. But Dr. King has made a second, quite independent, estimate which confirms the first. He has computed the percentage of increase in all the important items of wealth for which he could get reliable data in physical units over the same years, and found that the average increase was even higher than his first method indicated. He concludes, accordingly, that "The normal fraction of the national income saved is about one-seventh."

If this percentage seems large, it must be remembered (1) that about 40 per cent of the country's savings are made by business enterprises, through the retention and reinvestment of profits which might otherwise have been distributed to individuals, and (2) that about 9 per cent more seems to consist in the accumulation of larger stocks of clothing, personal ornaments, furniture, and automobiles. Thus only half of the total corresponds to what many have in mind when they speak of the savings of people. Finally it should be said that defects of the data lead Dr. King to present his results as rough approximations, which require confirmation or revision in the light of later and fuller statistics. Certainly his estimate covers an exceptional period; in 1916 Dr. King finds that savings jumped to twice the pre-war average even after he had allowed for the rise of prices, and in 1918 he finds that the war wastes more than offset savings. While these exceptional cases tend to cancel each other, there is small assurance that ten years of post-war experience will yield averages agreeing closely with 1910-18.

Little can be gained by attempting to refine upon rough approximations; but it must be pointed out that Dr. King's average of 14 per cent of income saved means 14 per cent of income as estimated by

the National Bureau in its first report. If the savings were compared with money income, the percentage would run somewhat higher. On the other hand, Dr. King quite properly treats an increase in the stock of durable consumption goods as savings. But we have just been considering what part of money incomes is spent in buying goods at retail, without reference to the problem of saving. Subtracting the increase of consumption goods (9 per cent of savings, according to Dr. King), would make the savings which flow into revenue-producing investments a lower percentage of money income. In view of the partial offsetting of these two items, we have no clear reason for saying that the proportion of money income invested to produce income is greater or less than one-seventh.

On the basis of Dr. King's estimates, it seems that on the average employees "save" about 5 per cent of their annual wages and salaries; farmers, together with owners of farm lands and mortgages, "save" about 12 per cent of their net income from agriculture; other business men "save" about 33 per cent of their annual incomes. That is, these classes spend the respective percentages of their income in ways which increase their stocks of semi-durable consumption goods, or better their equipment for making money, or buy securities which enable some enterpriser to better his equipment, or acquire revenue-bringing claims against other people. Of the total savings in his period Dr. King attributes 20 per cent to employees, 12 per cent to the agricultural interest, and 68 per cent to business men and property owners in non-agricultural lines. Two-fifths of all the saving is done directly by business enterprises, without the funds ever passing into the hands of individuals. Dr. King also finds, and this point is of especial interest here, that "the volume of saving by business concerns varies directly with the waves of business activity," but that "the extent of private saving is much less closely correlated with the economic cycle." [1]

Another study of American savings, made on a different plan by Dr. Walter Renton Ingalls, confirms King's chief results. Using the National Bureau's and his own estimates of national income from 1912 to 1922 on the one side, and on the other side David Friday's and his own estimates of savings, Dr. Ingalls computes that, before the war, savings made about 15 per cent of annual income, one year

[1] Willford I. King, "The Net Volume of Saving in the United States," *Journal of the American Statistical Association*, September and December, 1922, vol. xviii, pp. 305-323 and 455-470.

with another. This percentage agrees closely with Dr. King's fraction —one-seventh. Again like King, Dr. Ingalls finds that nominal savings were greatly enhanced by the war, but that the war savings were mostly spent in destroying lives and property, or lost in the post-war readjustments. Finally, in 1920-22, Dr. Ingalls thinks that savings shrank to about half their pre-war proportion—say 7 or 8 per cent of the national income.[2] Of course, a marked decline of savings in a three-year period which includes a great crisis followed by a severe depression is not out of line with Dr. King's results.

Both of these investigations indicate that saving, whether measured in dollars or in percentages of national income, belongs among the highly variable factors in our problem. Any average which we may take to represent the general run of affairs will differ widely from the figures for years of great prosperity and deep depression. Yet we must use some average in order to compare current savings with the accumulations of the past. If we take Ingalls' pre-war estimate of 15 per cent, or King's estimate of one-seventh, as a fair average of the part of income saved annually, and if we accept the estimate presented in an earlier section that the value of man-made equipment possessed by our people is equal to the national income of three or four years, it follows that, in the United States, the man-made equipment on hand represents a value equivalent to the average savings of between 20 and 30 current years.[3]

VI. The Guidance of Economic Activity.

1. The Problem of Adjusting Supply to Demand in a Business Economy.

The discussion of the flow of money payments in the preceding section provides a basis for treating one aspect of the protean problem of supply and demand in a business economy. Another aspect of this problem must now be faced—the difficulty of keeping the rate at

[2] See W. R. Ingalls, *Wealth and Income of the American People*, 2d ed., York, Pennsylvania, 1923, pp. 202-204, 252-254, and *Current Economic Affairs*, 1924, pp. 82, 152.

[3] Professor Cassel believes that in Sweden annual savings average approximately one-fifth of national income, and that national income averages approximately one-seventh of national wealth. I judge that the estimate of wealth used includes the value of land. On this basis, the accumulated wealth of Sweden equals the average savings of some 35 years. The National Defense Commission estimated the average annual increase of wealth in 1885-1908 at 3.18 per cent. See Gustav Cassel, *Theoretische Sozialökonomie*, 3d ed., Erlangen and Leipzig, 1923, p. 52.

which each kind of goods is being produced adjusted to the rate at which each kind is being bought.

Within the hundred years since Sismondi wrote about the uncertainties of catering to a "metaphysical public," this problem has been growing ever more intricate. Factory production has taken over one household industry after another, market areas have widened, the variety of products has multiplied, industrial equipment has become more elaborate and more specialized. On one side of the market stand the millions of money-income receivers, who provide for most of their families' want by buying goods which others make. On the other side stand these same millions with their diversified capabilities as workers, their diversified properties in natural resources and industrial equipment, and their fluid investment funds, seeking the most profitable markets for all these productive energies. The buyers of goods and the sellers of goods are the same persons; but this identity does not enable them to keep their efforts as producers, organized in business enterprises, adjusted to their wants as consumers, organized in families.

So pervasive is this problem in a business economy and so constant its pressure, that generation by generation a large part of the routine shrewdness and a large part of the innovating energy of business men are absorbed in keeping abreast of it. Many-sided progress has been achieved in the course of this effort. Communication has become incomparably more rapid within the century, and made to yield vastly better reports of demand in widely separate markets. Improvements in transportation have rendered possible a more satisfactory distribution of supplies. The collection and analysis of commercial statistics are beginning to aid the distribution of goods through time, as the telegraph, railway and steamship aid distribution in space. Trade associations make competition less blind, and industrial integration makes planning of production more systematic. Insurance has expanded to equalize the burden of carrying a vast variety of economic risks. The standardization of goods, which comes with mass production, partially offsets the diversification of products. One use of advertising is to control demand for goods, so far as may be. Combined with all these technical improvements, is the day-by-day effort of every responsible business man to follow current demand with vigilance, to take advantage of every favorable change, to guard against every decline, with all the skill which mother wit and practical experience can muster.

Yet it is not certain that those efforts all put together have gained upon the growing difficulties of the problem. For, on the side of business administration itself, there are forces which keep the markets from attaining equilibrium. So long as free enterprise prevails on a competitive basis, there cannot be a stable adjustment of supply to demand. As Dr. Schumpeter has pointed out, every business innovation disturbs the preceding basis of adjustment.[1] New products and new styles or brands of old goods, new sources of supply, new methods of production, even new competitors turning out familiar goods by familiar methods, keep forcing changes in the production and marketing schedules of established houses. And there is no evidence that the current of business innovations is becoming less swift.

