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The Business Cycle in a Changing World

ONE

The Nature and Causes of Business Cycles

ECONOMIC change is a law of life. Nowadays, we commonly associate economic instability with business booms and recessions, and we have become accustomed to speaking of these vicissitudes in economic fortune as the "business cycle." However, economic instability has been man's lot through the ages, whether he has made his living by hunting and fishing, by cultivating crops, or by practicing the arts of commerce, industry, and finance. Economic history discloses endless variations of economic conditions. Even the meaning of "good times" keeps changing as the aspirations of people and their performance undergo changes. But relative to the standards of each age and place, some years are prosperous, others dull, still others depressed.

I. TYPES OF ECONOMIC MOVEMENT

The outstanding feature of modern industrial nations is the growth of their economies. Thus, the population of the United States has risen steadily, year in and year out. So too, with very

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few exceptions, has the stock of housing, industrial plant, machinery, school buildings, highways, and other major forms of capital. The gross national product—that is, the total output of commodities and services—has fluctuated continually, but has done so along a rising secular trend. So also has output per capita, per worker, or per man-hour worked. In short, the American economy, viewed in the aggregate, has been basically characterized by growth of resources, growth of output, and growth of efficiency.

When we look beneath the surface of aggregate economic activity, we find some industries and communities growing rapidly, others growing only gradually, and still others declining. These divergent trends reflect a host of influences—among them, business innovations, population changes, shifts in consumer preferences, the discovery of new mines or oil fields, the exhaustion of old mines or timberlands, and changes in governmental policies. For example, the capital invested in American railroads and their volume of traffic increased rapidly during the nineteenth century, responding to the economic growth of the country and in turn stimulating it. But the railroads also grew at the expense of coaches, canals, and other waterways, which they gradually superseded by offering better service or charging a lower price. Years later the competitive trend was reversed, as new methods of transportation came into being—first, trolley lines, then buses, trucks, passenger automobiles, pipelines, airplanes, and improved waterways. These battled the railroads for traffic as vigorously as railroads in their youth had fought their commercial rivals. More recently, railroads have begun to retaliate through the use of radically new freight cars and other innovations. Such divergence of industrial trends is one of the expressions of economic progress.

Business cycles have been intimately connected with the

lopsided surges of development that mark economic progress. However, business cycles are not the only type of fluctuation to which economic life is subject. During certain hours of the day, most of us are at school or at work; during other hours we relax in whatever way suits our tastes or needs. This daily cycle in activity is so regular and dependable that we take it for granted. The same is true of the weekly cycle which brings its day or days of rest. Whatever difficulties or opportunities the daily and weekly cycles may have posed for our remote ancestors, our own lives and social institutions have become adjusted to their repetitive course. We know that shops will be closed at certain hours and on certain days, and we plan our shopping accordingly. We know that the nation's production will decline abruptly when factory workers put down their tools in the late afternoon, but we also know that their jobs do not cease on that account and that they will take up their tools again the next morning or when the weekend is over. In view of the extreme brevity and regularity of these cyclical movements, we pay no attention to them in judging whether business is improving or worsening.

Much the same is true of the seasonal fluctuations that run their course within the period of a year. Partly because of vagaries of the weather or the calendar, partly because of changes in business practice, the annual cycle is less regular than the daily or weekly cycle. Nevertheless, we expect business in general to be more brisk in the spring than in the summer or winter, and we ordinarily find it so. We expect department store sales to reach a peak during the Easter shopping season and a still higher peak before Christmas, and so we find it. We expect unemployment to be at its highest in February and at its lowest in October, and so it usually is. Workers in seasonal trades may not cherish the fluctuation to which they are subject, but they can reasonably count on returning to their

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jobs when the dull season ends and can plan their lives accordingly. In view of the substantial regularity of seasonal fluctuations, businessmen as well as economists usually put them out of sight when they seek to determine whether a particular branch of trade—or the economy as a whole—is expanding or contracting.

Business cycles differ in vital respects from these daily, weekly, and annual cycles. First, the recurring sequence of changes that constitutes a business cycle—expansion, downturn, contraction, and upturn—is not periodic. In other words, the phases of business cycles repeat themselves, but their duration varies considerably and so too does their intensity and scope. Second, since business cycles last from about two to ten years, they are considerably longer than the other cycles. Third, business cycles have a more powerful tendency to synchronize industrial, commercial, and financial processes than do the shorter cycles. Thus, the daily and weekly cycles in total production have no counterpart in inventories, bank loans, or interest rates, while seasonal fluctuations vary widely from one business activity to another. Fourth, although custom has left its imprint on the daily and annual cycles, they are part of the natural environment of man. Business cycles, on the other hand, are a product of culture. They are found only in modern nations where economic activities are organized mainly through business enterprises and where individuals enjoy considerable freedom in producing, pricing, trading, and saving or investing.

When economic plans and decisions are made independently by millions of business firms and households, some imbalance is frequently bound to occur between output and sales, or between output and the stock of equipment, or between inventories and outstanding orders, or between costs of production and prices. This much can be reasonably anti-

pated by everyone. However, the locus of the imbalance, its timing and magnitude, and the adjustments to which it leads can rarely, if ever, be foreseen with precision. In short, the business cycle lacks the brevity, the simplicity, the regularity, and dependability, or the predictability of its cousins. For all these reasons, although the business cycle is often the vehicle of progress, it also spells instability for society. When the economy starts on a downward course, no one can be sure how many months the recession will last, whether it will degenerate into a depression, how many business firms will go bankrupt, how far prices will decline, and—most important of all from a human standpoint—how many men and women will become unemployed. Although the United States and other countries are learning rapidly how to adapt to business cycles and to bring them under control, they remain troublesome.

Business cycles are not merely fluctuations in aggregate economic activity. They are also fluctuations that are widely diffused throughout the economy, and this fact distinguishes them from the convulsions of economic fortune that characterized earlier times as well as from the other short-term variations of our own age. Continuous and fairly pervasive fluctuations do not arise in a nation's economy until its activities of production, distribution, and consumption have become closely interwoven through division of labor, the making and spending of money incomes, a system of banking and credit, a mode of production relying extensively on fixed capital, and some ease in communication and transportation. Since these institutions emerged gradually in the Western world, the phenomenon of business cycles itself developed gradually and no precise date can be assigned for its first mature expression. It appears, however, that business cycles have existed in the United States, Great Britain, and France for nearly two hundred years, and that they have marked the economies of other

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modern nations practicing free enterprise since the latter part of the nineteenth century—if not longer. Earlier centuries, while free from business cycles, did not escape the ordeal of economic instability. This is evident from the hardships that frequently accompanied or followed bad harvests, epidemics, wars, earthquakes, monetary upheavals, high-handed acts of rulers, civil disorders, and similar fortuitous events.

In recent decades, the Soviet Union and other nations that organize economic activity through state enterprises and governmental edicts have also escaped business cycles; but they have not escaped economic fluctuations. Variations in harvests, political purges, wars, monetary revolutions, and misadventures, as well as successes of planning, have left their mark on the aggregate economic activity of these nations. Of course, episodic or erratic disturbances also powerfully influence the course of economic activity in the United States and in other developed nations that practice free enterprise, but they appear to do so by hastening or retarding, by strengthening or opposing, the economic processes that of themselves tend to generate cyclical movements. The ragged contours of most business cycles testify to the role of random disturbances, and so too does the strong individuality of successive business cycles.

Business cycles also need to be distinguished from specific cycles—that is, cycles in specific activities, such as mining coal or trading in securities, which have about the same order of duration as the business cycle but may or may not match its timing. Occasionally, specific cycles appear to be superimposed, so to speak, on longer cycles marked by their own rises and declines. Huge swings, lasting about ten to twenty-five years, have been common in building construction in various countries. Waves of this order of duration, but consisting of accelerations and retardations of growth rather than of actual

rises and declines, also appear to have characterized aggregate economic activity in the United States. These Kuznets cycles, as they are often called, reflect variations in the intensity of successive business cycles. A distinction between major and minor cycles, such as Hansen makes, likewise involves a grouping of successive business cycles. On this view, the interval between the troughs of severe depressions is a major cycle, so that some major cycles may include only one business cycle while others include two or more. Long waves of about fifty years—usually called Kondratieff cycles—have also been alleged to characterize aggregate economic activity of Western nations. The existence of these waves, while suggested by price movements, has not yet been established.

