

International Financial Integration

THE LIMITS OF SOVEREIGNTY

A HALSTED PRESS BOOK

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David T. Llewellyn

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INTERNATIONAL FINANCIAL INTEGRATION

Dedicated affectionately to
WENDY

Preface

This book is about the nature and extent of international financial integration and its policy implications. The orientation of the study is the extent to which such integration limits national sovereignty in the execution of economic policy in general and monetary policy in particular.

The substantial volume of international capital flows is a major feature of the international monetary system, and has an important impact on the domestic economy. And yet many basic textbooks tend either not to consider this aspect of the macro-economy, or confine the analysis to an appendage of the main argument. It is hoped that this book will help to redress the balance somewhat by placing international financial linkages and capital flows at the forefront of the analysis of the macro-economy.

Only weeks after the typescript was sent to the publishers the British Government abolished all remaining exchange-control regulations which had previously inhibited capital outflows from the United Kingdom. This move could prove to be one of the most important changes in the monetary environment of the United Kingdom since 1945, and it certainly increases the extent to which the country is financially integrated with the international money markets. Although the orientation of the book is not specifically the United Kingdom, the text has been amended to take note of the fact that exchange control in the United Kingdom was abolished in October 1979.

My interest in this topic was developed during a three-year period at the International Monetary Fund in Washington, and my intellectual debt to former colleagues at the Fund is gratefully acknowledged. But the book itself arose out of a course of lectures given at the Universities of Loughborough and Nottingham, and a week's course given regularly for the Bank of America in London and Paris. Indeed, the book is an attempt at integrating the basic, sometimes rather abstract, analytical framework of the economist, and the expertise and orientation of the practical banker. The analysis of international financial integration is conducted in terms of the actual operation of institutions and financial markets. It is hoped that both economist and banker can learn from each other, and that an attempt at something of a synthesis of their respective traditions will prove useful. The book is therefore addressed to economists, bankers and students and has been written with each in mind. Thus, while economists can learn from the operators who make the markets they analyse, similarly bankers can benefit from the broader analytical framework of the economist.

At various points in the book, therefore, examination is made of the operation and procedures of relevant financial markets (such as the forward exchange market) and of banking operations. This is based on a belief that an appreciation of banking techniques, and the mechanics of money markets, must be a necessary ingredient of a full understanding of the operation and conduct of monetary policy and the implications of international financial integration.

The book will hopefully prove useful for bankers, fellow economists and students. It should be relevant for many third-year undergraduate courses in macro and monetary economics, banking, international finance and international economics at universities and polytechnics. The emphasis of the discussion is upon issues of policy and relevant empirical evidence is surveyed. Institutional mechanisms are discussed while purely theoretical constructs have been kept to a minimum. No attempt at all has been made to offer a comprehensive review of the enormous theoretical literature on the monetary aspects of the open economy. Indeed, the framework of the study is set in Chapter 2 in terms of the extended *IS/LM* paradigm.

I owe a considerable intellectual debt to many colleagues and, of course, to the many economists whose research and writing has extended the subject enormously over the past decade. I owe a particular debt to Professor Brian Tew of the University of Nottingham, whose perception and ready willingness to discuss issues is very much appreciated by many. I have also benefited from many discussions with Mr G. E. J. Dennis of the University of Loughborough, with whom I collaborate in writing 'Trends in International Banking and Capital Markets' for the *Financial Times*. I also wish to offer my sincere thanks to the many bankers and officials in various countries who have patiently dealt with my many questions, and who have given so freely of their time. I also gratefully acknowledge the generous financial assistance given to my department by the Midland Bank. The editor of *The Banker* has also kindly allowed me to reproduce substantial parts of my article in the January 1979 issue.

There have been several delays in the writing of this book. I would like to record my sincere thanks to George McKenzie of the University of Southampton, and to Macmillan for their encouragement and patience during the delays. My secretary, Mrs Brenda Moore, has been of very great assistance. She has patiently endured several drafts of various chapters, and her speed and efficiency in typing the manuscript when other demands have been substantial, are very much appreciated.

Above all, I wish to thank my family for their constant help and encouragement, and I dedicate the book to my wife, Wendy.