In the trades which cater to personal needs, the trend seems to be toward offering to consumers an ever wider variety of wares and services ready for immediate delivery. Trade goes largely, perhaps increasingly, to enterprises which enable consumers to buy "what they want when they want it." To make such buying possible, some business enterprise must provide goods in anticipation of the demand. If the manufacturer does not make to stock, then the wholesale merchant or the retailer must assume the hazard.

Nor is the case widely different in trades which make goods only to order. There the business enterprise must provide facilities for executing orders before it can get them. Inventory hazards may be reduced; but not the larger and longer hazards upon investment of capital and time. Business men who embark in any productive enterprise, investors who advance capital, and wage-earners who learn trades are all taking a chance that the demand for their services at a satisfactory price will prove less than the supply they offer. This hazard is faced even in an enterprise which has a complete monopoly of its special field.

"Uncertainty," to use Dr. Hardy's term, is thus an all-pervading phase of every business undertaking.[2] Its tap root is uncertainty concerning what people will buy at what prices. Its lateral roots are uncertainty what competitors, direct and indirect, will sell at what prices; uncertainty what supplies of all the needed kinds can be bought at what prices, and uncertainty what will happen within the enterprise, or within its business connection, to affect its profits.

[1] See Chapter I, section iv, 4.

[2] See Chapter I, section iv, 2. On the distinction between risk and uncertainty, see Frank H. Knight, *Risk, Uncertainty and Profit*, Boston, 1921.

The fruits of uncertainty appear in the emotional aberrations of business judgments and competitive illusions, by which Professor Pigou and Dr. T. W. Mitchell explain business cycles.[3] And under the pressure of uncertainty men have evolved that elaborate co-operative system of guiding economic activity, which we have next to consider.

2. The Rôle Played by Business Managements.

The most active rôle in determining what use shall be made of the country's natural resources, industrial equipment, investment funds, brains and brawn is played by business men.

When the earliest theories of crises were being formulated, economists could assume that there stood at the head of the typical business enterprise a capitalist-employer, who provided a large part of the invested funds, carried the brunt of the hazard, performed the "work of superintendence," and pocketed the profits. Millions of enterprisers of this versatile type are still in business; but they are most numerous in industries where the scale of organization has remained what it was in the days of Sismondi and Ricardo. These are industries in which the business-cycle hazard is small.[1] In the industries dominated by large-scale organization, the single capitalist-employer has ceased to be typical; though in mining, manufacturing, and construction work such men can be counted by the tens or the hundreds of thousands. In this field which particularly concerns us, because of the wide oscillations in business activity to which it is subject, quite a different form of business leadership has evolved.

The corporations, which now handle the bulk of large-scale business, are usually owned by a miscellaneous and shifting body of stockholders. The funds required for fixed investment are provided in some measure by these owners, but in large part by bondholders, who may or may not own shares as well as bonds. The immediate pecuniary hazards are borne by the shareholders; but ordinarily under provisions which limit their liability to loss of the sums which they have put into their shares, and under conditions which enable them to throw a large part of the business-cycle hazard upon the employees. The work of management is largely dissociated from ownership and financial responsibility. The stockholders delegate the super-

[3] See Chapter I, section iv, 3 and 10.
[1] See above in this chapter, section ii, 3.

vision 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 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 stockholders who take no part in managing the corporation beyond sending in their proxies to be voted at the annual meeting, do not fill the bill. Neither do directors who confine such attention as they may give the corporation's affairs to passing on questions of general policy, selecting officers, criticizing or approving 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 responsibility as the capitalist-employer. The latter, in fine, has been replaced by a "management," which includes the more active directors and high officials, often with the addition of one or two financial advisers, legal counsel, and large stockholders. Practically, it is this group which decides what the corporation shall do.

There are, however, many small and a few large corporations in which a single person dominates affairs. The stockholders elect his candidates to office, the directors defer to his judgment, the officials act as his agents. His position may be entrenched by outright ownership of a majority of the voting shares, or it may rest upon his influence with those who "own the control." In these "one-man" corporations, the theoretical division of responsibility and function becomes a legal fiction. Yet the position of such a captain of industry usually differs from the position of the old capitalist-employer, in that he furnishes a smaller proportion of the capital, assumes a smaller proportion of the detailed labor of superintendence, and shares the uncertainties and the profits with more associates. Instead of restricting, these limitations enhance his power; they mean that the individual who controls a corporation can determine the use of a mass of property and labor vastly greater than his own capital would permit.

Thus, while the corporate form of organization has produced a division of the leadership of business enterprises among several parties at interest, it has made possible greater centralization of power. The captains of finance and industry wield an influence increased by the

capital which their prestige attracts from thousands of investors, and sometimes augmented still further by working alliances among themselves.

Another development to be noted is the partial differentiation of a class of enterprisers who play an exceptionally active rôle 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. But the typical promoter is merely 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 seldom retains the leadership for long. As permanent officers, men of more cautious temper and more systematic habits commonly take command.

3. The Rôle Played by Technical Experts.

The "labor of superintendence" which men like Richard Arkwright and Robert Owen undertook in the early nineteenth century involved oversight of industrial, as well as commercial and financial, plans and operations. But under the impetus of scientific discoveries and mechanical inventions, the technique of industrial processes rapidly became so elaborate that this combination of functions ceased to be feasible. A few, very few, men possessed the versatility and the energy to keep abreast both of the increasingly exacting business problems and of the increasingly exacting industrial problems. Almost with the start of the Industrial Revolution, there began a division of labor between the men skilled in designing and operating machinery, and the men skilled in dealing with the markets for wares and money. While the old capitalist-employer has evolved on the one side into a business management, he has evolved on the other side into a set of technical experts.

As early as the middle of the 18th century, the civil engineers in England had branched off from the military engineers. The civil engineers were concerned mainly with the construction of roads, bridges, aqueducts, canals, harbors, docks and lighthouses. From this parent stock, there were differentiated successively the mechanical, mining. marine, sanitary, gas, chemical, and electrical engineers. By applying the results and the methods of modern science to the

everyday work of the world, these men led that rapid advance in the making of goods which characterizes the present age. They became the chief directors of productive energies, on the technical side.

The prompt rise of the engineering professions must be ascribed to the relatively advanced stage of physical science, and the obvious advantage of applying its discoveries to industry. The social sciences lag far behind mechanics, chemistry and electro-physics in certainty and precision, and hence in the practical usefulness of the knowledge they convey. But in recent years they too have begun to yield results applicable to practice. At least as rapidly as they have grown ripe for the task, these sciences have been put to work by new groups of experts, who are gradually gaining something of the self-confidence and the recognition enjoyed for decades by engineers. Personnel managers are being trained to select and deal with employees, to study the requirements of different jobs, and to supervise working conditions, with the double object of increasing output and diminishing friction. Marketing—the art of winning and keeping customers—is becoming a field for specialists in advertising and selling. Business statisticians give advice on many phases of planning and current operations. "Scientific management" calls for a combination of so many kinds of expertness that perhaps it will contribute to the growth of half-a-dozen professions rather than one. Indeed, these developments are all so recent, so much in process, that one can be sure of little except that new professions are growing up which offer guidance to economic activity based on the still modest achievements of the social disciplines.

