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WESLEY MITCHELL AND THE STUDY OF BUSINESS CYCLES¹

R. A. GORDON²

IT WAS nearly forty years ago that Wesley Mitchell published his first great study of business cycles.³ Its synthesis of painstaking factual investigation and theoretical analysis, given the data and analytical tools then available, has seldom been excelled in economics. For the next thirty-five years, until his death in 1948, Mitchell sought to build further on the foundation laid in his 1913 volume. The business-cycle research program of the National Bureau of Economic Research is his child. As part of this program, Mitchell and his colleagues in the National Bureau compiled hundreds of time series and, with the help of specially devised measures of cyclical behavior, set out to bring the study of business cycles out of its "speculative stage" by a detailed empirical investigation of "what the business cycles of experience have been like."⁴

As the National Bureau's program in business cycles expanded to cope with new questions that were constantly being uncovered, the goal of the investigation continued to be "a systematic treatise that would deal comprehensively with business cycles and their

causes."⁵ "The living shape of the treatise" has by now become the Bureau's "Studies in Business Cycles," of which the first was Mitchell's 1927 volume, *Business Cycles: The Problem and Its Setting*. While the Bureau published many studies dealing wholly or partly with business cycles after 1927, the second general volume in the "Studies in Business Cycles" did not appear until *Measuring Business Cycles*, by Burns and Mitchell, was published in 1946. This imposing work presented the National Bureau's kit of statistical tools. With the help of these tools and the special studies of his collaborators, Mitchell hoped "to develop a model of business cycles from carefully screened observations, to use it in describing how the cycles of experience are typically propagated, and then press on to account for the outstanding differences among them."⁶ *What Happens during Business Cycles*, listed as No. 5 in the "Studies in Business Cycles," was intended to be a "progress report" on what Mitchell had been able to discover. In its present incomplete form, it becomes a progress report in a twofold sense.

¹ A review of Wesley C. Mitchell, *What Happens during Business Cycles: A Progress Report*. New York: National Bureau of Economic Research, 1951. Pp. xxxi+386. \$5.00.

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³ *Business Cycles* (Berkeley: University of California Press, 1913). Part III of this volume was later reprinted as *Business Cycles and Their Causes* (Berkeley: University of California Press, 1941).

⁴ A. F. Burns's Introduction to *What Happens during Business Cycles*, p. x.

PURPOSE OF THE VOLUME

The aim of the book is descriptive. It is not, except indirectly, a search for causes; it is not to test current theories

⁵ See A. F. Burns's essay, "Wesley Mitchell and the National Bureau," *Twenty-ninth Annual Report of the National Bureau of Economic Research* (New York, 1949), p. 43.

⁶ Burns's Introduction to *What Happens during Business Cycles*, p. x.

of the business cycle. Mitchell's objective is to give scientific precision to our vague impressions as to what *typically* happens during business cycles. In Arthur Burns's words: "The accent of the book is on characteristic behavior, formalized in the concept of a 'typical cycle.'"⁷ The varieties of economic behavior during a "typical cycle" are described and summarized through the special measures which Burns and Mitchell described in *Measuring Business Cycles*.

Mitchell planned the volume to be in seven parts, of which only the first two and part of the third were completed. Part I sets out his objectives, defines his approach, and summarizes the National Bureau's statistical measures. Part II applies the Bureau's basic measures of timing, conformity, and amplitude to the many different facets of business activity. This is the longest section of the book and also the most disappointing. Part III was to summarize the "consensus of cyclical behavior" among different series as reflected in the Bureau's reference-cycle patterns. This section, which was not fully completed, was to have been followed by four parts dealing, successively, with the processes of expansion, recession, contraction, and revival. The whole was to give us a systematic description of how a capitalist economy, through the functioning of its many interdependent parts, generates the phenomenon we call business cycles.

