Volume Title: Wesley Clair Mitchell: The Economic Scientist

Volume Author/Editor: Arthur F. Burns, ed.

Volume Publisher: NBER

Volume ISBN: 0-87014-052-3

Volume URL: http://www.nber.org/books/burn52-1

Publication Date: 1952

Chapter Title: Contribution to the Theory of Business Cycles

Chapter Author: John Maurice Clark

Chapter URL: http://www.nber.org/chapters/c3100

Chapter pages in book: (p. 193 - 206)

Contribution to the Theory of Business Cycles*

By John Maurice Clark

I INTRODUCTION

If a single study can be selected as the "formative type" of the present movement of quantitative research in American economics, that distinction undoubtedly belongs to Wesley C. Mitchell's study of business cycles. It has already had a transforming effect on our ways of conceiving and approaching one major economic phenomenon, while it has implications for general economic theory and method which may be even more far reaching.

The material embodiment of this research is already voluminous. In 1913 appeared the quarto volume *Business Cycles*, published by the University of California. The method used is set forth and carried through its various stages to the culminating interpretation. The book carries no claims of completeness, but is permeated with a sense of the need for better and more comprehensive data; it is a logical preface to the author's subsequent work as research director of the National Bureau of Economic Research. The studies of this bureau may be largely oriented by the problem of cycles; but, if so, their scope indicates that this problem is hardly narrower than the whole of economic life. (Witness the studies of national income and of trade-union membership.) A rewriting of Mitchell's own work is in preparation, and the first volume has appeared, corresponding to the first of the three main divisions of the original treatise.[1] To this revision the Bureau has contributed, not only its studies already made, but additional data, analyses,

* First published under the title "Wesley C. Mitchell's Contribution to the Theory of Business Cycles," in *Methods in Social Science,* edited by Stuart Rice (University of Chicago Press, 1931). Later reprinted in J. M. Clark's *Preface to Social Economics* (Farrar & Rinehart, 1936). Reprinted here, with minor changes, by permission of the author and original publisher.

[1] *Business Cycles: The Problem and Its Setting* (National Bureau, 1927); referred to hereafter as "2d ed."

and expert advice in the technique of statistical treatment.[2] For added light on Mitchell's conceptions of method, one must turn to other papers, especially his presidential address to the American Economic Association,[3] and his essay in the collaborative volume, *The Trend of Economics,* edited by R. G. Tugwell.

In discussing research such as this, our major concern will naturally be with the larger matters of scientific strategy, rather than with details of statistical technique which might well constitute a separate study. It is noteworthy that such an outstanding statistical economist has developed his technique in the actual handling of problems, not by formal classroom training in the craft. The first edition makes little use of the more elaborate technical devices of statistical rendering. The second edition contains a fairly extended exposition of these methods, indicating a much larger use of them in the forthcoming volume. But Mitchell is no slave of these techniques, and repeatedly refrains from refinements of analysis and presentation where these are not justified by the adequacy and the accuracy of the data. In the original volume he makes free use of the theories, the data, and the organized indices produced by other students and agéncies. Indeed, he gathers in an unprecedentedly wide range of material, both factual and theoretical. In the second edition the material is greatly enriched by the studies of the Bureau. The aid it has rendered in the actual preparation of the book is described as having been volunteered; nevertheless the outcome is a product, not of individual research, nor of the collaboration of independent students, but of organized staff work. As a result the statistical material is rounded out in a more systematic way than would otherwise be possible and contributes much to the comprehensiveness of the treatment; though for this result, considerable credit must also be given to the general development of statistics in the past fifteen years.

In spite of the fact that the original volume was the most comprehensively grounded treatise in its field, its statistical basis was limited. Its "annals of business,"[4] as well as its thoroughgoing sta-

[2] Preface, *ibid.*

[3] "Quantitative Analysis in Economic Theory," *American Economic Review,* March 1925, pp. 1-12.

