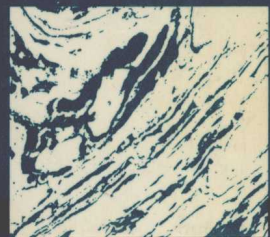


8TH EDITION

BUSINESS CYCLES AND FORECASTING

VALENTINE
ELLIS



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PREFACE

This is the eighth edition of *Business Cycles and Forecasting*. Every edition required revision to reflect significant changes in the economy and in the advances made in the field of economics. The current edition has been completely reworked to that end. Throughout the revision our overriding goal has been to do our best to present the ideas in as understandable a manner as possible. It is a textbook designed for learning.

The eighth edition also introduces a new author, Dennis F. Ellis. Dr. Ellis is Professor of Business Economics at The University of Michigan - Flint and did extensive reviewing work on the seventh edition of this text. He is also active in economic forecasting and consulting work.

Business Cycles and Forecasting is used in a variety of courses and in a variety of ways. Some users think of it as a text on business conditions analysis; others use it as an intermediate macroeconomics text; for still others it is their forecasting text. It is intended for both economics and business majors at the intermediate level and for the required course in economics for MBA students.

The organization of the book reflects the authors' conviction that to be able to intelligently analyze and forecast economic conditions (or simply to make sense out of what is going on in the economy), a theoretical foundation is an absolute necessity. In addition, some feel for historical experience contributes to the acquisition of the perspective so necessary for worthwhile analysis and forecasting. To this end the first four chapters of Part 1 present a survey of some of the important historical features of the fluctuations or cycles in the aggregate economy. Chapter 5 deals with cycles in specific industries including building and various agricultural crops, as well as a discussion of the Kondratieff cycle.

Part 2 is a short course in intermediate macroeconomic theory or national income analysis. Chapter 6 is a careful and rigorous discussion of the fundamental building blocks of aggregate economic analysis. Chapter 7 summarizes the most important elements of the classical macroeconomic model, while Chapters 8 through 12 develop the core of the contemporary basic macroeconomic model.

Part 3 summarizes the major schools of business cycle theory as developed by their leading advocates. This was once virtually the entire content of courses in business cycles and was, prior to Keynes, the main outlet for thinking about aggregate economics. At that time speculation about economic relationships predominated over rigorous theoretical and empirical study. Even today, these early theories provide valuable insight into the processes of economic activity.

Part 4 is devoted to forecasting on the aggregate level, the industry level, and the level of the individual firm. The use of econometrics has become more prevalent in forecasting, and Part 4 has been revised to reflect this. Chapter 15 now includes a discussion of nonlinear trends, as well as modelling of regional economics. Chapter 16 presents the leading, coincident, and lagging indicator system of projecting turning points. This chapter also introduces the reader to the workings of a simple "full blown" econometric model. The forecasting uses of such models is presented along with the potential for "what if" kinds of simulations. Techniques for forecasting durable goods are found in Chapter 17. This chapter also introduces the reader to the stock adjustment model. Chapter 18 presents an introduction to forecasting models used in the investment category of GNP. Statistical techniques of forecasting are continued in Chapter 19 with a discussion of a building block approach to projecting prices of individual

commodities. Sales forecasting is the topic of Chapter 20, and here the traditional methods of classical decomposition, and relations of sales with GNP are presented.

The purpose of Part 4 is not to make econometricians out of students but rather to expose them to the use of economic theory in statistical forecasting. The emphasis remains on the economics, with a healthy respect for the pitfalls of forecasting. On the other hand, since no action can be taken, whether in business or government policy, without some explicit or implicit forecast, the goal should be to make the best forecast possible with the techniques and information available.

Part 5 considers the issues of public policy to promote economic stabilization and growth, with the emphasis on monetary and fiscal policies. The faith of the public, and of economists themselves, in the ability to manage the economy by governmental action goes through cycles of its own. The stance that is taken in these chapters is that economic policy can have a very positive effect, but with all of the uncertainties involved, we should try to be aware of the possible undesirable consequences, and we should not expect more than can be delivered.

The authors have done their best to avoid polemics in presenting both the theory and the policy discussions. Instead our aim has been to offer a balanced treatment, believing that there is something to be gained from an open-minded study of diverse points of view. The factors responsible for producing changes in the levels of economic activity and national income are not completely understood in all of their ramifications, but most of the basic determinants are clear. The business cycle is no longer a totally unsolved riddle, and there exists a large measure of understanding of the factors that promote economic growth. As knowledge of the causal factors steadily increases, economic forecasting will become more accurate.

