MACROECONOMICS
f o r DEVELOPING
COUNTRIES

PAUL COOK & COLIN KIRKPATRICK

Macroeconomics for Developing Countries

Paul Cook

Senior Lecturer in Economics,
University of Manchester

Colin Kirkpatrick

Professor of Development Economics,
University of Bradford

To Soyini, Khari, Susan and Stephen

Preface

This book has arisen out of the authors' experience in teaching introductory and intermediate level courses in macroeconomics to students studying the problems of Third World countries, many of whom are involved in economic policy formulation and implementation in their own countries on completion of their studies. Many others have been involved in work for international development agencies. In drawing up a course that would meet the needs of these students, two things became clear. The first was the absence of a suitable textbook. There are of course numerous excellent texts in development economics and in macroeconomics, but neither class of text exactly met our requirements. Economic growth, rather than short-run macro management, remains the dominant concern in development economics. Attention is concentrated on the contribution of aggregate supply to economic growth, in terms of either the productive use of unlimited supplies of labour, or the removal of particular supply constraints, such as a shortage of domestic savings or foreign exchange. On the other hand, in macroeconomic textbooks the analysis is conducted in terms of advanced, industrialised economies, with no attempt to adapt the framework to the particular conditions and characteristics of developing economies.

The second thing we quickly learnt from teaching the course was that students had considerable difficulty in relating the basic analytical models to current policy debates. There is a growing literature concerned with macro policy issues in less developed countries (LDCs), but much of this material is written at an

advanced level in professional journals and is not easily assimilated by student readers, especially those who do not have a firm grounding in economic theory.

We have tried to overcome these two difficulties by showing how the standard textbook macroeconomic analysis can be adapted to incorporate particular features and conditions found in developing countries, and by then going on to use this framework to examine various macro policy issues of current concern to developing countries. Our attempt to provide a coverage of both theory and policy at an accessible level has inevitably involved simplification of what are complex and controversial issues. But on balance we believe that the potential dangers of over-simplification are outweighed by the gains of encouraging students to bridge the gap between theory and practice at a comparatively early stage in their studies.

Contents

1

Introduction

The objective of macroeconomic policy is to control the short-run behaviour of an economy. The 'short run' is usually taken to cover a period of one to three years, and 'behaviour' is monitored by the movements in three main aggregate level variables – the output level, the inflation rate and the balance of payments. Short-run macroeconomic policy is often referred to as stabilisation policy. If we think of stability as a situation in which the main macro variables are at a desired or target level, then the need for stabilisation policy arises when the current rate of inflation, output level and balance of payments are not at these target levels. It is necessary, therefore, for the economy to 'adjust' from its current situation of instability to the target stabilised position.

Economic instability is reflected in high inflation, low output growth and a growing balance of payments deficit. The figures in Table 1.1 make it clear why short-run macroeconomic policy is critically important in developing countries. Each of the three main macro variables has fluctuated widely over the past decade. Growth in real output varied significantly from year to year. Inflation has been in excess of 25 per cent per annum throughout the decade. The goods and services account of the balance of payments has been in continuous deficit, with large annual fluctuations.

Table 1.1 Macro indicators for developing countries 1981–88

	1981	1982	1983	1984	1985	1986	1987	1988	1989
Inflation (annual % change)[1]	25.8	25.2	32.4	38.2	39.7	31.1	40.5	67.1	45.5
Current account balance (US$ billions)[2]	−68.0	−100.3	−82.7	−54.3	−51.2	−73.4	−32.1	−55.0	−57.0
Real GDP growth rate	1.9	2.2	2.2	4.1	3.6	4.2	3.3	4.3	3.3

[1]Consumer prices: weighted averages
[2]Goods and services balance

Source: International Monetary Fund (1989)

1.1   The national income accounting framework

We begin our analysis by reviewing what has become the focal point of macroeconomics, particularly the Keynesian variety, i.e. the aggregate income accounts. The macro level statistics are provided by the system of national accounts, and these accounting relationships can be used to provide important insights for the formulation of macro policy.

The central concept in national accounting is to measure the total output of goods and services of the economy over a given time period. This measure is known as gross domestic product (GDP). Output is produced by employing various factors of production (mainly labour and capital), and the revenue from the sale of output is used to make payments to these factors of production. The value of output is identical, therefore, to the value of incomes paid out, or what is known as national income. Since the output produced is sold (or added to stocks), the value of output is also equal to the value of expenditure. GDP can be regarded, therefore, as the total value of output produced (aggregate supply), the total value of expenditure on output (aggregate demand), or the total value of incomes generated in producing the output (real income).

The basic relations are a little more complicated when we allow for an economy's transactions with other countries. In an open economy, the total value of the output produced is purchased by either domestic or foreign residents. The part purchased by foreigners is exports. The part purchased by domestic residents is their total spending, less the amount spent on imports. The total spending of domestic residents is defined as absorption (A): if we deduct imports from absorption, then the remainder is spending on domestic output.