[4] The term "business annals" is applied to connected summaries of general

tistical analyses, were confined to the period 1890-1911, and to the four countries: England, France, Germany, and the United States. International comparisons, even in the well-explored field of price movements, were handicapped by lack of comparability of data; and the elimination of noncomparable data reduced the size of the sample. In numerous fields other than that of prices, little international comparison was possible. In some matters, notably in physical production, consumption, and savings, the data were extremely scant, or of an indirect character requiring much resort to inference.

For the first volume of the second edition far more complete data are available. Use is made of the Bureau's own series of business annals, compiled by Dr. Willard Thorp.[5] This series covers the United States and England from 1790, France from 1840, Germany from 1853, Austria from 1867, and twelve other countries from 1890, all concluding with the year 1925. These data provide observations upon a sufficiently large number of different cycles to permit the use of statistical methods in studying the annals themselves. They permit a sort of second-power statistical study which arrays the cycles and studies their characteristics by accepted methods of group analysis, including frequency curves of the main characteristics. The typical length and the departures therefrom are shown in frequency tables, both for the whole cycle and for its different phases; and notice is taken of the long-run trend of change in length, the relation of long-run price trends to the lengths of the different phases of the cycle, the relation of the length of the cycle to the relative length of its different phases, etc. International relationships are studied by the aid of a large chart of parallel spectrum-like bands.[6] The reliability of the "annals" is checked by comparisons with statistical indices of business condi-

---

business conditions built upon the summaries of contemporary financial writers. They are condensed into time charts which simply designate the periods of prosperity, recession, depression, and recovery. Their only strictly quantitative feature is the duration of the periods.

[5] Willard Long Thorp, *Business Annals* (National Bureau, 1926). The volume contains an Introduction, "Business Cycles as Revealed by Business Annals," by Wesley C. Mitchell, pp. 15-100.

[6] 2d ed., pp. 444-45.

tions running back to 1875 for the United States, and to 1855 for England.[7] Use is made of the annals compiled by Dr. W. R. Scott, of St. Andrews, covering the period 1558-1720, to shed light on the question as to when the modern type of business cycles originated—those recorded by Scott being clearly a different variety.

On the statistical side, various indices of physical production are now available; and the Bureau itself has compiled, and is soon to publish, a series of social statistics for England, France, Germany, and the United States. In short, clear promise is given that the factual basis of the second edition will be far more complete than that of the first.

The end sought in the continuance of such inquiries is to make negligible the probability that the limitation of data has any material effect on the conclusions drawn. In some cases, this probability can perhaps be treated by quantitative methods; in others, it can only be estimated in general terms by the exercise of "judgment." In the field of prices the goal is either attained or closely approximated, while much improvement has been made in other directions. By its contribution to this result, staff research appears to have justified itself; while the work of independent investigators is also justified by the assistance they have rendered toward the same end.

II THE DEVELOPMENT OF MITCHELL'S IDEAS OF METHOD

For an understanding of this study from the standpoint of method one fact is so vital as to call for somewhat detailed development. This is not, like so many superficially similar studies, a detached investigation of a special problem representing an exception to the general theory held by the author or devoid of important implications as to the existence or the truth of such a general theory. The method is not chosen merely because it seems appropriate to the handling of this type of special problem without reference to the methods appropriate to general theory. This may have been the case with Mitchell's earliest descriptive studies, but he was even then a rebel against deductive method in theory. Long before the

[7] *Ibid.*, pp. 367-74.

writing of *Business Cycles* he had reached the conviction that general theory should be built on the results of the quantitative-descriptive type of method.

One may say that the interest which was focused in his early descriptive studies broadened—the problem of the business cycle playing an important part in the broadening process—until it grappled with the problems of general theory. With the resulting perspective, the factual interest narrowed again to the business cycle as a problem of practicable scope forming an integral part of the groundwork of the general structure. The fact that he set a new standard in the treatment of this problem is definitely an outcome of this broadening and subsequent refocusing. Because he has viewed the business cycle in its broadest relationships and lent a hospitable ear to all of the rival theories, he has in mind an unusually wide range of categories, in terms of which the business cycle may be described. Because his general theory is not a simple explanation of equilibrium, he could not be content with a simple conception of business cycles as departures from equilibrium (usually vaguely and inadequately conceived), but he is moved to drive toward as full a description as possible.

