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Macroeconomic Management with Informal Financial Markets

by

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Abstract

Informal credit and foreign currency markets are a widespread phenomenon in developing countries. This paper begins by reviewing the scope and nature of these markets, and the channels through which they operate. It then examines their implications for macroeconomic management, particularly in the areas of monetary policy and official exchange rate adjustment, interest rate liberalization, and the unification of foreign exchange markets. The analysis illustrates the importance of accounting for the presence of informal financial markets in the design of stabilization programs.

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I. Introduction

Informal markets--whether they refer to credit, foreign exchange, or any other good--are a widespread phenomenon in developing nations and often account for a significant component of economic activity. They typically develop in response to a situation of excess demand in an official market, itself resulting from quantitative restrictions on sale, government-imposed price ceilings, or both. They are often illegal, but are tolerated in many countries.

The macroeconomic role of informal financial markets has attracted considerable attention in recent years, particularly in the context of a renewed controversy regarding the short- and long-run effects of financial repression. While there exists a large consensus on the microeconomic distortions implied by interest rate ceilings, there is widespread disagreement regarding the short-run macroeconomic effects associated with interest rate liberalization. Analysts in the McKinnon-Shaw tradition have argued that raising controlled interest rates would lead to a shift in the composition of aggregate demand from consumption to investment, exerting a positive effect on growth. By contrast, adherents of the New Structuralist school have emphasized the presence of informal loan markets, and have suggested that raising controlled interest rates would draw funds away from such markets, thereby raising interest rates there, reducing aggregate supply and raising inflation, both in the short and the medium run. ^{1/}

The macroeconomic effects of parallel markets for foreign exchange have also

^{1/} The New Structuralist view is associated with van Wijnbergen (1983) and Taylor (1983). See Montiel, Agénor and Haque (1993) for a detailed account of these different perspectives.

attracted a great deal of interest recently, particularly in the context of trade and exchange rate reforms. The costs associated with those markets have also become better understood, and several countries have attempted to unify their official and parallel markets for foreign exchange.

The purpose of this paper is to examine the implications of the existence of parallel credit and foreign currency markets for macroeconomic management and the design of macroeconomic reform programs. Section II reviews the scope and nature of these markets in developing countries. Section III discusses the alternative channels through which informal financial markets affect macroeconomic behavior. Section IV examines their implications for macroeconomic management, particularly in the transmission process of credit policy, official exchange rate adjustment, interest rate liberalization, and the unification of foreign exchange markets.

II. Scope and Nature of Informal Financial Markets

Because of their very nature, informal financial markets are difficult to monitor or quantify in a meaningful manner. Consequently, information on the size and nature of these markets is not very extensive or reliable. The qualitative features and basic structural characteristics of these markets are, however, relatively well documented. ^{1/}

1. Informal credit markets

Informal credit markets consist of a variety of unregulated transactions, including the lending and borrowing activities of professional and nonprofessional moneylenders, private finance firms, indigenous bankers,

^{1/} The discussion that follows dwells to a large extent on Agénor (1992) and Montiel, Agénor and Haque (1993).

rotating saving and credit associations, pawnshops, traders, landlords and households. These transactions can be classified into the following four categories: (a) regular money-lending by individuals or institutions (such as pawnbrokers, indigenous bankers, or finance companies) whose principal activity consists in lending using their own funds or intermediated funds; (b) occasional or intermittent lending by individuals, firms and institutions with a surplus of funds; (c) tied credit, that is, lending by those whose main activity lies in markets other than the credit market but who tie credit to transactions in markets where their primary activities lie; and d) group finance, or various forms of cooperative efforts aimed at generating loanable funds for individual credit needs. The importance of each activity varies considerably across countries. In India, for instance, tied credit accounts for a large fraction of total informal credit. Rotating savings and credit associations are very common in Asia and Africa, but less so in Latin America. Group finance is used frequently in both urban and rural areas of developing countries.

Available information on informal loan markets, while fragmentary and relying on disparate and noncomparable sources across countries, reveals that the share of informal credit in total credit may vary from about a third to about three-quarters. In Taiwan, for instance, the ratio of financial loans to private enterprises from the informal credit market to those from the regulated market averaged nearly 30 percent during the period 1971-88 (Huang et al., 1992).