Thus a business management is now able to command supposedly expert advice in the direction of its affairs, not only from its old counsellors in law and accounting, but also from a bewildering array of talent versed in the sciences of nature and man. Perhaps the time is coming when the chief function of the business executive will be deciding whose advice to ask and what advice to accept, what experts to enroll in his staff and what to consult on occasion. If the multiplication of technical professions continues, that function itself may evolve into a profession.

In 1923, the National Industrial Conference Board made an effort to estimate the number of men in the United States who can fairly be "included in the category of those who plan, supervise and administer the business of the nation." As such it counted

major officials, managers, superintendents, technical engineers, designers, draftsmen, inventors, architects, chemists, assayers, metallurgists, and auditors, together with one-quarter of the number of foremen, overseers and inspectors in agriculture, mining, construction, trade, transportation and public service.

Even with this liberal definition of business and industrial guides, the Board found, on analyzing the census data for 1920, that only a million and a half persons could be included. This number is much smaller than the number of men engaged in business on their own account—some 10,000,000.[1] But the proportion of all persons having gainful occupations who are "administrators, supervisors and technical experts" has been rising steadily each decade; it stood at 1.25 per cent in 1870 and 3.80 per cent in 1920. And this percentage is decidedly higher in the large-scale industries subject to a considerable business-cycle hazard, than in small-scale industries like agriculture.[2]

While the technical experts who build upon the natural sciences know most about the making of goods and the technical experts who build upon social sciences are coming to know most about the managing of men, they remain for the most part merely advisers to the

[1] See above, section ii, 3.

[2] The chief results of this report are shown in the following table:

THE GAINFULLY OCCUPIED COMPARED WITH ADMINISTRATORS, SUPERVISORS AND TECHNICAL EXPERTS

THE UNITED STATES, 1920

	Total Persons Gainfully Occupied Thousands	Administrators, Supervisors, and Technical Experts Thousands	Percentage
Agriculture and animal husbandry	10,953	200[a]	1.83
Extraction of minerals	1,090	44	4.00
Manufacturing and mechanical industries	12,819	600	4.68
Transportation	3,064	105	3.42
Trade	4,243	229	5.39
Public service	770	34	4.41
Professional service	2,144	265[b]	12.36
Domestic and personal service	3,405	5	.14
Clerical occupations	3,127	30	.95
Total	41,614	1,510	3.63

[a] Rough approximation.

[b] Includes engineers and other technical persons.

See *Engineering Education and American Industry*, Special Report No. 25, National Industrial Conference Board, New York, 1923, p. 6.

captains of industry. Higher authority belongs to the business men. That is an inevitable result of economic organization on the basis of money economy in its present form. For the crucial factor in deciding the fate of a business enterprise is not the perfection of its mechanical processes, the excellence of its personnel work, or even the cleverness of its selling methods. All such excellencies contribute toward business success, and it is on this ground that the technical professions get their chance to share in the guidance of economic activity. But the final test is the ability of an enterprise as a whole to make profits. This fact entrenches the business men in their position as the authoritative leaders of the industrial army.

4. The Rôle Played by Lenders.

Business managements, however, must often submit their decisions to review by a higher court. Most enterprises need to borrow, and this fact gives the lenders an effective veto power over proposals which do not meet their approval.

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 pay the interest and to safeguard 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 require applicants for loans to make statements of their financial position. In addition, the banks and the houses which grant mercantile credits subscribe to commercial agencies and maintain credit departments of their own, to collect and analyze information about the business prospects of their customers. Similarly, corporations which offer bonds or stocks for sale furnish circulars setting forth their financial records, 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. Credit men perform a technical function for large lenders similar to the function performed by engineers for industrial companies.

This review of the projects of enterprises by lenders, then, is no perfunctory affair. Nor is its practical influence upon the guidance of

economic activity slight. There are always being launched more schemes than can be financed with the available funds. In rejecting some and accepting other schemes, the men of money are taking an important, though not a 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 ability, or time to discriminate wisely between profitable and unprofitable schemes. Many such folk put their funds into savings banks, rely upon the advice of friends who are better equipped, consult with their banks and lawyers, study the financial press, employ investment counsel, or follow what they suppose to be the lead of some conspicuous figure in high finance. Investors who lack independent judgment are peculiarly subject to the influence of feeling in the matters where feeling is a dangerous guide. The alternating waves of confidence and timidity which sweep over the market for securities are among the most characteristic phenomena of business cycles. Even those who are relied upon for advice are not wholly immune from the emotional contagion. Thus the guidance of economic activity by the investing class is only in part an 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 the efficiency with which they follow up their investments. The greatest lenders become perforce much more than lenders. Over the enterprises in which their fortunes and their prestige are at stake they keep close watch. On the highest levels of business success, indeed, the functions of the investor and the enterpriser merge into each other.

5. The Rôle Played by Consumers.

The court of last resort in deciding what goods shall be made is the whole body of consumers with money incomes to spend.

Since retail merchants, public utilities, personal service agencies, and professional men strive to supply what the public will buy, this rule applies immediately to the production of goods which gratify personal wants. Less strictly, the rule applies also to the production

of the materials from which consumers' goods are made, to the production of all producers' goods used in making consumers' goods, and even to the production of producers' goods used in making producers' goods. But the farther the remove from personal wants, the less is the control of consumers over demand and the larger the element of business discretion. Business managements and their technical advisers have considerable leeway in choosing what locations, what materials, what equipment and what services they shall use in production, and in what proportions they shall combine the several factors. Nor is the timing of business purchases rigidly bound by the timing of consumers' purchases. Thus the accurate form of statement is: production is guided by forecasts of what consumers will buy, supplemented by judgments concerning profitable methods of providing both consumers' goods and the endless variety of producers' goods which modern technique requires.

What proportion of current effort goes directly to the making of consumers' goods, and so falls most strictly under the rule of consumers' demand, we do not know. Of course, the preceding estimate that some such fraction as one-seventh of the total money income of the American people is "saved" on the average does not mean that six-sevenths of productive effort is spent directly upon consumers' goods. Still less does the estimate that the receipt of money incomes constitutes only a tenth of business transactions mean that nine-tenths of productive effort goes into making producers' goods. But where between these wide limits consumers' control fades into a mere sphere of influence we have no means of telling. The one certainty is that the development of modern technique directs an even larger amount of energy to the production of goods for making goods, and to the training of men to plan and supervise the directly productive efforts of other men.[1]

Even within the range where their control is most direct, consumers exert their authority as guides of production in a passive fashion. Usually they reveal what they want made only by buying briskly certain of the finished goods offered them, and by buying

[1] Mr. H. Gordon Hayes has estimated from the American Census of Occupations that about a quarter of "gainfully occupied" persons are engaged in the production of "durable goods"—including "all household furnishings and all household equipment that is made of wood or metal." He also estimates that about 4.25 per cent of the gainfully occupied are engaged in the construction and repair of factory buildings, machinery, railway roadway and rolling stock, and agricultural implements. "Production After the War," *Journal of Political Economy*, December, 1918, vol. xxvi, pp. 941-951.

other goods slowly. Producers follow the leads thus given as closely as they can, but also endeavor to stimulate demand and to direct it into profitable channels. Indeed, it seems that consumers often learn what they want by looking over the wares displayed in the shops. People are conscious of the general character of their needs, rather than of the specific goods which they desire. To decide precisely what foods, garments, furnishings, ornaments, or amusements one will buy is a difficult task. The picture given by so many economic treatises of buyers coming to market with their minds already made up about what goods they wish, and what price they are willing to pay at need for successive units of each kind, is an undeserved compliment to the mental energy of mankind. Even to canvass the market's offerings thoroughly takes more time and thought than the average shopper will devote to the task. So people follow an easier course, buying what they have bought before, what they see others using, or what advertisements and salesmen urge them to buy. The psychological categories important to the understanding of consumers' demand are habit, imitation and suggestion—not reflective choice. In particular, new products are seldom called for by consumers conscious of ungratified wants; they are pushed upon consumers by business enterprises, which often spend large sums in "educating the market," or "creating demand."

