View metadata, citation and similar papers at core.ac.uk

brought to you by CORE

provided by Research Papers in Economics

This PDF is a selection from an out-of-print volume from the National Bureau of Economic Research

Volume Title: Strategic Factors in Business Cycles

Volume Author/Editor: John Maurice Clark

Volume Publisher: NBER

Volume ISBN: 0-87014-023-X

Volume URL: http://www.nber.org/books/clar34-1

Publication Date: 1934

Chapter Title: Part 3: General Movements, 1922-1929

Chapter Author: John Maurice Clark

Chapter URL: http://www.nber.org/chapters/c2317

Chapter pages in book: (p. 96 - 110)

PART THREE

GENERAL MOVEMENTS, 1922–1929

Introduction

BEFORE the advent of the current type of statistical analysis, theories of business fluctuations ran in terms of a period of about ten years. The more recent methods have revealed cycles which, in this country, have an average length about one-third as great, though with considerable variation from cycle to cycle, ranging from about two to five years. One reason for this change may be that the older methods of observation revealed only the more obvious and spectacular movements, commonly accompanied by great waves of speculation and a widespread breakdown of the banking system, while the more delicate statistical analysis now available reveals more basic industrial fluctuations which do not always

produce such spectacular symptoms, visible to the man in the street. On the other hand, there have been changes in the character of business cycles themselves. And it may well be that factors having relatively short natural periods have been increasing in importance as compared to others whose natural periods are longer. If so, traces should still be visible of these more slowly acting forces. And some present-day students still consider that there is evidence pointing to the existence of longer cycles, combined with the shorter ones. Thus it is particularly pertinent to examine the movements over longer periods.

In doing this for the post-War years the writer was much assisted by material presented by Professor F. C. Mills in *Economic Tendencies in the United States,*[1] covering the period 1899-1929, with emphasis on the last eight years. The organized series of the National Bureau of Economic Research were also a main reliance. While still provisional as to the length of the recession beginning in 1929, they give an adequate picture of the decade 1921-31, covering almost the whole of three short cycles.

In this analysis it seems significant that this entire three-cycle period exhibits a surprising number (though not all) of the features that characterize the typical single cycle. In most series it shows two cycles

[1] (National Bureau of Economic Research, 1932), a study sponsored by the Committee on Recent Economic Changes.

with large rises and small declines followed by one cycle with a small rise and large decline. In construction, as already noted, there is a practically uninterrupted rise during the whole of the first two cycles and a practically uninterrupted decline during the greater part of the last cycle. For this decline, residential construction is responsible.

The Stock Market

In stock exchange speculation the striking feature is not a repetition of three similar cycles, but successively rising waves culminating in a veritable mania. This, in connection with the intervals that have separated comparable fevers in the past, suggests strongly that there are psychological elements in this phase of business which have a longer natural period than some of the other elements, such as those connected with the time concentrations of expansion of capital equipment. One cycle of three years and four months appears to be too short for the working up of one of these more extreme forms of market brainstorm, including the process of forgetting the lessons supposedly learned from earlier experiences of the same sort. A 'new era'—or a new era psychology—cannot be successfully launched in three years.

Another line of explanation of the stock market boom is based upon the quantity of free funds seeking investment and constituting the demand for securities, relative to the supply. Expressed in an

extreme form, this explanation states that the boom was simply due to the unprecedented quantity of savings seeking investment that accumulated in the prosperous period of 1922-29. According to this view, a rise in prices was a mathematical necessity, since the supply of securities into which these funds might flow, though large, was still limited. There can be little doubt that savings during this period were an increasing proportion, and probably an unprecedentedly large proportion, of an unprecedentedly large national dividend. A contributing factor, whose importance cannot be measured, was the retirement of the Federal war debt at a rate of over $800,000,000 a year, tending to increase the volume of free funds seeking re-investment. This fully neutralized the increase in state and local debts during the same period, and left free for private investment funds which would otherwise have been absorbed by increased issues of state and local bonds. Cheap money rates and the expansion of bank credit strengthened the movement, and are thought by some to have been the initiating and determining factor. The total was sufficient to finance a large export of capital and an enormous increase in our domestic capital equipment, and to leave something over for sheer speculative inflation of security values.

