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Coordination of Monetary and Fiscal Policies¹

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Abstract

Recently, monetary authorities have increasingly focused on implementing policies to ensure price stability and strengthen central bank independence. Simultaneously, in the fiscal area, market development has allowed public debt managers to focus more on cost minimization. This “divorce” of monetary and debt management functions in no way lessens the need for effective coordination of monetary and fiscal policy if overall economic performance is to be optimized and maintained in the long term. This paper analyzes these issues based on a review of the relevant literature and of country experiences from an institutional and operational perspective.

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SUMMARY

This paper analyzes the interaction between monetary and fiscal policies, stressing the need for policy coordination at two different levels: fulfillment of the overall policy objectives, and institutional and operational procedures. On the former, the main interaction between monetary and fiscal policies relates to the financing of the budget deficit and its consequences for monetary management. The monetary policy stance will affect the capacity of the government to finance the budget deficit by affecting the cost of debt service and by limiting or expanding the available sources of financing. At the same time, the financing strategy of the government and its financial needs will place constraints on the operational independence of the monetary authority.

This paper also reviews institutional arrangements for the conduct of monetary policy that attempt to insulate the central bank from the deficit financing requirements of the fiscal authorities, such as legal arrangements guaranteeing central bank independence and currency boards. At the same time, it examines institutional arrangements for public debt management, which must allocate responsibility for public debt functions among the treasury, the central bank, and the debt management office in a transparent fashion.

Finally, this paper reviews mechanisms for ensuring efficient coordination at the operational level. Monetary programming provides a consistent framework for the design of policies and for the coordination of operational procedures. In addition, however, the authorities need to develop specific procedures for the day-to-day operational aspects of policy implementation, such as the management of government cash balances, the timing and size of debt issuances, and liquidity forecasting. Notwithstanding the “divorce” between monetary and debt management policies that can occur at the institutional level following financial reform and liberalization, coordination at both the overall policy objectives and the operational levels remains crucial, especially as markets become liberalized and gain depth.

I. INTRODUCTION

The efficient pursuit of the objectives of the authorities' overall macroeconomic policy framework requires a close degree of coordination of financial policies. In this paper, the interaction between monetary and fiscal policies is analyzed, stressing the need for policy coordination at two different levels: fulfillment of the overall policy objectives (including financial sector development), and institutional and operational procedures.

In many countries, monetary policy has been subservient to fiscal policy; central banks have often been required to finance public sector deficits, including those arising from quasi-fiscal activities. Such subordination of monetary policy to fiscal needs introduced an inflationary bias. In recent years, however, there has been a worldwide trend—in the context of the modernization of financial markets—to set up institutional and operational mechanisms that would ensure more efficient overall policy design and implementation. These include the adoption of market-based monetary and debt management instruments, as well as moves to increase central bank independence and in some cases the design of strict rule-based monetary arrangements, such as currency boards.

Two fundamental issues need to be stressed regarding the nature of monetary and fiscal policy coordination. First, the overall policy mix as well as each individual policy must be set on a sustainable course. Second, monetary and fiscal policies operate in different time frames, with monetary policy adjusting almost on a continuous basis and economic agents reacting with much shorter lags to it than in the case of changes to fiscal policy, while fiscal policy takes time to adjust and economic agents react with a lag to such adjustments.

The paper is organized as follows: Section II sets out in general terms the rationale for coordination of monetary and fiscal policies and the major requirements to achieve it, including an overview of the developmental stages in the coordination process. Section III reviews the interaction between monetary and fiscal policy, including the effects of monetary policy on public debt management and the effects of public debt management on the conduct of central bank policies. This section also reviews the roles of monetary and fiscal policy under different exchange rate regimes. Section IV analyzes policy coordinating arrangements from the institutional and operational perspectives focusing on current trends toward greater independence for central banks and increased autonomy for public debt management agencies and the coordination of policies in the medium term through monetary programming frameworks. Concerning coordination of operations, issues at stake involve arrangements for the management of government cash balances, for the timing and size of public debt issuances, for central bank credit to the government, and for liquidity forecasting. Section V presents some concluding remarks.

II. GENERAL ASPECTS OF POLICY COORDINATION

A. The Need to Coordinate Monetary and Fiscal Policies

The foremost objective of macroeconomic policy is to achieve sustainable economic growth in a context of price stability and viable external accounts. For this, it is essential to achieve a close degree of coordination among decision makers in the areas of monetary and fiscal policy. The ultimate effect of measures taken in either of these areas will inevitably depend on how the policies in each area affect those of the other. Without efficient policy coordination, financial instability could ensue, leading to high interest rates, exchange rate pressures, rapid inflation, and an adverse impact on economic growth. At the same time, however, monetary and fiscal policies are designed and implemented by different official bodies, each with its own objectives, resources, constraints, and incentives.

The effective implementation of monetary and fiscal policies thus requires extensive coordination between the respective authorities. Effective coordination makes it easier for policy makers to achieve their stated policy objectives in an efficient manner. It also ensures the commitment of decision makers responsible for these two policy areas to mutually agreed objectives, thus helping to eliminate the problem of time inconsistency in the design of monetary policy.³ Within this general framework, coordination can take the form of ongoing contacts between the fiscal and monetary authorities to decide jointly on aspects relating to policy design and implementation, or alternatively, coordination could be based on a set of rules and procedures which minimizes the need for frequent interaction; the particular characteristics of any given country and its degree of institutional development will determine the most efficient choice.

Lack of coordination between the monetary and fiscal authorities will result in inferior overall economic performance. A weak policy stance in one policy area burdens the other area and is unsustainable in the long term. For example, lax fiscal policy will put pressure to tighten monetary policy, even if the latter cannot fully compensate for fiscal imbalances. Moreover, the lack of credibility of the overall policy framework caused by the long-term inconsistency of such a policy mix will diminish the effectiveness of monetary policy.

Efficient coordination of monetary and fiscal policies needs to take into account at the outset the need for policy sustainability. A necessary condition for the efficient coordination of monetary and fiscal policies is that each policy be on a sustainable course. Even if decision

³The time inconsistency problem for monetary policy arises in part from the benefits that the fiscal authorities could obtain from a sudden jump in price inflation if public debt is growing rapidly; this situation reduces the credibility of monetary policy.

makers closely coordinate their policies, coordination cannot succeed if the intended medium-term course of one or both policies is unsustainable.⁴

Equally important for the overall policy framework is achieving credibility for each of the two policies. The stabilization of expectations through monetary policy can only be successful if public finances do not give rise to destabilizing expectations; the pursuit of price stability could lead to very high interest rates or a large loss of international reserves if the markets called policy credibility into question owing to an unfavorable perception of the fiscal stance. At the same time, the less credible monetary policy is, the larger the burden on fiscal policy, since interest rates would tend to be higher than otherwise.

The coordination process also needs to take into account that monetary and fiscal policy adjustments operate in different time frames. Normally, it takes a long time to alter the fiscal stance through policy action. By contrast, monetary policy can be adjusted to alter monetary conditions on a daily basis. This inevitably requires monetary policy to bear most of the burden of any “fine tuning” of stabilization policies.