One reason why spending money is a backward art in comparison with making money was suggested early in this chapter;—the family continues to be the dominant unit of organization for spending money, whereas for making money the family has been superseded largely by a more highly organized unit. The housewife, who does a large fraction of the world's shopping, is not selected for her efficiency as a manager, is not dismissed for inefficiency, and has small chance of extending her sway over other households if she proves capable. She must buy so many different kinds of goods that she cannot become a good judge of qualities and prices, like the buyers for business houses. She is usually a manual laborer in several crafts, as well as a manager—a combination of functions not conducive to efficiency. From the sciences of most importance to consumption, physiology and psychology, she cannot get as much practical help as the business man can get from the more mature sciences of physics and chemistry. Above all, she cannot systematize all her planning on the basis of accounting like the business man; for while the dollar is a satisfactory unit for reckoning profits as well as costs, it is not a satisfactory unit

for expressing family welfare. Under these conditions, it is not surprising that what the world has learned in the art of consumption has been due less to the initiative of consumers, than to the initiative of producers striving to win a market for their wares.[2]

Yet with all their puzzles, consumers are in a strong market position. Their formal freedom to spend their money incomes as they like, combined with their massive inertia, keeps producers under pressure to solicit custom, to teach the public to want more goods and new goods. This task of stimulating demand is never done; for the march of technical improvement is ever increasing our capacity to produce, and before we have learned to distribute and to use what has just been added to our output, new advances have been scored. Hence the chronic complaint of business men that our industries are "over-built." The classical economists had logic of a sort on their side when they argued that general over-production is impossible in an exchange economy, because a supply of one kind of goods constitutes demand for goods of other kinds. But keener insight was revealed by Sismondi, and by Malthus who said,

> That an efficient taste for luxuries and conveniences, that is, such a taste as will properly stimulate industry, instead of being ready to appear at the moment it is required, is a plant of slow growth, the history of human society sufficiently shows.[3]

If anyone falters at reviewing the evidence which Malthus airily cites, he can try the conclusion by work-a-day business experience. Testimony abounds that the crucial difficulty in modern business lies in the "selling end," and the sincerity of this opinion is attested by the rapidly-increasing volume of selling costs.[4]

This pressure passively put by consumers upon producers is relaxed occasionally by the wasteful consumption of wars, and more frequently in booms, when the volume of demand is speciously magni-

[2] Compare Wesley C. Mitchell, "The Backward Art of Spending Money," *American Economic Review*, June, 1912, vol. ii, pp. 269-281; Henry Harap, *The Education of the Consumer*, New York, 1924 (a demonstration of how much a consumer needs to know), and Hazel Kyrk, *A Theory of Consumption*, Boston, 1923 (a demonstration that the economic theory of consumption is as laggard as the practice).

[3] T. R. Malthus, *Principles of Political Economy*, 2d ed., London, 1836, p. 321. For Sismondi's similar views, see above, Chapter I, section ii.

[4] For an effective presentation of the sellers' problem in modern business by an economist who has had practical experience, see George Binney Dibblee, *The Laws of Supply and Demand*, London, 1912, chapters x-xv.

fied for a while by business illusions. But most of the time the pressure is felt to be severe by the bulk of business enterprises. And that fact keeps consumers' demand the final arbiter of production, both in amount and in kind.

Back of consumers' demand, of course, stands the congeries of factors which control the distribution of income and the habits of spending. But this remark means merely that society's ways to-day are conditioned by its ways yesterday, coupled with its inability to make quick adjustments to altered conditions. To follow this fascinating line of analysis further would not be irrelevant, but the bare suggestion must suffice.

6. The Rôle Played by Government.

Concomitantly with the growth of money economy in Europe after the Middle Ages, the rôle which Government played in guiding economic activity became less active. The time had been when all men believed that the state should direct and regulate the economic life of its people for the good of the commonweal, quite as much as it should provide for the common defense. But as money economy extended, it began to appear that the merchant and the craftsman, in order to make money for themselves, must provide goods which the public wanted, and that in competing with each other for trade these private agents would keep down prices. The economic theory of *laissez faire,* as expounded by the Physiocrats, Adam Smith and the classical school, was an intellectual reflection of these accumulating facts of experience. By rationalizing the policy of private initiative in search of profits, which had developed spontaneously within the old scheme of governmental control, the economists expedited the transition in progress. Matters moved so fast, indeed, that the beginnings of reaction against extreme *laissez faire* appeared within the generation of Ricardo. The unrestricted pursuit of profits led at certain points to shocking ills, which Parliament intervened to check. England, and after her the world, in the fumbling fashion characteristic of social experimentation, presently attacked the problem of finding in detail what part of economic activity is best left to the guidance of business managements, and what part is best directed by the state. With that problem the leading nations are wrestling to-day as vigorously as ever. They seem to be no nearer a uniform and

satisfactory solution than they were in the transition days of Adam Smith; for, though progress is doubtless made, the problem keeps developing new difficulties.

Of course, the great argument for confiding economic activity to the Government's guidance is that Government aims at promoting public welfare, while business enterprises must make money. Government can consider what needs it is most important to satisfy and can assess the cost upon those most able to bear it; whereas business enterprises must consider what demands it is profitable to meet, and cannot serve those who cannot pay. Were that the whole story, Government would to-day play a more active rôle in economic life than it played in the era of Mercantilism. But most people prefer to buy what they like, rather than to pay for what the authorities think ought to be produced. And most men are skeptical of Government's efficiency in pursuing its aims. Hence the scope of Government activities varies from country to country and from time to time with changes in public opinion—not to say public sentiment—on these fundamental issues.

At present Government in the United States, including the federal, state and local authorities, constitutes one of the leading branches of production. Government owns a huge amount of property, employs about 9 per cent of all wage- and salary-earners, and pays about 8 per cent of the current income of individuals. These are post-war figures.[1]

The few services which are almost everywhere performed by Government are services in which management for profit is deemed 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. The longer list of services which in some places are assumed by Government and in others left to business enterprises fall mainly into four classes: undertakings like water supply, street cars, and railways which are most economically managed as monopolies, and are 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 find it profitable to regard; undertakings like the

[1] The percentage for incomes is an average for the years 1919-21. The percentage for employees refers to 1921. Both figures are drawn from Dr. King's estimates. See his introductory chapter to Dr. Leven's *Income in the Various States*, National Bureau of Economic Research, New York, 1925.

improvements of rivers and harbors, the reclamation of waste lands, and the buildings of canals in which the prospects of profits 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, and so on, with many variations from country to country and state to state. Certain products are often forbidden, such as impure foods and drugs. So too, in this country, are business practices restrictive of competition.

Most economic regulations of Government are negative in character; but Governments sometimes attempt to direct business enterprise into undertakings which are believed by the majority of the moment 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. In other cases, the Government provides producers with expert technical advice—exporters and farmers, for example.

Still more in general, the whole plan of raising public revenues and apportioning 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 business 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. Indeed, it is mainly as a "disturbing factor" that Government figures in the theory of business cycles. Its own economic operations are perhaps freer from cyclical fluctuations than those of any industry.