But enough of such generalizing! A more vivid picture is afforded by Mitchell's own words in a letter which he has, against his inclination, permitted to be published with this essay.[8] In passing, one may note that his recollections cast doubt on some of the positions taken by Professor Homan in his very competent study.[9] Some modification is clearly called for in Homan's assumption that Mitchell brought to college only the common mental equipment of a well-brought-up, Middle Western boy of superior intelligence. The influence of Dewey and Veblen seems to have fallen in with and developed his previous leanings rather than to have planted the first seeds. Witness further the fact that, of various influences he might have received from Laughlin, he appears to have selected those which paralleled his own bent toward objectivity, rejecting

[8] The letter, originally published as an appendix to the present essay, is reproduced along with other correspondence in Mrs. Mitchell's paper in this volume. See pp. 93-99.

[9] Paul Thomas Homan's essay on Mitchell, published in 1928, is reprinted in this volume on pp. 155-92.

others equally prominent. The evidence indicates that Mitchell felt himself to be influenced at least as much by those things he reacted against as by those with which he was in sympathy. And his statement that he regarded his first edition as an approach to general theory negatives Homan's surmise on this point.[10] Homan's suggestion that Mitchell's method of work has colored his conclusions[11] can hardly be other than true, but it does not follow that the basic character of his views is a mere rationalization of the bent of statistical workmanship.

The pyrotechnics of Veblen's battle with the orthodox left Mitchell not simply dazzled and confused, but grappling with the stubborn question: How important were the factors which Veblen emphasized and orthodox theory circumnavigated, compared to those which orthodox theory emphasized and Veblen slighted? A question of quantitative potentialities! One may conjecture that Mitchell's natural leanings received aid and comfort from Veblen's doctrine of replacing assumed harmonies by an observed sequence of matter-of-fact cause and effect. For, while Veblen preached this doctrine, Mitchell practices it—as nearly as may be and with reservations as to the meaning attached to "cause and effect" which will appear later.

It is quite natural that Mitchell refuses to subordinate quantitative economics to the function of verifying the conclusions of traditional deductive theory, or to be worried by the fact that, as yet, quantitative economics has not gotten far with this task.[12] In his view, traditional theory suggests problems and hypotheses, but they are likely to be recast in the process of adapting them to the test of observed behavior; while observation will itself suggest other problems whose standing is in no way inferior merely because traditional "theory" may ignore them. "Traditional theory," in this connection, means primarily the central theory of value and distribution, or the general theory of economic equilibrium; but the same proposition holds true in less degree of the special theories which have been set forth to explain, for instance, the business cycle. We shall see in a moment how these theories are utilized in Mitchell's study.

[10] *Ibid.*, p. 165.

[11] *Ibid.*, pp. 187-88.

[12] Cf. "Quantitative Analysis in Economic Theory," *op. cit.*, esp. p. 3.

III · THE ORGANIZATION OF THE TREATISE

In organization and order of presentation, the method of the first edition is substantially followed in the second. Both studies start with a review of existing theories, the chief difference being that climatic theories are mentioned only in footnotes in the first edition, and receive more adequate attention in the second. There follows a survey of general features of the economic order, so far as they bear on the problem in hand. This is the author's closest approach to a formulation of his own economic philosophy. Next comes, in the first edition, a survey of "economic annals," or accounts of the sequences of prosperity and depression of business in general, by expert observers writing in financial journals and similar publications. Then follows a detailed statistical analysis of the behavior of different phenomena: prices of different classes of commodities, wages, interest rates of different classes, stock prices, physical production and consumption, unemployment, currency, banking conditions, savings, and profits. (Only the average amount of savings is studied, data being inadequate to reveal their variations.) In the second edition, this material is reserved for a later volume; but the first volume includes, with its lengthy exposition of methods of statistical analysis, enough sample tables and charts to give a very fair picture of the general form of the phenomenon as revealed by this method of attack. Finally comes the author's own interpretation, which he characterizes as "analytic description" rather than causal explanation. He concludes that the modern type of business cycle is a phase of a well-developed "money economy," defined as a system in which the bulk of the people live by getting and spending money incomes, and production is guided by the pursuit of money profits.[13] In the second edition, this conclusion is based in part on a historical sketch of the development of the money economy (which reveals Mitchell as vastly more than a statistical analyst) but mainly on a detailed study of the "annals" reaching back to a period in which the present form of the phenomenon was clearly absent. This study constitutes a well-marked bit of "evolutionary economics," and is fulfilled by the conclusion that further changes are to be expected. The bulk of the "analytic