Policy coordination needs to be undertaken at two different levels. First, there is a need to address the constraints that arise in the short term regarding the operating procedures of monetary and fiscal policies. Second, policy coordination also has to deal with the long-term macroeconomic effects that could arise from an unbalanced policy mix. In the short term, policy coordination is meant to ensure the attainment of orderly financial conditions including price stability. The main areas where attention should be focused are monetary policy and public debt management. In the long term, the policy coordination problem rests on how to design a balanced monetary and fiscal policy mix that is conducive to maintaining the economy on its equilibrium growth path—controlling inflation and promoting financial conditions for sustainable growth. This implies limiting the fiscal deficit to a level that can be financed through the operation of the capital markets without creating distortions in the allocation of resources in the economy, without having recourse to direct monetary financing from the central bank, and without relying on an excessive level of external borrowing.

The joint determination of objectives and policies by the monetary and fiscal authorities is a fundamental requirement for efficient policy coordination. A situation where the different policies are made consistent with each other by the passive reaction in one policy area to the commanding position in the other policy area would not achieve the objective of maximizing the effects of policies. For example, setting a very restrictive monetary policy to

⁴For example, suppose that the fiscal authority sets its policies on a course that will raise the ratio of government debt to GDP indefinitely. Initially, close coordination of this fiscal plan with the actions of the monetary authority might serve to limit its real interest rate and exchange rate costs. However, the real interest rate will still tend to rise over time, uncertainty and instability will increase, and—even with a strong dose of policy coordination—the monetary/fiscal policy mix will become unsustainable.

offset a lax fiscal policy may crowd out private investment and significantly increase the borrowing costs for the government.

The establishment and development of domestic capital markets require an even greater degree of monetary and fiscal policy coordination. The domestic financial market provides the least distortionary source of financing for the fiscal deficit, while the need to pay market-determined debt service costs acts as a deterrent to large fiscal deficits. At the same time, these markets allow the central bank to conduct monetary policy more efficiently through the use of indirect, market-based policy instruments. Finally, domestic financial markets impose discipline on the monetary and fiscal authorities given their responsibilities in ensuring a stable financial environment that would be conducive to maintaining orderly and efficient conditions in such markets.

The need for policy coordination also arises in the case of structural reform and liberalization of the financial sector.⁵ Such reform can only proceed within the framework of a supportive fiscal policy that provides macroeconomic stability, fiscal discipline, and avoidance of taxes that discriminate against financial activity.⁶ If high fiscal deficits persist while the authorities are undertaking the reform of the financial sector, interest rates could reach very high levels or, if interest rates are kept at artificially low levels, either inflation would surge or the demand for credit and distortions in resource allocation would grow significantly. In either case, the financial reform program more than likely will be unsuccessful. The presence of government payment arrears and the way they are dealt with also will impact strongly on the chances for success of financial sector reform.

B. Phases in the Development of the Coordination Process

The need for policy coordination is present in any economy, irrespective of its stage of development. However, it will take different forms depending on a country's specific situation and the particular characteristics of its economy, including the depth of its financial markets, the exchange rate regime, and other institutional arrangements.⁷

In the early stages of development, where there are no local markets for government debt, the central bank tends to finance fiscal deficits almost entirely, except for that part that the government finances abroad. Under these circumstances, formal rules to constrain central bank financing to the budget are needed to avoid an excessive expansion in domestic credit. A

⁵See Leite (1992).

⁶Together with improved legal, accounting and regulatory systems in the financial sector, these are the prerequisites for successful financial liberalization; see World Bank (1989).

⁷See Sundararajan et al. (1994)

framework that projects the demand for broad money and the sources of domestic credit, i.e., a broad money programming framework is very useful in facilitating a balanced policy mix.⁸

The auctioning of short-term marketable government securities often serves as a starting point for money market development. There is normally no secondary market for these securities yet, the interbank market is still underdeveloped, interest rates could still be controlled by the authorities, and indirect instruments of monetary policy are just being introduced. However, the government's debt service costs are now affected by the actions of the central bank, and policy coordination—still mainly under a framework of broad money programming—will be essential to reduce the cost of debt servicing while ensuring the attainment of the objectives of monetary policy.

As domestic financial markets start to develop, there is greater flexibility in the determination of interest rates. The central bank actively starts to manage overall liquidity levels (despite sometimes still remaining the major source of liquidity for public debt instruments). As the signaling role of interest rates increases in the economy, the use of broad money programming frameworks as a tool for effective monetary and fiscal policy coordination tends to lessen in importance.⁹ The monitoring of financial market developments—in particular the money market—becomes critical. In this context, the role of reserve money programming becomes more important to guide central bank interventions in the market.

Finally, when domestic financial markets become fully developed, interest rates are completely flexible, the market ensures the liquidity of public debt instruments, and the central bank manages liquidity at its own initiative, using flexible market-based instruments. In such an environment, financial markets react rapidly and strongly to monetary policy signals. In particular, the credibility of monetary policy is critical in maintaining orderly market conditions. The independence of the central bank, which is not always present in earlier stages, will normally have been established and is interpreted by the markets as a guarantee against the resurgence of macroeconomic imbalances—including fiscal imbalances—and inflation. However, such “institutional credibility” needs to be supported by “operational credibility.” In particular, achieving the objectives of monetary policy depends not only on the law that protects the independence of the monetary authority, but also on the practical arrangements between the monetary and fiscal policy makers and the degree of fiscal discipline. No matter how much independence the law gives the central bank, in practice the central bank can only successfully pursue monetary policies that are well understood and accepted by the government and the public.

⁸See Chapter IV, Section C for further discussion on monetary programming frameworks.

⁹This trend is often highlighted by the process of deregulation and liberalization, which causes problems in interpreting monetary aggregates.

III. THE INTERACTION BETWEEN MONETARY AND FISCAL POLICIES

A. General Remarks

The main sphere of interaction between monetary and fiscal policies relates to the financing of the budget deficit and monetary management. The particular stance of monetary policy affects the capacity of the government to finance the budget deficit by changing the cost of debt service and by limiting or expanding the available sources of financing. At the same time, the financing needs of the government and its funding strategy will place constraints on the operational independence of the monetary authority.

The effects of a given fiscal deficit on inflation and output growth depend not only on its size but also on the way it is financed. There are four alternative financing sources for the government deficit: voluntary private sector purchases of government debt in the domestic market, foreign borrowing, forced placement of government debt,¹⁰ and transfer of resources from the central bank (in the form of direct central bank credit, transfers of central bank profits to the treasury, and quasi-fiscal activities undertaken on account of the government).¹¹

Voluntary purchases of government debt by local and foreign investors are in general the preferred financing strategy, since they limit the negative repercussions of a large fiscal deficit, such as inflationary pressures and a weakening of the economy's external position. By operating through clear market signals, voluntary purchases of government debt give immediate and reliable information to decision makers and the general public regarding the consequences of any given level of financing for the government. In contrast, the other sources of financing can magnify the problems arising from a large fiscal deficit. Increasing central bank credit to the government will accelerate domestic credit creation and put pressure on international reserves and on reserve money; thus, inflationary pressures may follow. If government securities are placed compulsorily, this will cause financial repression, leading to significant crowding out of the private sector from the financial markets. Finally, if the deficit is primarily financed abroad, it could lead to excessive reliance on foreign borrowing, which may undermine credibility in the ability of the government to honor its debt and may also create an unsustainable debt service.

Developing countries rely much more than industrialized countries on the central bank to finance the fiscal deficit.¹² During the period 1979–93, the median OECD country

¹⁰Such as the creation of “captive” markets for government securities by forcing institutions, such as banks and pension funds, to invest a certain share of their portfolios in such securities.

¹¹See Fry (1995 and forthcoming).