7. The Alleged "Planlessness" of Production.

With technical experts to plan the processes of production, business experts to guide the making of money, lenders to review all

projects requiring large investments, Government to care for the public welfare, and with the whole buying public as a final arbiter, it may seem as if the business economy provides a staff and a procedure adequate to the task of directing economic activity, vast and intricate as that task is.

This impression is strengthened by observing that each class of guides is spurred to efficiency by hope of gain, and deterred from recklessness by fear of loss. The engineer who blunders is discharged, the enterpriser who blunders goes into bankruptcy, the lender who blunders loses his money, and even the administration which blunders may lose office—though that is less sure. 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.

Nor does all this apply merely to the leaders of economic activity. In theory, every adult is free to choose whatever lawful ways of making a money income he thinks wise, and to change as often as he likes. Thus every worker is supposed to have a modest share in directing production. In practice, of course, the range of occupations for which anyone can qualify is limited both by his native capacity and by his opportunities to get the requisite training and social connection. But the pressure which the business economy applies to the rank and file of the industrial army to develop efficiency in working and spending money is certainly not less severe than the pressure it applies to the captains. The older writers who expounded the philosophy of individualism emphasized the need of such pressure to make men work and save, at the same time as they argued that each man is the best judge of his own interests. Later writers, who credit men with less rationality than was the fashion a century ago, hold that economic individualism, involved in the current money economy, is a safeguard against failures to recognize where self-interest lies. Professor John Maurice Clark's remark on this head is whimsical only in part:

> Individualism may be regarded, not so much as the system calculated to get the utmost out of a people of extremely high intelligence, as the system in which human stupidity can do the least harm.[1]

[1] "The Socializing of Economics" in *The Trend of Economics*, edited by R. G. Tugwell, New York, 1924, p. 97.

With this powerful stimulation of individual efficiency, the business 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. The fusing of incitements to individual efficiency with opportunity for wide coöperation is the great merit of the business economy.

That men like making and spending money as a way of organizing economic activity on the whole better than any other system they have yet practiced on a large scale, is indicated by history. The first section of this chapter suggests that the business economy grew out of the preferences of millions of men in successive generations in all quarters of the world. The medieval king and his tenants, the lord of the manor and his serfs, seem all to have gained by substituting monetary payments for the rendering of personal services. No one forced the housewife to give up making her own bread and her candles; no one forced the frontiersman to buy clothing in place of dressing in buckskin. It was because they preferred the new way of providing for their wants when the opportunity to choose was presented, that consumers patronized the retail shop selling factory products. So, too, banking could develop only as great numbers of people year after year found it useful. Not that the growth of money economy has involved no coercion, loss, and injustice—witness, for example, the tragic side of the enclosures which made possible farming for profit, the sufferings of peasants who could not learn the art of living on money, the oppressions exercised by money lenders, and the tragic struggle of the hand-loom weavers against the power loom. But broadly speaking, it seems clear that this feature of culture could have attained such general acceptance by the most advanced peoples of the world after so thorough a trial only because it seemed to meet their needs more adequately than the other forms of economic organization with which they have had experience.

Nevertheless, the business economy has obvious limitations as a system of organizing economic effort for the satisfaction of wants—limitations which must be noticed because they bear on the problem of business cycles.

1. The business 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. Coordination 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 is limited by 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 which have no power to enforce a common program, 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. Apart from the transient programs of economic mobilization adopted under stress of war, civilized nations have not yet developed 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 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 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 technical an aim as pecuniary profit cannot guide their efforts with certainty toward their own ideals of public welfare. And Government can remedy this defect only in part.

3. Even from the point of view of business, prospective profit is an uncertain, flickering light. For 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 business economy confuses the guidance of economic activity by interjecting a large element of uncertainty into business ventures.

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 technique 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 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. To recognize this fact, however, is but the beginning of wisdom. Much patient analysis 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.

VII. International Differences in Economic Organization.

1. The Uneven Development of Business Economy.

All the highly civilized nations of the world to-day have substantially the same form of economic organization. The business economy, sketched in this chapter with particular reference to the United States, prevails in Great Britain, France, Belgium, the Netherlands, Switzerland, the Scandinavian countries, Germany, Austria, and the great British colonies with white populations. A somewhat less mature stage of the money economy has been reached by the other European countries, by the Spanish- and Portuguese-speaking peoples of South America, and by the European colonists in South Africa. A still less mature stage prevails in the Orient, aside from Japan.[1]

In no country is the development of the business economy uniform over all sections. Everywhere the city dwellers carry on more of their activities by making and spending money incomes than the country folk. Nearly every country, even in the Orient, has its centers of large-scale industry and trade, and every country has its areas where production is organized rather on a family basis than on the basis of full-fledged business enterprises.

This uneven development of business economy influences the course run by business cycles in different parts of the world. It has been shown that alternations of prosperity and depression occur with increasing regularity as business economy extends in scope, and seem to arise more from economic processes and less from political or physical events.[2] It will be shown in the fourth chapter that the business cycles of countries which have highly developed business economies correspond to each other in timing and intensity rather closely; between countries where pecuniary organization is less mature the correspondence is distinctly less close. Finally, within every large country, there are measurable differences in the timing and the intensity of cyclical fluctuations in different sections—differences which appear to correlate with the differences in thoroughness of pecuniary organization.

[1] These statements are based upon rather vague and general impressions. Perhaps the grouping suggested is not quite fair in all cases; certainly it is subject to revision as conditions develop in the countries which we now count laggard.

[2] See section i, 4, of this chapter.

The history of the past two hundred years suggests that the international and sectional differences in economic organization are gradually becoming less. In all quarters of the globe business economy has been gaining ground. But the approach toward uniformity is slow, not only because the laggard peoples learn new habits deliberately, but also because the advanced peoples keep elaborating their pecuniary institutions. For as long a time as we can envisage, differences will maintain themselves on a scale sufficient to prevent business cycles from reaching in all quarters of the world even the measure of uniformity which they now possess among the central European nations, Great Britain, Canada and the United States.

2. The Proportion of the Workers Engaged in Farming.

A second set of conditions which make business cycles differ from country to country is found in the character of the occupations followed by their peoples. Of course, all the major industries are represented in every large population; but the proportions of the people engaged in agriculture, manufacturing, mining, transportation, trade, and the professions, vary widely. Because of the divergencies noted above in the business-cycle hazards to which various industries are subject,[1] it is pertinent to make international comparisons of occupation groups.

Unfortunately, occupations are classified in such unlike ways by different countries that close comparisons are out of the question. But the point of most importance—the percentage of male workers engaged in farming[2]—can be ascertained roughly for the countries whose business annals will be presented in a later chapter. The figures are given in Table 10. While the foreign data have been rearranged to fit the American census classification as nearly as may be, the percentages can be trusted only as showing the existence of very wide differences in dependence upon agriculture, and, by inference, upon other industries, particularly manufacturing.

England and Wales here stand in a class by themselves, with only one-ninth of their workers on farms. This does not mean that business cycles in England are more exempt from agricultural influences than business cycles in the European countries or the United

[1] See section ii, 3, of this chapter.

[2] Much better figures can be found for men than for women in several of the countries included.