MITCHELL'S USE OF THE NATIONAL BUREAU'S MEASURES

Part II cannot help but be a disappointment to sympathetic followers of Mitchell's and the National Bureau's work. The measures of timing, conformity, and amplitude, computed for

⁷ *Ibid.*, p. xi.

hundreds of series, give at best a blurred picture of the significant differences and similarities in the cyclical behavior of the various aspects of economic activity. What is sadder still in a report on the last major effort of a great social scientist, Mitchell has not used these measures in a way to extract from them the significant information which they might reveal. The treatment is scholarly enough and buttressed with all the scientific caution we have been led to expect in National Bureau publications. But it is not thorough and systematic, and it is lacking in imagination. This comes about largely because Mitchell has failed to ask the right questions of his data. He has applied his tools within a framework of limited design; and he has failed to classify and analyze his data in ways that might bring out revealing interrelationships. Description, to be useful, must be ordered in such a way as to bring out significant tendencies. This, it is true, involves some formulation of hypotheses in advance. The book was conceived within a theoretical framework—the outlines of which are given in Mitchell's 1913 and 1927 volumes. But this framework leads Mitchell to ignore important questions which should have been addressed to his material.

Let us look first at his attempt to summarize the varieties of cyclical timing. Potentially, the National Bureau's work on timing relationships could be one of the most important parts of their program. As an example, Moore's study of statistical indicators has received deservedly wide attention.⁸ But Mitchell's analysis in the present volume suffers on two accounts. First of all, the tool he

⁸ G. H. Moore, *Statistical Indicators of Cyclical Revivals and Recessions* ("National Bureau of Economic Research Occasional Papers," No. 31. [New York, 1950]).

uses is too blunt. Timing is measured only in terms of the nine stages into which the National Bureau divides business cycles. A conforming series must show a quite substantial and persistent lead or lag to avoid being included in the coinciding group. (Even so, a significant minority of the 794 series showed a typical lead or lag of at least one stage at either peak or trough.)⁹

What is more serious is the failure adequately to classify his results to bring out the economic significance of the varieties of timing behavior uncovered. A frequency distribution showing the numbers of series having different sorts of characteristic timing is of little help. *Which* sorts of series typically lead or lag? On pages 70–71 Mitchell offers a table which provides a weak and unsatisfactory answer to this question. Thus, of the 25 positively conforming series having two-stage leads at the trough, 12 were “investment (mainly early stages): security issues, orders, contracts, production of building materials.” This is a pretty crude classification. There were also 52½ “investment” series, with a similarly cryptic description, which showed a one-stage lead. We are told nothing about possible significant relationships within and between these two groups of leading investment series. Since the table deals only with leading or lagging series, we do not know how many investment series coincided at the reference turning points or what was the total number of such series in the whole sample. In short, Mitchell does not let his data reveal the typical

timing relationships for significant sectors of the economy, organized in a way which would have maximum usefulness.

The long chapter on amplitudes does not offer a satisfactory answer to the question Mitchell puts to himself (p. 113): “What factors tend to produce large and what tend to produce small fluctuations?” Here, again, not many readers will be satisfied with the way he chooses to classify his material. As a result, important questions are not asked of the data. More serious, the textual discussion and statistical results are not adequately integrated. Much of the discussion consists of rather elementary observations on why various types of economic activity fluctuate as they do during business cycles. Where detailed tables are presented, the significance of the statistical findings is not always fully appraised.

Followers of the Bureau’s work will read with interest Mitchell’s chapter on “Cycle-by-Cycle Variability in Cyclical Behavior.” So far, the Bureau has been concerned primarily with the search for measures of *typical* cyclical behavior; and their use of averages, taken over a succession of cycles, has been frequently criticized. Burns and Mitchell attempted (in my opinion, not very successfully) to deal with some of these objections in *Measuring Business Cycles*.¹⁰ In *What Happens during Business Cycles* Mitchell poses the problem in this form: What determines the degree of variability in the single-cycle patterns for any series, and how does this variability affect the reliance we can place on the National Bureau’s measures of *average* cyclical behavior? In a painstaking and ingenious analysis, he demonstrates how secular, cyclical, and irregular forces in-

⁹ However, the vast majority of the leading and lagging series showed one-stage leads or lags. Mitchell makes no attempt to measure leads more precisely than this, though the basis for more refined measurements exists in the National Bureau’s files. Nor is there any systematic treatment of dispersion around average leads and lags.

¹⁰ Cf. chaps. ix–xii of that volume.

fluence the average deviations at each stage of the average reference-cycle pattern. He further tests the influence of amplitude, and of irregularities in timing on these average deviations. One constructive result is that we are put in a much better position to assess the significance of the measures of dispersion that we find plotted as vertical lines on the National Bureau's reference-cycle charts. And Mitchell further concludes that, though the differences among cycles should also be analyzed, he is justified in going on to study what typically happens in the various stages of the business cycle.