[13] 2d ed., p. 63 ff.

description" is a picture of the typical course of cycles based on the common features of those observed but recognizing different degrees of variation from type.

IV THE TREATMENT OF EXISTING THEORIES

In the Preface to the first edition one finds the phrase: "To determine which of these [current] explanations are really valid. . . ." This is to be taken, not as a formulation of the central problem, but as a device to aid the mind in approaching it. The various theories are not separately verified.[14] They suggest classifications of data as significant for the statistical part of the study, for instance, the distinction between producers' and consumers' goods, or between "organic" and "inorganic" products. They suggest causal relationships at numerous points in the ultimate interpretation; but clearly none contains the sole cause and none by itself contains a sufficient cause of all the features of the phenomena. Mitchell entertains the question whether practical reasons justify singling out one or more conditions as "the cause" or "the causes," but he himself makes no such selection.[15] If made, it would seem almost necessarily to imply as a point of departure some theory of normal behavior, lapses from which may then be explained by single (additional) causes; and this Mitchell might well regard as hypothetical rather than realistic economics.

While recognizing the value of the various theories, he finds them open to the general criticism that they take too readily for granted the nature of the phenomenon they undertake to explain, and that they tend to view cycles as special problems of abnormal behavior, by focusing attention on "explanations of" the crisis—Why need anyone explain prosperity?[16] Mitchell's fuller description of the cycle, aided as it is by the special theories, in turn develops and alters the nature of the problem which the special theories attack. Incidentally, in the second edition he takes up the definition of the term "cycle" and defends his use of it, distinguishing between periodicity, which implies regular intervals, and cycles, which may be of varying length.[17]

[14] *Business Cycles,* p. 20; 2d ed., p. 58.

[15] Cf. 2d ed., pp. 54-55.

[16] *Ibid.,* pp. 2, 451-55.

[17] *Ibid.,* pp. 464-69.

V MITCHELL'S CONSPECTUS OF THE ECONOMIC ORDER

In summarizing the leading features of the economic order, Mitchell selects those which seem significant for the purpose in hand. As to the methods used in making this selection, the author himself would probably have difficulty in formulating them on paper. He deals in part with economic motives, but mainly with the economic machinery which forms the framework in which these motives work. In the first edition, he deals mainly with such matters of common knowledge as the ordinary economic theorist has at his disposal; while in the second edition, considerable quantitative matter is introduced, utilizing the results of his own statistical researches. Even without this indication, it seems clear that the order in which this part appears in the published volume is not necessarily the order in which the work was done.[18] Presumably this section was formulated and reformulated as the statistical studies and interpretation progressed, the author having consciously undertaken to include such things, and only such things, as played a part in his final interpretation.

It is no contradiction of this statement to say that one finds symptoms of Veblenian influence: particularly in the distinction between technical and pecuniary occupations, in the subordination of technical to profit-making considerations, in the emphases on the motive of profit-making and the planlessness of production, without corresponding emphasis on the checks and the ordering influences of the "natural economic laws" of the traditional economics. Competition is mentioned, but not "normal competitive price," and the "law of supply and demand" is conspicuously absent.[19] There is also a decided kinship with the type of theoretical approach originated by Walras and used at present by Cassel, in so far as they substitute the idea of a multitude of interacting functional relationships for that of single or ultimate "causes"; but Mitchell, of course, does not follow them in focusing attention on the conditions of a theoretical equilibrium in these relationships.

[18] Contrast Homan's assumption that this section was first in formulation as in presentation (see above, p. 169).

[19] 2d ed., pp. 154-57.