As must be the case for any textbook authors, our debts are great to the many individuals who have influenced our thinking. They include our own teachers, our colleagues, our students, the many professors and students who have used earlier editions of this book and have been kind enough to offer helpful suggestions for its improvement. Our developmental editors at South-Western Publishing, who also qualify as friends, deserve special mention for their professionalism in minimizing the errors of the authors. For this we particularly wish to thank Marvin Good and Alice Denny for their work over several editions of the book.

While it is impossible to thank everyone who has contributed to the eighth edition of *Business Cycles and Forecasting*, the following persons deserve special acknowledgment: David Fand from Wayne State University; Peeth Kartha and Clark Chastain, both from The University of Michigan - Flint; and Xiao Ming Shen, a graduate student at the University of Cincinnati. We also express our appreciation to our colleagues who reviewed the manuscript as it was in process:

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INTRODUCTION TO BUSINESS FLUCTUATIONS




Fluctuations in economic activity are a part of life. At times, they are of all-consuming interest and concern to people in their capacities as business decision makers, family breadwinners, budgeters, and wealth managers. Changes are continually taking place in prices, in wages, in the level of employment, and in other economic factors; these changes affect the fortunes of all of us, not only in our country but in the world. The early pioneers on the frontiers of civilization could largely ignore economic changes since they built their own homes from native timber, raised their own food, and made their own clothes. However, in an economy of interdependence in which almost everyone works for a living and uses the money received to buy goods and services, the state of economic activity is of primary concern to all.

The benefits of a free-enterprise system have been evident to other societies. There is now a greater movement towards the use of capitalistic approaches throughout the world. Economic systems that once relied on a great deal of economic planning are currently experimenting with the use of the price mechanism. Eventually these economies also will experience the ups and downs of business cycles.



PART 1



This introductory part attempts to set the stage for the later parts that deal with the analysis of the causal factors in economic fluctuations, the forecasting of future economic activities, and policies designed to mitigate the more severe and costly sorts of fluctuations. The first five chapters look at the historical record to encourage a perspective for current viewing of the economy. The patterns of business cycles and their regularities are given considerable study. Chapters 1 through 4 of this part deal with general cycles, that is, cycles in the overall or aggregate economy, while Chapter 5 treats a number of specific cycles, that is, cycles in particular segments of business activity. This discussion provides a review of the background needed to understand what is happening in the economy during cyclical fluctuations. These features of the American economy will be used in the explanation of why the cycle develops as it does. If the economy were changed materially, the cycle would be changed or perhaps even eliminated in the form in which it has occurred.



CHAPTER

1

NATURE OF ECONOMIC FLUCTUATIONS AND FORECASTING

The volume of economic activity in America has been increasing since early colonial days. This has been true not only because population and the number of workers have increased but also because our productivity has increased as methods have been developed to turn out more and more goods with a given amount of labor. This growth of economic activity has not taken place, however, at a steady rate. It was very rapid during World War II and the early postwar years and much slower in the 1930s and the late 1970s. Nor has growth taken place without interruption. There have been several periods of minor decreases in economic activity even in the prosperous years since the end of World War II. From time to time there have been much more serious and protracted interruptions in the forward push of economic progress. This happened from 1929 to 1933 and also in several earlier periods in our history.

NATURE AND SIGNIFICANCE OF ECONOMIC FLUCTUATIONS

Severe fluctuations in production, employment, prices, and other phases of economic activity are of primary importance as economic, social, and political factors. They affect not only the economy and society at large but also the living styles and standards of individuals of all ages and in all walks of life.

Economic problems and their impact on the people exist at all times and in all societies. The economics profession dedicates itself continuously to work on the solutions. Economic fluctuations exacerbate these problems, and to the degree that these fluctuations can be made milder, the problems and suffering can be lessened.

The first observation to make is that business fluctuations happen over time. In other words, the study must be dynamic rather than static.

If economic activity could change instantaneously, the statistics of business activity would look different than they do. But, in fact, most activity takes time: time for decisions to be made, time to arrange financing, time to order materials and hire or lay off workers, time to change production rates, and so on. Recognizing time lags of different lengths for different economic processes plays an important role in the understanding of business conditions analysis.