¹²The estimates in this paragraph are from Fry (forthcoming); they are based on a group of
(continued...)

government was repaying debt to the central bank, while at the same time the median developing country government obtained 30 percent of its borrowing requirements from the central bank. Also, in the median OECD country, central bank net credit to the government amounted to only 12 percent of the overall banking system's net credit to the government, compared to 66 percent in the median developing country. To further contrast the experience in these two categories of countries, the median OECD country financed more than 50 percent of its government deficit from voluntary lending by the domestic private sector, compared with 8 percent for the median developing country.

To better understand the relationship between monetary policy and fiscal policy, the links between the government deficit, including both the treasury and the central bank, and the sources for its financing can be expressed as follows:¹³

$$D(t) = [B(t) - B(t-1)] + [M(t) - M(t-1)] \quad (1)$$

where $D(t)$ is the government's budget deficit on a cash basis, $[B(t) - B(t-1)]$ is the net placement of government bonds (foreign and domestic), and $[M(t) - M(t-1)]$ is the change in the monetary base arising from central bank credit to the government. It is obvious that only two of the three elements in equation (1) can be determined exogenously.

An evaluation of equation (1) shows that without coordination between the monetary and fiscal policies, there are three possible scenarios. In the first scenario, the central bank is dominant; as a result, the monetary authority could determine the growth of the monetary base independently of the financing needs of the government. The financing possibilities in the domestic and foreign financial markets would then constrain the size of the budget deficit. Ultimately, the government could be forced to reduce its budget deficit to match available financing with the danger of not paying due regard to expenditure priorities, to rely excessively on foreign financing to postpone the "day of reckoning," or finally, to place significant levels of debt in the domestic market which would lead to very high real interest rates.

In the second scenario, the Ministry of Finance is dominant; as a result, it can determine the size of the budget deficit without consulting with the monetary authority. Given the financing possibilities in the bond market, the monetary authority would then be obliged to supply whatever amount of needed financing in the form of monetary base (e.g., direct credit

¹²(...continued)

111 countries for which government deficit data exist; 21 of these countries are OECD members and the rest are referred to as "developing countries."

¹³See Sundararajan et al. (1994). The government deficit is defined in equation (1) on a cash basis; if it were to be defined on an accrual basis, an additional term would need to be added to the right hand side of the equation to represent the accumulation of arrears.

to the government).¹⁴ If this exceeded the expansion of demand for real base money at the targeted price level, increased pressures on inflation and on international reserves would arise. Moreover, the heightened instability brought about by high inflation would stifle the development of the domestic financial market.

Finally, in the third scenario, both the central bank and the Ministry of Finance behave as if they were independent; as a result, the monetary and fiscal authorities could make inconsistent decisions regarding both the growth of the monetary base and the size of the budget deficit, respectively. The fiscal authority would finance that part of the budget deficit not covered by resources from seigniorage in the domestic and foreign bond markets. If the domestic financial markets are not well developed, however, they might not be in a position to provide the necessary financing, and, once the limits on access to foreign sources of financing are reached, either fiscal or monetary policy would need to assume a subservient role as described in the two previous scenarios. Moreover, even in the presence of well-developed domestic capital markets, if the fiscal targets are inconsistent with the goals of monetary policy, interest rates in the domestic bond market could increase to very high levels or significant government arrears could appear.

The coordination of fiscal and monetary policies would give rise to a better result in any of the above scenarios, since the development of monetary and debt management procedures which work in tandem with each other would be self-reinforcing. The growth of financial markets opens up additional opportunities for improved monetary and public debt policy implementation, while the coordination of monetary and fiscal policy goals not only permits attaining them simultaneously at a lower cost for the economy but also promotes the expansion of the domestic financial market.

B. Impact of Monetary Policy on Public Debt Management

The actions of the monetary authority will affect the management of public debt through a variety of channels, including the stance of monetary policy, the choice and design of central bank instruments, and the measures taken to promote the development of the domestic financial markets.

The stance of monetary policy

The capacity of the government to place debt at a low financial cost depends to a large degree on the stance of monetary policy. An expansionary monetary policy would initially permit the placement of public debt in the market at low interest rates. However, if inflation follows the implementation of such a lax monetary policy or if the budget deficit grows rapidly given the prevailing low financial costs, nominal interest rates would tend to increase implying

¹⁴Provided that it remains within the legal limits imposed on central bank credit to the government.

a capital loss for investors; in the event, investors would demand higher interest rates to cover for perceived risks, debt service costs would climb and the fiscal authority would have to lower the primary deficit to match available financing. On the other hand, a restrictive monetary policy could initially increase the cost of debt service for the government, but if applied in a coordinated fashion with a responsible fiscal policy it would help to build up credibility, which would eventually lead to no expectation of capital loss, and thus lower interest rates and a more sustained development of the domestic financial markets.

If the monetary authority conducts restrained policies without a certain degree of coordination with the fiscal authority, the results could be counterproductive mainly because, as mentioned above, it will be very difficult for monetary policy to be credible if fiscal policy is not. In this case, the appropriate degree of monetary restraint could further aggravate the budgetary cost of debt service, which could undermine the sustainability of the fiscal position (the so-called snowball effect).¹⁵ In the extreme case, a contractionary monetary policy could end up leading to a perverse expansionary effect on aggregate demand through the increased public sector interest payments. If the monetary authority is not willing to abandon its firm policy stance because the goal of price stability would be seriously jeopardized, the fiscal authority must then strive to increase the primary fiscal surplus. Additionally, tightening monetary policy could worsen the fiscal situation as the resulting higher interest rates may dampen economic activity and thus reduce tax revenues, while at the same time the lower rate of growth could cause an increase in the debt-to-GDP ratio. Finally, as a result of the lower rate of economic growth, the expansion of reserve money will decelerate and seigniorage will be reduced.¹⁶

The instruments of monetary policy

The choice and design of monetary policy instruments also have a direct impact on the capacity of the fiscal authority to place debt in the financial market in the desired amounts and at a reasonable cost.¹⁷ In particular, the monetary authority can help lower the cost of public debt service by enhancing the liquidity of government securities through their open market operations and the modalities of rediscount and reserve requirement regulations.

In carrying out open market operations, the central bank must decide whether to intervene by transacting in its own paper or deposits, or in government securities. The choice between these two instruments depends on the characteristics of the financial market and on

¹⁵See Bank of International Settlements (1992), where this problem is discussed in the case of a number of OECD countries. Sargent and Wallace (1981) discuss the “snowball effect” from a formal point of view.

¹⁶See Dornbusch (1996).

¹⁷See Baliño (1995).

the ability of the monetary and fiscal authorities to coordinate policy targets and operational procedures. The ideal choice from the point of view of the operation of the financial market is to have the central bank conduct its open market operations in government securities in the secondary market, while the treasury places debt in the primary market. This permits the fiscal and monetary authorities to pursue their own objectives simultaneously, while government securities stand to gain in liquidity. However, in the absence of a secondary market, both the fiscal and monetary authorities would need to operate in the primary market; in this case, the importance of policy coordination cannot be overstated if the goals of both monetary and fiscal policy are to be achieved.

If coordination between the central bank and the treasury is difficult to achieve, the central bank could issue its own securities for monetary policy purposes while the treasury issues government paper to support debt management objectives. However, even in this case some degree of coordination would be necessary to achieve efficient market segmentation (for example, by dealing in securities of different maturities). This would help to avoid head to head competition between the fiscal authorities—who try to reduce the costs of debt service—and the monetary authorities—who try to maintain interest rates high enough to prevent an excessive build up of liquidity. Such a confrontation would end up increasing the borrowing costs for both.