Interest rates in informal credit markets are in general substantially higher than those prevailing in official markets. ^{1/} In the absence of organized securities markets and in the presence of financial repression, the lending rate in the informal credit market represents the relevant opportunity cost of holding money for domestic residents. The evidence provided by Montiel, Agénor and Haque (1993) suggests that informal interest rates are influenced not only by domestic money-market conditions but also by arbitrage relationships with foreign financial variables.

2. Parallel markets for foreign exchange

Parallel currency markets in developing countries have emerged primarily as a result of foreign trade restrictions and capital controls on trade flows. The imposition of tariffs, quotas and other regulations--such as licensing procedures, administrative allocations of foreign exchange, and prohibitions--creates incentives to smuggle and fake invoices, by creating excess demand for goods at illegal, pre-tax prices. Illegal trade creates a demand for illegal currency which, in turn, stimulates its supply, and leads to the establishment of a parallel currency market if the central bank is unable to meet all the demand for foreign exchange at the official exchange rate. Under capital controls, the parallel market becomes a major element

^{1/} If households are free to hold assets in the formal sector (deposits with the banking system) or the informal sector (deposits with unregulated finance companies) and allocate their portfolio so as to equalize risk-adjusted rates of return, the implicit tax on bank deposits (as discussed below) cannot explain the large interest rate differential between sectors. Rather, it reflects the risk component assigned to intermediation by informal finance companies, the informational advantage of moneylenders, and the limited alternatives available to borrowers. It is not generally symptomatic of pure rents that accrue to moneylenders. See Montiel, Agénor and Haque (1993, pp. 21-22).

in financing capital flight and portfolio transactions, foreign currency being a hedge against adverse political change and--in high-inflation economies--a hedge against the inflation tax. Other factors that help explain the development of a parallel currency market in particular circumstances include illegal activities. In some Latin American countries, for instance, the development of the illegal market for dollars has been closely associated with drug-related trade (Melvin and Ladman, 1991).

As with informal credit markets, parallel currency markets are often tolerated by governments. The size of these markets depends upon the range of transactions subject to control, as well as the degree to which restrictions are enforced. In countries where large and chronic balance-of-payments deficits force the central bank to ration foreign exchange allocated to the private sector (because government needs are large and must be satisfied in priority), parallel currency markets will typically be well developed, with an exchange rate substantially more depreciated than the official rate. The parallel market premium, which depends in the long run upon "structural" factors--such as the level of tariffs and export subsidies (see below), the penalty structure, and the amount of resources devoted to apprehension and prosecution of offenders--may also display large fluctuations in the short run, a phenomenon that reflects the asset price characteristics of the parallel exchange rate. In periods characterized by uncertainty over macroeconomic policies, or unstable political and social conditions, parallel market rates tend to react rapidly to expected changes in future economic circumstances.

Sources of supply and demand in parallel currency markets vary across countries. Available estimates suggest that smuggling and under-invoicing of exports are the major sources of supply in most cases. The demand for foreign currency results from four main components: imports (legal and illegal), residents traveling abroad, portfolio diversification, and capital flight--the last two motives being, of course, often related. The portfolio/capital flight motive is particularly acute in high-inflation economies, and in countries where considerable uncertainty over economic policies prevails, because foreign currency holdings represent an efficient hedge against inflation bursts.

III. Analytical Implication of Informal Financial Markets

While Informal credit markets and parallel markets for foreign exchange coexist in many developing economies, the approach followed in the literature has long been to consider separately both types of markets. However, more recent developments have attempted to integrate both types of informal financial markets in a systematic and consistent framework. ^{1/} In what follows we briefly review the main channels through which informal markets in credit and foreign exchange have been captured analytically.

A key structural feature of formal financial markets in developing countries is the limited menu of assets available to private agents. In most countries, private agents in the formal sector hold currency, demand and time deposits while they lend and borrow from the banking system.

^{1/} For a more detailed discussion of models of informal markets as well as the implications of such models, see Agénor and Montiel (1994), and Montiel, Agénor, and Haque (1993).

However, these transactions remain subject to official restrictions on interest rates and amount and type of credit. Consumer durables, land and physical capital can be held directly, though often with official restrictions against collateralizing some of these assets. Organized equity markets are small or nonexistent--although in several of them these markets have developed at a rapid pace in recent years--and the acquisition of foreign exchange or assets by domestic residents through legal channels is often also restricted.

