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PART I

BUSINESS CYCLES

Chapter 1

What Is a Recession?

In the course of its studies of business cycles, the National Bureau of Economic Research has identified successive periods of business expansion and contraction in the United States and several other countries. Business cycle peak dates mark the end of a period of expansion and the beginning of a period of contraction; trough dates mark the end of a period of contraction and the beginning of a period of expansion. For the United States the chronology goes back to 1854 on a monthly and quarterly basis, and to 1834 on an annual basis (Table A–1). Between 1854 and 1981 (the last peak date) some thirty peaks and thirty troughs have been recognized. These dates identify thirty expansions and twenty-nine contractions. The thirteen contractions since 1920 are recorded in fuller detail in Table A–2.

This chronology of business cycles has come to be widely used in economic studies, in government reports, in business publications, and in the popular press. The contraction periods are commonly identified as "recessions." An explanation of the procedures used in establishing the dates may, therefore, help to explain what a recession is, at least in an operational sense. What causes recession is another matter and will not be considered here.

The peak and trough dates purport to identify business cycles defined as follows:

> Business cycles are a type of fluctuation found in the aggregate economic activity of nations that organize their work mainly in business enterprises: a cycle consists of expansions occurring at about the same time in many

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> economic activities, followed by similarly general recessions, contractions, and revivals which merge into the expansion phase of the next cycle; this sequence of changes is recurrent but not periodic; in duration business cycles vary from more than one year to ten or twelve years; they are not divisible into shorter cycles of similar character with amplitudes approximately their own.[1]

This definition, formulated by Arthur F. Burns and Wesley C. Mitchell in 1946, is a modification of one published by the National Bureau in 1927. Hence it has been used, in substantially its present form, for more than fifty years. It imposes no fixed requirement upon the duration of business expansions or contractions, and even the limits on the period of a full cycle (expansion and contraction) are broad: more than a year to ten or twelve years. In practice, the shortest contraction recognized in the United States has been six months; the longest, sixty-five months. Since 1937, no contraction has exceeded a year and a half. Taking pre-World War II chronologies for England, France, and Germany into account, the full range for expansions has been from eight to one hundred six months, while contractions have lasted from six to eighty-one months. Thus, past experience suggests that contractions that fit the definition in other respects are likely to last at least six months.

Besides duration, the definition recognizes two other significant features of business cycles—amplitude and scope. Again, no precise numerical magnitudes are cited, and in practice no precise specifications with respect to amplitude or scope have been imposed.

The requirement as to amplitude is that expansions and contractions reflect an absolute rise and an absolute fall in "aggregate economic activity." A rise and fall in some limited measure of economic activity, such as manufacturing output or corporate profits, is not enough. Nor is a mere slowing down or cessation of growth in total activity enough to qualify as a contraction. Moreover, the requirement that cycles not be "divisible into shorter cycles with amplitudes approximating their own" means that if, for example, a long expansion is interrupted by a decline, the decline should be recognized as a contraction if, and only if, it is as large as the smallest contraction in the historical record.

The concept "aggregate economic activity" is not defined either. Reticence on this score is due to the fact that no single comprehensive measure of the nation's economic activity—whether in terms of output, income, expenditures, or employment—is available for a long historical period on a monthly or quarterly basis, comparable throughout in its economic coverage, and adequate throughout in its statistical foundation. The coverage and quality of economic data has

improved markedly over the years. The vagueness of the specification simply recognizes the fact that one should use the best data available at any given time, taking careful account of possible biases due to changes in the quality of the information.

Even at the present time, reliance upon a single measure of total activity—say, gross national product in current dollars—might run into difficulty. First, there are uncertainties in the measurement of important sectors of GNP, especially in the preliminary figures. Then suppose that, because the general level of prices continued to rise for a while, GNP expressed in current dollars rose, while GNP corrected for price change declined, total employment fell, and unemployment rose. It might be generally conceded that a recession was under way, although the previously selected measure, GNP in current dollars, failed to show it because of inflation.

The definition describes business cycles as expansions in many economic activities followed by similarly general contractions, but does not say how many activities or what they are. In recent years statistical measures of the scope of expansions and contractions, known as diffusion indexes, have been constructed. But while these give some degree of precision to the concept, they are computed in many different ways and comprehend various measures of economic activity. No single index has been found to be clearly superior to every other.