University of Loughborough
25 September 1979

DAVID T. LLEWELLYN

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Contents

<i>Preface</i>	ix
<i>Acknowledgements</i>	xi
1 Introduction	1
2 Stabilisation Policy in an Open Economy	7
3 The Monetary Approach	28
4 The Forward Exchange Rate	35
<i>Appendix</i> The Forward Exchange Rate and Stabilisation Policy with a Floating Spot Rate	50
5 Forward Exchange Rate: A Banker's View	55
6 International Capital Movements: Theory and Evidence	63
7 International Arbitrage	78
<i>Appendix</i> Abolition of U.K. Exchange Control	102
8 The Policy Options	105
9 Euro-currency Markets and their Control	114
10 Forward Exchange Policy	137
<i>Appendix</i> Bank of England Intervention of the Forward Market	152
11 Capital Account Policies and Financial Institutions	158
12 The Independence of Monetary Policy	169
13 The Structure of World Interest Rates	184
14 The Issue of Monetary Independence	194
<i>Notes and References</i>	202
<i>Index</i>	209

1

Introduction

A major development in the international monetary system over the 1970s was the substantial rise in the volume of international capital flows. The high degree of capital mobility, and the volume of funds involved, is a major feature of the international monetary system and the world economy. The degree of financial integration between countries that has now been reached, in large part associated with international capital flows and the expansion of euro-currency markets, has important implications for the conduct of monetary policy. This has become particularly important in the United Kingdom since the abolition of exchange control in October 1979. The extent of financial integration has a major bearing upon both the effectiveness of monetary policy in any one country and the extent to which individual countries are able to pursue a monetary policy strategy independently of that of other countries. Increasingly, monetary policy has had to be framed within the constraints imposed by a high degree of financial integration in the world economy.

Various aspects and the policy implications of international financial integration are explored in the following chapters. In particular, the ultimate focus of attention is the extent and nature of the constraint imposed upon monetary policy by international financial integration. While the major emphasis is given to integration through international capital flows, the more general two-way causal link between the balance of payments and domestic monetary conditions is also considered. Although the emphasis is on policy issues, these must necessarily be set in the context of the operation of financial markets. For this reason, several chapters are devoted to fairly detailed analysis of the foreign-exchange market and the techniques of international arbitrage and, where possible, empirical evidence is reviewed.

MEASURES OF FINANCIAL INTEGRATION

International financial integration may be measured in several alternative, though related, ways and at various points in the analysis emphasis is given to one rather than the others. Broadly, integration may be viewed in terms of: (1) the interest-rate sensitivity of international capital movements and the volume of funds available for international arbitrage; (2) the extent to which arbitrage capital flows induce equilibrating movements in the spot exchange rate, the forward rate and interest rates to eliminate profitable arbitrage

opportunities; (3) the extent to which movements in high-powered money (the monetary base) or the money supply in different countries are causally related; and (4) the extent to which interest rates in different financial centres move in parallel.

With respect to the first, two components need to be identified: (i) the degree to which wealth holders *desire* to optimise a portfolio structure on the basis of a mix of financial assets in different countries and/or currencies and (ii) the extent to which they are technically able to do so. The first relates essentially to the substitutability of financial assets in different countries and currencies and the extent to which, in terms of risk-return calculations, wealth holders seek to optimise their position through internationally and multi-currency diversified portfolios. The second component incorporates questions related to information costs, transactions costs and, in particular, exchange control and other officially imposed constraints on the development of internationally diversified portfolios. Thus the first component may be high, and yet the actual volume of arbitrage funds may be comparatively small because of official and market constraints. In this case, interest rates and other variables may diverge from equilibrium levels, and apparently profitable arbitrage opportunities may be sustained.

The second aspect of integration to be discussed (particularly in Chapters 4 and 7) focuses upon the extent of deviations from the interest-parity condition, i.e. the extent to which the forward exchange-rate premium or discount does not equal interest-rate differentials between currencies and countries. Considerable attention is given to the forward exchange market because movements in the forward exchange rate tend to limit the volume of capital flows (and hence the degree of financial interdependence), but also because official (central bank) intervention in the forward market can be a powerful policy technique.