The menu of financial assets in developing countries, therefore, consists of domestic currency, deposits with the banking system, foreign currency, loans extended through a curb market, land, and physical capital. These assets may be financed by the individuals' personal net worth or by borrowing both from the banking system and through the curb market. Financial repression implies that interest rates on assets and liabilities of the formal banking system are fixed by administrative restrictions, while the price of foreign currency on the parallel market, and that of real assets as well as the interest rate on informal credit market loans, are determined by market conditions.

The analysis of policy shocks in this setting must therefore take into account the role of informal market assets as components of household portfolios. Policy changes that affect the official exchange rate, administered interest rates and the price level not only affect household incomes and wealth in the formal sector but also induce reactions in parallel exchange rates, informal interest rates and in the valuation of households' aggregate wealth.

An element that plays a central role in the analysis of macroeconomic policy shocks in the presence of informal credit and foreign currency markets is the degree of financial repression. Since interest rate ceilings imply an implicit tax on depositors and subsidy for creditors, the degree of financial repression can be related to the present value of the subsidy, per unit of bank credit, implied by the binding legal interest rate ceilings. 1/ Individuals with access to bank credit receive a subsidy equivalent to the interest rate differential between curb market loans and bank credit times the amount of bank credit extended. Depositors, by contrast, are taxed by an amount equivalent to the product of the value of bank deposits and the interest rate differential. The sum of the present value of these subsidies and taxes is, therefore, the net addition to household financial wealth. 2/ The net wealth effects of financial repression depend on whether households are net creditors or debtors with respect to the banking system. In the presence of large reserve requirements (a situation that often prevails in developing countries where large public fiscal deficits are financed through central bank credit) households tend to be net creditors to the banking system. In this case,

1/ More precisely, the index of financial repression is measured as the difference between the interest rate on the banking system and informal sector loan rates, divided by the banking system loan rate. It is bound between zero and one. See Agénor, Haque, and Montiel (1993) for a more detailed analysis.

2/ In some countries the banking system is dominated by large, loss-making state-owned banks. In such circumstances the cost of the subsidy to borrowers may be absorbed by banks in the form of lower profits and reduced net worth, instead of being passed onto depositors in the form of lower deposit rates, relative to those available in the informal market. To the extent that the quasi-fiscal deficit is financed by higher inflation, the net implicit tax on borrowers can be positive.

therefore, the implicit tax imposed on households by interest rate ceilings on deposits exceeds the subsidy received by favored borrowers. Policies that increase (decrease) the degree of financial repression will thus reduce (increase) household wealth.

Another important element for the analysis of policy shocks in the presence of informal markets is the degree of substitutability between assets. A relatively high degree of substitutability implies that a large shift in resources would occur from one sector to another in response to a given shock. The real effects would also differ as a result, depending on differences in the use of resources across sectors. For instance, consider an increase in administered interest rates that reduces financial repression and draws resources from the informal market into the formal sector. The real effects of this portfolio shift on the level of investment and economic activity may be positive or negative. This is because the formal sector provides relatively less intermediation owing to the presence of the following: (a) large legal reserve requirements, (b) a larger requirement for free reserves because of larger liquid liabilities, and (c) increased possibility of attaining global credit limits imposed for stabilization purposes. 1/

In the presence of informal financial markets, the analysis must also take into account the reaction of prices in those markets to policy shocks.

1/ If increasing administered interest rates draws funds from cash and non-productive assets into the formal banking system, overall loanable resources (formal and informal) will increase even with the role of bank reserves in syphoning resources out of the lending stream. If so, the importance of the Neo-Structuralist critique of the McKinnon-Shaw analysis regarding the effects of an increase in deposit rates needs to be empirically determined. See the discussion below.

Because of their relative lack of liquidity, however, real assets are likely to be poorer substitutes for deposits than currency. Curb market loans, real assets as well as foreign-currency denominated assets that are traded on parallel markets differ from domestic currency holdings and bank deposits in that the returns from holding the former are endogenous. The nominal rate of return from holding such assets consists of any real income derived from them as well as the expected rate of change in its nominal price. Changes in the valuation of private sector wealth could occur as a result of relative price changes of the asset holdings as well as portfolio shifts. Consequently, the implications of the aggregate demand response to such changes in wealth must be taken into account.