The characteristics of rediscount and reserve requirement regulations are also of relevance in determining the liquidity of government securities. In the case of a rediscount facility where the central bank is ready to rediscount government securities or to accept them as collateral for its loans, the demand for such securities would increase. Considering the reserve requirement system, the greater the uncertainty regarding the amounts to be deposited at the central bank, the larger the demand for assets—including government securities—which can easily be liquidated. Such uncertainty increases if reserves must be maintained on a daily basis as opposed to an average over a certain period of time, and if reserve requirements are determined on a contemporaneous basis rather than on a lagged basis.¹⁸

C. Impact of Public Debt Management on Monetary Policy

Just as monetary policy has a direct impact on the ability of the fiscal authority to place debt in the market, so the financing strategy of the government affects the conduct of monetary policy and places constraints on the operational autonomy of the central bank. The modalities of public debt management will affect interest rates, while the financial operations of the government more generally will complicate the central bank's task to maintain an orderly behavior of the monetary aggregates. In addition, public debt management may alter money demand and influence the development of the local financial markets.

¹⁸See Baliño (1995).

The perceived sustainability of the public debt will affect interest rates. In particular, if debt growth is viewed by market participants as unsustainable, the credibility of the overall policy mix is reduced, and interest rates will rise. In countries where the capital account has been liberalized, the high interest rates, in turn, will attract capital from abroad which will require monetary sterilization operations by the central bank, further complicating monetary management.

The sustainability of the public debt is a function of the size of the stock of debt, its average maturity, and the relationship between the average interest rate and the rate of growth of GNP. A high level of public sector debt relative to GNP is seen by market participants as a threat to the credibility and effectiveness of monetary policy since it could entail the risk of its future monetization or could be an indication of an underlying weak fiscal policy stance. These problems are greatly compounded as the average length of maturity of the public debt decreases and the ratio of financing needs of the government to the monetary base increases, thus reducing the room for maneuverability available to the fiscal authority. Finally, if the real interest rate exceeds the growth rate of real GNP, the stock of debt will grow as a ratio to GNP if the government's primary balance is not positive.

If a problem of debt sustainability is present, the only realistic solution is to implement a program of fiscal adjustment that would reduce the financing needs of the government and, eventually, generate a budget surplus that would produce the resources to reduce the stock of debt to sustainable levels. The fiscal authority should avoid addressing the problem of a rising level of public debt by replacing market-based financing with central bank credit, which would lead to inflation, or with forced debt placements, which would mean financial repression. Either alternative would end up complicating rather than easing the task of the monetary authority.

Public debt management can affect the demand for money in several ways.¹⁹ First, an increase in the holdings of government securities, in the absence of Ricardian equivalence,²⁰ could give rise to a positive wealth effect, with the result that real balances demanded would tend to increase. Second, liquid government securities could be a substitute for money balances, which would depress the demand for the latter. Finally, a level of public debt perceived as unsustainable would create expectations of future inflation, as mentioned previously, and would thus reduce the demand for money.

In addition to public debt management, other financial operations of the government have an impact on monetary policy. In particular, swings in government deposits at the central

¹⁹See Baliño (1995).

²⁰The Ricardian equivalence hypothesis states that the effect of higher government expenditure on aggregate demand is the same whether it is financed by borrowing or by lump-sum taxes. See, for example, Fry (1995).

bank immediately change the outstanding monetary base, which the central bank might have to offset through open market operations. Furthermore, how the fiscal authority decides to split its financing between domestic and foreign borrowing affects monetary growth, and is, therefore, of interest to the monetary authority in deciding how to carry out its monetary operations.

Finally, as in the case of monetary policy, the operation of public debt policy could help develop the domestic financial market. A moderate expansion of the stock of public debt could help develop the financial market, while a very rapid expansion of the debt could stifle such development.

D. Monetary and Fiscal Policies under Different Exchange Rate Regimes

Fixed exchange rate regime

Under a fixed exchange rate regime,²¹ a small country faced with perfect capital mobility and with no nontraded goods will find fiscal policy particularly effective in influencing aggregate demand, while monetary policy remains entirely ineffective. Fiscal policy is particularly effective in influencing aggregate demand since changes in the fiscal stance do not affect the interest rate (which will always remain equal to the international interest rate) or the exchange rate (which is fixed by a policy decision). In such circumstances, expansionary fiscal policy would not give rise to any crowding out of private sector activity. In this case, there would be no question regarding what the optimal monetary and fiscal policy mix should be. However, the position of fiscal policy would weaken, and that of monetary policy strengthen, the lower the degree of perfect capital mobility, the stronger the presence of nontraded goods in the economy, and the larger the country relative to foreign markets. In this case, the optimal policy mix would be determined by the structural characteristics of the economy.

The lack of effectiveness of monetary policy under a fixed exchange rate regime arises from the fact that any expansion in the level of domestic credit will be offset by an equivalent reduction in the level of net international reserves, with no effect on the monetary aggregates. The initial increase in the money supply following an expansion of domestic credit will prompt a drop of local interest rates; as a result, capital outflows will take place which will in turn be reflected in a loss of international reserves and a reduction of the money supply. The capital outflow will continue until the local interest rate climbs back to its original level. Ultimately, the only effect of the expansionary monetary policy will have been a change in the composition of the sources of money supply, with no modification of the overall level of the monetary aggregates or the interest rate.

²¹The discussion of a fixed exchange rate regime also encompasses the case of a predetermined crawling peg regime (where instead of fixing the nominal value of the exchange rate, the nominal change in the value of the exchange rate is fixed).

The above conclusions would need to be qualified if capital mobility is less than perfect or if there are nontraded goods. If capital mobility is less than perfect, fiscal policy will lose part of its effectiveness, since domestic interest rates now will move in response to changes in the stance of fiscal policy. This, in turn, would lead to some crowding out of the private sector. By the same token, monetary policy will gain some effectiveness, since interest rates can move following policy actions on the part of the monetary authorities, and thus will affect the level of aggregate demand.

In the presence of nontraded goods, fiscal policy also would lose part of its effectiveness, while monetary policy would have some effect on the level of aggregate demand. For example, an expansion in the supply of money would not only affect the balance of payments but also output levels of nontraded goods; the higher the share of nontraded goods in total output in the economy, the more effective monetary policy will be even under a fixed exchange rate regime.

Even though under a fixed exchange rate regime the economy is shielded from nominal shocks from abroad, it becomes more prone to real shocks. Given the relative effectiveness of monetary and fiscal policies as discussed previously, the role of shock absorber in the event of exogenous shocks would fall mainly (or entirely, in the case of a small country with perfect capital mobility and no nontraded goods) on fiscal policy.

Nonetheless, there are limits to the effectiveness of fiscal policy under a fixed exchange rate regime (other than those arising from relaxing the assumptions of perfect capital mobility and absence of nontraded goods). These limits, which remain stronger the longer the time period considered, arise from the weakening of confidence on the exchange rate peg that could follow from an expansionary fiscal policy. Such a policy would lead to a deficit in the current account of the balance of payments; over time, a current account deficit becomes unsustainable, and market participants would expect a devaluation, which would lead immediately to a hike in interest rates. Also, an expansionary fiscal policy would lead to inflation, which would erode competitiveness.

Flexible exchange rate regime

In the case of a flexible exchange rate regime, monetary policy can be used to raise the level of domestic output while fiscal policy loses all effectiveness. In the presence of perfect capital mobility and absence of nontraded goods, there is no question that theoretically the optimal policy mix in a flexible exchange rate case consists solely of monetary policy. However, if the structural characteristics of the economy are different, there would also be a role for fiscal policy to play even under a flexible exchange rate regime. Moreover, at a practical level, prudent fiscal policy will always be necessary to establish overall policy credibility and to avoid overburdening monetary policy.