States which have from a quarter to a third of their men in the fields, but that the harvests which affect English cycles are the harvests in

TABLE 10

PROPORTION OF GAINFULLY EMPLOYED MALES ENGAGED IN AGRICULTURAL PURSUITS IN VARIOUS COUNTRIES

Country	Date	Per Cent in Agriculture
China	1911	75.0[a]
India	1911	71.4
Russia	1897	61.6[b]
Japan	1908	58.5[c]
Union of South Africa	1911	55.4
Italy	1911	53.8[d]
Sweden	1910	49.1[e]
Austria	1910	45.5
Brazil	1920	45.0[d]
Canada	1911	41.0[f]
France	1911	40.0
United States	1910	35.8[f]
Argentina	1914	30.0[g]
Netherlands	1909	29.4
Australia	1911	29.0[h]
Germany	1907	28.3
England and Wales	1911	11.0[f]

NOTES:

[a] Estimated. See *China Year Book*, 1916, p. 3; *Journal of the American Asiatic Association*, 1911, vol. xi, p. 203; *Statesman's Year Book*, 1923, p. 771.

[b] Data for the entire Empire, including Siberia and the Caucasus.

[c] Percentage represents the proportion of all households engaged in agriculture to the total number.

[d] Males over 10 years of age.

[e] Males over 15 years of age.

[f] Males 10 years of age and over.

[g] Occupation data do not include workers in occupations not sufficiently specified, such as day-laborers, which tends to lower the percentage of agriculturally employed. The surprisingly low percentage is somewhat substantiated by the fact that 55 per cent of the population is classed as urban. A considerable part of the town and city dwellers consists of landlords and their dependents.

[h] "Exclusive of full-blooded aboriginals."

Compiled by Willard L. Thorp from censuses or official year books of the several countries, except in the cases of China and Russia. For the Chinese sources, see above note ([a]). The Russian data were obtained from the French population census of 1911, I, part iii, p. 176.

The occupation data in the various censuses have been regrouped to conform as nearly as may be to the category in the United States *Census of Occupations*, 1910, entitled "Agriculture, Forestry and Animal Husbandry," not including fishermen and oystermen. In order to make the records as comparable as possible, the data were taken from the census nearest to 1910 for each country.

the countries from which England buys the bulk of her foodstuffs and to which she sells the bulk of her exports.

At the other extreme are the great Oriental populations of China and India, followed by the Russian Empire and Japan. Several of the European countries in the list depend more upon farming than does the United States. More surprising are the low percentages for Argentina and Australia. Defects in the original data (particularly from Argentina, which omits from her occupation tables workers whose trades are not definitely specified) may be partly responsible for this result; but few North Americans realize how large a proportion of the people in these two southern lands live in cities.

3. Enterprise and Thrift.

Observers generally agree upon two temperamental differences which are revealed in the business behavior of the foremost commercial nations. The French are held to show less business enterprise than the Americans (who are inclined to credit themselves with preeminence in this quality), or the English, or the Germans. Their railways could not be built without a state guarantee of dividends; their merchant marine relies upon bounties; their great credit companies, founded largely to aid in establishing new enterprises, have gone over mainly to the less hazardous business of accepting deposits and handling investments for customers; their private banks are concerned chiefly with transactions in foreign exchange and short-time credits. The Frenchman seems to have no great fondness for the game of business. He aims to secure a competency by the thrifty conduct of his affairs along conservative lines, then to retire and invest his accumulations in *rentes*. It may be largely for this reason that the cyclical fluctuations in French business are relatively narrow in scope, and seldom marked by severe crises.[1]

On the other hand, the French are believed to surpass Americans, English, and even Germans in thrift. In the years preceding the war, France seemed to be displacing England as the world's greatest lender. The relative lack of domestic business enterprise, combined with an enormous aggregate of small savings, provided each year hundreds of millions of francs which sought investment in foreign securities. And in the selection of their investments the French preferred what they believed to be a conservative policy. Occasionally they might buy freely of speculative stocks, like "Kaffirs"; but the bulk of their sav-

[1] Compare K. Wiedenfeld, "Das Persönliche im Modernen Unternehmertum," *Schmoller's Jahrbuch für Gesetzgebung*, 1910, pp. 229-233,

ings went into government obligations, high-grade railway and industrial bonds, or into shares long established as dividend payers.[2]

It would be easy to elaborate by pointing out various contrasts between the business traits commonly believed to characterize the North and the South Americans, the Japanese and the Chinese, or the Russians and the Scandinavians. Nor can it be doubted that whatever differences exist among national temperaments have their bearing upon the whole economic life of the peoples in question. But such elaboration would not sensibly promote the present inquiry. For, after showing in the fourth chapter what relations exist among business cycles in different parts of the world, we shall concentrate attention upon the United States, England, France, and Germany. And about the differences in their business traits what has been said will suffice.

4. Monetary and Banking Systems.

Before the Great War it was thought that all the commercial nations of the world would soon have monetary systems of the same type. One country after another had gone over to the single gold standard, with supplementary use of silver coins, and of paper money issued by the Government, by the banks, or both. China was the greatest nation remaining on the silver basis; there were no bimetallic standards, and irredeemable paper standards seemed to be rare episodes. While the war produced wild confusion in monetary systems and forced many of the European nations to suspend specie payments, it now seems probable that within a few years the earlier uniformity will be restored in large measure. If so, the old facility of international transactions will return, and the financial bonds which connect the business fortunes of the great commercial nations will become closer than they have been since 1914—unless non-business forces again intervene to prevent.

Banking systems, also, had been growing more alike before the war, as various countries strove to adapt features which had succeeded elsewhere to their peculiar needs. The last great step in this direction was the establishing of the Federal Reserve System by the

[2] Compare, for example, A. Neymarch, *French Savings and Their Influence*, pp. 163-181; publications of the National Monetary Commission (Senate Document No. 494, 61st Congress, 2d Session).

United States in 1914—a measure which introduced a modified form of centralization into a system theretofore composed of some 29,000 independent banks. But banking systems and banking usages had never attained such similarity as characterized monetary systems. The difference of chief moment to the student of business cycles is between the preponderant use of bank checks in making payments among the Anglo-Saxon communities, and the relatively slight use of checks in other countries. But it should also be recalled that outside of Europe, North America and Australia, the use of banking facilities is confined mainly to the commercial centers and so touches the bulk of the people only by indirection.

5. Government's Share in Directing Economic Activity.

Finally, there are considerable differences even among those modern nations whose pecuniary institutions are most alike, in the share which central and local Governments take in directing economic activities.

Partly because of limitations placed by constitutional law upon the powers of Government, partly it would seem because of a temperamental restiveness under control, Americans have made fewer and less bold experiments in municipal operation of public utilities, or in state operation of railways, telegraphs, telephones, mines, and the like, than have the Germans, French, or British. Perhaps, however, this difference is growing less decade by decade. Certainly, the rise of public commissions as agencies for regulating privately-owned enterprises has given the federal, state and municipal Governments of the Union a share in directing several branches of business.

While later chapters will show that all the international differences in economic organization and practice which have been pointed out possess some significance, by far the most important is the uneven development of business economy. There are, indeed, close organic relations between this uneven development and the proportion of men engaged in agriculture, the prevalence of an enterprising spirit in business affairs, the use of banking facilities, and perhaps even the share which Government takes in directing economic activity. Yet all these differences together account only for a part of the divergencies which the fourth chapter will show among the business annals of various countries. Another part must be ascribed to factors of a

political or physical type. About the relative importance of the forces which produce divergencies among business cycles, however, and about their interactions, our knowledge is meager. Perhaps we are overlooking forces which will some day be found to play dominating rôles. But the way to hasten the day of fuller understanding is to make the best use we can of our present insights, imperfect though they are.