At each instant, individuals attempt to maintain a portfolio balance which is such that the domestic currency value of the stock of foreign assets is equal to a desired proportion of total wealth. As indicated earlier, any loss of confidence in the domestic currency, such as fears about inflation and increasing taxation, and low real interest rates would induce private agents to substitute away from the domestic currency and into foreign exchange holdings. In the short run, therefore, the parallel market rate will move to set portfolio demand equal to the existing stock of foreign currency. In the long run, the parallel rate and private sector holdings of foreign currency are determined by the requirements of both equilibrium portfolio allocation and equilibrium of the unreported current account.

The unreported current account is defined as the difference between the flow supply and demand for foreign exchange in the parallel market. The

flow demand for foreign currency in the parallel market is derived from planned smuggled imports, while successfully smuggled exports determine the flow supply of foreign currency. In the long run, where legal exports equal legal imports and successfully smuggled exports pay for planned smuggled imports, the premium can be expressed as a weighted average of import and export tariff rates, and is therefore determined by the structure of tariff barriers. An importer will tend to smuggle if the tariff is so high that it pays to purchase foreign exchange in the parallel market at a premium, given the possibility of getting caught by the customs enforcement agency. Similarly, controlling for detection technology, the incentive to smuggle exports out will exist when the subsidy (or tax rate) on exports is smaller than the parallel market premium weighted by the probability of not getting caught. An increase (decrease) in the import tariff or export tax rate, therefore, pushes the parallel market premium up (down). In general, whereas the premium depends essentially on the structure of trade taxes in the long run, it is determined by the requirement of household portfolio considerations in the short-run.

A divergence between the official and parallel exchange rates induces in the short run a flow of arbitrage activity, the magnitude of which depends on both the costs of evading exchange controls and the size of the exchange rate differential. Leakages that ensue from such arbitrage activity have important implications for the analysis of illegal or quasi-legal markets of foreign exchange in developing countries. Such arbitrage necessitates a change in the yield on domestic assets or in the parallel rate to restore equilibrium. For example, a positive supply shock,

by causing an excess demand in the money market, could lead to an appreciation of the parallel exchange rate in order to maintain uncovered asset yields in line. Similarly, a permanent increase in the foreign price level is associated with an appreciation of the parallel exchange rate and--as a result of the partial offset provided by the movement in the free rate--leads to a less than equiproportionate rise in domestic prices.

IV. Policy issues with Informal Financial Markets

In countries where informal credit and foreign currency markets are large, the different channels discussed in the previous section may affect significantly the transmission process and the overall effectiveness of macroeconomic policy shocks. We focus in what follows on changes in policy instruments that have figured prominently in stabilization and macroeconomic return programs implemented in developing countries. ^{1/}

1. Monetary and exchange rate policies

In the absence of organized primary markets (for credit auctions or government securities auctions), and secondary securities markets, monetary authorities in developing countries typically have recourse to four non-market based policy instruments: (a) the level of administered bank interest rates, (b) the amount of credit extended by the central bank to the commercial banking system, (c) the required reserve ratio, and (d) the

^{1/} The analysis presented here is based on detailed analytical and simulation models developed in Agénor (1993) and Montiel, Agénor, and Haque (1993). In addition to the explicit consideration of informal financial markets, these models account for other macroeconomic features that are deemed important in developing countries--such as wage rigidity and imports of intermediate products. See also Agénor and Montiel (1994).

official exchange rate. 1/ In order to understand the transmission process of macroeconomic policies in the presence of informal markets, we will study the effects of changes in all four policy instruments in a typical developing country setting.

a. Increase in the level of administered bank interest rates

Increasing interest rates in formal financial markets causes individuals to reallocate their portfolios by moving funds from both the informal loan markets and foreign-asset holdings into domestic deposits. The curb market interest rate therefore rises and the parallel exchange rate appreciates, upon announcement of the measure. 2/ The magnitude of both effects depends on the degree of substitutability among the assets in individual portfolios. As the parallel exchange rate appreciates, the domestic-currency value of financial wealth falls, to an extent that depends on the weight of foreign currency assets in private portfolios. The reduction in the nominal value of wealth causes a secondary reallocation of portfolios, since the demand for interest-bearing assets depends also on total (non-currency) financial wealth. Because of this wealth effect, the demand for domestic deposits may, indeed, rise or fall in net terms.

1/ A fifth instrument of monetary policy used in some developing countries is the secondary or statutory liquidity ratio, which could be introduced in the framework described previously by adding holdings of government bonds by commercial banks. Changes in this instrument would affect the formal financial intermediation process in a manner similar to changes in reserve requirements.

