THOMAS F. DERNBURG

MACRO-ECONOMICS

CONCEPTS, THEORIES, AND POLICIES

SEVENTH EDITION

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THOMAS F. DERNBURG
The American University

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PREFACE

This seventh edition of *Macroeconomics* represents a completely revised and rewritten edition of Dernburg and McDougall's textbook. Because it is designed to serve students at the intermediate level, the center of attention continues to be the Keynes-Hicks income expenditure model. This is now, however, augmented with extended treatment of aggregate supply in order to permit a complete analysis involving prices as well as quantities. Dynamic aggregate demand and supply functions are derived explicitly and are presented for use in the analysis of the inflation-stagflation process.

The building block approach of earlier editions has been retained. However, the central organizing principle is now somewhat different. Whereas the theoretical core of comparative static macroeconomic analysis had been presented in Part Two, with dynamics reserved for Part Three, Part Two is now used to develop the income-expenditure side, culminating in the aggregate demand function. Part Three then adds aggregate supply and integrates this with aggregate demand so that the inflation-stagflation process can be treated within a unified framework. Economic growth fits into Part Three as a long-run aggregate supply problem.

Part One consists of introductory materials. Chapter 2 provides a brief introduction to the national accounts along with new material on the construction of price indexes. A new chapter which introduces such key relationships as the output, productivity, and employment connection has been added. The purpose is to emphasize that recent stagflation is a multifaceted problem in which excessive unemployment and inflation interact with inadequate economic growth.

In previous editions international macroeconomic topics were discussed in two stages. The income-expenditure aspects of the analysis had been incorporated into Part Two to complete the basic macro model, while policy issues were considered in the last part of the book. In the current edition the open-economy macroeconomics are presented in two integrated chapters that now constitute a separate part of the book. This is a disadvantage in that the subject may receive short shrift in a one-semester course, but it provides a gain by permitting the basic closed-economy model to be assembled more simply and expeditiously. There is a further gain in that the unity of the open-economy material is more effectively integrated in the current package.

Policy issues are sprinkled throughout the book in order to provide as much meaning and relevance to the theory as possible. However, care has been taken to avoid introducing policy issues prematurely. We have, in other words, discussed policy as soon as possible, but not before the student's level of sophistication is sufficient to appraise the issues and their resolution effectively. This makes for a certain lack of order in dealing with policy issues, but it seems worth the price.