VI ANNALS AND STATISTICS

In the second edition, Mitchell pays careful attention to the relative advantages and limitations of business annals and statistics, attempting to gain whatever light can be secured from each. The main uses of the annals have already been indicated. Statistical studies play the larger part, since it is through them that he is able to trace the complicated order of events of which the cycle is made up. He finds, for instance, that wholesale prices vary more than retail; those of production goods more than those of consumption goods (even at wholesale); those of raw materials more than those of finished products; and wage rates less than any class of prices.[20]

With reference to the timing of different related phenomena, the indications are for the most part less clear and more difficult of interpretation. Perhaps the clearest cases are those of bond yields in relation to short-time interest rates, and the loans, the deposits, and the reserves of banks. The conclusion is also reached that the physical volume of production revives ahead of prices, sometimes by as much as two years.[21] The preliminary material included in the first volume of the second edition indicates that these time sequences are to be treated far more elaborately, with the aid of statistical methods of gauging leads and lags, using the results of recent studies in this field.[22] Some of the indications in the first volume—for example, as to coal and iron production and wages—are complicated by the merging of cyclical and secular trends, and raise the question whether the earlier upturn of production is due to the secular trend rather than to the purely cyclical movement. Yet the isolation of secular trends and cyclical-irregular movements may raise more problems than it settles—as Mitchell clearly realizes. Indeed, he has already formulated a series of penetrating queries as to the interactions of secular and cyclical trends.[23]

He may be counted on to determine whether the isolation makes any difference in the timing of the cyclical-irregular upturn. He will probably assume that for certain purposes—perhaps for ex-

[20] *Business Cycles,* pp. 461-66.

[21] *Ibid.,* p. 458; cf. charts of coal and iron production (pp. 231-36) in connection with price charts (pp. 97-126).

[22] 2d ed., pp. 261-70.

[23] *Ibid.,* p. 233.

plaining effects on prices and related processes—the actual upturn is the significant thing, while for other purposes analysis into components is necessary. His factual bent would naturally lead him to recognize that these components are theoretical abstractions and cause him to be on his guard against assignments of causal responsibility to such abstractions—assignments which might be as doubtful in their way as those of traditional deductive theory.

VII THE FINAL INTERPRETATION

Perhaps the most interesting questions as to Mitchell's method arise in connection with his final synthesis, or "analytic description," of the typical business cycle. Certain features of this are obvious enough. The facts revealed by his statistical studies are recombined in the order in which they occur, showing what is happening at each stage of the cycle and how each stage leads to the next. The emphasis is on "how" rather than "why," and the whole result is not characterized as a causal explanation; yet the description is not merely empirical—it must accord with reason.[24] In the same spirit is his cautious treatment of coefficients of correlation. Yet he is willing to speak of causal relations at particular points—this being the form in which the mind habitually frames some of its most fruitful hypotheses; but he insists on the recognition that these relationships are manifold and interacting—that causes are at the same time effects and effects are also causes. Apparently the things to which he chiefly objects are: (1) the idea of an absolutely necessary sequence where modifying conditions are too numerous to justify such an inference,[25] and (2) the conception of causation as a single chain running in one direction and anchored somewhere to a cause which is ultimate—"the" cause—rather than one of an indefinitely large network of conditioning factors. And Mitchell's work should do much to help consign this obsolete chain-and-anchorage notion of cause to the museum of historical antiquities.

But what is meant by a description which accords with reason? An example or two may help us here. If dealers buy more goods (in physical terms) than they are selling, their stocks must increase; conversely, if they increase their stocks, they must be buying more

[24] Cf. *ibid.*, p. 470.

[25] *Ibid.*, pp. 262-70.

than they sell; and if they increase their stocks at a time when their sales are increasing, their purchases—and the sales of those who supply them—must increase more than their sales. Here we have the quasi-mathematical "reason" that deals with physical quantities. But when do dealers increase their stocks? It is natural for them, in the pursuit of maximum profits and minimum losses, to attempt to reduce them when they expect dull trade, and increase them when there is prospect of increased sales, and especially of increased prices; and the most available sign of such a prospect is the beginning of an actual upward movement. But here we are in the realm of human expectations and reactions whose behavior is notoriously variable even when most of the significant conditions are apparently the same. A movement toward "hand-to-mouth buying" might start for reasons outside the business cycle, or for reasons arising from it, and in either case might alter permanently the typical habits of stockkeeping. Here it is unsafe to reason from conditions to conduct and make a priori predictions; but given the conduct, one may see that it accords with the customary operation of known motives as conditioned by the given circumstances, and is, in this sense, "explained."