2/ This highlights an important role of informal financial markets in developing countries that is similar to that of well-functioning asset markets in industrial countries, i.e., that such markets are forward-looking. They anticipate future policies, and these anticipations themselves have macroeconomic effects. Such effects begin to be felt when anticipations are formed rather than when policies are implemented.

This measure has a deflationary effect as well as a contractionary effect on output for a number of reasons. First, the appreciation of the parallel exchange rate reduces the real value of private wealth which reduces aggregate demand. Second, the exchange rate appreciation also reduces the producer price for domestic exports which dampens supply. Third, to the extent that the proportional increase in administered interest rates exceeds that in the curb market, the degree of financial regression falls. If households are net debtors with respect to the banking system, the implicit subsidy provided by controls on interest rates falls on impact, thus reducing income and aggregate demand. The increase in the informal interest rate exerts direct contractionary effects on spending as well. Consequently, output and domestic prices fall when the measure is implemented. Ignoring informal market linkages and wealth effects in the determination of macroeconomic outcomes as in McKinnon's analysis would have led to the recommendation that an increase in official interest rates is unambiguously expansionary.

b. Credit expansion by the central bank

An expansion of credit by the central bank to commercial banks leads to an initial excess supply of domestic monetary assets in private agents' portfolios. Attempts to restore portfolio balance leads to an increased demand for foreign assets and hence to a depreciation of the parallel exchange rate as well as an increase in the domestic price level, in order to induce households to absorb the increased supply of money. Given administered interest rates, the increase in the price level implies a fall in the real rate of interest in the formal sector. The private sector's

demand for deposits is reduced, causing households to shift assets towards informal market loans, which leads in turn to a fall in the curb market interest rate. The fall in the curb market rate also reduces the real interest rate, exerting a positive effect on private expenditure. The fall in the real rate stimulates private expenditure and investment, contributing to the increase in the domestic price level and output. This expansion of demand is somewhat dampened by a reduction in the degree of financial repression, which results from the decline in the implicit subsidy provided by interest rate controls.

If the stimulus resulting from the fall in the real interest rate outweighs the adverse effect on aggregate demand resulting from the reduced level of financial wealth, the net effect is an expansion of private spending, which stimulates output and raises prices. Net foreign assets of the central bank fall, as a consequence of the higher level of domestic activity (which raises imports), and the increase in under-invoicing of exports (resulting from the higher premium).

c. An increase in the required reserve ratio

A rise in the required reserve ratio leads to an increase in the cost of deposits and thus, since banks cannot increase loan rates, translates into a lower deposit rate. The induced increase in the financial repression tax exerts a negative wealth effect on aggregate demand. Portfolio reallocation results in a substitution into the informal credit and parallel foreign currency markets, lowering interest rates in the former and the premium in the latter. Lower informal market interest rates offset, in part, the adverse effect of the higher degree of financial repression on

domestic economic activity. The net effect is nevertheless a reduction in domestic demand and output which lowers the demand for imports while the propensity to under-invoice exports falls as a result of the lower premium. The net effect on the stock of foreign assets of the central bank is thus positive. The stock of foreign assets held by the public also rises in the long run.

d. Devaluation of the official exchange rate

In the presence of informal financial markets, the potential contractionary effect of a devaluation of the official exchange rate (see Agénor and Montiel, 1994) tends to be reinforced. This is so because a devaluation typically reduces the premium in the short run and leads to a substitution into domestic assets and an accumulation of foreign reserves by the central bank. Consequently, there is an expansion in the money supply that drives up the domestic price level. The increased demand for currency due to a higher domestic price level tends to draw funds out of both the informal credit and foreign exchange markets, raising the interest rate charged for informal loans and causing the parallel exchange rate to appreciate. The higher curb market interest rate has a direct contractionary effect on private spending, as does the reduction in real private wealth brought about by a reduced domestic-currency value of foreign assets and a higher price level.

In the simulation results reported by Agénor, Haque and Montiel (1993), the official devaluation proves to be very effective in improving the current account because the conventional expenditure-switching effects are strongly reinforced by expenditure-reducing effects. In addition, the

fall in the parallel market premium reduces the propensity to under-invoice sales abroad, resulting in a higher level of recorded exports. As a result, the reported current account improves while the unreported current account deteriorates. Because the resulting inflow in foreign reserves is only partially monetized and since other financial policies are unchanged, the real effects of the official devaluation are slow to dissipate.