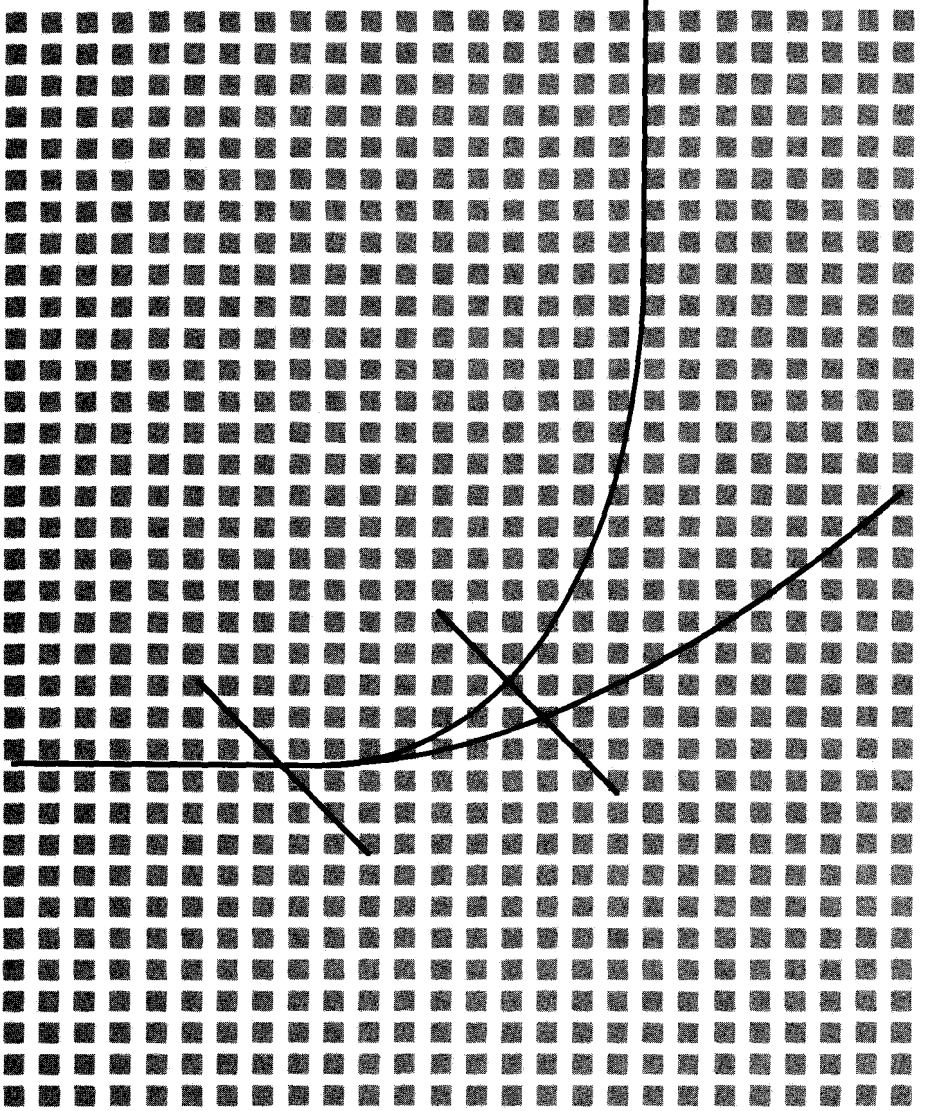
The volume is accompanied by extensive review questions at the end of each chapter as well as an instructor's manual expertly prepared by Robin H. Hahnel of the American University. Thanks are due to the following reviewers for valuable comments and criticisms: Robert Barry, College of William and Mary; John Birch, University of Wyoming; Louis P. Cain, Loyola University of Chicago; Meredith O. Clement, Dartmouth College; Charles Fischer, Pittsburg State University; Wayne A. Jesswein, University of Minnesota; David Luan, Southern Illinois University; and Nina Pascal, Wright State University. Responsibility for errors and omissions lies with the author.

Thomas F. Dernburg

CONTENTS

INTRODUCTION TO MACROECONOMICS AND MACROECONOMIC MEASUREMENT

1



MACROECONOMICS AND ITS SETTING 1

1-1 AN OVERVIEW

Macroeconomics is the study of the behavior of economic events in the aggregate. The magnitudes that most concern the macroeconomist are the overall, or "global," rate of unemployment, the level of production and the rate at which it changes, and the level and rate of change of the overall level of prices. Thus macroeconomics is the study of the behavior of employment, output, and inflation.

Despite ongoing controversy between different schools of thought, the popular notion that macroeconomics consists of a wide assortment of contradictions, half-truths, and mutually exclusive systems of thought is demonstrably false. Macroeconomics has an elegant and remarkably powerful set of tools that come together in an orderly fashion that may be described as the "macroeconomic model." Differences in emphasis and priority can be readily fitted into the model, and their implications can be examined. New developments often seem revolutionary, but once the dust settles, we usually find that they amount to refinements or logical extensions of an economic model that remains basically sound even though it admits to a wide variety of interpretations and policy conclusions.

It is the job of a textbook on macroeconomics to explain the macroeconomic model with respect to its individual parts and their interactions. There is no need for separate models that contrast classicists with Keynesians, monetarists with fiscalists, and post-Keynesians with rational expectationists. Once we get a handle on the basic model, we can easily see where the

various "schools" fit in. This is not the approach taken universally in textbooks, but it is the best approach because it provides a framework within which logical thinking about economic problems can proceed profitably and effectively.

Macroeconomics is first and foremost a policy science. On the demand side, the major tools of policy are monetary policy and fiscal policy. Monetary policy is conducted by the Federal Reserve system, which has the capacity and the authority to alter the supply of money and credit in the economy. Fiscal policy entails the use of the budget of the federal government in order to influence the level of total spending in the economy by means of changing the amount of the government's spending for goods and services or altering the incomes of the private sector by changing taxes or government transfer outlays to individuals. The task of the policy-oriented macroeconomist is to show how these tools can be used to narrow the gaps between actual employment and full employment, between actual inflation and no inflation, and between the actual growth rate and the growth of potential output.