Under a flexible exchange rate regime, the monetary stock is fully under the control of the authorities. A monetary expansion, for example, would initially lower the domestic interest

rate prompting an expansion of output. However, since the domestic interest rate now lies below international interest rates, capital outflows would ensue. The capital outflows will lead to a depreciation of the exchange rate, which improves competitiveness and raises output levels even further. Owing to such higher output levels, now money demand also would increase. The exchange rate will continue depreciating until income conditions are such that monetary equilibrium is again reached at the going international interest rate and new higher level of money supply.

An expansionary fiscal policy, however, would be totally ineffective in influencing aggregate demand, as it would crowd out private sector activity. An increase in the domestic public debt needed to finance a higher level of fiscal expenditure would give rise to an initial increase in interest rates. As a result, capital inflows would take place—until interest rates come down to international levels—and the exchange rate would appreciate. The resulting loss of competitiveness would reduce the profitability of the private sector which, then, would effectively have been crowded out by the fiscal expansion.

Under a flexible exchange rate regime the economy is more prone to nominal shocks from abroad. In this case monetary policy assumes the main role as shock absorber, the more so the higher the degree of capital mobility and the smaller the number of nontraded goods. Nonetheless, just as fiscal policy was not completely independent in the case of a fixed exchange rate regime in the longer term, there also are limits on monetary policy in the case of a flexible exchange rate regime. In particular, continued monetary expansion could lead to an unsustainable process of exchange rate depreciation and domestic inflation.

IV. INSTITUTIONAL AND OPERATIONAL COORDINATING ARRANGEMENTS

Effective coordination of monetary and fiscal policies requires appropriate supporting institutional and operational arrangements. This section reviews the different coordinating arrangements between monetary and fiscal policies with an emphasis on actual country experiences. It is noteworthy to mention at the outset that, because of the implementation of market-based policies, current trends in this area point to an increasing institutional separation of monetary and fiscal policy responsibilities.

A. Arrangements for Policy Implementation

Independence of the central bank

Central bank independence from the political power is usually advocated to reduce the alleged inflationary bias of governments.²² Assigning monetary policy responsibilities to an independent central bank insulated from political pressures and having a large degree of operational autonomy is seen as an effective way of anchoring monetary policy to long-run

²²See Cottarelli (1993) for a detailed discussion of this topic.

considerations and to resist pressures to trade price stability for temporary increases in output. However, as mentioned above, the fact that a central bank enjoys some form of independence does not mean that it no longer needs to coordinate its operations with the fiscal authority; in fact, a crucial element of a successful monetary policy framework based on central bank independence will depend on developing efficient means of policy coordination between the central bank and the fiscal authority.

Central bank independence does not mean absolute independence, which, in any event, probably does not exist. The question here is what would be the appropriate degree of delegated responsibility to the central bank to insulate it from political pressures. Once the desired degree of independence for the central bank has been determined, it will be key to decide what are the best arrangements to establish it, as well as what are the appropriate mechanisms to keep the central bank accountable for its policy actions. This approach not only recognizes that the ultimate responsibility rests with the political leadership, but also acknowledges that the degree and nature of policy independence for the central bank are based on the political structure of the country.

Moreover, for central bank independence to be effective and for accountability to be feasible, the central bank needs to be assigned a single primary objective. Although accountability does not strictly require the pursuit of a single objective, it is most effective when there is a single primary objective against which performance can be assessed. In this respect, the recent trend has been to give central banks the primary responsibility of promoting and maintaining price stability. Among recent central bank legislation, the statute of the European System of Central Banks and the European Central Bank is a clear example of establishing price stability as the primary objective of a central bank.²³ Countries with a long standing experience of government interference in central bank function are also moving in this direction. For instance, Japan is about to enact a new law for the Bank of Japan, which will enhance its independence and define price stability as a primary objective. Countries in transition are also following this path, as evidenced by the changes that occurred in 1995 in China when a new law for the central bank was enacted.²⁴

Preventing and resolving conflicts

Under a framework that does not include an autonomous central bank with a clear price stability objective, there is the danger that, in the case of conflicts between monetary and fiscal policy, the central bank could be subject to political pressures and that short-term considerations could take preeminence over long-run considerations. Under such a framework, arrangements should be in place to prevent the building up of inconsistencies between monetary and fiscal policy. These include limitation to direct central bank credit to

²³See Effros (1994) for further analysis.

²⁴See Mehran et al. (1996) for a full description of China's experience.

the government, balanced budget or deficit limitation clauses, and the establishment of coordination committees. These arrangements are reviewed in the following sections.

A framework that includes an autonomous central bank with a clear price stability objective provides arrangements to prevent the building up of inconsistencies. Moreover, the process to resolve conflicts when fiscal and monetary policy become inconsistent is reasonably clear. For example, if fiscal policy is expansionary, the central bank would tighten monetary policy, and interest rates and probably the exchange rate would rise. The government has two options for resolving the policy conflict: it could either adjust fiscal policy or it could change the price stability target assigned to the central bank. Either option would be preferable to a compromise by the “autonomous” central bank which could erode its credibility and therefore the credibility of any future attempt to lower inflation.

Limiting direct central bank credit to the government

An issue closely related to the independence of the central bank is the extent to which the government can receive direct credit from the central bank. When securities markets are undeveloped, direct central bank credit is the main source of domestic government financing. Excessive central bank credit is likely to pose a threat to macroeconomic stability as mentioned earlier in this paper. Institutional arrangements to limit direct central bank credit to the government are thus critical to enhance central bank independence and contain the risk of inflation. Traditionally, statutory ceilings on public debt have been imposed on the central bank's advances or overdrafts to the government.²⁵ It is important to note that the effectiveness of such statutory ceilings is not perfect, since there are ways to circumvent them.²⁶ Therefore, the authorities must ensure that indirect lending does not run counter to their stated policy objectives.

Countries which are at the developed stage in the evolution of the coordination process are more likely to implement arrangements under which the central bank is prohibited to provide direct credit to the government. However, indirect central bank credit, that is, voluntary purchases of government securities in the secondary market (through outright open market operations, repurchase agreements, and the acquisition of government paper as collateral for the refinancing of the banking system), is normally permitted so that the central bank can manage overall liquidity in the system through the government's securities market. In most countries, this is the most liquid segment of the money market. The Maastricht Treaty is a good example of an institutional arrangement designed along these lines. It prohibits overdraft facilities or any other type of credit facility from the future European Central Bank or from existing central banks of the European Union in favor of European governments. Moreover, it forbids the direct purchase of government securities in the primary market by the

²⁵See Cottarelli (1993) and Leone (1991) for further discussion and analysis of these issues.

²⁶See Sundararajan et al. (1994).

European Central Bank or European Union central banks. Finally, secondary market purchases are monitored to avoid circumvention of the prohibition on direct lending to the government.