The effect of such a surplus of savings, if we assume that it existed, constitutes an interesting theoretical problem. A buys securities from B, and B

spends the money either for other securities or for goods for consumption. It is reasonable to suppose that the funds circulate from investor to investor until the entire amount is spent, either by corporations for industrial capital or by one person or another for consumption purposes, or at least for goods other than stock market securities. Meanwhile, each purchase of securities has tended to enhance their prices. It can easily be conceived that in a period characterized by only mild recessions, for example, 1922-29, such a process would go on cumulatively, requiring several short cycles to reach its limits at the point where prospective incomes were capitalized at such extravagant rates that a reaction became inevitable. According to this explanation of the boom, the irrational values set on future yields were not the results of an original speculative mania; rather the apparent mania was the result of an over-supply of funds seeking investment. Between these two rival explanations statistics afford no way of choosing which element was of more importance as an originating cause. Both were present, each reacted on the other, and the natural conclusion is that both were jointly responsible for the result.

Such a boom destroys one corrective for a lack of equilibrium in the economic order, on which economic theorists have relied in their descriptions of a 'static' state. According to these theories, when there is an over-supply of investment funds, yields

should decline and this should reduce the incentive to further saving and investment. But these same low yields, taking shape as they do in ever increasing prices of existing securities, give rise to enormous speculative profits to the holders, quite apart from the earnings of the industrial properties which the securities represent. Thus the stimulus to increased purchase of securities, instead of being self-limiting, becomes cumulative within limits which the recent boom showed to be surprisingly wide.

Construction

With respect to construction, it seems probable that the principal factor in the early stages of the post-War boom was the shortage inherited from the World War. This was presumably larger than the aftermath of a typical short-cycle depression—accurate comparative measures are unfortunately lacking—and the work of making it good took longer to get under way, partly on account of post-War restrictions on rentals. Thus, once started, it persisted beyond the limits of one general business cycle, and acquired a momentum which invited speculative activity, and this in turn carried construction to the point of what appears to have been a rather unusually large over-supply, at least in certain fields. This may well have been a strong factor in the rising trend of the two cycles of 1921-24 and 1924-27, with

effects which returned to help sustain the building boom itself.

A factor which undoubtedly assisted very greatly, and one which tied construction to the stock market to an increased extent, was the shift to the corporate form of financing, bringing with it broadened sources of funds and also the opportunity for construction motivated by profits of promotion rather than by expectation of returns from rentals. One general hypothesis suggested by this experience is that, in the field of durable goods, the duration of the rebound of any one considerable type of business may be a function of the extent to which the supply in existence has been limited as a result of the preceding depression or dislocation. For that reason different branches of production may have longer or shorter revival movements during any one revival of general business.

Banking

Bank loans (loans of Federal Reserve member banks) behave similarly to construction in that between 1922 and 1931 there is only one actual cyclical decline: the one beginning in November, 1929. In this field, however, this form of behavior is typical of previous experience. Bank loans have, since 1879, shown a strong secular uptrend and only a moderate cyclical movement, with the result that, on the average, the effect of a general business recession is

approximately cancelled by the secular uptrend. In the average cycle pattern, bank loans rise strongly during the up-swing of general business and remain approximately stable during the down-swing. The period 1879-1908 includes eight general business cycles, but in only four of these do bank loans show any positive decline. These facts, as far as they go, suggest the existence of longer rhythms than those of the short cycle; or they may suggest a classification of cycles into major ones, which are serious enough to bring about a positive decline in bank loans, and lesser ones which are not.