The most obvious difference between this method and that of traditional theory is that Mitchell reasons from conduct to conditioning motive and circumstance, while traditional theory, in appearance at least, reasons from motive and circumstance to "normal" conduct. Mitchell insists that he would not trust himself to use his analysis of motive and circumstance as a basis for predicting conduct without constant check by observations of actual behavior. Theory, being interested in "normal" behavior, has no such hesitation; variations of behavior from normal are merely the results of other than normal causes. The normal behavior of equilibrium theory is highly simplified and differs from actual behavior. But is not Mitchell simplifying also, to a less extent, in picturing the normal cycle and giving separate recognition to variations from it? At certain points in his analytic description he notes alternative versions of behavior, while every cycle has some features which are unique. His picture of determining conditions is comprehensive, including many of the "disturbing factors" of traditional theory. It is also too complex to permit the mind to deduce a result which is uniquely determined and exact. And it is the lack of this quality, in all probability, which causes some readers to miss the feeling of definite explanation which they get from more traditional methods.

Here is a very great difference. Relying on the deductive methods, traditional theory simplifies to the point at which this method can secure definite results; and this definiteness, though abstract rather than actual, is apparently held by John Stuart Mill to be the criterion of scientific character in economic thinking. Such thinking proceeds ostensibly from premises to resulting behavior.

Much could be said on both sides as to whether this is the order in which the thinking is actually done, or whether the (hypothetical) results are themselves assumptions actually determining the "premises" selected to explain them. Since the method is limited to such premises as are capable of yielding definite deductive results, there is ground for holding that the available premises of this character really limit and determine the results it can attain. On the other hand, from the fact that the whole structure is the outgrowth of the search for the "natural levels" of price and its "component parts" (shares in distribution), one may make at least a reasonable claim that the assumed result—normal prices and distributive shares—comes first and the apparent premises are derived from it, a selection of conditioning motives and circumstances which are sufficient to "explain" the result. To the inductive student, the whole structure is one hypothesis, with its implications somewhat elaborated and the emphasis on its own internal consistency, as Mitchell points out, rather than on the resemblance of the whole to the observed facts.

And it is this whole hypothetical state of normal equilibrium, of which Mitchell finds no evidence in the facts as he observes them.[26] There is no level of prosperity of which he can say: "Whenever business is above this level, economic forces are acting to bring it down, and whenever it is below, they are acting to bring it up." Economic forces act upward from trough to crest, downward from crest to trough; near the turning points a conflict of forces may appear, but hardly at the midpoint. Each stage tends to bring its successor into being and not to return to an equilibrium level. Yet

[26] *Business Cycles,* p. 86; 2d ed., p. 376.

even Mitchell speaks of profits in a way which implies a long-run normal relation of prices to costs on the average of the ups and downs.[27] So far as there are forces that act in this way, some approach to the theorist's "normal" seems to find justification. On the other hand, the theorist's abstract normal implies no unemployment; and such a normal is obviously not the average of the periods of prosperity and depression, in the same way that the normal price may represent the average of high and low periods. Evidently different parts of the static norm bear different relations to reality.

An assimilation of Mitchell's results should certainly challenge the most orthodox theorist to produce some modifications in the traditional analysis, other than a slight lengthening of the chapter on business cycles in that part of the theorist's treatise labeled "special problems" or "applied economics." Shall we ever see the general economic theory which would be the logical outcome of an approach to the whole subject via Mitchell's study of cycles? Or will the effects of Mitchell's study be merged with the results of growing knowledge in many other realms of economic phenomena and motives?

[27] *Ibid.*, pp. 182, 187-88.