In the past it often was possible to pursue one target at a time without worrying too much about the others. During the Great Depression of the 1930s the focus of attention was on raising production and employment, and those objectives could be pursued without too much concern about inflation. Conversely, during World War II as well as the Korean and Vietnam wars the chief problem was finding ways to moderate the inflationary impact of expanded military spending. The economic diseases seemed to arrive one at a time.

But as the economy moved into the 1970s a new phenomenon surfaced. The diseases of excessive unemployment, too much inflation, and too little economic growth began to plague the economy simultaneously. Table 1-1 records this descent into stagflation and shows how economic conditions on all fronts deteriorated. Unemployment and inflation both were higher

TABLE 1-1

Unemployment, Inflation, and Growth Since 1950

Years	Unemployment Rate	*Annual Rates of Growth*			Discomfort Index
		Prices*	Real GNP†	Productivity‡	
1960–1969	4.8	2.6	4.2	3.1	7.4
1970–1979	6.2	6.5	3.1	1.6	12.7
1979	5.8	8.6	3.2	−0.9	14.4
1980	7.1	9.3	−0.4	−0.7	16.4
1981	7.6	9.4	1.9	1.8	17.0
1982	9.7	6.0	−1.8	0.3	15.7

* Annual rate of growth of the implicit price deflator for gross national product (GNP).
† Annual rate of growth of real GNP.
‡ Annual rate of growth of output per hour of all persons in the business sector.

in the 1970s than in the 1960s, and the rate of economic growth was lower. Annual data for 1979–1980, which also are shown in the table, confirm that the situation seemed to get even worse as the economy moved into the 1980s. Notice the last column of the table, which records the "discomfort index," which is merely the sum of the unemployment rate and the rate of inflation. This simple idea, invented by the late Arthur Okun, chairman of the Council of Economic Advisors under President Johnson, provides a seat of the pants indication of the degree to which overall economic conditions are improving or deteriorating.

Stagflation creates a severe dilemma for monetary-fiscal tools. If these tools are used to slow inflation, they tend to make unemployment worse; if they are used to raise employment, they may worsen inflation. As a consequence, macroeconomists have branched out and have attempted to find supplementary tools of policy, including "incomes policies," which are designed to slow inflation without slowing the economy, and "industrial policies," which are designed to stimulate investment and restore growth in productivity.

After World War II there was widespread fear that the economy might slip back into depression in the wake of reductions in defense spending. Fortunately, this fear was not realized, and as time went on economists became sufficiently confident that high employment could be achieved and reconciled with price stability that they shifted their attention to the study of the growth of potential output. Such analysis reverted to the frame of reference of the older (sometimes called "classical") economists, where full utilization of labor and capital could be assumed as givens and where the subject for study became the growth over time of the stock of labor and capital as well as a description of how these factors, when combined with improved technology, interact to produce growth of potential output. This study was called "neoclassical" growth economics, and its focus of attention was the economy's supply potential in the long run.

The influence of neoclassical growth economics was such that the Council of Economic Advisors (CEA) published charts in its annual reports in which labor force and productivity trends were used to project "potential output" and potential output was compared with actual output. The difference between the two was the "GNP gap," and the focus of attention was on how best to fill this gap. An example of such a chart is presented in Chapter 3. Potential output gives the impression of marching along smoothly and inexorably, whereas actual output bounces around and acts very much as if it were struggling to keep up.

An approach which envisions smooth growth of potential output and which causes policy problems to be focused on the GNP gap and therefore to be demand-oriented is ill equipped to deal with abrupt changes in aggregate supply. Yet severe supply shocks came to plague the economy in the 1970s. The sharp deterioration of world agricultural conditions in the early 1970s and the OPEC pricing decisions that caused the price of imported oil to quadruple in 1973–1974 and then to double in 1979 were the most conspicuous and important factors. But it also became clear as the impact of these dramatic changes was studied that many other sources of supply

restriction were afflicting the economy and that some of them were built into the economy in a manner that made supply restriction an annual event. Among these other factors were the dismantling of President Nixon's price controls program in 1974, the very drastic changes in international rates of currency exchange after 1971, the sharp annual increases in payroll taxes that have been needed to finance increasingly burdensome social insurance programs, periodic increases in legal minimum wages, and substantial increases in sales and excise taxes at the federal, state, and local levels.

