Introduction

Informal credit and foreign currency markets play an important macroeconomic role in developing economies. In most countries with an underdeveloped system of financial intermediation, commercial banks play a predominant role as a source of funds for firms, both for short-term working capital purposes and for long-term fixed capital formation. Bank credit is, however, often rationed, with bank lending rates typically fixed by the authorities and unresponsive to excess demand for credit. Moreover, commercial banks and other officially-recognized financial institutions in developing countries have often been subject to extremely high required reserve and liquidity ratios, designed in part to provide a captive source of demand for government liabilities in countries where the public sector has traditionally been revenue-poor.

As a consequence of this "financial repression", unorganized money markets have tended to develop and have become an essential part of the financial intermediation process. These markets are often "informal", in the sense that they have no legal standing and are not subject to regulation by the government. An important implication of this, of course, is that informal credit markets are not subject to the interest rate ceilings that are often imposed on the formal financial system, so that borrowing and lending rates for financial institutions in the informal sector tend to be market determined. In addition, because the government has no way to impose reserve or liquidity requirements on these institutions, they are able to escape this form of disguised taxation, and may therefore operate at a competitive advantage relative to institutions in the formal sector.

Similarly, the imposition of trade controls and exchange restrictions on foreign exchange transactions have often led to the emergence of informal, or "parallel" markets in foreign currency. After the collapse of the Bretton Woods system, the vast majority of developing countries maintained some form of official parity for their currencies, whether in the form of a fixed exchange rate against a single industrial-country currency or basket of currencies, or of a "managed" exchange rate, altered by the authorities in response to exogenous shocks according to some announced or unannounced formula.[1] The official parity has too often been defended in part through the use of exchange controls, restricting the availability of foreign exchange at the declared parity for current and/or capital account transactions. The number of developing countries that officially permit the free movement of capital across their borders is extremely small.

How large are these informal credit and foreign exchange markets in developing countries? By their very nature, these markets tend to be outside the purview of the legal system, so little systematic evidence exists as to the magnitude of the transactions mediated through such markets, relative to that of transactions occuring through the formal system. In recent years, however, economists have begun to appreciate the extent to which excessive taxation and regulation of "formal" economic activity can lead to the growth of a substantial "underground" economy in developing countries. Estimates of the size of the underground economy have been as high as 20–30 percent of officially-measured Gross Domestic Product for some countries. Undoubtedly, the financial and foreign exchange transactions of the public sector are typically carried out through formal markets in developing countries. In view of what was said before, however, it may not be surprising to learn that, at least for the private sector in many of these countries, the magnitude of the transactions that take place through informal credit and foreign exchange markets may rival that of their formal counterparts. Evidence pertaining to this issue is summarized in chapter 1.

The macroeconomic role of financial repression and informal financial markets in developing countries has proven to be controversial. While there is widespread agreement on the microeconomic distortions implied by interest rate ceilings, the consensus does not extend to the short-run macroeconomic effects of removing such

ceilings or moving administered interest rates closer to market-clearing levels. As will be shown in chapter 2, analysts in the McKinnon-Shaw tradition would argue that raising controlled interest rates need have no effect on aggregate demand, and would simply shift the composition of such demand from consumption to investment. By contrast, adherents of the "Neo-Structuralist" school emphasize the presence of informal loan markets, and suggest that raising controlled interest rates would draw funds away from such markets, thereby raising interest rates there, as well as constraining both aggregate demand and aggregate supply.[2]

The macroeconomic effects of parallel markets for foreign exchange have also attracted a great deal of interest recently.[3] As indicated above, such markets have typically emerged in response to foreign exchange controls. These controls, often imposed for balance-of-payments reasons, generate an unofficial market which is both dependent upon conditions in the official market and responsive to other macroeconomic forces. The price, output and welfare implications of a parallel foreign currency market are perceived to vary according to whether unofficial transactions are illegal and participants face penalties which raise expected costs of transacting in this market.

Given the size of informal credit and foreign exchange markets in many developing countries, their presence will have important macroeconomic effects. Such markets can be expected to play important roles in determining the manner in which exogenous and policy shocks are disseminated throughout the economy, both on impact and over time. Failing to integrate them into the short-run macroeconomics of developing countries may therefore result in inadequate analysis and misleading policy advice. Unfortunately, little has been achieved to date in the integration of informal credit and foreign exchange markets in macroeconomic models for developing countries. While informal loan markets are the subject of a large microeconomic literature, their macroeconomic role has largely been ignored outside the context of the dialogue between analysts in the tradition of McKinnon and Shaw and Neo-Structuralists. Parallel currency markets have fared somewhat better, receiving a substantial amount of attention in the developing-country macroeconomic literature, but existing models that incorporate such markets have failed to recognize the financial-

repression context in which such markets typically arise. In short, models which integrate financial repression as well as informal credit and foreign currency markets - and can therefore do justice to macroeconomic reality in a large number of developing countries - have not yet been developed.