VIII. Conclusion.

1. The *Raison d'Être* of Chapter II.

Taken one at a time, most of the theories of business cycles reviewed in Chapter I seem plausible, not to say convincing. Certainly each theory, this time without exception, illuminates some angle of the problem. Taken all together, the theories render a different service—one which is welcome only to the man who has the courage and time to enter upon a thorough investigation. They show that business cycles are congeries of diverse fluctuations in numerous processes—physical, psychological, and economic. Indeed, upon reflection the theories figure less as rival explanations of a single phenomenon than as complementary explanations of closely related phenomena. The processes with which they severally deal are all characteristic features of the whole. These processes not only run side by side, but also influence and (except for the weather) are influenced by each other. Thus the diversity of explanations, which at first seems confusing, becomes an aid toward envisaging the complex character of the problem.

Complexity is no proof of multiplicity of causes. Perhaps some single factor is responsible for all the phenomena. An acceptable explanation of this simple type would constitute the ideal theory of business cycles from the practical, as well as from the scientific, viewpoint. But if there be one cause of business cycles, we cannot make sure of its adequacy as an explanation without knowing what are the phenomena to be explained, and how the single cause produces its complex effects, direct and indirect. Neither on the single-cause hypothesis, nor on the hypothesis of multiple causes, are we equipped to deal with the problem of causation until we have learned what are the processes characteristic of business cycles, and how these processes are related to one another. Chapter I indicated what the leading proc-

esses are. The way to discover their relations is to study the development and the functioning of the economic organization within which business cycles run their courses. Hence the sketch of the business economy drawn in this chapter.

Few writers upon business cycles deem such an introduction necessary. None of them question that most processes of modern life, social and political as well as economic, have some share in the alternations of prosperity and depression. But most investigators take the complexities for granted, credit themselves and their readers with a knowledge of economic organization sufficient for their purpose, and concentrate upon demonstrating the source from which comes the dominant impetus to cyclical fluctuations. A theorist who has satisfied himself upon that central issue is prone to adduce only the evidence and arguments which seem to prove his explanation, spending little time upon processes which adjust themselves to his ruling cause. A skillful exposition of this type is likely to convince the reader also, unless he is acquainted with one or several equally confident demonstrations that some other cause is primarily responsible. In the latter case, the reader must give up the puzzle, or choose among the explanations on inadequate grounds, or study for himself the interrelations among the processes exploited by his various authorities.

Our debt to men who have written, and even thought, in this summary fashion is heavy. It profits us less to dwell upon their lack of circumspection than to dwell upon their positive achievements. When the problem of business cycles was first attacked it was inevitable that the hypotheses offered would be inadequately worked out. The complexities of the problem, the possibility of making numerous hypotheses, had to be discovered. Contemporaries who still follow out a single line of causation without careful examination of other lines, may seem a trifle quaint; yet they too may add new discoveries to the growing stock of knowledge, or new ideas on which to work. We must choose, however, between following their methods and making use of their results. If we see a promise of usefulness in the seemingly divergent conclusions reached by several different groups of investigators, we must set about our own constructive work with more care than our guides deemed necessary.

2. A Summary.

Now that the sketch of economic organization is completed, we may sum up the leading results in form for future use.

Business cycles do not become a prominent feature of economic experience in any community until a large proportion of its members have begun to live by making and spending money incomes. On the other hand, such cycles seem to appear in all countries when economic activity becomes organized predominantly in this fashion. These observations suggest that there is an organic connection between that elaborate form of economic organization which we may call "business economy," and recurrent cycles of prosperity and depression.

As a money economy attains high development, consumption continues to be carried on mainly by families; but production comes to be carried on mainly by a new unit—the business enterprise. Further, there is evidence that business cycles are most pronounced in those industries which are dominated by full-fledged business enterprises, and that within these industries they affect large enterprises more seriously than small ones.

According to the best available estimates, the man-made equipment which American workers now use has an aggregate value of about three years' current income. This equipment includes not only buildings, transportation system, factories, and implements of all kinds, but also roads, the products and merchandise on their way toward consumers, and the personal effects owned by individuals. The possession of this stock of accumulated wealth makes it possible for the population to consume for a time more than it is producing. Every year the population eats about the same amount of food per capita; but the expenditure upon maintaining and extending the equipment used for business purposes need not be, and in practice is not, kept so nearly uniform. Thus modern industrial methods and modern business organization in combination open the door to wide cyclical fluctuations in at least one important field of economic activity.

To prosper, even to survive, business enterprises must make profits —not every year, but on the average. Hence the making of profits is of necessity the controlling aim of business management. The industrial processes which enterprises carry on in producing, transporting, storing, and distributing goods are means toward this end.

In other phrases: industry is subordinated to business, the making of goods to the making of money.

Yet the quantity of goods handled within a given period is a matter of primary concern, even from the strictest business viewpoint. Profits are the difference between the prices which an enterprise pays for all the things it must buy, and the prices which the enterprise receives for all the things it sells. Thus profits depend upon the physical volume of goods bought and sold, as well as upon the margins between buying and selling prices.

The prices of the innumerable kinds of goods made and consumed in a business economy constitute an orderly system. The active agency in maintaining the relations among the various parts of this system is the quest for profits itself. Business men are ever looking for opportunities which promise a large volume of trade at wide price margins. Where the margins seem wide and demand active, new enterprisers crowd in if they can, and their competition presently raises buying and lowers selling prices. When margins seem narrow, new investments are avoided, and such of the old investments as can be withdrawn are shifted to more promising fields. In consequence, buying prices are likely to fall and selling prices to rise. The result of these shiftings of investment, which are always in progress, is not to make uniform the percentage margins on which all classes of goods are handled; but so to adjust buying and selling prices that the net price margins, together with the volume of trade which can be handled with a given investment, will hold out similar prospects of profits in all branches of business open to newcomers. This uniformity never is attained in fact; but the plus and minus departures from the prevailing level of prospective profits are the guides which business men try to follow in planning investments.

In our analysis of business cycles, then, we must recognize that profit making is the central process among the congeries that constitute the activities of a business economy. Weather conditions count in so far as they affect profits, so do emotional aberrations, so do the production and consumption of consumers' goods, and so do a thousand other factors. On the other hand, the prospects of making profits react upon all these other processes, in so far as they are affected by human behavior. Even the factors which we classify as political or social rather than economic are influenced in varying measure by the profitableness of business. But, of course, attention must be concentrated upon the relations among the processes which

are of outstanding importance as affecting and affected by prospective profits. In this chapter, an effort is made to get as good estimates as possible of the relative magnitude of a few fundamental factors.

The elaborate exchanges required by the system of "production for the use of others and acquisition for the use of self" are managed in relatively small part by the use of coin and paper money, and mainly by the use of credit instruments. In the United States it seems that something like 85 per cent of payments are made by check. Deposit currency is adapted to the varying activity of business, because both its volume and its rate of turnover rise and fall with prosperity and depression.

The goods produced by business enterprises are distributed among the community by the continual paying and spending of money incomes. Of the several income streams, wages and salaries is much the largest, averaging over one-half of total money income. Profits ranks second, and is approximately equal to dividends, interest, and rents put together. From the money incomes received by individuals, upwards of 60 per cent seems to be spent at retail shops in average years; the rest is distributed among various channels, of which rent is the most important.

It is characteristic of the business economy that the process of providing goods to meet human needs gives rise to business transactions which far exceed current income. Recent data indicate that the total volume of payments in the United States is perhaps ten times the aggregate money incomes of all individuals, or five times the transactions involved in both receiving and spending personal incomes.