Balanced budget or deficit limitation clauses

As a fiscal parallel to legal independence of the central bank, it is worth mentioning here the discussion in some countries regarding institutional arrangements to promote fiscal discipline. The need to restore and safeguard sound public finances has led a number of countries to consider the introduction of fiscal rules as reflected in the balanced budget amendment discussions in the United States and the Growth and Stability Pact that has now been agreed upon by prospective participants in the European Monetary Union.²⁷

For such arrangements to be effective, it is critical to avoid “leaks” which can result from off-budget transactions, unfunded pension liabilities, other future commitments, and quasi-fiscal operations. Among the latter, avoidance of the quasi-fiscal deficit caused by central bank losses deserves special attention in the context of coordination of monetary and fiscal policies. Central banks are not—and should not be—guided by profit-maximizing objectives. Nonetheless, they can have substantial profits and losses, and their treatment can have important implications for monetary policy and public debt management. Therefore, it is important to make appropriate arrangements, preferably in advance, to ensure that losses, which generally lead to a monetary expansion, do not interfere with the central bank’s primary objective of controlling inflation. Therefore, many central bank laws and regulations contain provisions regarding the treatment of losses. Such losses should normally be covered by the government, since generally they result from functions of the central bank which are quasi-fiscal in nature or from the implementation of monetary policy which is a component of the government’s macro policies.²⁸

Currency board arrangements

Currency board arrangements (CBAs), which encompass a variety of institutional practices, can also enhance credibility. CBAs are always characterized by a monetary regime where an explicit commitment has been made to convert domestic currency into a specified foreign currency at a fixed exchange rate. Such a commitment is combined with attendant

²⁷The Stability and Growth Pact provides a framework for budgetary discipline among prospective participants in Stage 3 of the European Monetary Union, i.e., when the irrevocable locking of exchange rates will take place. The Stability and Growth Pact provides an early warning system in which serious slippages from a country’s medium-term fiscal plans are identified and recommendations for corrective action are made well before the deficit exceeds its reference value.

²⁸See Vaez-Zadeh (1991) for further analysis.

restrictions on the issuing authority to ensure that it fulfills its obligation.²⁹ These restrictions normally include a requirement that CBA monetary liabilities be backed by foreign assets. The adoption of clear and binding monetary rules that link the central bank's monetary liabilities to its foreign assets—and the maintenance of sufficient foreign exchange reserves to credibly support that rule under any circumstance—typically constrain the monetary authority from extending credit to the government or the banking system. Thus, by fully controlling its net domestic assets, a CBA can ensure the fulfillment of its obligation to maintain price stability.

CBAs provide the monetary authority with little room for discretionary policies and thus, at least from a theoretical standpoint, they offer the best protection against pressures for direct monetary financing to the government. Such a framework for monetary policy has two basic implications for fiscal policy. First, since the budget deficit cannot be monetized, discipline is required to ensure that the deficit is consistent with available market financing. Second, since CBAs limit the flexibility of monetary policy, fiscal policy must bear the burden of pursuing the aims of macroeconomic management. As a result, fiscal policy and public debt management must remain flexible and strong. Thus CBAs can be viewed as particularly sound arrangements for effective coordination of monetary and fiscal policies.

The experience of some countries (in particular Argentina, Estonia and Lithuania), shows that CBAs have been effective in promoting and maintaining fiscal discipline. However, they do not necessarily guarantee total fiscal discipline. In particular they do not prevent the building up of government payments arrears. For example in Djibouti, government arrears accumulated to 7 percent of GDP in 1993. Furthermore, Panama's experience shows that strong monetary arrangements do not necessarily guarantee fiscal discipline if there is ample access to foreign borrowing.³⁰ Despite using the U.S. dollar as its main currency, the government ran a substantial budget deficit during the 1980s, which was financed mostly by foreign borrowing and the accumulation of external arrears, which amounted to about 46 percent of GDP by end-1994.

B. Relationship Between the Central Bank and the Treasury

Typically, the legal framework for public debt management authorizes the treasury or the Ministry of Finance (MOF) to borrow on behalf of the government, whereas the central bank normally acts as fiscal agent for the government. To some extent, such an organization is a legacy of the past, when central banks were originally set up as multi-functional institutions with the intention of keeping their government fully financed. These institutional arrangements facilitate policy coordination but may sometimes lead to a conflict of interest between the

²⁹See Baliño et al. (1977) for a full discussion of currency board arrangements.

³⁰Effectively, Panama does not have its own currency; instead, it uses the U.S. dollar as legal tender. For this reason, Panama cannot have an independent monetary policy and there is no scope for monetary financing of the government.

central bank's duties as monetary authority and as fiscal agent. In case of conflict, the central bank is likely to give priority to its duties as monetary authority. The arrangements that are appropriate for a particular country are likely to change over time, in line with economic progress and development in the areas of financial sector liberalization and reform.

Currently, however, there is a trend toward a "divorce" between debt management and monetary policy which in some cases involves a reduction in the role of the central bank as fiscal agent while increasing the responsibility of the agency in charge of debt management regarding policy decisions in the field of government financing. However, there are preconditions for such a "divorce" to permit the achievement of the overall objectives of economic policy, including a stable economic framework, market development, and the adoption of indirect instruments of monetary control. It is in the context of a "divorce" between debt management and monetary policy that the coordination of monetary and fiscal policy has become so important these days. The following section discusses developments in this area from the point of view of the allocation of debt management functions between the MOF and the central bank.

Location of debt management functions

Public debt management comprises a number of separate but related functions which involve the formulation of instruments (the policy function), the projection of fiscal requirements and the formulation of a debt program (the planning function), selling arrangements (the selling function), the management of government cash balances (the fiscal function), the management of the stock of government debt (the secondary market function), the provision of advice to the treasury on the above debt management functions (advisory function), and the management of records of debt management and stock of government debt (the accounting function).³¹

These functions can be situated in either the treasury, the MOF, or the central bank. There is no clear pattern as regards their preferred location. Historical, socio-political, and economic factors play a role, and arrangements are likely to evolve in line with economic progress and the scope for the implementation of a market-based debt management strategy. At one end of the spectrum, there are countries where the central bank is the sole financial agent of the government and sells securities in the primary market. The central bank may also be requested to provide direct credit to the government. As already mentioned, the setting up of multi-functional central banks, with responsibility for keeping their governments fully financed, motivated the assignment to the central bank of most debt management functions. At the other end of the spectrum, the MOF either does the work itself, or relies for the execution of its decisions on an agency under its direct supervision.

³¹See Sundararajan et al. (1994) for a detailed survey of debt management functions.

The main objectives of public debt management will be critical in determining the location of debt management functions. When the development of the secondary markets is the main debt management objective, the central bank may be given considerable scope in key decisions concerning issuance, type, size, and timing. This would be typical of countries in a transitional stage of the coordination process. On the other hand, for countries in the developed stage, interest cost minimization may become the main objective, and the treasury generally manages most aspects of the debt policy. For instance, the Bank of Canada, acting as financial agent of the government, used to exercise significant influence on public debt management policy. However, the treasury took a much more forceful role after the mid-1980s as interest cost minimization became the overriding concern. In the United States, where the secondary market for government securities is well developed, interest cost minimization is also the main objective, and the treasury manages most aspects of public debt policy. In France, ever since 1986, the government's issuing policy has been to attract international investors, with a cost minimization objective in mind; the treasury is in charge of most of the key functions, and in particular, of the policy, planning, fiscal, and secondary functions.

Establishment of a separate debt management office

An issue deserving special attention in the context of market-based debt management strategies is the establishment of a separate debt management office, which allows for a formal separation of objectives, instruments, and functions. Such a path has been followed by some countries like New Zealand, Sweden, and Ireland in which the development of financial markets has allowed significant scope to adopt cost minimization as the main objective of public debt management. However, the establishment of a separate debt management office does not lessen the need for coordination between monetary and fiscal policies. This is confirmed by the specific arrangements implemented in those three countries which provide for formal or informal means for coordination.³²

However, in countries where markets are still undeveloped and rudimentary, setting up a separate debt management office may complicate rather than assist a smooth development of the various debt management functions.