The purpose of this book is to fill this gap by integrating repressed credit markets and parallel foreign exchange markets in a common macroeconomic analytical framework. The book is organized as follows. Chapter 1 presents an overview of the role of informal financial markets in developing countries, which dwells on the microeconomic literature on informal credit markets as well as both microeconomic and macroeconomic analysis of parallel currency markets. Chapter 2 presents an overview of analytical macroeconomic models which have been separately developed to deal with informal credit markets and parallel markets for foreign exchange. These elements are combined into an integrated analytical model in chapter 3 in which both types of markets are explicitly incorporated, and their role in determining the effects of macroeconomic policies is examined. The requirement of analytical tractability, however, forces us to adopt a very simple framework which does not embody several key developing-country features. A simplified model is examined first, because its workings are more transparent than those of the more realistic model that follows. A more detailed, general equilibrium analysis is therefore presented in chapter 4. The expanded model incorporates structural features which are commonly perceived as relevant in developing countries, but that are left out of the simpler analytical framework. These include leakages between official and parallel foreign exchange markets, trade taxes, and imported intermediate inputs in the production process. The more realistic model also allows for the existence of nominal wage contracts, thereby creating the scope for Keynesian unemployment. Throughout the analysis, agents are assumed to be forward-looking and endowed with perfect foresight.[4] This property is now acknowledged to play an important role in the way that well-functioning financial markets transmit macroeconomic disturbances. In a forward-looking world, every policy announcement and every event that has a possible implication for future policy affects expectations, and thus the prices of financial assets. These effects must be taken into account for

a proper understanding of the dynamic effects of policy and exogenous shocks.

The general equilibrium nature of the expanded model makes it particularly suitable for an analysis of the transmission process of macroeconomic policies. Its complexity, however, precludes a purely analytical treatment. A simulation approach, that is, the numerical solution of the model with specific functional forms and parameter values, is used in chapter 5 to assess its properties. Parameter estimates are either taken directly or inferred from the existing literature on developing countries. The simulations undertaken in chapter 5 address the nature of the response of the economy modeled in chapter 4 to a variety of policy shocks, focusing on the roles of the informal credit and foreign currency markets in transmitting the effects of such shocks. Because the shocks considered include changes in administered interest rates and required reserve ratios, they are relevant for assessing the likely macroeconomic responses of developing economies to the partial financial liberalizations that are being undertaken in many such countries at present. It is our contention that the dynamics of financial liberalization cannot be properly understood outside the context of a fully specified model such as that of chapter 4 which incorporates both existing financial repression as well as the informal financial markets to which such repression gives rise. The lessons learned for financial liberalization, as well as for the effects of other macroeconomic policies in a context in which financial liberalization remains incomplete, are summarized in chapter 6, which also discusses some possible extensions of our analysis.

This book is the product of many years of research on informal financial markets, conducted mostly in the Research Department of the International Monetary Fund. We have greatly benefited, over the years, from comments and discussions with colleagues, friends, and visiting scholars, which have helped us shape the ideas presented in the next chapters. We are particularly grateful to Guiseppe Bertola, Jagdeep Bhandari, Dean DeRosa, Robert Flood, Linda Goldberg, Joshua Greene, Steven Kamin, Mohsin Khan, Saul Lizondo, Steven Symansky, Mark Taylor, and Carlos Vègh, although none of them should be held responsible for our views. Finally, we would like to thank the publishers of the *Journal of Development Economics*, *Staff Papers*, and *Princeton Essays in*

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Notes

1 Few developing countries have adopted freely floating exchange rates for any period of time, and fewer still have maintained such a system as a permanent feature of their macroeconomic policy regime.
2 See Arida and Taylor (1985), Bruno (1979), Dauhajre (1987) van Wijnbergen (1982, 1983*a*) and Taylor (1983). The Neo-Structuralist view has been subject to a number of criticisms; see Agénor (1989), Buffie (1984), Kapur (1992), and Owen and Solis-Fallas (1989).
3 See Agénor (1990*c*) for a review of the literature.
4 Forward-looking expectations have by now become a major feature of developing-country macroeconomic analysis although the hypothesis remains subject to controversy, both in developing countries and elsewhere. See, for instance, Pesaran (1988).

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Nature and Scope of Informal Financial Markets

Although the existence of informal economies is commonly accepted, there are very few detailed studies that attempt to determine the size of these markets as well as their significance for the economy and the design of economic policy. As mentioned previously, part of the problem is that by their very nature these markets are extremely difficult to monitor or quantify in any meaningful manner. Often the problem is compounded by the fact that the government attempts to regulate away informal activity, thus making such activity illegal. This makes it even harder to gather information on these markets.

In this chapter we examine the definition and significance of informal financial markets. We present an overview of what is currently known about these markets based on various types of information that has been collected in diverse contexts over an extended period of time. Our purpose is to demonstrate that these markets are indeed a widespread phenomenon in developing countries and that they constitute a significant portion of economic activity in most countries. Consequently, they can be expected to play an important role in the transmission of macroeconomic shocks.

1 The Informal Economy – A Definition and its Significance

The terms “informal”, “parallel”, “black”, “underground”, “fragmented”, “unorganized” “segmented” and “curb” markets have all