2. Interest rate liberalization

Strategies for the eventual unification of interest rates or for the liberalization of financial markets have gained considerable importance over the past few years. Experience has shown that the initial state of the economy is important to the success of the reform as well as the implementation of the reform in a least-cost manner. ^{1/} In particular, the financial position of the private sector and the banking system, the quality of prudential regulation over the banking system, and the extent of macroeconomic stability are all factors that affect the pace of reform.

In low-inflation countries, especially where banking supervision is strong and efficiently enforced, and where demand management remains appropriately tight, interest rate adjustment aimed at quickly establishing positive interest rates can be implemented. Within this group, countries with a record of economic stability and sound and credible macroeconomic policies may be able to fully liberalize interest rates, subject to a strengthened system of prudential regulations over the banking system (see

^{1/} The complete freeing of bank borrowing and lending rates, however, remains rare in the developing world and, where adopted, has not always been carried out successfully or retained permanently.

Villanueva and Mirakhor (1990)). On the other hand, in high-inflation countries, interest rate liberalization is better achieved if the economy is first stabilized. In this case the establishment of price stability and an adequate regulatory and supervision framework for financial markets becomes the first step in moving towards market-determined interest rates.

As seen above, in the presence of informal financial markets, increases in administered interest rates can have contractionary macro-economic effects on impact. If such policies are adopted for efficiency reasons, compensating measures may be needed during the process of financial liberalization. 1/ In particular, a reduction in reserve requirements during the process of financial liberalization provides a potential offset to the adverse effects on aggregate demand of increases in administered interest rates. By reducing the interest rate in the informal market, through the positive wealth effect engendered by reduced financial repression--and possibly through effects on the parallel market premium as well--reduced reserve requirements may be expansionary. Similar expansionary effects can also be obtained during the process of financial liberalization for alternative monetary policy instruments such as expanded credit to the banking system, as discussed earlier.

3. Unification of foreign exchange markets

Growing recognition of the adverse effects of parallel currency market activities (such as efficiency losses linked to rent-seeking activities, the

1/ As discussed above, the contractionary effect of the increase in controlled interest rates is due to a reduction of the premium on impact, and not to the New Structuralist mechanism that focuses on the reduced efficiency of financial intermediation when funds are transferred from the informal to the formal market.

adverse impact of exchange rate fluctuations on domestic prices, and the loss in tax revenue due to smuggling) has led policymakers in many developing nations to attempt to unify the official and parallel markets for foreign exchange, in most cases by adopting a uniform floating exchange rate. 1/ Much interest has focused on the experience of Sub-Saharan African countries in the mid 1980s. 2/ While some of these countries chose to follow a gradual path to unification, most of them opted for an "overnight" approach, consisting in floating the official exchange rate and a simultaneous removal of foreign exchange controls.

The experience of Sub-Saharan African countries indicates first that in some countries--particularly in Sierra Leone and Zambia, where a floating arrangement was implemented in July 1986 and September 1985, respectively --exchange rate unification led to a surge in inflation. Second, the evidence also suggests that the parallel market premium rose substantially in the months preceding the unification attempt, and fell sharply upon implementation of reform. The unified floating exchange rate that emerged immediately after the reform took place was in some cases very close to the pre-reform parallel rate--implying that the drop in the premium resulted essentially from a sharp depreciation of the official exchange rate. This was the case, most notably, in Nigeria and Zaire. However, despite a sharp

1/ Although, in theory, unification can also take the form of adopting a uniform fixed exchange rate or a crawling peg regime--with changes in net foreign assets clearing the official market--few developing countries have followed these options in recent years.

2/ These countries include Gambia, Ghana, Nigeria, Sierra Leone, Somalia, Zaire, and Zambia. These experiments are discussed by, in particular, Agénor (1992) and Pinto (1991).

drop on impact, a significant premium reemerged subsequently in some countries--most notably Ghana, Sierra Leone, Somalia, and Zambia. 1/