Third, the power, and international transmission, of monetary policy may also be analysed in terms of the causal links between movements in monetary aggregates in different countries. Thus, with a fixed exchange rate, a policy-induced rise in high-powered money in country *A* may, through international financial flows, induce a rise in the monetary base in country *B*. This mechanism tends to limit the effectiveness of monetary policy in country *A*, but also to reduce the monetary independence of country *B* whose domestic money supply is not entirely under its own control.

At several points, a distinction has been made between currencies and countries. In some cases, of course, the two may be synonymous in that a movement of funds between countries also involves changes in the currency structure of a portfolio. This is not necessarily the case, however, because of the role of euro-currency markets (markets in bank deposits denominated in currencies other than those of the country in which the banks are located). Indeed, the euro-currency markets have served to increase the extent of international financial integration. Thus a wealth holder has a twofold

decision to make: the currency structure of his portfolio and the location of the assets, and in particular whether to hold bank deposits in the domestic or euro segment of a currency market. This distinction is highlighted in Chapters 7 and 9. Arbitrage flows may, therefore, be between national money markets, between different currency segments of the euro-currency market and between euro and domestic money markets.

POLICY CONSTRAINTS

Much of the analysis in the chapters that follow concentrates upon the constraints on policy (particularly monetary policy) imposed by international financial integration. This is based upon what might be termed two *incompatible trinities*. The international trinity relates capital flows, exchange rates and the domestic money supply. The evidence of the Bretton Woods regime, and of the experience of 'managed floating' rates since the mid 1970s, strongly indicates that fixed exchange rates, freedom of international capital flows and precise control over the domestic money supply are basically incompatible. Thus, policy-induced changes in the money supply create profitable arbitrage opportunities and, if exchange rates are fixed, the resultant capital flows induce changes in domestic money supplies due to the domestic financial counterpart to central bank intervention in the foreign exchange market.

Towards the end of the 1960s an attempt was made to resolve this fundamental conflict by imposing controls on capital movements (see Chapter 8). As these were circumvented, and introduced their own unintended distortions, the conflict was later resolved by adopting floating exchange rates. Floating exchange rates mean that although in principle the money supply is domestically determined, the monetary authorities lose control over the exchange rate. This dilemma has, at times, been particularly acute for Germany and Switzerland. In 1973 when, as a result of the domestic monetary counterpart of substantial foreign exchange market intervention by the Swiss central bank to stop the Swiss franc appreciating, the rate of inflation was unacceptably high, the Swiss franc, together with many other currencies, was allowed to float. Monetary stability was exchanged for exchange-rate stability. In October 1978 (after a year when the effective Swiss franc exchange rate had appreciated by 30 per cent), the Swiss authorities announced a maximum limit for subsequent appreciations against the Deutsche Mark. Foreign-exchange-market intervention was to be used to secure this limit. As a result of the domestic monetary consequences of this intervention, early in 1979 the Swiss authorities ceased to conduct monetary policy on the basis of publicly announced targets for the growth of the domestic money supply. Thus, with substantial international capital mobility, a fundamental conflict may emerge between official monetary and exchange-rate targets both within a country and between countries.

The related domestic *incompatible trinity* links the growth in the money supply, the level of interest rates and the size of the Government's own financial deficit. Policy-makers cannot arbitrarily choose simultaneous targets for all three variables. With a given financial deficit (public sector borrowing requirement in the United Kingdom) either the money supply or the level of interest rates is market- (demand-) determined. As noted in the final chapter, either trinity taken alone imposes constraints on the conduct of monetary policy. The constraints when both trinities are relevant can become particularly acute.

EXCHANGE-RATE SYSTEM

One of the key factors determining the constraint imposed upon monetary policy by international financial integration is, therefore, the exchange-rate system. Most of the analysis is conducted in terms of fixed v. floating exchange rates. In practice, the 'managed floating' regime conforms to neither polar case. As already noted, the rigid Bretton Woods fixed-exchange-rate system was eventually abandoned after close on thirty years in part because of the problems created for monetary control by international capital flows. The adoption of floating exchange rates was associated in no small part with a desire on the part of governments in Europe and elsewhere to determine their own monetary policy. In particular, and for reasons discussed in detail in Chapter 12, the nature of the Bretton Woods system (or at least the way it was operated) meant that monetary conditions in Europe were dominated by the stance of monetary policy adopted in the United States.