National income (Y) is given by total spending (domestic and foreign) on domestic goods, or

$$Y = A - M + X \tag{1.1}$$

$$= A + (X - M) \tag{1.2}$$

or,

$$(Y - A) = (X - M) \tag{1.3}$$

$(X - M)$ is the difference between the values of exports and

imports, and is known as the balance of trade. Relationship (1.3) tells us that the balance of trade is identically equal to the difference between national income (or the value of output, which is aggregate supply) and domestic absorption (which is aggregate demand).

Domestic residents may own factors of production abroad, and receive an income for their factor services rendered abroad. Similarly, the domestic economy may use factors whose owners reside abroad. These items (net factor payments, *NFP*) would need to be deducted from GDP to get a correct measure of final output produced by domestic residents. GDP plus *NFP* is called gross national product (GNP). If *NFP* is zero, then GDP and GNP are equal.

If *NFP* is zero, the trade balance $(X - M)$ is the same thing as the current account balance (CA). Thus, if there is a current account deficit (i.e. $M > X$), it is identically equal to the excess of spending by domestic residents over their income: aggregate demand exceeds aggregate supply.

Absorption was defined as total spending by domestic residents. Expenditure is made on consumption (C) and investment (I) goods (some of which may be imports). Expression (1.3) can therefore be rewritten as follows:

$$CA = X - M = Y - A = Y - (C + I) \qquad (1.4)$$

The economy's balance of payments on current account is equal to the change (with opposite sign) in the stock of claims on the rest of the world (net acquisition of foreign assets, *NAFA*).

$$CA = X - M = \Delta NAFA \qquad (1.5)$$

Savings is defined as the difference between income and consumption, i.e. $Y - C$. Therefore (1.4) can be rewritten as follows:

$$CA = X - M = Y - A = S - I \qquad (1.6)$$

The current account deficit is identically equal to the level of net savings.

These national income identities can be used to illustrate the essence of the problem of macroeconomic stabilisation. If we assume that the private sector components of aggregate saving and investment are equal, so that net savings in the private sector are zero, then any difference between S and I must be due to an imbalance between public sector investment and savings. Thus,

from (1.6), we can see that a balance of payments deficit on the current account will be matched by a budget deficit. This implies a fall in the country's stock of foreign assets, or an increase in the level of foreign liabilities. If this situation persists, a point will eventually be reached where the stock of foreign reserves is exhausted and/or no further foreign borrowing is possible. At this point, the economy must adjust, by lowering the level of domestic absorption relative to the level of output. In other words, the gap between aggregate supply and demand will have to be reduced.

1.2 Supply and demand imbalance

The previous section described the statistical framework within which macroeconomists work, and also introduced the notion that much of macroeconomic analysis is founded on the relation between aggregate demand and aggregate supply. We also saw that the need for stabilisation policy is generally signalled by excess demand pressures. It will be helpful at this stage to give a brief introduction to these important concepts, which underlie much of the macro analysis developed in the later chapters.

An aggregate supply curve shows the level of output that the total economy will supply at a given price level. If, for instance, in Figure 1.1, the price level is P_0, then suppliers are willing to produce Y_0 level of goods and services; if the price level is P_1 then Y_1 will in turn be produced. At this stage the price level has not been determined, only the decision to supply a certain amount at each different price level.

The reader will notice that the aggregate supply curve (AS) is drawn with an upward slope from left to right so that at higher price levels more output is provided. Obviously there will be a point when, given fixed amounts of capital, labour and technology, output cannot be increased in the short term. This represents the full employment level, and at this point the aggregate supply curve will become vertical.

Aggregate demand is the demand for goods and services as a whole, i.e. the demand for total output. The aggregate demand curve simply shows the relationship between the total amount of goods and services people desire and the price level. The curve constructed in Figure 1.1 and labelled AD is downward sloping
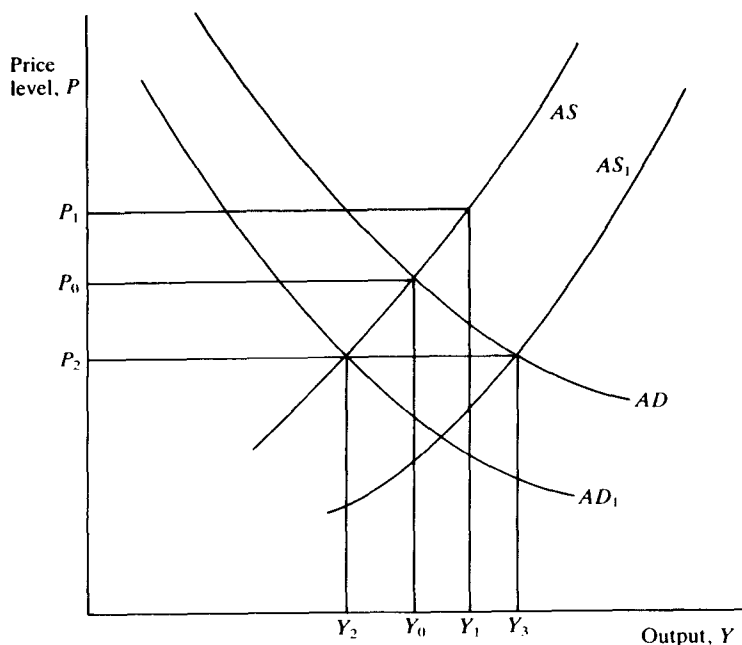
Figure 1.1 The effect of a reduction in aggregate demand and an increase in aggregate supply

from left to right, showing at each different price the level of output demanded.