The terms used by economists to describe the phases of business cycles are rich in diversity but are gradually becoming standardized. The "peak" of a business cycle marks the end of "expansion" and the beginning of "contraction." The "trough" marks the end of contraction and the beginning of expansion. Frequently, "prosperity" is used interchangeably with "expansion," although it is better practice to restrict terms such as "prosperity" or "boom" to the higher reaches of particular expansions when full employment is closely approximated. The term "recession" does double duty. It is widely used to refer to the transition from expansion to contraction, just as "recovery" or "revival" is used to refer to the transition from contraction to expansion. Contractions of varying intensity are also commonly distinguished by the terms "recession" and "depression"; the former refers to a moderate contraction of aggregate activity that lasts in the neighborhood of a year, while the latter refers to a severe contraction or to one which, while moderate, lasts distinctly longer than a year. The term "crisis" originally was used to denote the financial disturbances that frequently occurred during the transition from expansion to contraction,

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but later it came to be applied to any transition from expansion to contraction. Nowadays, the term "crisis" is usually reserved for a violent disruption of financial markets without regard to the stage of the business cycle in which such a disturbance occurs.

II. GROWTH OF KNOWLEDGE ABOUT BUSINESS CYCLES

In view of the complexity of business cycles and the innumerable differences between them, their essential features and causes have long been a matter of debate. The lack of full or precise economic statistics, which was especially serious before World War I, inevitably contributed to uncertainty about the actual course of business cycles and their causes. But as public concern about crises, inflation, depressions, and unemployment grew, economists have also pressed their investigation of this range of problems.

During much of the nineteenth century, interest was focused on commercial crises—that is, the sharp rise of money rates, scramble for liquidity, drop of prices, and spread of bankruptcies that frequently marked the culmination of a boom. With the emergence of the concept of a business cycle, various economists became concerned with the entire round of events that preceded and followed a crisis. The business cycle itself, however, was still viewed as centering, in the main, in activities of commerce and finance. Some economists traced its causes to natural forces, others to psychological factors, and still others to the workings of the monetary and banking system. Toward the end of the century, interest began to shift to phenomena of industry and employment, and more particularly to the great fluctuations that characterized the capital goods industries. This change of outlook reflected the growth

of manufacturing, transportation, and public utility enterprises in modern nations, the relative decline of agriculture, and a growing realization that the transition from prosperity to recession could occur without a crisis or panic but not without a substantial increase of unemployment. In later decades, numerous explanations of the business cycle were developed that gave a large role to investment—usually to investment in fixed capital but sometimes to investment in inventories. Economists stressed different factors that had a bearing on the investment process—such as population growth, territorial expansion, stock of capital, the state of optimism, new technology, bunching of innovations, the rate of change in consumption, variation of interest rates, and changes of costs, prices, and profits. Or else they attributed primary significance to particular features of economic organization—such as industrial competition, uncertainty of demand, or the inequality of incomes. More frequently than not, the various theories differed mainly in their points of emphasis and therefore served to supplement one another.

The truly outstanding contributions to knowledge of business cycles were made by a small number of economists. Clément Juglar, 1819–1905, pioneered by demonstrating, in the course of a massive factual study of prices and finance, that crises were merely a passing phase of a recurring, wavelike fluctuation in business activity. Mikhail Tugan-Baranovskii, 1865–1919, was the first influential economist to see in the fluctuating rate of growth of the fixed capital of a country the main cause of its business cycles. Knut Wicksell, 1851–1926, clarified the cumulative processes of the business cycle by analyzing the consequences of a discrepancy between the rate of return on investment, which was liable to shift because of technological or other real changes in opportunity, and the market rate of interest. Albert Aftalion, 1874–1956, developed

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the implications for the business cycle of certain industrial facts—the long period required to bring new fixed capital into being, the long life of capital goods, and the capacity of minor changes in consumption to generate large changes in the net additions to the fixed capital required by business firms. Joseph A. Schumpeter, 1883–1950, viewed economic growth itself as a cyclical process and attributed the business cycle to the bunching of innovations, which forced difficult readjustments on old enterprises but in the end resulted in a more effective use of existing resources. Wesley Clair Mitchell, 1874–1948, carried factual investigation of business cycles far beyond earlier efforts, sharpened the concept of a self-generating cycle in a business system, and clarified the interrelations of costs, prices, and profits during a business cycle. John Maynard Keynes, 1883–1946, stressed the dynamic role of investment in altering the level of national income, formulated a consumption function which treats consumer spending as a passive response to national income, and with the aid of this function clarified the process whereby an increment of investment, besides adding directly to a nation's income, raises it indirectly by stimulating larger consumer spending. Through the contributions of these pioneers and of many other economists and economic statisticians, notably Warren M. Persons, Simon Kuznets, and Jan Tinbergen, significant advances have been made in recent decades in describing with some precision the major features of business cycles and also in understanding the processes whereby they are generated.

This paper presents in nontechnical language the main results of modern research on the nature and causes of business cycles. It should be borne in mind, however, that the concrete manifestations of the business cycle keep changing and that numerous aspects of business cycles are still obscure. These facts justify extensive new research. The investigations that

economists have currently under way focus on speculative model building, econometric model building, historical studies of individual cycles, statistical studies of fluctuations in individual processes or in the economy at large, experiments with forecasting techniques, and studies of business-cycle policy. This variety of approaches sometimes leads to methodological controversies. But no serious student of business cycles any longer questions that empirical research must be guided by an analytic framework or that speculative theorizing must be tested by an appeal to experience.

III. CYCLICAL BEHAVIOR OF AGGREGATE ACTIVITY

The business cycle involves to some degree the entire system of business—the formation of firms and their disappearance, prices as well as output, the employment of labor and other resources, costs and profits, the flow of incomes to individuals and consumer spending, savings and investments, exports and imports, trading in securities as well as commodities, the extension and repayment of loans, the money supply and its turnover, and the fiscal operations of government. Since there is no unique way of combining all these activities, the business cycle cannot be fully depicted by any single measure. However, the behavior of the entire congeries of fluctuations is indicated reasonably well for recent decades by statistical series of fairly comprehensive economic coverage—such as industrial production, total or nonagricultural employment, the flow of personal income, bank clearings or debits, and the gross national product.

The picture of a typical business cycle which emerges from these statistical records and also from earlier historical descriptions is that of a sustained rise in aggregate economic activity

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followed by a sustained, but smaller and shorter, decline. Activity at the peak of a business cycle is not merely higher than at the immediately preceding and following troughs. With very rare exceptions, it is also higher than at the preceding peak and lower than at the following peak. Likewise, the trough of a business cycle is usually higher than its immediate predecessor. In view of these typical characteristics, a business cycle almost always includes a visible element of growth. It is not merely an oscillation. The expansion, which ultimately carries aggregate activity to new heights, is typically most rapid in its early stages—the more so when it follows a severe contraction than when it follows a mild one. Although the rate of advance usually tapers off as the expansion proceeds, at times it reaccelerates as an expansion draws to a close without, however, regaining its initial speed. During contractions the rate of decline is usually fastest in the middle stages.

Between 1854 and 1961 the average length of business cycles in the United States was forty-nine months, with the average expansion lasting thirty months and the average contraction nineteen. The duration of individual cycles varied considerably—from ten to eighty months for expansions, from seven to sixty-five months for contractions, and from seventeen to one hundred and one months for full cycles. In a sense, aggregate activity was “depressed” over longer intervals than the duration of contractions may suggest, since some time must elapse before recovery can restore activity to the level attained at the preceding cyclical peak. On the other hand, the level of activity in the months immediately following a peak is often only a little lower than at the peak. During the ten business cycles from 1919 to 1961, when expansions averaged thirty-five months and contractions fifteen, the increases of industrial production ranged from 18 to 93 per cent and averaged 38 per cent, while the declines ranged from seven to 66 per cent and

averaged 26 per cent. Total output and employment, however, have fluctuated within decidedly narrower ranges. The reason is that they encompass, besides volatile activities like manufacturing and mining, relatively stable activities such as retailing, the service trades, and governmental work. Thus, during the business-cycle contraction of 1957-58, when industrial production declined 14.2 per cent, total real output fell only 4.6 per cent and employment in nonagricultural establishments 4.3 per cent (see Table 1.1 and Chart 1.1).

In other industrial countries the average duration of business cycles has been somewhat longer than in the United States. For example, between 1879 and 1932, fifteen business cycles ran their course in the United States, but only ten in Germany, and eleven in Great Britain and France. Typically, the amplitude of business cycles has also been smaller in other countries than in the United States. Although the business cycles of individual countries often synchronize, some divergence of economic fortune has always been present. In general, the minor cycles of individual nations have followed a relatively independent course, while the larger cyclical movements have tended to be of international scope.