Fixed Capital

Another striking feature of the period 1922-29 was a strong upward movement in the proportion of fixed capital to labor not only in industry but also in agriculture. Since adequate measures are lacking, it is not possible to make a fully conclusive comparison of the rate at which this change was going on during the post-War period and earlier periods, but its importance in the later period seems outstanding, and it was proceeding at an accelerating rate, as witnessed by the fact that the rate of growth in production of capital equipment was far greater than that of goods in general,[2] and greater also than in the pre-War period, 1899-1913. This movement was so pronounced as to create a sus-

[2] See F. C. Mills, *op. cit.*, pp. 22, 280-1, 284.

picion that it was a concentration of growth rather than a true secular trend, and was greater than could be permanently maintained and absorbed, at least by our business system as it now operates.

This is corroborated by evidences of growing excess productive capacity in numerous industries. The evidence is overwhelming in some instances, though no adequate measure of real excess capacity exists. Figures of theoretical capacity as commonly given are subject to heavy deductions for the purpose in hand.[3] As to whether capital funds are really increasing faster than industry in general can absorb them, or are merely misdirected, there can hardly be any scientifically conclusive test; and it is especially difficult to see how the question could have been answered while the growth was going on.

The answer hinges not only on the increase in capital, but also on the effect it has had in increasing the productiveness of industry. And these later accretions of capital seem to have been more effective than those of preceding periods in increasing physical output. Professor Mills' figures indicate that the country's physical output increased faster from 1922 to 1929 than during the fourteen years preceding the World War, while the period from 1913 to 1922 witnessed a still smaller increase.[4] In manufacturing, the period of post-War prosperity clearly shows a

[3] This point will be amplified in Part V, see pp. 150-1.

[4] See *Economic Tendencies in the United States,* pp. 3, 189, 284.

higher rate of increase in product per worker, though the number of workers was increasing more slowly.

As to the relation of output to fixed capital, one attempt has been made to measure this ratio for the years 1899 to 1921.[5] The conclusion was that while product per worker increased, capital per worker increased from three to four times as much. In the period of post-War prosperity, the indications are that product much more nearly kept pace with capital; indeed, with economies in working capital, it is not certain that total capital has increased faster than product.

The 'law of diminishing productivity' would lead us to expect that product would increase at a rate intermediate between the increase of labor and that of capital. If it increased as fast as capital, that would mean that technical progress had entirely neutralized the effects of the principle of diminishing productivity, and in the long run that is probably too much to expect. Thus on *a priori* grounds one may conclude that in all probability product, relative to labor and capital, was increasing during the post-War period at a higher rate than one would expect to be maintained as a long-run normal rate of increase. Such conclusions, however, can never be more than provisional.

[5] See C. W. Cobb and Paul H. Douglas's A Theory of Productivity, *American Economic Review Supplement,* March, 1928, pp. 139-65. The study includes the construction of an index number of fixed capital.

Corporate Net Incomes

During the period 1922-29, profits as represented by corporate net incomes, increased faster than wages. In manufacturing, net incomes increased at an annual rate of 5.3 per cent, per capita earnings of wage earners at the rate of 1.6 per cent, and number of factory workers at 1 per cent.[6] The conclusion seems clear that there was an increase in the proportion of total income going to profits (including those left in the business) and a corresponding decrease in the relative proportion going to wages and salaries—this in spite of a very considerable increase in real wages, reckoned in terms of commodity buying power.[7] These are both changes of the type which characterizes the upward swings of the familiar short cycle; but they have persisted through two short cycles and the up-swing of a third, instead of being fully cancelled by the down-swing of each

[6] For corporate earnings, see *Economic Tendencies in the United States,* p. 482; for wages, *ibid.,* pp. 478-9, and for number of workers, *ibid.,* p. 417. Cf. also King's *The National Income and Its Purchasing Power* (National Bureau of Economic Research, 1930) pp. 196, 94, 108. In King's figures, interest and dividends appear as a growing percentage of the national income, but total entrepreneurial income *realized by individuals* about holds its relative position.