The asymmetrical nature of the reserve currency system meant that, in practice, a balance-of-payments deficit in the United States had no effect upon the U.S. money supply but, as a result of foreign exchange market interventions by central banks in surplus countries, the money supply in surplus countries was raised. Towards the end of the 1960s and in the early 1970s U.S. monetary policy became more expansionary than in Europe. The attempt at resolving the resultant conflict was eventually made in terms of abandoning the rigid fixed-exchange-rate system of the 1950s and 1960s. Floating rates were viewed not only as conferring monetary autonomy, but as a means of reducing the monetary dominance of the United States in particular.

The efficacy of floating rates has, however, come to be questioned in three main areas. It is not clear that, in practice, domestic objectives are more easily attained by floating exchange rates, nor that governments are able to frame monetary policy exclusively on the basis of domestic policy objectives. Second, the power of exchange-rate movements to secure real-wage and balance-of-payments adjustment is questionable in the long run. Third, the volatility of exchange rates, and their overshooting of long-run equilibrium

values, has been greater than early theoretical models predicted and certainly greater than desired by policy makers.

THE EVIDENCE SUMMARISED

International financial integration, and the resultant policy constraints, is a question of degree. It is clear that monetary policy is in practice substantially constrained through offsetting capital flows when exchange rates are fixed. But the evidence also indicates that some monetary independence is retained. This is because: (i) there are limits to the responsiveness of capital to interest-rate differentials (Chapters 4 and 12); (ii) certain market mechanisms both limit capital flows and insulate domestic monetary conditions from those flows that do take place; and (iii) the monetary authorities are able, at least in the short term, to offset or *sterilise* the domestic monetary consequences of capital flows and the balance of payments in general (Chapter 12). In particular, equilibrating movements in the forward exchange rate afford a substantial degree of insulation and limit the extent to which capital flows in response to interest-rate changes. However, by definition, equilibrating forward-exchange-rate adjustments apply only to those capital flows that are covered in the forward market and not to uncovered (essentially speculative) capital flows. A degree of insulation is also achieved in some cases by extensive exchange control to limit capital flows. However, this degree of insulation was removed for the United Kingdom in October 1979 when all remaining exchange controls were removed.

The evidence also indicates that, at least in the short run, externally induced changes in the money supply can be *sterilised*. However, problems emerge if several countries simultaneously attempt sterilisation beyond a certain degree (Chapter 12) as this indicates a major conflict in monetary policy between countries. The longer-run viability of sterilisation policy is also questionable.

Overall, neither of the two polar cases identified in Chapter 2 is confirmed by the empirical evidence. Thus, while monetary policy clearly is constrained by international financial integration, there is no evidence that monetary conditions in any country are totally dominated by external influences. The 'small-country' model, where the domestic interest rate is constrained at the world level, is clearly not consistent with the experience of either fixed or floating rates except, perhaps, in some analytical 'long run' of little interest to policy-makers.

Over the 1970s the environment in which monetary policy was conducted underwent substantial changes. The decade started with the strains imposed by a collapsing fixed exchange rate system buttressed in many European countries by a battery of controls and other measures designed to limit capital inflows (see Chapter 8). Since 1973 the international monetary system has been based upon varying degrees of 'managed-floating'. The euro-currency markets also grew at a substantial rate, as did the volume of international

capital flows. Rates of inflation reached unprecedented levels in the early 1970s in many countries and the decade witnessed marked divergencies in the rates of inflation between countries. The strategies of monetary policy also changed markedly, with increasing emphasis being given to the control of monetary aggregates as the target of policy rather than interest-rate levels. There were also significant changes in the intellectual climate, with monetarist analysis increasingly emphasising the limited role for discretionary monetary policy and the role of monetary policy in contributing to policy objectives with respect to real magnitudes such as the level of output and employment. Increasing doubts were also raised with respect to the power of exchange-rate changes to adjust relative real wages and the balance of payments in the long run. The link between the balance of payments and the money supply were also increasingly emphasised.

An important background to these policy and intellectual trends was the clear constraint imposed by international financial integration. It is to the details of this that we now turn.