IV. CYCLICAL BEHAVIOR OF INDIVIDUAL ACTIVITIES

Many, but by no means all, individual activities reflect the cyclical movements of comprehensive aggregates of economic activity. The fortunes of individual firms are often dominated by personal factors or conditions peculiar to their industry or locality. Activities like the production of wheat experience fluctuations that are heavily influenced by the weather and bear little relation in time to business cycles. Activities involving the

TABLE 1.1. A Partial Chronology of Business Cycles ^a

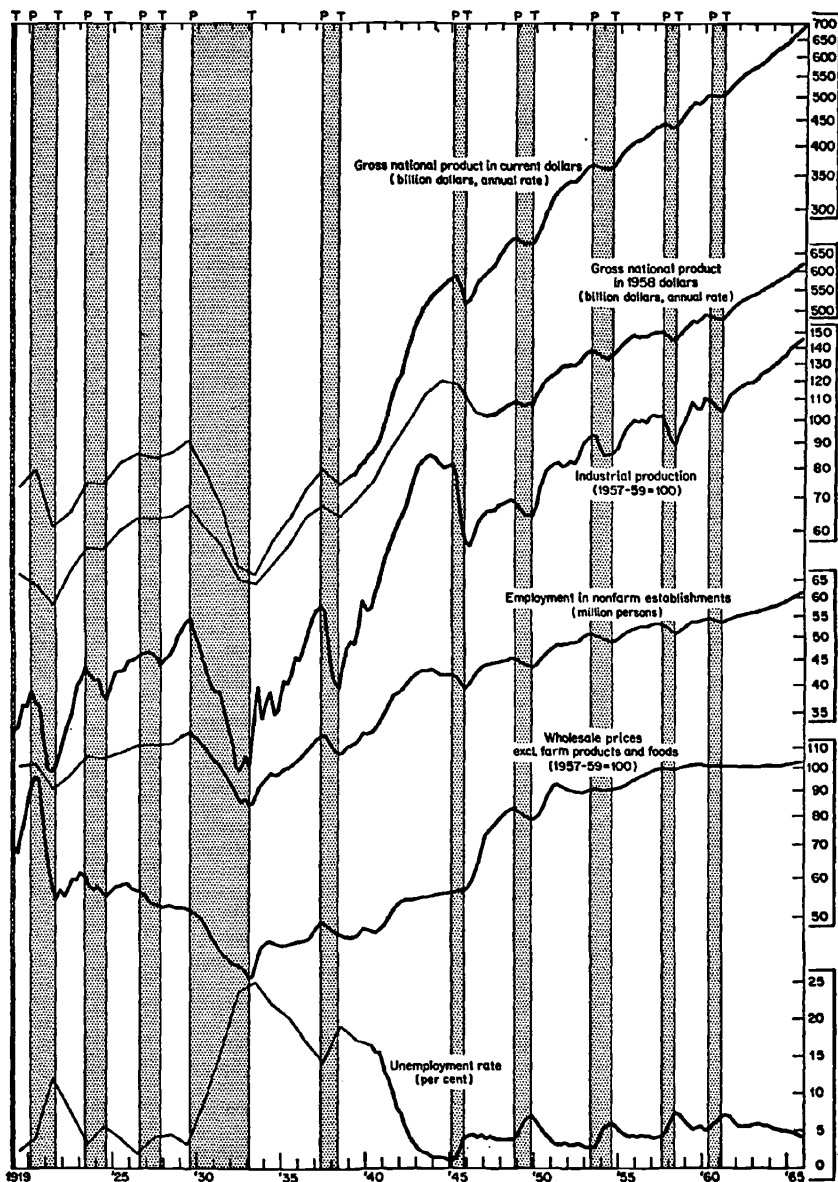
United States		Great Britain	
Peak	Trough	Peak	Trough
	1834	1792	1793
1836	1838	1796	1797
1839	1843	1802	1803
1845	1846	1806	1808
1847	1848	1810	1811
1853	Dec. 1854	1815	1816
June 1857	Dec. 1858	1818	1819
Oct. 1860	June 1861	1825	1826
Apr. 1865	Dec. 1867	1828	1829
June 1869	Dec. 1870	1831	1832
Oct. 1873	Mar. 1879	1836	1837
Mar. 1882	May 1885	1839	1842
Mar. 1887	Apr. 1888	1845	1848
July 1890	May 1891	1854	Dec. 1854
Jan. 1893	June 1894	Sept. 1857	Mar. 1858
Dec. 1895	June 1897	Sept. 1860	Dec. 1862
June 1899	Dec. 1900	Mar. 1866	Mar. 1868
Sept. 1902	Aug. 1904	Sept. 1872	June 1879
May 1907	June 1908	Dec. 1882	June 1886
Jan. 1910	Jan. 1912	Sept. 1890	Feb. 1895
Jan. 1913	Dec. 1914	June 1900	Sept. 1901
Aug. 1918	Mar. 1919	June 1903	Nov. 1904
Jan. 1920	July 1921	June 1907	Nov. 1908
May 1923	July 1924	Dec. 1912	Sept. 1914
Oct. 1926	Nov. 1927	Oct. 1918	Apr. 1919
Aug. 1929	Mar. 1933	Mar. 1920	June 1921
May 1937	June 1938	Nov. 1924	July 1926
Feb. 1945	Oct. 1945	Mar. 1927	Sept. 1928
Nov. 1948	Oct. 1949	July 1929	Aug. 1932
July 1953	Aug. 1954	Sept. 1937	Sept. 1938
July 1957	Apr. 1958		
May 1960	Feb. 1961		

SOURCE: Based on studies of the National Bureau of Economic Research.

^a The dates given are subject to revision. Work on the extension of the chronologies for Great Britain, Germany, and France is under way.

Germany		France	
Peak	Trough	Peak	Trough
	1866		1840
1869	1870	1847	1849
1872	Feb. 1879	1853	1854
Jan. 1882	Aug. 1886	1857	1858
Jan. 1890	Feb. 1895	1864	Dec. 1865
Mar. 1900	Mar. 1902	Nov. 1867	Oct. 1868
Aug. 1903	Feb. 1905	Aug. 1870	Feb. 1872
July 1907	Dec. 1908	Sept. 1873	Aug. 1876
Apr. 1913	Aug. 1914	Apr. 1878	Sept. 1879
June 1918	June 1919	Dec. 1881	Aug. 1887
May 1922	Nov. 1923	Jan. 1891	Jan. 1895
Mar. 1925	Mar. 1926	Mar. 1900	Sept. 1902
Apr. 1929	Aug. 1932	May 1903	Oct. 1904
		July 1907	Feb. 1909
		June 1913	Aug. 1914
		June 1918	Apr. 1919
		Sept. 1920	July 1921
		Oct. 1924	June 1925
		Oct. 1926	June 1927
		Mar. 1930	July 1932
		July 1933	Apr. 1935
		June 1937	Aug. 1938

CHART 1.1. Production, Prices, and Employment in the United States, 1919-65^a



^a T indicates trough; P indicates peak; shaded areas represent business-cycle contractions; unshaded areas represent expansions. Data are quarterly, except for the following, which are annual: GNP in current dollars, 1919-38; GNP in 1958 dollars, 1919-46; employment, 1919-28; unemployment rate, 1919-39.

production of new products, like radio tubes in the 1920's or transistors more recently, may defy business-cycle contractions during the early and rapidly growing stage of their history. Some financial magnitudes, like the money supply, decline during severe contractions but merely experience a reduced rate of growth during ordinary contractions. Others, like commercial bank investments or the cash balances of corporations, tend to move contracyclically. Even activities that generally move with the business cycle sometimes skip a cycle, or undergo an extra fluctuation of their own, or move especially early or late during recessions or recoveries. In short, some economic activities are free from cyclical fluctuations over extended periods or are subject to an independent rhythm, while even the numerous activities that tend to keep in step with the business cycle have specific cycles whose turning points are scattered.

This diversity of movement in various branches of the economy means that expansion in some activities is always accompanied by contraction in others. We find, for example, that expansions in individual branches of production run side by side with individual contractions, whether business as a whole is depressed or prosperous. The turns of the specific cycles are not, however, distributed at random through time. On the contrary, they come in clusters, so that at a time when the troughs in production are bunched the peaks are few, and vice versa. But when the number of troughs in a given month exceeds the peaks, the number of expanding activities must also be larger the following month. Hence, the bunching of cyclical turns results, so to speak, in protracted periods when a majority of individual branches of production experience expansion, followed by protracted periods when a majority experience contraction. Empirically, the periods when expansions preponderate are virtually coterminous with the upward phases of

the cycle in aggregate production; that is to say, aggregate production expands when individual expansions dominate. Moreover, when the expanding activities constitute a large majority, the amplitude of the cyclical rise in total production is apt to be larger than when the majority is small. To put this relationship another way, when the cyclical rise of total production is especially large, the industrial scope of expansion also tends to be especially broad. The scope of individual contractions, while usually less extensive than that of expansions, is similarly correlated with cyclical declines in aggregate production. All these relations in the sphere of production hold, and in the same way, between individual branches of employment and total employment, between individual branches of expenditure and total expenditure, and, indeed, between individual business processes and business as a whole.