[7] Mr. M. C. Rorty suggests that this movement represents a lagging adjustment to a prior disturbance brought about by the changed price level following the World War. In his view, interest and dividends were less than a normal percentage of the national income in 1922, and rose to only a trifle above normal in 1929. The question remains whether this 'normal' represents a satisfactory state of long-run balance.

successive short cycle. It is as if we had superimposed on the three short cycles, one longer one whose up-swing lasted from 1921 to 1929 and whose down-swing would probably be found to coincide with the unusually long and deep down-swing of the last of the three short cycles. This last down-swing may be found to have fully cancelled the effects of the entire period 1921-29, with respect to the relative shares of income going to profits and to wages, wiping out the gains made by profits in this period.

Thus this ten-year period 1922-32 resembles the movements characterizing the shorter cycle in speculation, construction, growth of capital equipment and distribution of incomes. In two other factors of prime importance the movements of this period were far from characteristic of the shorter cyclical movements. Prices remained approximately stable but with a sagging tendency after 1925, culminating in a catastrophic fall. This may be interpreted as a long cycle superimposed on a downward secular trend; but such an analysis may not carry conviction. Nor is it wholly adequate to speak of it as a delayed post-War deflation, so far as that implies a return to what would have been normal had the War not occurred. If that has happened, it can only be by the merest chance, when the distribution of the world's gold, national budgets and balances of international trade and indebtedness are all racked by the strains of the post-War 'settlements'.

Employment

With respect to employment, the figures for total factory employment for the ten-year period show simply three cycles, with little or no upward trend to match the growth of population. In the cases of railroads, mining and agriculture, numbers attached to these industries failed to keep pace with the growth of population.[8] Figures of actual unemployment are notoriously inadequate but if there was a ten-year cycle, its upward swing carried with it no clear decrease of unemployment, and possibly even an increase. The seemingly abnormal increase of capital equipment had not been employing many more workers, and may even have been displacing them, if allowance is made for the growth of population. Thus the heavy cyclical fall in employment, when it came, was all the more serious.

Durable Goods

Another feature of this ten-year period was a large increase in the proportion of our income going into durable goods, with all the consequences indicated in the earlier parts of this study. These types of expenditure are in a high degree optional, postponable and subject to intensified fluctuations, both because of the durability of the goods purchased and because of the luxury or semi-luxury character of

8 See King, *op. cit.*, pp. 56-7.

fresh additions to the community's supply. For both these reasons they represent types of goods in which the forces which operate toward the beginnings of a recovery might naturally be expected to be slower in their action in proportion both to the durability of the goods and to their luxury or semi-luxury character.[9] Thus elements of added sensitiveness have apparently been introduced into our economic system. This point will be developed in Part IV, dealing with this last cycle.

Conclusion

It is easier to record the changes occurring in such a period than to interpret their meaning. What are their causes? Are they the natural results of growing economic power, or only the natural results under certain conditions, for instance, of credit institutions and the distribution of incomes? Do they represent a state of balance or 'moving equilibrium' in the general sense of equality between supply and demand, adequate and unhampered use of existing productive powers and no obstacles to their future development and use? Or do they represent maladjustments in this large, but still limited, sense?

In dealing with the typical patterns of the short cycles, the *rationale* of different specific features was

[9] The importance of the increase of luxury goods, demand for which is highly sensitive, has been stressed by Mr. M. C. Rorty; see "How May Business Revival Be Forced?" *Harvard Business Review Supplement,* April, 1932, pp. 385-98.

examined as each came up for discussion. The nature of these longer swings is such an organic whole that this method seems hardly applicable; and the problem can better be treated as a unit. This will be attempted in Part VI, against the background of a study of the basic conditions of moving equilibrium in a growing society. An attempt will be made to judge at least tentatively the nature and meaning of the post-War movements.