Market economies such as that of the United States, as opposed to planned economies, have certain characteristics that make them subject to change in their own peculiar fashion. Some of these are desirable, such as the growth arising from technological improvements in products or in production processes. Others are not at all desirable because they can result in periods of unemployment or inflation. In general, planned economies, as we have been able to observe them, are more cumbersome in their ability to change and adapt to new developments. In market economies, the rule is: Change, or suffer the consequences.

Depression Periods in Economic Activity

It is difficult to comprehend the full effect on the lives of individuals of periods of severe depression in economic activity. Those who are unable to find employment in a period of depression are forced to curtail consumption of goods and services to such an extent that real deprivation often exists. The psychological impact on their lives is more difficult to measure, but is certainly great. The effect on the attitudes of young people who are just entering the labor force and cannot find employment can be highly detrimental to the social framework of the nation. This is especially true of young people who are members of minority groups since these groups often are hit hardest by unemployment. Older workers who lose their jobs during the decline in business activity on the downswing of the cycle may find it almost impossible to find gainful employment on a regular basis even after the depression ends.

Depression periods have also often been periods of declines in the general level of prices, that is, of deflation. In a period of deflation, debtors find their loans and the interest payments on them more difficult to repay since it takes more purchasing power to do so than it did at the time the loan was made. This creates problems for business people and farmers who mortgaged their property in a period of high prices and must pay off mortgages and meet interest payments in a pe-

riod of falling prices. The same is true for individuals buying a house on which they have a substantial mortgage. Not only does it take additional real income to repay the loan and interest on it, but problems arise if an individual is forced to move. More dollars may be owed than the house will bring on the market and, as a result, there will still be some debt remaining after the sale, so nothing would remain for a payment on a new home.

Even when the price level does not decline absolutely during recession periods, often there is a period of failing rates of increase in the price level, which creates serious problems in many fields of activity. For example, during the inflation of the 1970s, farmers saw land values rising rapidly. In the anticipation of prices continuing to rise at a similar pace in the future, many farmers expanded their landholdings by going into debt. When, during the early 1980s, prices did not rise as fast as expected, servicing the debt became very difficult and foreclosures resulted. The disinflation of the 1980s created difficulties for all those who had made contracts to deliver goods or services at prices based on the expectation of higher rates of inflation than actually occurred.

Business fluctuations also create problems for society at large. From the economic standpoint, there is the loss of goods that might have been produced during the period of less than full employment. This will amount to billions of dollars even in relatively minor downturns and is staggering in major depressions. There is also a loss of capital equipment that deteriorates faster than it is replaced. As a result, it is more difficult to achieve high levels of production in the ensuing prosperity period, and the nation is permanently poorer than it would have been if capital had been replaced and expanded at more normal levels.

Business failures increase rapidly during periods of depressed business activity, especially in major depressions. This involves losses not only for the owners, but generally also for creditors. Such losses to creditors have been substantial even in minor downturns. Business failures also have an adverse effect on the employees of the concerns that fail and on the communities in which they are located.

Depressions also create social problems that become especially severe during protracted periods of large-scale unemployment. The crime rate increases, especially among the younger people who have not been firmly established in their jobs and homes or who are just entering the labor force and find it impossible to get jobs. Marriages are postponed, and birth rates drop, which intensifies the depression

since demand for housing and consumer goods related to homemaking and rearing a family is further reduced.

The political repercussions of business fluctuations are also of great importance. When large numbers of people are unemployed, they are easily swayed by demagogues who promise them food and shelter in exchange for some freedoms. At least part of the rise of communism, and especially fascism, can be traced to such situations in periods of greatly depressed business activity. In democratic nations, there is tremendous pressure on the government during times of subnormal business activity to do something about unemployment and other problems associated with depressed economic conditions. The result is that the trend toward government regulation and public ownership of business is greatly accelerated.

Boom Periods in Economic Activity

Severe problems also occur when demands are made on the economy that are beyond its ability to supply. Increasing output in itself creates no macroeconomic problems, but the effect of demand in excess of the ability to supply leads to an increase in the general level of prices. Prices do not change uniformly but do so at different rates in different sectors of the economy, which creates problems. It leads to inequities among individuals and groups and also to a less than optimum allocation of resources.