The shift from a widening to a narrowing scope of expansions usually takes place gradually and follows a cyclical course. Rising activities are only a bare majority at the beginning of a business-cycle expansion. Their number swells as aggregate activity increases, though expansion reaches its widest scope not when aggregate activity is at a peak but perhaps six months or a year earlier. In the neighborhood of the peak, crosscurrents are the outstanding feature of the economic situation. Once the economy turns down, the number of expanding activities becomes smaller and smaller, but the scope of contraction does not widen indefinitely. Perhaps six months or a year before aggregate activity reaches a trough, the proportion of contracting activities is already at a maximum. Thereafter, the majority of contracting activities dwindles, while the minority of expanding activities keeps growing and before long becomes the ruling majority. About the time when that happens, the tide of aggregate activity begins rising again. A continual transformation of the economic system thus occurs

beneath the surface phenomena of aggregate expansion and contraction.

The degree of clustering and the precise sequence of the cyclical turns of individual branches of production or employment vary from one business-cycle turn to the next. New and rapidly growing industries tend to move down late at downturns and to move up early at upturns. Activity in the machinery trades tends to move somewhat late at both upturns and downturns. Apart from these tendencies, the sequence within any cluster of cyclical upturns in individual branches of industry usually bears little resemblance to the sequence within the next cluster of either downturns or upturns.

Rather strong repetitive tendencies emerge, however, when production and employment are viewed in relation to other economic processes. Activities preparatory to investment expenditure—such as the formation of new firms, appropriations for capital expenditure by corporations, issuance of building permits, contracts for residential building, orders for machinery and equipment, contracts for commercial and industrial construction, additions to private debt, and new equity issues—typically begin declining while total production, employment, the flow of incomes, and the average level of wholesale prices are still rising. Similarly, these visible preparations for investment typically recover several months before production, employment, incomes, and wholesale prices end their cyclical decline. Cyclical fluctuations in profit margins, in the proportion of corporations achieving rising profits, and in prices of common stocks also tend to lead the tides of aggregate activity, and so too—although less consistently—do the fluctuations of total corporate profits. Other activities that tend to move up early in recoveries and to move down early in recessions are investment in inventories of materials, spot prices of industrial raw materials, and certain marginal adjustments of

the work force, such as the average length of the work week and the rate of new hirings.

On the other hand, many economic processes or activities tend to lag in the course of business cycles. Outstanding among these are labor costs per unit of output, interest rates charged by banks on business loans, mortgage yields, retail prices, business expenditures on new plant and equipment, the installation of new industrial facilities, and aggregate business inventories. Of course, the cyclical turns in these lagging processes tend to precede opposite turns in aggregate activity.

The internal composition of the economy keeps changing in the course of a business cycle but not only on account of differences in cyclical timing. Just as individual activities do not rise or fall in perfect unison, so also they do not rise or fall by any uniform percentage during a business cycle. Some economic magnitudes—for example, retail sales and bank interest rates on business loans—move within a range that is narrow relative to their level. Others—especially business profits, capital gains or losses, and orders for investment goods—have enormous fluctuations. These and many other differences of cyclical amplitude are a recurring feature of business cycles. The turmoil that goes on within aggregate economic activity during a business cycle is, therefore, in no small part systematic.

In a typical business cycle, aggregate production fluctuates over a wider range than do aggregate sales. Moreover, sales by manufacturers fluctuate more widely than sales by wholesalers, while the latter fluctuate more than sales by retailers. The production of durable goods—both those destined for producers and those destined for consumers—fluctuates more widely than that of nondurables. Industrial production usually fluctuates more than the level of industrial prices at wholesale, which in turn fluctuates more than the level of retail prices or of wage rates. The cyclical fluctuation in the number of

man-hours worked is larger than the fluctuation in the number employed, and the latter is larger in commodity-producing industries than in the service trades. Wage disbursements fluctuate within a wider range than salary payments or the flow of property income to individuals but within a much narrower range than profits. Corporate profits also fluctuate much more widely than dividend payments or total personal income. Consumer expenditures fluctuate still less than personal income, while personal savings fluctuate more than personal income but less than corporate savings. Cyclical amplitudes are larger in private investment expenditure as a whole than in consumer expenditure and they are also larger in consumer spending on durable goods than on nondurables or services. Again, amplitudes are typically larger in construction contracts than in the volume of construction executed, larger in business orders for machinery and equipment than in their production or shipments, larger in additions to inventories by business firms than in gross or net additions to their fixed capital, and larger in additions to inventories of the firms manufacturing durable goods than of those manufacturing nondurables. Finally, new security issues fluctuate more widely than trading on the stock exchanges, stock prices more than commodity or bond prices, short-term interest rates more than bond yields, open market interest rates more than customer rates, extensions of consumer installment credit more than repayments, imports more than exports, governmental revenues more than expenditures, and so through the gamut of processes that make up the economy.

Since disparities of cyclical amplitude and timing, such as those just noted, tend to be repeated in successive business cycles, the proportions that critical economic factors bear to one another tend to change in a systematic manner during a business cycle. For example, investment expenditure fluctuates much more widely relative to its size than does consumer

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spending; hence the ratio of investment to the gross national product tends to move with the business cycle, while the ratio of consumer spending to gross national product traces out an inverse movement. The amplitude of cycles is larger in total production than in sales; hence, inventory investment passes through a cycle of accumulation and liquidation that closely matches or even leads the cycle in aggregate activity, while the movement of total inventories lags both in recoveries and recessions. Government expenditures usually fluctuate within a smaller range or bear a much looser relation to the business cycle than do revenues; hence, the budgetary surplus, taken in an algebraic sense, tends to move with the business cycle. One more illustration will have to suffice. The rate of increase of the labor force varies little between expansions and contractions of aggregate activity; employment, on the other hand, moves strongly and synchronously with the tides in activity but typically rises more slowly than the labor force both at the beginning and toward the very end of expansion. Unemployment, therefore, typically turns up before aggregate activity starts receding and turns down only after economic recovery is already under way.

The empirical features of business cycles will be further elucidated in later pages. The point to note now is that our generalizations are largely based on intensive studies of the business cycles that have occurred in the United States during recent decades, although considerable confirmation has also been provided by studies of other countries—notably, Great Britain, Canada, Italy, and Japan. It is also well to keep in mind, first, that the generalizations emphasize the repetitive features of the economic changes that take place during business cycles; second, that they merely express strong tendencies toward repetition—not invariant rules of behavior. Diversity and individuality are no less characteristic of business cycles

than the family resemblance among them, and this fact inevitably complicates the task of understanding the nature and causes of business cycles. Fortunately, there is less uncertainty about the broad processes that typically generate business cycles than about the specific causes of this or that cyclical episode.

V. THE CUMULATIVE PROCESS OF EXPANSION

The continual transformation of the economy during a business cycle, which we have just reviewed, indicates that once the forces of recovery have taken hold, they will cumulate in strength. In other words, the expansion will spread out over the economic system, gather momentum, and for a time become a self-reinforcing process.

The proximate impulse to expansion may come from an increase of spending by business firms, consumers, or the government, or it may originate outside the domestic economy. The source or sources of the expansive impulse will be considered later. For the moment, let us assume merely that the economy is jarred out of its depressed level by an appreciable rise in the volume of newly initiated construction. A chain of familiar consequences will then be set in motion. Contractors will hire additional labor, disburse larger sums in wages, place larger orders for materials, supplies, and equipment with dealers or manufacturers, and finance at least a part of their rising outlays from new bank loans. The employment of labor on construction sites will at first increase only a little but after a few weeks or months—as the sequence of technical operations permits—more rapidly. Sales by retail shops and service establishments that cater to consumers will follow suit; for most construction workers will soon spend all or part of their larger

income, and some will even feel encouraged to buy on the installment plan. The impact of the additional spending by contractors and their workmen will be spotty and uneven, but the effects will gradually spread out. Although some dealers or manufacturers will be content to meet the enlarged demand by drawing down their inventories, others will want to maintain inventories at their current level, and still others will seek to expand them in order better to accommodate a rising volume of sales. Here and there, therefore, not only will production of services and of goods made to specification be stimulated but also of staples that are normally carried in stock.