What, then, is the procedure followed by the National Bureau in identifying a new business cycle peak or trough? Two aspects of the procedure can be distinguished. First, a decision must be reached as to whether a period of expansion has ended and a cyclical contraction has begun. Second, the date of the peak must be determined. Similar decisions are required when the problem is to determine whether a contraction has ended and an expansion has begun and when the date of a trough is to be fixed. The following discussion will be confined to the problem of peaks and the ensuing contraction.

The existence of a long and generally accepted historical chronology helps to make the task easier. An apparent contraction can be compared with earlier contractions recognized in the chronology and also with earlier episodes that had some of the earmarks of contractions but were not recognized as such. If its character measures up to the former group, it can be designated as a contraction. If, on the other hand, it appears to belong with the latter group, the problem is resolved accordingly.

Three principal kinds of historical comparison are made. First, the approximate duration of the contraction in aggregate activity that

has occurred or seems likely to occur is compared with earlier contractions. Second, the relative depth of the decline in aggregate activity that has occurred or seems likely to occur is compared with the declines during earlier contractions. The specific measures include GNP in current and in constant dollars, industrial production, employment, unemployment, personal income, and other series. Table A–2 presents a few of these measures.

One procedure for making such comparisons is to assume a provisional business cycle peak date and compute the percentage change over the first three, four, five, and so on months following that date. Corresponding measures are computed for earlier contractions. This procedure can also be applied to earlier episodes that were not designated contractions. These comparisons show whether the size of the contraction to date is smaller or larger than the decline over the same interval on earlier occasions. Chapters 6 and 16 give examples.

Third, the same sort of historical comparison is carried out in terms of diffusion indexes to determine whether the current movement is as widely diffused among different economic activities or among different sectors or industries or regions as on the earlier occasions. Table A–2 shows, for example, how widespread the declines in employment have been during previous recessions.

Comparisons of the sort described are, of course, more tenuous when a contraction is in its early stages than when it is well under way. Sometimes the initial decline is so sharp and widespread that little doubt exists that the entire contraction will be comparable with earlier contractions. Or, the uncertainty may last for months without a decisive outcome. In this respect, for example, the mild contraction dated from April 1960 differed from the sharp contraction after August 1957. The period of hesitancy during 1962 also was difficult to evaluate at the time, although no contraction was designated, and this judgment seems vindicated by events.

Contemporary judgments on these matters need to be reinforced by an appraisal of (1) the causal factors underlying the recessionary developments and (2) the steps that the government has taken or may take that would offset or, perchance, reinforce recession. Developments elsewhere in the world—the occurrence of recessions abroad, world trade and capital movements, prices and interest rates in foreign countries—also have a bearing upon our own economic situation and our ability to react to developments at home. In short, mere statistical comparisons of the type described above, while essential, are not the only requirement for an informed judgment on the likelihood of a business cycle contraction.

If, as a result of these evaluations and comparisons, the conclusion is reached that a business cycle contraction comparable in its several

dimensions with earlier contractions has begun, the problem of dating the peak is taken up. The objective here is to identify the month when aggregate economic activity reached its highest level and began to decline—that is, to determine when the general expansion culminated and a general contraction got under way. To do this we again examine various monthly and quarterly aggregates. These series have been classified in previous studies by the National Bureau as "roughly coincident indicators" on the ground that their peaks and troughs have usually roughly coincided with the selected business cycle peak and trough dates. This correspondence is, of course, no accident—the dates have been selected on the basis of many of these same indicators. But the peak months of the several indicators do not coincide precisely either with the selected dates or with each other. Hence a judgment and a choice must be made among competing dates on the basis of the evidence.

In practice we assemble seasonally adjusted data for such comprehensive series as the following:[2]

- GNP in current dollars (value of goods and services produced: two series, one based on expenditure, the other on income, the difference being the statistical discrepancy);
- GNP in constant dollars (current dollar GNP deflated by the implicit price index);
- Total business sales (dollar volume of manufacturers', wholesalers', and retailers' sales);
- Bank debits outside New York City (dollar volume of payments from demand deposit accounts);
- Index of industrial production (physical volume of mining, manufacturing, and utilities output);
- Unemployment rate (two series: one based on the number of insured unemployed, the other on reports by a sample of individuals on their employment status);
- Nonagricultural employment (two series: one based on reports by establishments covering the number of their employees, the other based on reports by individuals on their employment status);
- Manhours of nonfarm employment (number employed multiplied by the average number of hours worked per week); and
- Personal income (income of individuals from wages and salaries, interest, dividends, rent, and benefit payments).