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Stabilisation Policy in an Open Economy

A convenient means of focusing upon the impact international capital movements have on the domestic economy is through the analysis of stabilisation policy. An extensive literature establishes that the response of income and employment to fiscal and monetary policies¹ depends both upon the exchange-rate system and the interest-rate sensitivity of international capital movements. The analysis of stabilisation policy is reviewed in this chapter within a generalised, essentially Keynesian, framework which incorporates the monetary aspects of the balance of payments.

The major analytical and empirical issues involved and featured throughout the book are: (i) the extent to which international capital movements are sensitive to interest-rate changes; (ii) their impact upon the domestic money supply and exchange rate; (iii) the impact capital movements have on the power of stabilisation policy to alter domestic income and employment; (iv) the extent to which the monetary effects of the balance of payments can be sterilised; (v) the relative power of monetary and fiscal policy with fixed and floating exchange rates with varying degrees of international capital mobility; and (vi) the degree of insulation of the domestic economy from foreign disturbances that is afforded by a floating exchange rate. Together, these largely determine the degree of monetary independence of non-reserve currency countries.

Through the 1960s it became increasingly apparent that a major aspect of the fixed-exchange-rate system was that, in a world of substantial capital mobility, monetary policy in countries outside the United States was frequently undermined by the domestic monetary implications of the balance of payments. The domestic monetary counterpart of official intervention in the foreign-exchange market might conflict with domestic monetary policy. The domestic money supply was found not to be entirely exogenous in a fixed-exchange-rate system, as a substantial proportion of any domestically induced change in the money supply could be offset by monetary flows resulting from the balance of payments. For instance, contractionary domestic monetary policy could be offset by capital inflows either at the initiative of foreign investors attracted by high interest rates, or by attempts by domestic bank and non-bank residents to restore the supply of money balances by borrowing in international money markets. In both cases the impact on the domestic money supply resulting from official exchange market intervention to prevent the exchange rate rising would tend to offset the original contractionary domestic monetary policy.

Immediately after the German central bank ceased supporting the Deutsche Mark in the exchange market in 1971, the Bundesbank claimed in its regular *Bulletin*: 'The Bank is now released from the compulsion of having to create central bank money by the purchase of foreign exchange. . . . The Bundesbank thus no longer has to fear that its restrictive course in credit policy is more or less automatically undercut by monetary inflows from foreign countries.' (Bundesbank Monthly Report, Mar 1971.) The case for floating exchange rates was seen in the early 1970s largely in terms of the supposed greater independence and power afforded to monetary policy.

THE BASIC MODEL

A simplified, essentially Keynesian, model of an open economy may be employed to illustrate the analysis of monetary and fiscal policy. This model is adopted, not because it is necessarily the most appropriate analytical framework for considering stabilisation policy in an open economy, but because it offers a simple and consistent analytical structure in which to survey the major issues involved in international interdependence. In particular, the importance of international capital movements for the domestic economy can be readily appreciated using the standard *IS/LM* paradigm. This standard paradigm can be easily adapted to highlight the issues under review. The model is used simply to illustrate the major issues, and no attempt is made to survey the vast literature on stabilisation policy in an open economy, most of which has progressed beyond the simple *IS/LM* paradigm. For an alternative structural model, which incorporates the rational expectations hypothesis and offers a synthesis of Keynesian and monetarist models, see Beenstock (1978).

Equation (2.1) gives the traditional *IS* curve, and equation (2.2) the *LM* curve which also indicates that the supply of money has a domestic and foreign component.² The latter is measured by the central bank's holdings

$$Y = C(Y) + I(i) + G + X(r) - M_p(Y, r) \quad (2.1)$$

$$M = H + R = L_a(Y) + L_d(i) \quad (2.2)$$

$$B = \Delta R = T + K_1(i) + K_2(r - r_e) \quad (2.3)$$

of reserves of gold and foreign exchange. Throughout the analysis it is assumed that a rise in the domestic interest rate does not induce any change in interest rates in other countries, and that capital movements take place on an uncovered basis. This means that complications with respect to offsetting changes in the forward exchange rate can be ignored. This assumption is dropped in Chapter 4. The model relates to a small country and is presented in the normal Keynesian flow formulation. This implies that wealth effects (specifically those deriving from an unbalanced budget and current account)