In response to larger construction spending, the rough balance between expanding and contracting enterprises that had previously ruled in the economy will thus be tipped, albeit irregularly, toward expansion. As firms revise their production schedules upward, they also will often increase their purchases from other firms, give fuller work to their present employees, perhaps recall some former employees or hire new ones, but in any event disburse larger sums in wages. Thus, each expanding center of production will stimulate activity elsewhere, including lending by the banks, in ever-widening circles. The spread of expansion from these centers will serve to check or counteract spirals of contraction that meanwhile are being generated at other points. With the scope of the expansion gradually becoming wider, retailers will be more prone to place orders with their suppliers in quantities that exceed their current sales, wholesalers and manufacturers will behave similarly, working hours will lengthen here and there, the work force will grow in an increasing number of firms and in the aggregate, and so too will income disbursements and sales to consumers.

We have supposed thus far that the higher volume of newly initiated construction will merely be maintained. In fact, construction work will tend to grow and so too will the activity of those making all sorts of machinery and equipment. Business

firms, viewed in the mass, will still be operating well below capacity; but some firms—and their number is now increasing—will be operating at or close to full capacity. Moreover, as production rises, the profits of these firms, and indeed of business generally, will tend to improve. For a time, service enterprises—shops, theaters, buses, airlines, etc.—can handle more customers without adding appreciably, if at all, to the aggregate hours worked by their employees. That is much less likely to happen in manufacturing and other commodity-producing establishments. However, since these enterprises also rely heavily on overhead types of labor, their labor requirements per unit of output will tend to fall as output expands, thus reinforcing increases of productivity stemming from improvements of organization or technology. Experience shows that the swiftest advances of output per man-hour typically occur in the early stages of a business-cycle expansion and that they then usually outweigh such increases as may occur in wage rates. The result is that unit labor costs of production tend to decline rather sharply, at least for a few months. Depreciation charges per unit of output will also be falling. Meanwhile, such increases as occur in other cost items are as yet apt to be quite moderate, and they can frequently be offset by advancing selling prices. Hence, an increasing number of firms will find that their profit margins are rising handsomely and, since their volume of business is also growing, that their total profits are rising still more. With business profits and consumer incomes improving on a wide front, with shortages of capacity looming more frequently, with delivery periods lengthening, and with interest rates, machinery and equipment prices, and construction costs still relatively favorable, it is only natural that contracts and orders for investment goods should rise briskly. Investment expenditures will follow suit, though with an irregular lag and diminished amplitude.

Moreover, as the expansion spreads, it generates in more

people a feeling of confidence about the economic future—a mood that may gradually change from optimism to exuberance. As people become more optimistic, they respond more strongly to such increases of sales, prices, or profits as keep occurring. In other words, a given increase of sales, prices, or profits evokes a larger business response. An advance of prices, whether in commodity markets, business salesrooms, or on the stock exchange, is now more apt to encourage expectations that prices will go still higher. Increases of sales, improvements of profits, and delays of deliveries are similarly projected. In this sort of environment, dishoarding and borrowing become easier to rationalize and buying rises briskly all around. Many firms, fearing that they may not get all of the supplies they will soon need, begin bunching their orders more heavily and some actually order more than they expect to get. Not a few investors who had previously postponed action on attractive projects because the time did not seem right, now decide to go ahead. The new spirit of enterprise fosters more new projects that are related loosely, if at all, to the specific shortages of facilities that keep arising. More business firms brush up their long-range plans for expansion or modernization. More promoters push projects to exploit new products or techniques. More new firms are organized to share in the growing markets. More legislatures authorize improvements worthy of an era of prosperity. More families decide to buy a new automobile, to refurnish their home, or to build or buy a new house. Thus, the widening scope of expansion and the improved outlook that goes with it foster both investment and consumption, with advances of the one reinforcing the other in a cumulative process.

Even an adverse development, such as a strike in a major industry or a deliberate effort to reduce inventories of some major product, may now be taken in stride. At an early stage

of the expansion, any such reversal of fortune could have sufficed to terminate it. Now, in view of the high level of business and consumer optimism and the large backlog of outstanding commitments for capital goods, a brief inventory adjustment is merely apt to bring a pause to the growth of aggregate economic activity; once this adjustment is completed the economy can resume its advance in spirited fashion.

VI. GATHERING FORCES OF RECESSION

And yet, as history so plainly teaches, a general expansion of economic activity sometimes lasts only a year and rarely lasts more than three or four years. Why does not the process of expansion continue indefinitely? And if the expansion must end, why is it not followed by a high plateau of economic activity instead of a decline? A partial answer to these questions can sometimes be found in disturbances that originate outside the mainstream of the domestic economy—such as political developments that threaten radical changes in property rights, or a drastic cut of military expenditures at the end of a war, or a major crisis abroad. Developments of this nature are entirely capable of cutting short an expansion that otherwise would have continued. However, experience strongly suggests that even in the absence of serious external disturbances the course of aggregate activity will in time be reversed by restrictive forces that gradually but insistently come into play as a result of the expansion process itself.

First, as the expansion continues, the slack in the economy is taken up and reduced. Although improvements of technology and new installations keep adding to the capacity of the nation's workshops, production generally rises still faster; hence, idle or excess capacity diminishes in a growing majority of the nation's businesses. Although the nation's labor force keeps

growing, jobs increase faster; hence, unemployment declines. Although the reserves of the banking system may be expanding, bank loans and investments generate deposits at a faster rate; hence, the ratio of reserves to deposits keeps falling. Although producers of metals and other materials and supplies respond to the brisk demand by raising production schedules, they are frequently unable to move quickly enough; hence, deliveries stretch out or become less dependable. The pecuniary expression of the mounting shortages is a general rise of prices—of labor, credit, raw materials, intermediate products, and finished goods; but that is not all. The shortages are real and their physical expression is a narrower scope of the expansion itself. Rising sales by a particular firm or industry still release forces of physical expansion elsewhere, but their effects are blunted since more and more businessmen must now contend with bottlenecks. Once labor is in short supply in a community, an increase of employment by one firm must often result in some reduction of employment elsewhere in the same community. Once this or that material is in short supply, some firms must get along with less than they need or wait longer for deliveries. Once the banking system stops expanding credit or materially reduces its rate of expansion, any new loans to some firms will affect adversely the ability of other firms to get the credit they need. Instances of this sort multiply as the economy moves toward full employment. At some point, therefore, the scope of the expansion stops widening and begins to narrow. Although aggregate activity is still growing, it can no longer maintain its initial rapid pace.

Second, the advance of prosperity tends to raise unit costs of production and therefore threatens profit margins—unless selling prices rise sufficiently. Taking the business system as a whole, much the largest item in costs and one which businessmen watch with the greatest care is labor—more precisely, the

cost of labor per unit of output. This cost depends, first, on the hourly wage of labor and, second, on output per man-hour. Both tend to rise as the expansion progresses, but at unequal rates. The price of labor moves sluggishly in the early part of the expansion, but advances of wages tend to become more frequent and larger as competition for labor increases and trade unions take advantage of improved market conditions. Increasing resort to overtime work at premium rates of pay accentuates the rise in the average price of labor, and so too does the faster upgrading of workers. On the other hand, output per man-hour, which improved sharply early in the expansion, tends to increase more gradually as the expansion lengthens, and it may also decline before the expansion is over. To be sure, improvements in organization and technology continue to be made at a thousand points at this as at every stage of the business cycle. However, their effectiveness in raising productivity is offset by developments that increasingly grow out of prosperity—such as a decline in the average quality of newly hired labor, fatigue of both workers and their managers, restlessness among workers and rapid turnover of labor, the need to put some obsolete plants or equipment back into use, the need to operate some highly efficient plants beyond their optimum capacity, and the need or wish to add liberally—once substantial increases of business have occurred—to indirect or overhead types of labor. Thus, as the expansion of aggregate activity continues, increases of productivity tend to diminish or even vanish, while the price of labor not only rises but tends to rise faster than productivity. The result is that unit labor costs of production tend to move up persistently.