Composite indexes constructed from these series are a helpful device for summarizing their movements. In addition, some of the major components of these series are also helpful, such as the final sales component of GNP, the retail sales component of total business sales, the commodity-industries component of nonagricultural employment, and the labor income component of personal income. These components throw light on the movements of the totals and sometimes are more decisive in their own movements. Various price indexes, particularly the producer price index, are useful in evaluating the movements of total sales as well as in judging the state of the market for goods and services.

We examine other related series for what they reveal about the significance of the movements in total activity. Both leading and lagging indicators can contribute to a judgment on whether a cyclical contraction has begun and, if so, when it started. Certain "leading indicators," such as new orders for durable goods, average workweek, housing starts, inventory change, stock prices, profits and profit margins, and the rates of change in money and credit typically will have entered upon declines earlier, and hence their movements will have become clearer, before the aggregates have declined appreciably. Certain "lagging indicators," such as total inventories, credit outstanding, and plant and equipment expenditures, are generally less erratic than many other series and help to confirm that a cyclical decline in the economy is under way and to indicate, within broad limits, when it started.

Diffusion indexes are useful not only to measure the extent to which a contraction has spread throughout the economy, but also to determine the approximate date when the balance turned from expansion to contraction. In the later stages of a business cycle expansion, the number of activities that are continuing to expand diminishes. At about the time that aggregate activity reaches its zenith, there is a rough balance between expanding and contracting forces. Thereafter, the contracting factors dominate. Diffusion indexes portray this changing balance in various ways depending upon their composition and method of construction.

All of these materials, then, aid in the formulation of a judgment as to the date of a business cycle peak. Sometimes they point quite clearly to a single month: sometimes the evidence is conflicting and presents a difficult choice. We have, however, felt that it was best to choose a single month in each case rather than to indicate a zone within which the peak probably lies or to specify alternative monthly dates. Users of the chronology should be aware, however, that a degree of uncertainty attaches to any particular date and that revisions of the underlying statistical materials may later suggest a dif-

ferent choice. Indeed, the National Bureau has from time to time reviewed the dates and revised some of them by a month or two or three. For many purposes, however, small errors or uncertainties in the dates are not of great consequence. One of the advantages of basing them on a wide variety of evidence is that it reduces the possibility of error and the need for subsequent revision.

For further analysis of the problem of identifying business cycle peaks and troughs, the reader may consult Chapters 2 and 5, and the following:

Arthur F. Burns and Wesley C. Mitchell. *Measuring Business Cycles.* New York: NBER, 1946, Chapter 4.

Geoffrey H. Moore, ed. *Business Cycle Indicators.* Princeton: NBER, 1961. Chapters 3, 5, 8, and Appendix A.

Lorman C. Trueblood. "The Dating of Postwar Business Cycles." *Proceedings of the Business and Economics Statistics Section of the American Statistical Association.* 1961.

G.W. Cloos. "How Good are the National Bureau's Reference Dates?" *Journal of Business*, January 1963.

G.W. Cloos. "More on Reference Dates and Leading Indicators." *Journal of Business*, July 1963.

Victor Zarnowitz. "On the Dating of Business Cycles." *Journal of Business*, January 1963.

Victor Zarnowitz. "Cloos on Reference Dates and Leading Indicators: A Comment." *Journal of Business*, October 1963.

Victor Zarnowitz and Geoffrey H. Moore. "The Recession and Recovery of 1973–1976." *Explorations in Economic Research* 4, no. 4 (Fall 1977).

Ilse Mintz. *Dating Postwar Business Cycles: Methods and their Application to Western Germany, 1950–67.* Occasional Paper 107. (New York: NBER, 1970).

Ilse Mintz. "Dating United States Growth Cycles." *Explorations in Economic Research* 1, no. 1 (Summer 1974).

Rendigs Fels and C. Elton Hinshaw. *Forecasting and Recognizing Business Cycle Turning Points* (New York: NBER, 1968).

Solomon Fabricant. "The Recession of 1969–70." In *The Business Cycle Today*, Victor Zarnowitz, ed. (New York: NBER, 1972).

Much of the current information relevant to the problem is provided in the United States Department of Commerce monthly report, *Business Conditions Digest.*

NOTES TO CHAPTER 1

1. Arthur F. Burns and Wesley C. Mitchell, *Measuring Business Cycles*, p. 3 (New York: NBER, 1946).
2. For a more recent list, see Chapter 2.