I am willing to accept this conclusion as a first step. All business-cycle theory assumes that a private-enterprise economy is characterized by some sort of typical or normal response mechanism which tends to create cyclical fluctuations. But, while the Bureau's averages are useful in helping to delineate the general nature of this response mechanism, this moves us only a small way toward answering the important questions of causation. The Bureau's averaging, to obtain typical cyclical patterns, may well conceal the different combinations of interrelationships in different cycles which help to explain why and when the cyclical turning points occur.¹¹

Part III, though not completed, is the most interesting section of the book. It is here that he sets out to summarize, on the basis of a considerable list of comprehensive series, "what happens during a typical American business cycle" (pp.

¹¹ Mitchell was aware of this. See, e.g., his Preface to *Business Cycles and Their Causes*, pp. x-xi. But he insisted that the study of typical sequences should come first. These could then serve "as centers for organizing our knowledge concerning the variable sequences, and as beginnings in the search for new uniformities." See also pp. 165-68 of the same volume.

252-53). The analytical tool used is the Bureau's average reference-cycle pattern. The questions to be answered are: How do we summarize the behavior of numerous series during the successive stages into which the National Bureau divides the business cycle? What does our summary tell us about what typically happens during business cycles? Mitchell's methods of summarization are of the simplest sort: the number and identity of series rising or falling during each successive business-cycle segment; frequency distributions of the average reference-cycle standings of the thirty-four series chosen for study in each stage of the cycle; identification of the series having very low, very high, or middle standings in each cycle stage; and distribution of the series according to their rates of change in each segment of reference expansion or contraction.¹² On the basis of these statistical summaries, Mitchell is able to present a short, descriptive "schedule of developments" during a typical business cycle. Here, again, the material is descriptive; Mitchell was not yet ready to analyze possible causes. And, again, the choice and classification of data prevent the asking of significant questions. Nonetheless, some important findings emerge: for example, the sharp and general retardation in business expansion between Stages II and III; further retardation between Stages III and IV in some series having to do with in-

¹² The Bureau divides each cycle in general business activity into nine stages. Stages I, V, and IX refer, respectively, to the initial trough, the peak, and the subsequent trough in general business. Stages II-IV divide the expansion into thirds of equal duration, and stages VI-VIII do the same for contraction. Thus, the average reference-cycle pattern for any series—say, an index of wholesale commodity prices—portrays how, on the average, this series behaved during these nine phases of the cycle in general business.

vestment; the decline of many financial series in the last stage of expansion and the suggestive tapering-off in the rise in wholesale and retail sales and income payments. Unfortunately, however, Mitchell's plan did not call for deeper probing of the significance of these findings at this stage of the investigation. And time permitted him only one additional short section to argue that his summary based on average patterns is not vitiated by the differences that show up between cycles.

Mitchell's findings in Part III largely confirm common observation but add precision and a quantitative dimension to our impressions. The Bureau's reference-cycle patterns can be a useful descriptive tool, and I have found them a convenient way of describing what usually happens to the various aspects of the business situation as the business cycle unfolds.¹³ But such descriptive use does not provide us with an explanation of causes, and, in all probability, not even with the necessary tools for such an explanation. Much that is significant has undoubtedly been lost by averaging; typical relationships derived from the average patterns for different series are not necessarily significant in any causal sense; Mitchell and the National Bureau give us little help in selecting and classifying those patterns a careful study of which is likely to be most profitable. Perhaps these criticisms would have had less merit had Mitchell lived to complete the project. I wonder, however, if the blunt and relatively indiscriminating tools of analysis revealed in these chapters would have been adequate to the more detailed study that he envisaged.

¹³ R. A. Gordon, *Business Fluctuations* (New York: Harper & Bros., 1952), chap. ix.

MITCHELL'S CONCEPTION OF THE CYCLICAL PROCESS

Some critics have referred to the National Bureau's work in business cycles as "Measurement without Theory,"¹⁴ and its strongly inductive emphasis is obvious. Such criticisms, however, have tended to obscure the fact that Mitchell did have a "model" of the business cycle which guided his work from 1913 on. It is true that he came to distrust many of the detailed features of the theoretical synthesis which he presented in the 1913 volume, but he never gave up the basic skeleton of this model.