The analytical work on exchange market unification has shown that the impact of such a policy shift on the short- and long-run behavior of the exchange rate and inflation is generally ambiguous. The short-run effects of a pre-announced future adoption of a unified, flexible exchange rate arrangement have been examined by Lizondo (1987) and Agénor and Flood (1992). The behavior of the parallel exchange rate in anticipation of reform has been shown to depend on the state of expectations about the timing of reform, the initial position of the economy, the length of the transition period between announcement and implementation of reform, as well as the macroeconomic policy stance that agents expect policymakers to adopt in the post-reform regime. If the unification attempt is fully anticipated, agents will--in order to avoid capital losses--adjust their portfolios towards foreign-currency denominated assets if the uniform floating exchange rate is expected to be more depreciated than the existing parallel rate, and towards domestic-currency denominated assets if it is to be expected to be more appreciated. As a result of this portfolio adjustment, the parallel market rate will depreciate or appreciate immediately--at the moment the unification attempt is announced or when expectations are formed--towards the level asset holders expect the post-unification floating rate to be. After the

1/ Other countries that have recently unified their foreign exchange markets by adopting a floating exchange rate arrangement include Guyana (March 1990), India (early 1993), Jamaica (September 1990), Peru (August 1990), Sri Lanka (August 1990), Trinidad and Tobago (April 1993), and Venezuela (March 1989). These experiences are discussed in Agénor and Montiel (1994).

initial jump, and if the reform is known to take place in the near future, the parallel market rate will steadily depreciate or appreciate--or appreciate during a first phase and depreciate subsequently--towards the unified exchange rate during the transition to unification.

The longer-run macroeconomic effects of exchange market unification depend essentially on the fiscal implications of exchange rate reform. By unifying, the government loses the tax revenue implicit in the premium. As emphasized by Pinto (1991), the larger the tax on exports prior to reform, the larger the jump in inflation upon unification, since the policymakers attempt to compensate for a fall in revenue by an increase in monetary financing of the fiscal deficit and a higher tax on domestic money holdings. ^{1/}

The foregoing discussion provides a formal basis for interpreting the empirical evidence, alluded to earlier, on the short-run behavior of exchange rates and the premium observed during the unification process. The inflationary burst observed in several cases corroborates to some extent the "public finance view" of unification emphasized by Pinto (1991), and may in part be viewed as a result of the elimination of the quasi-fiscal revenue derived from the implicit tax on exports. In addition, however, the increase in inflation may have resulted from the inability of policymakers to maintain under control the rate of expansion of the money supply. The increase in the premium in the periods prior to reform can be interpreted as being, in part, the result of expectations about the timing of the reform process, as well as the size and direction of movements in the official and

^{1/} Pinto's emphasis on the trade-off between the premium and inflation in the unification process remains valid under a variety of rationing schemes in the official market for foreign exchange (Lizondo, 1991).

parallel exchange rates upon implementation. The fact that the parallel market exchange rate in some cases did not undergo a large "jump" at the moment the reform was implemented is consistent with the intuition that the timing of reform was predicted with a relatively high degree of accuracy by private agents. At the time of implementation, only the official exchange adjusts in a discrete fashion, because most of the effects of the change in the exchange rate regime had already been discounted in the parallel market by forward-looking agents. Finally, the re-emergence of a significant premium subsequent to reform occurred in countries where money growth was not kept under control, foreign exchange controls were reintroduced, and inflation rose substantially.

V. Concluding Remarks

Informal financial markets are a common phenomenon in developing countries. The purpose of this paper has been to review the implications of these markets for the formulation of short- and medium-term macroeconomic policies. We first provided a brief review of the nature and scope of these markets, emphasizing their common structural characteristics. We then examined the alternative channels through which informal credit and foreign current markets affect the behavior of private agents. The existence of these markets was shown to establish important new linkages between the financial and real spheres of the economy.

The main message of this paper is that informal financial markets have important implications for the analysis of the transmission process and the effectiveness of macroeconomic policy shocks. Because of their inherent flexibility and their forward-looking nature, they tend to transmit

immediately perceived or actual changes in policy instruments to the rest of the economy. In particular, when stabilization programs lack credibility, the parallel market premium will tend to increase and remain high, as expectations of higher inflation in the future induce agents to switch to foreign-currency denominated assets (Agénor and Taylor, 1993).

Although the strength of the different linkages between official and informal markets highlighted earlier will vary across countries, the policy simulations discussed in the previous section suggest that they may combine in ways that may lead to perverse results. A devaluation may or may not be contractionary, depending on factors such as the initial composition of private agents' portfolios, and the degree of rationing in the official credit market. While "orthodox" prescriptions may well be warranted in many cases, the success of stabilization programs may in others depend crucially on a proper account of the role of informal financial markets in the design of these programs.

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