The factors underlying these curves are quite complex and involve the decisions of individuals, businesses and government to both supply goods and services and demand them. In a real economy, decisions to supply will be affected by management objectives, which in turn will be affected by such things as the level of wages and the profits sought by people who own businesses. Demand is made largely by the same people who supply goods and services. Demand is affected in turn by the level of income and people's ability to pay. However, reflected in the aggregate demand curve is not simply the total demand for goods and services but also the demand for (and supply of) money. This is a more difficult concept that will be explained in the next two chapters. What needs to be understood at this stage is the fact that the two aggregate

curves for supply and demand reflect the decisions to supply (produce) and demand (spend) of a wide range of individuals whose goals, tastes and preferences also differ widely.

The intersection of the *AS* and *AD* curves determines the equilibrium price and output levels. At the equilibrium price and output levels, P_0 and Y_0, economic agents on the demand and supply side of the economy are satisfied with what they are doing so there is no pressure for change. But suppose a disequilibrium exists, with the price level at P_2 and aggregate demand in excess of aggregate supply. How can the economy adjust to remove this disequilibrium?

A stabilisation policy will require the government to introduce economic measures that have the effect of lowering the level of aggregate demand, represented in Figure 1.1 by a leftwards shift in the *AD* curve to AD_1. Equilibrium is restored with price level P_2 and a lower output level Y_2. An alternative policy would be to shift the aggregate supply curve to the right; with equilibrium being restored at P_2 and Y_3. However, 'supply-side' policies typically take a long time to have an effect, so an immediate reduction in the economy's macro disequilibrium will have to rely mainly on 'demand-side' stabilisation policies.

The impact of a shift in the *AD* curve will depend on the shape of the *AS* curve. In Figure 1.2 we have drawn the *AS* curve in three sections – horizontal, upward sloping and vertical. What happens if *AD* increases? If *AS* is horizontal, output rises and the price level remains unchanged; if *AS* is vertical, the price level rises and output is unaltered; if *AS* is upward sloping, then both output and the price level increase. The shape of the *AS* curve is therefore critical in determining how a shift in aggregate demand will affect the price level.

Figure 1.3 illustrates the case of supply shifts. Provided the *AD* curve is downard sloping, then a shift in *AS* will always cause the price level and output level to move in opposite directions.

1.3 Economic structure and macroeconomic analysis

So far we have offered no explanation of the slope of the *AD* and *AS* curves. This will be the task of the following chapters. It is sufficient to note that the two curves represent the aggregation of all the separate markets within the economy. Each of these markets in turn
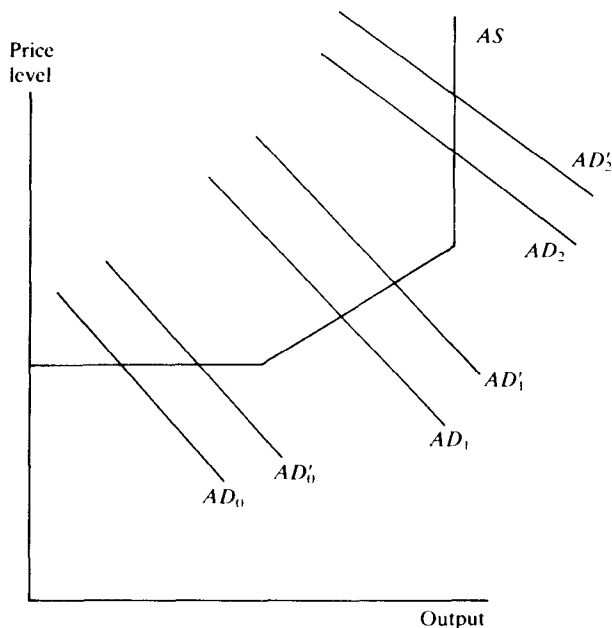
Figure 1.2 The effect of an increase in aggregate demand with different slopes for the aggregate supply curve

consists of individual consuming and producing agents. The shape of the *AD* and *AS* curves must therefore depend on the underlying market structure of the economy and the way in which economic agents behave within this structure. When we draw the aggregate demand and supply curves with a particular slope, or when we shift them in our analysis, we are implicitly assuming a certain underlying structure in the economy, and a given pattern of economic response by the economic agents within that structure. Economic policy issues cannot be discussed, therefore, without reference to particular economic structures and institutions, and economic models need to be formulated with structural characteristics appropriate to the economy at hand. The notion of a single model has to be replaced by a range of models, each of which is associated with a particular set of 'stylised facts' reflecting different structural and institutional conditions.