A not inconsiderable fraction of current income is "saved" every year—that is, expended in ways which increase the community's stock of fairly durable consumers' goods or increase its capacity to produce future income. The best available estimate for the United States, which is none too certain, makes this fraction average about one-seventh of current income. Two-fifths of the saving is done not by individuals, but by business enterprises. The indications are that the accumulated wealth of the United States (excluding the value of land) is equal to the savings of some 20 to 30 years.

An economic organization which distributes incomes in money, and lets the recipients spend the money in any way they like, makes extremely difficult the task of adjusting the supply of each kind of goods to the profit-paying demand for it. To cope with this task of directing production in detail, the business economy has evolved

an elaborate system. Business managements play the most active rôle in guiding production; but they have the assistance of technical experts of various sorts, and they must submit most of their important projects to review by lenders of credit or investment funds. In the last resort consumers determine what shall be made, by buying certain products freely and others sparingly; their choices, however, can be and are influenced in considerable measure by business enterprises, and business managements decide the technical question what producers' goods, direct and indirect, they had best use in making consumers' commodities.

As the money economy developed in Europe, the share which Government took in guiding economic activity gradually shrank. The turning point seems to have come in the 17th century in England, early in the 18th century in France and late in the 18th century in Germany. Governments now render certain services which the community will not confide to commercial exploitation—a list that varies considerably from place to place—and for the rest endeavor to check methods of making money which are deemed incompatible with public welfare. Aside from schemes of economic mobilization during wars, no country has developed a comprehensive plan for the direction of its economic energies. The scheme of guidance by business managements, technical experts, lenders, and consumers, which has been evolved in the later stages of the money economy, is confined within the limits of single business enterprises, or groups of enterprises dominated by a common control. The relations among the undertakings of independent money-makers are not planned, but are established and altered by the mutual competition of these enterprises—in which anyone who can command the necessary capital is free to join, and in which some enterprisers win more or less monopolistic advantages. Business cycles are among the unplanned results of this scheme of organization.

Business economy nowadays prevails in much the same form among the nations in which Euro-American culture is highly developed. It seems also to be making headway in other countries; but in the Orient, aside from Japan, and in less civilized regions, it has not reached the point at which business cycles attain marked significance. Even among the great commercial nations there are minor differences in economic organization, respecting such matters as the percentage of the population engaged in farming, the relative development of thrift and enterprise, monetary and banking habits,

and the economic policy of Government. These differences combine with a multitude of non-economic factors to prevent the business cycles of any two countries from being precisely alike.

3. The Conception of Equilibrium.

To repeat once more: by showing that business cycles are intricate complexes made up of diverse fluctuations in numerous activities, Chapter I forced us to seek some orderly scheme for conceiving the relations of these processes to each other. The scheme which Chapter II presents centers on the pursuit of money profits. All the "causes" of business cycles stressed by the theories reviewed owe whatever influence they exert upon economic activity to their bearing upon profits, and the like must hold concerning any other "causes" which future investigation reveals. Thus we have a pattern to follow in future chapters, a pattern which should enable us to discuss the wide diversity of processes involved in business cycles without falling into confusion.

A further device for keeping order in the discussion is to treat the detailed problems marked out by our pattern as having all the same form—problems of equilibrium. The conception that business cycles consist in rhythmical ruptures and restorations of balance in some fundamental process is explicitly presented by several of the theories reviewed, and may be read into others. Can we make use of this idea?

Doubtless it was a mechanical analogy which gave its vogue to the notion of economic equilibria. Everyone admits that analogies, though often most suggestive in scientific inquiries, are dangerous guides. The usefulness of the analogy in question was greatest and its dangers least when economists were treating what they called "static" problems. Such problems can be given a quasi-mechanical character, for they are not taken from life, but made in an inquirer's head to suit his purposes, and mechanical analogies are appropriate to mechanical problems. But the problems of business cycles are the opposite of "static." If we are to conceive of them in terms of an equilibrium of mechanical forces, we must conceive of an equilibrium among numerous forces which are constantly changing, changing at different rates, and influencing one another as they change. Perhaps an ingenious person who thought the game worth while might design a mechanical contrivance which would work somewhat after the fashion of cyclical business fluctuations. If he did so, however, most

economists would find his machine so difficult to understand, and the real similarity of its operations to business processes so uncertain, that they would leave its intricacies to the pleased contemplation of the inventor.

Yet there is a different conception of equilibrium which may help us—the equilibrium of a balance sheet, or better, of an income and expenditures statement. Such a statement has nothing to do with mechanical forces, and that is a safeguard against false analogies. It deals with pecuniary quantities, and they are genuine elements in our problem. It sums up the results of numerous processes which concern us, through periods of time which we can divide according to their business characteristics. More than that, the statements for successive periods of time link into each other, as they should do for our purposes. The statement for one period shows what has happened to certain items included in its predecessor, and shows also certain items the disposition of which will appear in its successor. Finally, the balance which is struck is really a device for finding how much the expenditures and the receipts are out of balance. The difference between these two aggregates of items is put down on the income side as profit or loss, a positive or a negative sum. That feature, too, serves our needs. We have no more warrant for assuming in advance that business processes "tend" to maintain an equilibrium than to assume that they "tend" to get out of balance. What we need when we employ the concept of equilibrium, is a device for showing the relations between the aggregates which stand opposite each other in various processes, as expenditures and receipts stand opposite each other in bookkeeping. Having found equality, or having found one set of items in excess of the other, our problem is to trace the consequences. It is not a foregone conclusion that these consequences will always be of the sort which tend to restore a balance, any more than losses suffered by a business enterprise one year tend to give it profits in the year following. Yet we know that the modern business system does not function smoothly when the aggregates of the opposing items in certain pairs get too much out of balance.

To indicate the uses of this conception of equilibrium in discussing business cycles is to review again the leading conclusions of the present chapter. The central proposition is the one to which the statement of receipts and expenditures applies directly: business enterprises cannot "carry on" unless in the long run their incomes exceed their outlays by a satisfactory margin of profits. In order that this relation

(which the bookkeeper expresses as a balance) may be maintained, an indefinite number of other changing aggregates must be kept in due relation to each other. For example, the selling prices of each of the million kinds of goods produced and sold must be adjusted severally to their costs of production. So, too, the physical quantities of each kind of goods turned out must be adjusted severally to the physical quantities that can be sold. That payments may be made, the quantity and turnover of coin, paper money, and deposit currency must be adjusted to the pecuniary volume of trade, or the pecuniary volume of trade to the circulating medium. Also, the means of payment must be disbursed to buyers as money incomes, or as loans, in proportions duly adjusted to the value of goods sent to market. To provide for expansion of industrial equipment, a portion of the income and loans must be saved and invested, but that proportion must not be excessive.

So we might go on indefinitely, translating perhaps all of the theories of business cycles into terms of equilibrium. Clearly that form of statement has advantages, and may be resorted to freely without danger, if we remember that the equilibria in mind are akin to the balances of bookkeeping rather than to the equilibria of mechanics. Our balances take place in time, over periods which vary from case to case, and which are seldom definite. The balances need not be exact; business plans seek to provide liberal factors of safety; if results fall out in the neighborhood of expectations, all is well. When balances fail persistently by wide margins for a considerable period of time, men can restore them in many cases by writing certain constituents up or writing them down. For business balances usually combine both estimates of certain values and records of certain transactions; they look to the future as well as the past; they are used to control plans quite as much as to register results; their reliability depends upon judgments not less than on arithmetic.