Inflation creates serious problems for the individual. Debts may become easier to pay off, but problems in planning insurance, investment, and retirement programs increase. The face value of life insurance policies remains unchanged, but the proceeds buy less. The same is true of many pension programs that guarantee a fixed dollar amount. Personal investment also becomes a problem since bonds and savings and loan shares lose purchasing power as prices go up, and the average individual does not have the necessary analytical or financial ability to invest in common stocks in such a way as to keep up with inflation.

Many groups in society suffer a loss in real income during inflationary periods and try to use political pressure to stop it. The pay of government workers, teachers, employees in regulated industries, and others lags behind the rise in prices, and this makes it difficult to recruit and hold good workers. The teaching profession is likely to be hard hit since, when income fails to keep up with prices, fewer students, especially the good ones, plan to become teachers and thus a shortage exists for several years.

In the United States, the desire to avoid the undesirable consequences of economic fluctuations led to the enactment of the Full Employment Act of 1946, which stated that it was the policy of the federal government to plan its activities affecting the economy so as to promote full employment. The government is also under continuing pressure to use its powers and influences to control inflation as well as deflation. This was formalized by Congress in 1978 in the Humphrey-Hawkins Act, which specified targets for both unemployment and inflation. Government programs in agriculture have been directed toward stabilizing agricultural income and in housing toward stabilizing overall economic activity.

TYPES OF VARIATIONS IN ECONOMIC ACTIVITY

Economists recognize different types of variations in economic activity. These are the trend, business cycles, seasonal fluctuations, and irregular or random fluctuations.

Trend

Although economic activity does not proceed smoothly and is interrupted by periods of decline followed by increased activity, there is an underlying long-run tendency for economic activity to increase or decrease that is referred to as the trend. Trend is the persistent underlying movement that takes place in economic activity in general or in a sector of the economy over a period of years. It is the basic growth or decline that would exist if there were no periods of boom or depression or less pronounced variations in economic activity.

The trend in total economic activity is a linear one; that is, activity has grown at a more or less constant rate over a period of years. This trend in the United States has been upward due to many factors. The development of a new continent was a major factor until around 1900. The rapid increase in population, the increasing stock of capital goods, technological progress, the increased education and skills of the labor force, increased managerial skills, and the discovery of new sources of raw materials have also been significant.

The trend of total economic activity is the combined result of the trends of individual industries and businesses. A successful new industry usually grows rapidly in its early stages. Growth then levels off to a more gradual rate. In time, the industry becomes integrated with the economy, and its growth is largely governed by the growth in the

general economy. The trend of growth of such a new industry is a curvilinear one; that is, it resembles an elongated S. As the demand for goods and services changes, some industries may pass their peak and decline. This may be a gradual downward movement, as in the case of coal furnaces, or a rapid decline, as in the case of a product that has become obsolete, such as wagon wheels.

Business Cycles

Changes in the level of economic activity caused by the trend are overshadowed by continually recurring variations in total economic activity. Several years of expansion in total economic activity are followed by a period of slower growth or of contraction in such activity. These fluctuations occur in total economic activity, not just in a particular industry or sector of the economy. Such expansions and contractions in the level of activity occur at about the same time in most sectors of the economy. This sequence of fluctuations is a recurring one, but it is not periodic; that is, such variations do not occur at regular time intervals and do not last for the same periods of time. The amplitude of movement from the low point of activity to the high point of activity is not the same. These fluctuations have become known as *business cycles*. Any connotation of a high degree of regularity, however, that the term “cycles” may give is not warranted by serious study of the data on total economic activity, production, employment, prices, or any other major economic series. On the other hand, the recurrence of ups and downs in business is more regular than would be expected if it were a random process.

Seasonal Fluctuations

Seasonal fluctuations are changes in economic activity during the course of a year that occur in a more or less regular pattern from year to year. Such changes are related to the changing seasons of the year, to holidays, or to the calendar. The canning or freezing of fruit, for example, must take place during that season of the year when the fresh fruit is available. Other seasonal patterns are related to customs in our society, such as sales arising out of Christmas gift purchases and the Easter parade. The changing date of Easter leads to a changing seasonal pattern in those sectors of economic activity that are affected. Other seasonal variations occur because of the unequal number of days in the month in our calendar and the unequal distribution of holidays