Third, the increases of construction costs, equipment prices, and interest rates that are generated by the expansion process gradually become of more serious concern to the investing community. After all, a rise in long-term interest rates tends to

reduce the value of existing capital goods at the very time that it raises the carrying charges on new investments. Higher costs of new capital goods likewise serve to raise fixed charges. For a time, optimistic expectations concerning the earnings stream from new investment projects overpower the restraining influence of higher costs of capital goods or of higher interest rates, but they will not do so indefinitely. A firm that expects to earn 20 per cent annually from a new project can overlook a modest rise of construction costs or interest rates, especially when it plans to finance the investment from retained earnings or depreciation reserves. Not all investors, however, are in such a fortunate position. Homebuilders, in particular, are sensitive to a rise of construction and financing costs, partly because their activities are largely financed by borrowing and partly because interest charges are a very considerable fraction of the total cost of operating a dwelling. Experience shows that contracts for residential construction typically turn down before commitments for any other major category of investment. Business orders for machinery and equipment, as well as contracts for new factories, commercial buildings, and public utility plants still keep rising for a time. These types of investment are more responsive to prospective demand than to conditions of supply; but as the expansion of economic activity becomes more intense, they too begin to feel the pressure of rising costs. In deciding to invest in a particular project, a business firm may have given little heed to recent increases in costs. That decision, however, must still be followed by another, namely, whether to get the project under way now or later. Investors know that they will have the new plant or equipment on their hands for a long time and that their annual carrying charges will depend on the cost of the new capital goods, if not also on the rate of interest. They have got along thus far without the desired investment, and they will have to manage in any event

without it for some months or years. If, therefore, they expect costs to be appreciably lower a year or so from now, they may well bide their time. Such postponements in placing orders and contracts become more frequent even as business decisions to invest continue to accumulate.

The rise in construction, equipment, and financing costs during an expansion impinges so broadly on the investing class that it would eventually check the investment boom even if prosperity were diffused uniformly over the economic community. However, this is not the case, and the uneven spread of profits is still another major development that impedes the continuance of expansion. At every stage of the business cycle there are bound to be some firms whose profits are declining or whose losses are increasing. But these firms are not a steady fraction of the business population, and there are cogent reasons for expecting their numbers to increase as the expansion of aggregate activity stretches out. To protect profit margins, selling prices must rise sufficiently over the entire range of business enterprise to offset higher unit costs of production. Since business conditions are good, many firms can and do raise prices that much or more. But there are always some firms that find it hard to advance selling prices, and their number tends to grow at an advanced stage of the expansion. In some industries, sales have recently been pushed with such vigor that the markets for their products are approaching saturation at existing prices. In other industries, exaggerated notions concerning the volume of sales that could be made at a good profit have led to overstocking or overbuilding, so that prices come under pressure. Errors of this type occur at all times, but they are likely to be bunched when enthusiasm has infected a large and widening circle of businessmen. In still other cases, business custom, long-term contracts, or governmental regulation make it difficult or inexpedient to raise sell-

ing prices. Of course, firms that cannot advance selling prices will try all the harder to resist increases in costs, but such efforts meet with limited success at a time of extensive shortages. With the rise in unit costs of production continuing across the business front, more and more firms therefore find that their profit margins are becoming narrower, thus offsetting the influence on profits of rising sales or reinforcing the influence of declining sales—instances of which now become more numerous. We thus find in experience, as we should expect, that after a business expansion has run for some time, the proportion of firms enjoying rising profits begins to shrink, although profits of business in the aggregate still continue to advance.

These developments—the narrowing scope of expansion as full employment is approached, the rise of unit labor costs, the rise of financing costs, the rising cost of new capital goods, the spread of these cost increases across the economy, and the shrinkage in the proportion of business firms experiencing rising profits—tend gradually to undermine the expansion of investment. Prominent among the first to reduce investment commitments are the firms whose fortunes are waning. Their curtailments spread doubt among businessmen whose profits are still rising, many of whom have also become concerned about prospective profits or have come to feel that construction and financing costs will recede before long from the abnormal level to which they have been pushed by prosperity. These attitudes and responses are likely to be reflected in some weakening of stock exchange prices, which in turn will stir fresh doubts. With investment commitments declining, but actual expenditures still rising, backlogs of unfilled orders for capital goods and of uncompleted contracts for business construction must sooner or later turn down. Meanwhile, uncompleted contracts for residential construction have, in all probability, already been declining for some time. The decline in these sev-

eral backlogs induces reductions in orders for raw materials and parts, and the reduced pressure on suppliers in turn serves to stabilize, if not lower, prices. Since many of the consumer trades can now also count on faster deliveries, the orders placed with their suppliers are likely to turn down as well. These changes reinforce efforts to adjust inventories that have already been induced at numerous points by the narrower scope of expansion and the reduced rate of growth of aggregate activity. For all these reasons, while inventories on hand still keep rising, investment in inventories begins declining. In view of the smaller backlogs, business expenditures on fixed capital will themselves gradually move to a lower level a little later. Public expenditures may still rise, but they are unlikely to do so on a sufficient scale to offset the declines of private investment. The growth of consumer spending, therefore, is retarded, if it does not actually stop. As these adjustments proceed, the balance between expanding and contracting economic activities tips steadily toward contraction. The need for overtime is much reduced, unemployment begins to rise, aggregate production soon turns down—in short, a business recession gets under way.

VII. THE PROCESS OF CONTRACTION

The course of a typical recession is well known. A decline of production is accompanied by a reduction in the number of jobs, besides a reduced work week for many. The flow of incomes to individuals, therefore, tends to decline, and consumer spending—at least for expensive durable goods—follows suit. Retailers and wholesalers are now more apt to place orders for merchandise that are below the level of their respective sales. Many manufacturers, in their turn, also attempt to reduce their inventories. Taking the economy as a whole, the

broad result of these efforts is that production declines more than sales, and that inventory investment not only declines but is soon succeeded by liquidation. Meanwhile, quoted prices of many commodities, especially of raw materials, tend to soften, and discounts or concessions from list prices become more numerous and larger. Wage rates, however, are generally maintained and actually rise here and there. Even when they decline somewhat, unit costs of production still tend to rise, perhaps sharply, because it takes time before overhead costs, including the employment of indirect types of labor, can be adjusted to the lower volume of business. Many firms that are already experiencing lower profit margins therefore find that they must put up with still lower margins, while others first begin to feel the profit squeeze. With sales more often than not also declining, an increasing majority of businesses now experience falling profits, bankruptcies become more frequent, business profits in the aggregate—which probably began shrinking before sales did—decline further, and stock exchange prices extend their fall as well. In view of these developments, many businessmen and consumers, even if they are not actually poorer, become more concerned about the future. New business commitments for investment in fixed capital therefore tend to become less numerous, and—unless forces of recovery soon come into play—investment expenditures of this type as well as outlays on consumer durables will extend their decline, which is as yet modest, and reinforce the contraction process.

As a decline in one sector reacts on another, the economy may begin spiraling downward on a scale that outruns the magnitudes that we ordinarily associate with recession. The likelihood that a depression will develop depends on numerous factors—among them, the scale of speculation during the preceding phase of prosperity, the extent to which credit was per-

mitted to grow, whether or not the quality of credit suffered significant deterioration, whether any major markets became temporarily saturated, how much excess capacity had been created before the recession started, whether and in what degree the balance of international payments has become adverse, the organization of the financial system and its ability to withstand shocks, the shape of political developments, and the aptness and scale of monetary actions and other governmental efforts, if any, to stem the economic decline. If the onset of the contraction is marked by a financial crisis or if one develops somewhat later, there is a substantial probability that the decline of aggregate activity will prove severe and perhaps abnormally long as well. For when businessmen and their bankers begin to scramble for liquidity, both trade credit and bank credit will decline and so too will the money supply; commodity prices at wholesale and retail will slump and wage rates decline, while interest rates for a time rise sharply; confidence will become impaired and many investment projects will be abandoned instead of merely being postponed; business losses and bankruptcies will multiply; more workers will earn less or become totally unemployed; and, since spells of unemployment also lengthen, more and more families will deplete their savings and be forced to reduce their spending drastically. Even if the shift from expansion to contraction is made gradually, untoward disturbances originating outside the economy may still strike with great force and transform a mild contraction into a depression.

VIII. FORCES OF PROGRESS AND RECOVERY

Normally, however, a contraction in aggregate activity does not lead to depression. A contraction is not a mirror image of expansion, as it might well be if the business cycle were merely

an oscillation. A contraction does not usually cumulate and feed on itself in the manner of an expansion. Normally, many progressive developments continue, and some even become stronger, during the contraction phase of the business cycle; in other words, the forces making for contraction are powerfully counteracted by forces of growth that limit the degree to which it can cumulate.