Coordination committees

Coordination in the execution of monetary and fiscal policies can be achieved through formal or informal committees for debt management purposes. These committees—normally composed of officials of the MOF, the treasury, the debt office, and the central bank—meet on a regular basis to exchange information regarding the government's financing requirements, to discuss and analyze the results of the government's cash balance projections, to monitor overall liquidity and market developments, and to discuss the strategy for achieving

³²See Sundararajan et al. (1994) for a description of arrangements in place in these countries.

public debt and monetary management objectives.³³ These committees are particularly important in the early stages of market development—the transitional stage in the evolution of the coordination process highlighted earlier in the paper. They provide a means for members to learn about each other’s objectives and operating procedures, while helping to build a consensus on how debt and monetary management should be conducted to be mutually reinforcing. Later, as progress is achieved in a mutual understanding of objectives and operational arrangements, effective coordination can be based on informal contacts, and the frequency of formal meetings may be reduced.

C. Policy Coordination at the Operational Level

Policy coordination at the operational level is also a critical dimension of the coordination of monetary and fiscal policy. At the macro-level, monetary programming frameworks can be instrumental in preventing inconsistencies in the policy mix, whereas the coordination of operations is of critical importance for the day-to-day implementation of monetary and fiscal policies—the micro perspective.

Monetary programming: a framework for the policy mix

The monetary program—that is, a framework for designing a coherent monetary policy intended to achieve certain monetary targets within a specific time horizon—captures the interactions between monetary policy and fiscal policy mentioned earlier in the paper.³⁴ Typically, it includes a framework for monthly and quarterly projections of key monetary aggregates—often referred to as a *broad money program*, and an operational framework for weekly and daily forecasts of the main items of the central bank’s balance sheet—or *reserve money program*. The broad money program is expected to provide an assessment of the monetary stance, as provided by the monetary targets set by the authorities, in relation to the fiscal accounts and the balance of payments. The reserve money program supplies the central bank with an operational framework, or cash flow, to help guide daily monetary management. Whereas the implementation of direct monetary management only requires a broad money program, the use of indirect instruments requires a reserve money program.³⁵

³³ See Sundararajan et al. (1994) for a description of the mandate of these committees.

³⁴ The monetary program also serves as a planning tool for the central bank in the design of its monetary operations.

³⁵ However, in a liberalized market environment, programs cannot be followed in a mechanical way but must always be subject to change in the light of economic and market development.

Monetary programming in the context of direct monetary management

The implementation of direct, quantitative-based instruments of monetary control, such as bank-by-bank credit ceilings,—requires the development of a framework to manage the supply and demand of broad money (i.e., at the level of the banks' balance sheet)—referred to above as broad money programming. Under conditions of a stable demand for real money balances, this analytical framework allows the decision makers to project the level of monetary aggregates compatible with the projection for the nominal GDP. In other words, to facilitate the pursuit of the ultimate policy objective, intermediate targets for monetary policy, which move in relation to and are consistent with the ultimate policy objective, can be derived. The choice of a monetary aggregate as an intermediate target—narrow versus broader aggregates—will depend on which one has the most stable behavior.

The change in the money stock is equal to the sum of the change in the net foreign assets of the banking system (NFA) and the change in net domestic assets of the banking system (NDA). Once the desired change in the money stock has been established on the basis of projected inflation and real GDP growth, and the change in the NFA has been projected on the basis of the balance of payments objectives, the change in the NDA can be determined. The broad money program may be sufficient as an operational framework for policy coordination for a monetary management system based on direct credit controls, such as bank-specific credit ceilings. The ceiling on the expansion of credit to the private sector is thus established by taking into consideration the financial needs of the government budget and the projected balance of payment performance, which, in monetary programming, is formally treated as a residual.³⁶ The central bank should then use its monetary policy instruments to achieve the change in the money stock that is consistent with these targets.

Monetary programming in the context of indirect monetary management

The conduct of monetary policy through indirect instruments, where the central bank operates by modifying the cash reserve position of the banking system, requires the development of a framework to manage the supply and demand of reserve money. Such a framework—referred to above as reserve money program—operates at the level of the central bank's balance sheet, and is based on the relationship between reserve money and the money stock, expressed by the money multiplier. To be an effective tool, this framework needs to reflect the main sources of reserve money growth, that is, net credit of the central bank to the banking system, net credit of the central bank to the government and net foreign assets of the central bank.

³⁶Of course, if the exercise results in an unacceptable change in private sector credit, it must be redone using a different assumption for other variables.

The degree of central bank control over the sources of reserve money, a critical consideration for the effectiveness of indirect monetary management, will crucially depend on the exchange regime and on institutional arrangements concerning the relations between the central bank and the government—particularly to what extent the government can receive direct credit from the central bank. The reserve money framework mentioned above will serve to determine the direction and amount of the interventions of the central bank which are aimed at ensuring a path for reserve money consistent with the intermediate targets for monetary policy.

The central bank's interventions to influence the level of reserve money are carried out with the use of indirect tools of monetary control, such as open market operations, standing facilities and, to some extent, reserve requirements, aimed at offsetting any undesirable impact of the nondiscretionary factors on reserve money.³⁷

Challenges posed by financial sector reforms

The trend toward liberalization of the financial sector and growing market integration has posed a number of challenges for the conduct of monetary policy and in particular for the use of monetary programming frameworks.³⁸ The challenges focus on the appropriateness of monetary targets as effective guides for monetary policy and the trend toward a more eclectic approach to monetary frameworks, including inflation targeting. The relationship between money demand, incomes, and interest rates has been altered by the changes caused by liberalization, introducing instability in narrow definitions of money and reducing the authorities' ability to control the broader aggregates. Moreover, with financial deregulation, the boundary between banking and other financial activities has become blurred. This blurring then compounds the difficulty of identifying a monetary variable with a stable behavior capable of anticipating the evolution of other nominal variables in the economy.

The challenges now confronting monetary policy makers do not affect the logical and theoretically sound framework based on a monetary program, especially for those countries that still have some way to go in achieving financial liberalization and reforms, but they add to the complexities of actual policy implementation and coordination. As a consequence, a number of countries undergoing financial sector reforms were prompted to reassess their basic monetary policy framework as well as the adequacy of their intermediate monetary policy targets. The decreased emphasis on money targeting results in increased reliance on interest rates and market mechanisms for policy coordination. These challenges, as well as the adoption of indirect instruments of monetary policy, raise the requirements for information

³⁷ See Alexander, Baliño and Enoch (1995) for an analysis of direct and indirect monetary policy tools.

³⁸ See Tseng and Corker (1991) for a survey of the impact of financial liberalization on money demand and monetary policy in Asian countries.

and technical expertise at central banks. These changes call also for the adoption of sustainable policies—monetary as well as fiscal. This is particularly important for fiscal policy as in most countries it takes quite a long time to alter the fiscal stance through policy action, and overall policy credibility is unlikely to be achieved without a track record of credible fiscal management.

Coordination at the day-to-day level

At the day-to-day level of policy implementation, or the micro perspective, several issues deserve attention: the management of the government cash balances, the level of central bank credit to the government, and the formulation of liquidity forecasts.