Supply restrictions carry with them the uncomfortable consequence that they raise prices as they reduce production and employment. A careful student of the 1974–1975 recession estimated that prices rose 3.7 percent more rapidly in 1975 because of the oil shock and that the unemployment rate, which averaged 8.8 percent of the labor force in 1975, would have been reduced to 7.2 percent had there been no increase in energy prices.[1]

Although the same author estimated that the economy would have suffered a recession in 1974 even without the oil shock, it was clear that the increase in energy prices both worsened the recession and raised the inflation rate. Thus supply shocks are among the most nettlesome problems with which we have to deal. It is therefore easy to understand the recent preoccupation of macroeconomists with short-run and long-run supply-side issues. This preoccupation includes policies that would reduce the severity of the impact of supply shocks, policies that would offset their impact once they occur, and fundamental policies of tax reform that would restore work incentives and growth in productivity.

The renewed interest in the supply side is all the more pressing because the economy's growth in productivity has been languishing for over a decade. Output per hour of labor input, or labor productivity, is a crucial variable for the economy since without productivity growth the economy becomes a "zero sum society" in which one person can become better off only at the expense of someone else. If the average worker produces no more per hour this year than last year, it will be very hard for that worker to enjoy a higher standard of living. Among the available options are working longer hours, inducing another member of the family to enter the labor force, and taking income away from someone else directly by theft or hard bargaining or indirectly by getting Congress to cut taxes and curtail spending on social services.

An increasing fraction of the adult female population did in fact enter the labor force during the 1970s, and this helped ease the pressures caused by stagnating productivity. Nevertheless, these pressures were substantial, and they manifested themselves in a number of unpleasant ways. A zero sum society is not fertile turf for humanitarian programs. When real incomes are growing, people tend to be more generous because expansion of spending on social services can be financed out of the "growth dividend." But let that dividend decline or disappear and it doesn't take long before

[1]Otto Eckstein, *The Great Recession*, North-Holland, Amsterdam, 1978, chap. 9.

people start to participate in tax revolts and complain about loafers, freeloaders, and welfare cheats.

In the zero sum society competition for an increased share of a fixed economic pie intensifies, and it is therefore not surprising that we have inflationary boosts of wages and prices even when demand conditions would not seem to favor or justify such behavior. Then, in an effort to slow the inflation, we may resort to restrictive policies that reduce demand and in doing so bring about unemployment and reduced production levels that further aggravate shortages and loss of income by causing the economy to operate below potential. One disease tends to beget another. It is probably no accident that the age of stagflation coincided with the onset of the stagnation in productivity that found the growth of labor productivity declining from an average annual rate of 3.1 percent in the 1950s and 1960s to 1.6 percent in the 1970s.

The recession of 1974–1975 was far worse in its severity than any of the post-World War II recessions that preceded it. Unemployment rose to almost 9 percent of the labor force in early 1975, which was worse than anything that had been encountered since the Great Depression of the 1930s, when unemployment rose to 25 percent. Some people called it the "great recession," although in retrospect that appellation may have been premature since this period proved to be the prelude to an even worse recession that afflicted the economy in 1981–1982.[2]

In addition to its severity, the recession of 1974–1975 differed from prior recessions in several critical respects. Because the recession was in large part a manifestation of supply shocks, price pressures continued during the recession, and indeed, the underlying inflation was worse afterward than it had been before. This was unusual because recessions tend to cool inflation, just as the 1981–1982 recession has been cooling it. Although favorable food prices brought about a pause in 1976, the acceleration of inflation that had been under way since 1972 continued largely uninterrupted.

Such a trend carried with it the expectation of continuing inflation, with the result that contracts increasingly took anticipated inflation into account. Many labor contracts began to contain cost-of-living adjustment (COLA) provisions which automatically adjusted wages in response to inflation, and employers granted wage increases in response to the expectation that higher subsequent prices would cover the added wage costs even when demand conditions were not particularly favorable to such largess. Thus the inflation was built into the economy, and thinking about the economy and its problems necessarily had to be done with reference to an ongoing underlying trend of inflation.

The concept of a wage-price spiral or an inflation treadmill is certainly not new, but in recent years the idea has been augmented by the notion

[2] Whether you call it a recession or a depression is largely a matter of taste. Economists have never made the distinction clear. Therefore, it's probably just as well to stick with the old rule of thumb that if your neighbor loses his or her job, it is a recession, and if you lose yours, it is a depression.