What are these forces of growth? First, businessmen and consumers in a modern nation are accustomed to seeking and to expecting economic improvement. This optimistic state of mind generally continues during a contraction, provided its dimensions remain moderate. Investment opportunities, connected with new technology or market strategy, always keep arising in the minds of imaginative and resourceful men. Not a few of these opportunities are acted on promptly in spite of the recession. Second, most people are extremely reluctant to give up the standard of living that they have managed to attain, and in any event they cannot quickly readjust family expenditures. Hence, consumer spending is well maintained in the face of declines of income that are judged to be temporary. Third, the pitch of both interfirm and interindustry competition becomes more intense during a recession. Unlike investment commitments, which are at their highest level before aggregate activity turns down, the bunching of installations of new plant and equipment is likely to be heaviest when the recession is well under way. The newer facilities typically serve new products or permit lower costs of production of old products. Many progressive enterprises are therefore able to extend their markets even when business as a whole is falling off. Firms that suffer from shifts of demand or from an outworn technology may have managed to limp along or even do reasonably well when activity was brisk. Now, finding that competitors are penetrating their markets on a scale that

threatens survival, the hard-pressed firms are more likely to move with energy to modernize their plant, acquire new equipment, improve their products, try out new marketing strategies, and eliminate waste. Meanwhile, vigorous businesses whose plants are operating at or close to optimum capacity do not stand still. Not a few of them anticipate a large expansion of sales when the dull season is over, and therefore undertake additions or improvements to their plant and equipment. Fourth, a nation's resources normally continue to grow even during a recession. Since the population is still growing, the stabilizing force of consumption is reinforced. Since the number of business firms is still increasing, the formation of new businesses contributes, although at a reduced rate, to the demand for capital goods. Since the stock of housing, consumer durables, and industrial facilities is still expanding, a large market is assured for repairs, improvements, and replacements, although there is undoubtedly some postponing of this type of expenditure. Fifth, public efforts to promote economic growth and the general welfare are customary in a well-governed nation. These efforts may not always be wise or geared closely to the business cycle, but neither are they confined to times of prosperity. On the contrary, they are more likely to come during recessions—especially in recent times when full employment has become an increasingly firm objective of the public policy of nations.

The progressive forces that operate during recessions serve as a brake on the cumulative process of contraction. True, aggregate activity falls below the level reached at the peak of prosperity. The decline, however, is usually of moderate proportions. Not only that, but sales decline much less in the aggregate than production and the level of sales soon becomes higher than that of production. For a while, the liquidation of inventories proceeds at an increasing rate, but this cannot con-

tinue. To handle the volume of business on hand, especially if sales stabilize or decline very gradually, manufacturers and distributors must soon slow down, if not halt, the decline of their inventories. Taking the economic system as a whole, once inventory disinvestment declines more rapidly than the decline of sales, production must begin rising. Of course, a recovery of production will be preceded by an increase of orders, and an early upturn of orders is precisely what occurs when dealers and manufacturers take steps to slow down appreciably the decline of their inventories.

While business firms keep bringing inventories into better alignment with their sales, other developments that grow out of the recession also favor an early recovery. Since the reserves of commercial banks tend to pile up again, reserve ratios improve. Hence, interest rates decline and credit becomes more readily available. The effects of easy credit are likely to be felt most promptly by smaller businesses and the home-building industry, but they tend to ramify as banks put their reserves to use. When the demand for loans is still deficient, banks seek out customers energetically. At the same time, they augment their investments in bonds, thereby strengthening the bond market and stimulating a renewed interest in preferred stocks and gilt-edged common stocks. Meanwhile, numerous readjustments in the nation's workshops serve to lower unit costs of production. In view of the decline of aggregate demand, wage rates often stop rising and sometimes decline a little, overtime operations become less frequent, not a few of the less efficient enterprises go out of business, production is increasingly concentrated in the most modern plants and on the best equipment, many of the less efficient workers are let go, the ranks of the overhead types of labor are thinned here and there, and workers generally become more attentive to their duties. These changes reinforce the improvements of organiza-

tion and technology which always occur in a progressive economy and which are often speeded up during a recession, in response to the keener competition that develops at such a time. Of course, the beneficial changes in the costs of production of individual businesses are frequently offset or nullified by declining selling prices. However, once the adjustments of inventories have made good headway, commodity prices tend to stabilize. Hence, more and more firms are apt to find that their profit margins begin improving. With the prospect of profits brightening, interest rates declining, and costs of capital goods lower, some of the numerous investment projects that had previously been postponed are now revived and they supplement the new crop of active projects. As these developments become stronger, the decline of investment commitments ceases, new firms are established in larger numbers, orders and contracts for investment goods turn up, inventory disinvestment continues to ebb, and a recovery of aggregate production and employment soon gets under way.

Thus, corrective forces released by the recession combine with the more persistent forces of growth to bring the contraction of aggregate activity to a halt. Typically, the process works fairly speedily and the contraction is over in about a year or a year and a half. However, as previously noted, a contraction sometimes develops into a spiraling depression. When that happens, declining investment in fixed capital supplants inventory disinvestment as the principal drag on the economy. Worse still, the stubborn human trait of optimism begins to give way, so that a mere readjustment of inventories may bring only an abortive recovery. Once many men begin to lose faith in themselves or in the institutions of their society, full recovery may need to wait on substantial innovations or an actual reduction in the stock of fixed capital, unless powerful external influences come into play—such as a reorganization of the

monetary system, massive governmental expenditures, or a sudden increase of exports on account of foreign developments. Fortunately, no industrial country has suffered a spiraling depression since World War II, and the likelihood of such a development—as will be noted later—has been greatly reduced.

IX. DIFFERENCES AMONG BUSINESS CYCLES

The preceding sketch of the nature and causes of business cycles has stressed typical behavior. Yet no business cycle of actual experience corresponds precisely to our sketch, and some cycles bear only a faint resemblance to it. What history discloses is a succession of business cycles that differ considerably in length, in the intensity of their phases, in the industrial and financial developments that gain prominence during their course, and in their geographic scope. In American experience, for example, while expansions have normally run longer than contractions, there is no peacetime expansion on record before 1960 that lasted as long as the decline from 1873 to 1879. Industrial production has typically fluctuated over a wider range than industrial prices, but the opposite is true of several business cycles associated with wars. Interest rates have commonly risen during expansions of aggregate activity, but they continued to decline during almost the entire expansion from 1933 to 1937. Broad indexes of wholesale prices have generally declined during contractions of activity, but they failed to do so during the recession of 1890–91 or 1957–58. Contracts and orders for investment goods have typically moved up before total production or employment in the recovery process, but they did not do so at the upturns of 1914 or 1933. Declining stock prices have frequently signaled the approach of a re-

cession, but the stock market crash of 1929 came after aggregate activity had already turned down. Some economic declines, such as those of 1887-88 and 1926-27, were merely pauses in the growth of the domestic economy. Others, such as the depression of 1920-21, attained international scope, while the depression of the 1930's became a world-wide upheaval of catastrophic proportions.

In view of these and countless other variations among business cycles, the causes of any particular cycle are always in some degree peculiar to it. One prolific source of cyclical variation in the United States, as elsewhere, is found in the behavior of money, foreign trade, and the balance of payments. For example, good harvests in 1879, when crops abroad were poor, stimulated large exports of grain at favorable prices, thereby improving farmers' incomes, enlarging the business of shippers, inducing an inflow of gold, and otherwise speeding economic recovery. In 1891 and 1892, fear that political agitation for free silver would result in abandonment of the gold standard led to domestic hoarding of gold, to massive gold shipments abroad, and finally to a financial crisis in the spring of 1893. The expansion of 1891-93, therefore, developed nothing like the vigor suggested by our account of the cumulative process of expansion. The outbreak of war in Europe in 1914 soon caused a sharp upsurge in American exports, thereby checking a contraction in aggregate activity that otherwise might have dragged on. To cite one more illustration, the expansion of 1958-60 proved incomplete, in large part because of the restrictive monetary and fiscal policies that were undertaken by the government to curb inflationary pressures and to prevent further deterioration in the balance of international payments.

Business-cycle movements often spread from one country to another and sometimes engulf almost the whole world econ-

omy. Foreign trade, commodity prices, stock prices, and interest rates play a vital role in this process of transmission, both directly and through their influence on business psychology. The economies of most commercial nations are far more closely tied to the course of foreign trade and investment than is the economy of the United States. In view of the large role of foreign trade in small countries like the Netherlands or Norway, conditions abroad can have a decisive influence on domestic prosperity. Even in a larger country like Great Britain, an improvement of exports has not infrequently been the immediate cause of economic recovery. However, as the economic activity of a nation expands, its imports also tend to rise, partly because of a larger need for foreign raw materials and partly because of larger purchases abroad of equipment and consumer products. Meanwhile, since domestic markets keep improving, some firms find it more profitable or more convenient to cultivate home trade than to push exports. If, in response to the upswing of activity, domestic costs and prices advance more rapidly than prices charged by foreign enterprises, exports will probably suffer and monetary reserves—whether of gold or foreign currencies—will tend to diminish. A restriction of credit often follows, because under a regime of stable exchange rates the state of a country's balance of payments and the size of its monetary reserves and borrowing facilities may leave little room for an independent financial policy. This pattern of developments has become familiar to the nations of western Europe and to Japan.