While in principle other monetary operations can offset the effect on the level of bank reserves of changes in government deposits with the central bank, special arrangements can be negotiated with the government and commercial banks to address the monetary and public debt management issues that arise from the management of cash balances. Although it is traditional for the government to maintain the main account of government receipts and expenditures with the central bank, there are two approaches in this respect. In the first approach, all government balances are consolidated at the central bank through the operations of a Treasury Single Account. There are efficiency reasons for this, in particular to facilitate effective control over cash management and government expenditure. In the second approach, the government is allowed to place funds with commercial banks. Such an approach has developed among countries where cost minimization has become an important, if not the primary, objective of debt management—the United Kingdom, the United States, Germany, Canada, France, and Malaysia for instance.³⁹ In whichever case, however, information on cash-flow forecasts will need to be shared: the central bank will be primarily concerned with the consequences on liquidity of changes in government cash balances, while the treasury will be responsible to manage cash balances so as to minimize the cost of debt service.

Projecting the government's cash flow is important, both for debt and monetary management. From a debt management perspective, a projection of the government's cash flow based on the execution and control of the budget and the accounting for government operations is essential to plan the issuance of public debt. This is important, both as to timing and amount, so as to monitor and control the growth of central bank credit, and to manage the balances in the treasury account with the central bank. From a monetary policy perspective, cash flow projections are key to decide the timing and size of monetary operations. In some countries, such as Canada, the central bank and the Ministry of Finance independently forecast government net disbursements. In other countries (such as France and the United Kingdom), the central bank relies on the treasury for projections of government net disbursements. It is important to emphasize that, whatever the arrangements, short-term government cash flow forecasts will need to be shared. The central bank will be primarily

³⁹See Sundararajan et al. (1994) for a detailed description of such arrangements.

concerned with the liquidity management consequences of changes in government cash balances, while the treasury is responsible of managing cash balances so as to minimize the cost of debt service. Also, the treasury and the central bank should discuss whether forecast errors are the result of temporary shortfalls or surpluses, which will be self-corrected, or the result of more fundamental and permanent events which could prompt a change in the stance of macro-policies. The preparation of such projections also facilitates regular public disclosure of the size of the government's financing requirements and its plans for meeting them.

V. CONCLUDING REMARKS

The main objective of macroeconomic policy is to achieve sustainable economic growth in a context of price stability and viable external accounts. To meet this objective, this paper has shown that it will be essential to reach a close degree of coordination among the monetary and fiscal authorities. Only by achieving effective policy coordination will policy makers ensure that they will realize their stated objectives in the most efficient manner.

Efficient coordination of monetary and fiscal policies will only be possible if account is taken of the need for policy sustainability and credibility. Both the overall policy framework as well as each policy area considered individually must be set on a sustainable course and be credible. To burden one policy area excessively as a result of a weak stance in the other policy area will sooner or later doom the achievement of the objectives of macroeconomic policy. At the same time, the coordination process also needs to take into account that the adjustments in monetary and fiscal policy operate in different time frames: it normally takes a long time to adjust the fiscal stance through policy action, while monetary policy can be "fine-tuned" more rapidly.

The main sphere of interaction between monetary and fiscal policies relates to the financing of the budget deficit and monetary management. The actions of the monetary authorities will affect the management of the public debt through a variety of channels, including the stance of monetary policy, the choice and design of monetary policy instruments, and the measures taken to promote the development of the domestic financial markets. These variables collectively will affect the cost of debt service and will determine the available sources of financing for the government. At the same time, the financing strategy of the government will affect the conduct of monetary policy and will place constraints on the operational independence of the central bank.

The particular mix of monetary and fiscal policy to be adopted in any country will depend on the exchange arrangement in place. In general, the role for monetary policy will be larger the more flexible the exchange rate, although the structural characteristics of the economy and the perceived sustainability of monetary and fiscal policies also play a significant part in shaping the optimum policy mix.

The coordination of monetary and fiscal policies also raises issues of institutional and operational concern. Country experiences offer a wide range of institutional arrangements,

from "accomplished marriage" of monetary and debt management policies, as in those countries where the central bank is the sole financial agent to the government, to "accomplished divorce", where the central bank is no longer authorized to extend credit to the government and is vested with a high degree of autonomy on monetary matters, and debt management is carried out by the treasury or in some cases by a separate debt management office.

Effective coordination of monetary and fiscal policies requires appropriate supporting institutional and operating arrangements. Current trends in this respect point toward institutional separation of monetary policy and public debt management, a situation resulting in greater autonomy for the respective agencies in charge of monetary and public debt management. In such a context, central bank policies are typically aimed at promoting and maintaining the primary objective of price stability, whereas the agency in charge of public debt management aims at minimizing costs of fiscal deficit financing. It is such a setting that a growing number of countries have established a separate debt management office for which interest cost minimization becomes the main objective.

Country experiences show, however, that there is a need for policy coordination even in those cases where there exists an institutional "divorce" that could be seen as an effective protection against fiscal imbalances. As such, neither legal independence of the central bank nor a balanced budget clause or a rule-based monetary policy framework under CBAs are enough to ensure effective monetary and fiscal policy coordination. Rule-based arrangements are useful in enhancing transparency and in encouraging financial discipline, which are the key elements in providing an institutional framework that would bolster credibility and facilitate the success of stabilization policies. At the same time, since policy content matters more than policy framework, rule-based arrangements by themselves cannot create credibility. The advantages of rule-based arrangements can be realized only if they are backed by strong macroeconomic and structural policies and by the will and ability to minimize deviations from stated policy objectives.

There are several preconditions for a move towards greater autonomy for monetary policy and public debt management, which will allow separation of monetary and fiscal policy responsibilities. Especially important is the development of a market for government securities where market forces determine the conditions under which a budget deficit may be financed. This makes it possible to phase out direct central bank credit to the government, and to begin using market-based monetary instruments. Also, the need for formal channels for policy coordination, such as those provided by coordination committees, will diminish since there is a mutual understanding of the interactions between monetary and fiscal policies, and since macro-policies become subject to the discipline imposed by the markets.

Developing and transition economies can rely only to a certain extent on markets as a means to ensure financial discipline. Arrangements that are effective in countries in the developed stage of the coordination process may not be effective in the transitional stage during which the money market is not well developed and interest rates do not play the

leading role in the allocation of financial resources in the economy. When markets are underdeveloped and rudimentary, setting up an independent agency for government debt management may complicate rather than assist a smooth development of the various debt management functions. In such a setting, coordination committees are particularly useful as they provide a means for members to learn about each other's objectives and operating procedures and help in building consensus on how macro policies should be conducted to be mutually reinforcing.

The analysis in the paper suggests that the trend toward liberalization of the financial sector and growing market integration has resulted in a more eclectic approach to monetary frameworks, including inflation targeting. Although these developments do not affect the soundness of quantitative monetary frameworks (as opposed to more subjective approaches), especially in the case of countries that have not achieved a high level of financial liberalization, they do add to the complexities of policy implementation and coordination. However, the need for a sustainable course of policies, monetary as well as fiscal, is just as great as before. By placing greater reliance on prices and market mechanisms for policy coordination, the monetary frameworks call for the adoption of sustainable policies in the medium term. Such a need is reflected in the discussions on balanced budget or deficit limitation clauses in those countries which rely on the markets for the implementation of their policies.

Finally, at the day-to-day level, the micro-perspective, coordination of monetary and fiscal policy requires the establishment of an appropriate framework for liquidity forecasting and management. This involves in particular the monitoring by the central bank of the liquidity conditions in the system, of which the government cash balances are an important component. Coordination will involve sharing of information and the establishment of arrangements allowing the central bank to keep full control over overall liquidity developments in the system through its ability to influence them by means of its discretionary monetary operations.

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