Why does Mitchell's theoretical approach require summary statistical measures which permit us to map out the typical patterns of movement in many different series? The answer is that, "unless these divergencies in cyclical behavior are pictured by fit symbols, we have no suggestion of the basic business-cycle problem: how an economic system of interrelated parts develops internal stresses during expansions, stresses that bring on recessions, and how the uneven contractions of its varied parts pave the way for revivals" (p. 295).

In his earlier work Mitchell emphasized over and over again that "business cycles are intricate complexes made up of diverse fluctuations in numerous activities."¹⁵ For the Walrasian system of static, general equilibrium, he substituted the notion of a self-generating oscillatory system, whose fluctuations were generated by the dynamic inter-

¹⁴ Cf. T. C. Koopmans' essay with this title in *Review of Economic Statistics*, XXIX (August, 1947), 161-72.

¹⁵ *Business Cycles: The Problem and Its Setting* (New York: National Bureau of Economic Research, 1927), p. 186.

relationships among all the many variables which affect profit prospects in a private-enterprise economy. His notion of a self-generating model differs in essential respects from the mathematical models that sprinkle the current literature. His conception of "many, interrelated processes" left no room for the simple aggregative approach, with its emphasis on a few broad variables. Fundamental in Mitchell's conception of a dynamic system of interrelationships was his emphasis on an interdependent price system and on the factors which influence the relations between prices and costs and thus the behavior of profit margins. This, again, is something to which the most recent cycle theory pays little attention.

In his 1913 volume Mitchell offered a loosely knit theory which suggested where in this maze of dynamic interrelationships we should look for the immediate causes of the turning points. But he increasingly came to feel that the search for specific causes should not be made too soon. At the end of his 1927 volume he felt moved to say:

The concept of business cycles developed in this volume suggests that the leading question of the second volume be put in the form "How do business cycles run their course?" rather than in the form "What causes business cycles?" What we are seeking to understand is a complex of recurrent fluctuations in numerous interrelated processes. To learn what we can about the workings of these processes in their relations to one another and as a whole is the next step. When we have taken that step, it will be time to see what the question about the cause of business cycles means, and in what sense it can be answered.¹⁶

This approach is in sharp contrast to that employed by those who construct econometric business-cycle models.

¹⁶ *Ibid.*, p. 470.

The econometrician spells out his theory at the beginning: all relationships thought to be relevant are completely specified as the first step. If such a model fits the data well, and if various statistical criteria are fulfilled, there is nothing more to be done—except to wait and see whether the model fits the future as well as it did the past. There is no way of choosing among alternative hypotheses which may fit the data equally well.

Mitchell, on the other hand, did not specify his model completely. It contains many relations and variables, which can be grouped under a number of general headings. More precise formulation of these relations was the point which he had reached when he died, and on which he made a small start in the last chapter of *What Happens during Business Cycles*. By studying the workings of "numerous interrelated processes . . . in their relations to one another," he would, in effect, be specifying which variables seemed most important and how they were related to one another in the different stages of the business cycle. The painstaking empirical work which has occupied the Bureau for some three decades was conceived to be necessary to permit a realistically complete model, delineated in as much detail as should prove necessary, and in which inductive evidence as well as a priori theorizing provided the basis for the patterns of relationship finally specified. The final model, of course, was not to be stated in mathematical form; but the end product was to be a generalized model of how a private-enterprise economy generates cycles.

Thus Mitchell's work (and plans) in the field of business cycles during his twenty-five years or more with the Na-

tional Bureau rested on three foundation stones: the theoretical framework he outlined in his 1913 and 1927 volumes, the collection of a vast amount of empirical evidence, and the application to this mass of data of the statistical tools devised by the National Bureau. It is doubtful whether these foundations are strong enough to support a structure that will tell us what we need to know about business cycles. The statistical tools, though useful, are too crude. More important, the theoretical framework is not sufficiently developed and fails to point up some of the important questions which most economists today would emphasize. As a result, we have no assurance that the Bureau's measures do not conceal some kinds of evidence important to an understanding of the

nature and causes of cyclical fluctuations. I think, also, that Mitchell failed to pay sufficient attention to the secular problems of growth and technology and how and through what variables these forces have reacted upon the cyclical process at different periods in American history.

Mitchell was nearer the truth than the recent builders of aggregative models when he insisted on emphasizing the range and complexity of the relations which are relevant to a study of business cycles. Like them, however—although perhaps not quite to the same extent—he emphasized too much that there was one, essentially unchanging response mechanism, the delineation of which was to be the main step in explaining the business cycles of the last one hundred years or more.