Many nations of Latin America, Asia, and Africa derive their foreign exchange mainly from the export of one or at most a few raw materials, supplemented by investments made in these countries by foreigners or, perhaps, by gifts from abroad. But the prices of internationally traded raw materials tend to fluctuate widely, in part because of variations in the

state of demand in the industrial countries. These price fluctuations often have a critical bearing on the ability of the raw material producing nations to acquire from abroad the capital goods and supplies needed to develop their economies.

Not only are the economies of different nations tied together, but as various theories of long waves or major cycles have sought to suggest, no business-cycle movement can be understood solely in terms of what happened during that phase or the one just preceding it. Thus, the American contractions of 1923-24 and 1926-27 were merely minor interruptions of a great onrush of economic activity from 1921 to 1929. The period began with a rapid increase of production, was followed by a stretch of slower growth, and ended on a note of reacceleration. Financial activities followed a different and more hectic course. Emerging as an international creditor after the war, the United States played its new role with exuberance. Through 1924 the volume of foreign loans was substantial, yet the loans were on the whole of sound quality—as attested by later experience. The next few years witnessed a further expansion of foreign loans and a sharp deterioration of their quality. The speculative craze expressed itself also in other financial areas, notably in the real estate market and superlatively in the stock market. Consumer credit shared in the general upsurge and made possible a huge expansion in the output of durable consumer goods during the 1920's, not only absolutely but also relative to total output, thus adding a new hazard to economic stability. The financial situation was also made vulnerable by the great pyramiding of international credits that developed under the gold exchange standard. Governmental policies in the United States after 1929, which brought on tax increases and—worse still—tolerated the destruction of a third of the nation's money supply, cannot escape a very large part of the responsibility for the Great

Depression; but neither financial developments abroad nor the course of policy, private and public, in the decade prior to the depression can go blameless.

X. PROGRESS TOWARD ECONOMIC STABILITY

Besides such differences among business cycles as we have noted, which largely reflect episodic influences, there are other differences of a more persistent kind. Just as the business cycle itself emerged gradually in the course of economic evolution, so many of its features have undergone changes as the economy has continued to evolve.

The structure of a nation's economy and its institutions inevitably leave their stamp on the character of its cyclical fluctuations. Thus, after the introduction of the Federal Reserve System, the fluctuations of short-term interest rates in the United States became narrower, while the lag of long-term interest rates during recoveries and recessions became shorter and of late has virtually vanished. With the growth of trade unions and increasing resort to long-term labor contracts, wage rates have become less responsive to cyclical contractions of activity. More important still, the precise relations among the movements of production, employment, and personal income have kept changing as the structure of the American economy and its institutions have evolved. During the early decades of the nineteenth century, when agriculture was the dominant occupation, occasional declines in the nation's total volume of production, whether large or small, had little effect on the number of jobs and sometimes had slight influence even on the flow of money incomes. Later, as wage jobs gained rapidly in importance, the movements of employment and personal income fell into step with production. In recent times, however,

numerous changes in the structure of the American economy have served powerfully to reduce the impact of a cyclical decline of production on the lives and fortunes of individuals.

Important among these changes is the vast expansion of government, the greatly increased role of the income tax in public revenues, the shift of income tax collection to a pay-as-you-go basis, the rapid growth of unemployment insurance and other programs of social security, the growing frequency and scale of private pensions, the spread of business corporations, and their increasing pursuit of stable dividend policies. As a result of these and related developments, the movement of personal income is no longer closely linked to the fluctuations of production. For example, in the course of the recession of 1957-58, the physical volume of industrial production fell 14 per cent and of total production nearly 5 per cent. In the early decades of this century, aggregate personal income would have responded decisively to such a decline in production. This time government receipts and expenditures offset the drop in the flow of income from production, first, because much less was collected in taxes from corporations and individuals, second, because the amount of unemployment insurance and other social security payments rose. Corporations in turn reacted to the decline in profits by reducing their savings rather than the flow of dividends or pensions to individuals. In the end, the aggregate of personal incomes, whether before or after taxes, declined less than 1 per cent, and in the case of after-tax incomes even this decline was over before the recession ended.

Major structural changes have also occurred in the sphere of employment. Manufacturing, mining, construction, and freight transportation are the cyclically volatile industries; but their relative importance as providers of jobs has been gradually declining in recent decades, while that of the more stable service

industries has been increasing. In addition, the proportion of people who work as managers, engineers, scientists, accountants, secretaries, salesmen, or in kindred "white-collar" occupations has been steadily rising. Much of this type of employment is of an overhead character and therefore less responsive to the business cycle than are the jobs of machine operators, craftsmen, truck drivers, laborers, and others in the "blue-collar" category. It appears, therefore, that changes in the structure of the labor force have of late been loosening the links which, over a considerable part of economic history, tied the short-run movements of total employment in the United States rather firmly to the movements of production. We can no longer suppose, moreover, when employment falls during a recession, that there will be a corresponding decline in the number of people receiving an income. On the contrary, as a result of the widening sweep of social security programs, the number of income recipients actually increased during each recession of the postwar period.

These developments have left an imprint on the behavior of consumer spending in recent business cycles. First, consumers have maintained their spending at a high level even after business activity had been declining for some months, so that the cumulative process of contraction has been curbed. Second, retail trade has tended to turn up before production or employment, instead of lagging during the recovery stage as it did in earlier times. Thus, consumer spending has emerged as one of the active factors in arresting recession and hastening recovery. Of course, if the fluctuations of production had been larger in the postwar period, the impact of recessions on the lives of working people would have been greater. On the other hand, the more stable behavior of personal income and consumption has itself been a major reason why recent contractions of activity have been brief and of only moderate intensity.

Many other factors have contributed to this result. The need to overhaul the financial system became clear during the 1930's and led to numerous reforms, among them the development of the long-term amortized mortgage, the regulation of stock exchanges, the insurance of mortgages, the creation of a secondary market for mortgages, the insurance of savings and loan accounts, and—most important of all—the insurance of bank deposits. These financial reforms have served to prevent crises or the propagation of fear. Even more basic has been the change in political attitudes that emerged during the 1930's and which the Congress later articulated in the Employment Act of 1946. It is now generally agreed that mass unemployment is intolerable under modern conditions and that the federal government has a continuing responsibility to promote a high and rising level of employment and production. In recent times, therefore, the business cycle has no longer run a free course, and this fact has figured prominently in the plans of businessmen as well as consumers. The general expectation of the postwar period has been that the government would move with some vigor to check any recession that developed, and that its monetary, fiscal, and regulatory actions would contribute to that objective. By and large, this confidence has been justified by events. Not only has monetary policy in the main been shaped with a view to promoting stable prosperity, but fiscal policy—which previously had been handicapped by the convention of annually balanced budgets—has lately also been guided by the state of the economy. Business firms too have been paying closer attention to the business cycle. There is evidence, in particular, that inventories are being better managed and that this is helping to moderate the cyclical swings in production. On the other hand, governmental policies have often served to intensify inflationary expectations or pressures, and this has become a recurring problem.

The nations of western Europe have also experienced structural changes in the postwar period that, on balance, have worked in a stabilizing direction. White-collar occupations have gained in importance, and so too have systems of social security and of tax collection on a pay-as-you-go basis. Some countries, especially Sweden, achieved notable success with contracyclical policies well before the United States. Of late, all of western Europe has been striving energetically and ingeniously to promote economic expansion and full employment, and these efforts have been attended by great success. Even before World War II, the business cycle was a milder type of fluctuation in western Europe than in the United States, and the difference has persisted in the postwar period. Indeed, the main problem facing European nations in recent years has not been unemployment but rather the difficulties caused by inflation and balance-of-payments disequilibria. Japan has also been struggling with this problem.

It would, nevertheless, be premature to conclude that the older hazards of the business cycle belong to the past. True, the business cycle has become milder as a result of a favorable conjuncture of structural changes and of both better and wider understanding of the requirements of business-cycle policy. Certainly, there is increasing recognition of the desirability of preventing recessions, rather than merely acting to moderate them once they occur. However, the forces that tend to generate cyclical movements have not vanished in western Europe or Japan any more than in the United States. It is possible that in the future a "recession" will mean merely a reduced rate of growth of aggregate activity instead of an actual and sustained decline, but there is as yet insufficient ground for believing that economic developments will generally conform to this model in the near future. Hence, the wise course for economists is to continue basic research on the nature and causes of

business cycles, to remain watchful of developments that seem likely to bring on a slump in activity, and to extend the search for acceptable pathways to prosperity without inflation.

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