

INTERNATIONAL MONETARY FUND

Monetary Policy Implementation at Different Stages of Market Development

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October 26, 2004

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GLOSSARY OF MONETARY INSTRUMENTS¹

Rules-based instruments: Monetary instruments based on the regulatory power of the central bank. They include:

- **Liquid asset ratio (LAR):** Requirement for a bank to hold minimum amounts of specified liquid assets, typically as a percentage of the bank's liabilities.
- **Reserve requirements (RR):** Requirements for a bank to hold minimum balances with the central bank, typically as a percentage of its liabilities. When averaging provisions are allowed, banks can fulfill reserve requirements on the basis of average reserve holdings during the maintenance period.
- **Standing facilities:** Monetary instruments used at the initiative of banks and bearing a pre-specified interest rate, allowing banks to borrow from the central bank (refinance standing facility) or deposit funds with the central bank (deposit standing facility).

Money market operations: Monetary instruments that are used at the discretion of the central bank and bearing an interest rate linked to money market conditions. They aim at influencing the underlying demand and supply conditions for central bank money. They include:

- **Open market-type operations** are market-based monetary operations based on auction techniques that are regulated by the central bank. OMO-type operations involve: (i) lending/borrowing against underlying assets as collateral; (ii) primary market issuance of central bank securities or government securities for monetary policy purposes; and (iii) accepting fixed-term deposits.
- **Open market operations (OMO)** are market-based monetary operations conducted by the central bank as a participant in the money market. They involve: (i) buying/selling assets outright on the secondary market; and (ii) buying/selling assets under a repurchase agreement in the repo market, or foreign exchange swaps.
- **Auction techniques.** In their money market operations, central banks may use various auction techniques. With volume tenders, banks bid only for volumes supplied by the central bank at a preset interest rate. With interest rate tenders, banks bid for the amount and the rate; the central bank charges the rates offered (multiple-rate auction) or the cutoff rate (uniform-rate auction).
- **Fine-tuning operation:** An irregular money market operation executed mainly to deal with unexpected liquidity fluctuations in the market.

¹ The instruments are ordered starting with those that can be used in shallow money markets, and ending with those that need developed money market to be effective. Some of them (reserve requirements and standing facilities) may be used at all stages of money market development.

EXECUTIVE SUMMARY

1. **Central bankers around the world generally agree on the benefits for the economy of market-based instruments for the implementation of monetary policy.** In particular, following a trend initiated in the 1970s in industrial countries, most central banks in developing countries and emerging market economies have attempted to regulate overall liquidity conditions in the economy through financial operations in the domestic money markets. The objective of the central bank is to influence the underlying demand and supply conditions for central bank money. The move was the parallel in the monetary area of the trend toward enhancing the role of price signals in the economy in general. It aimed at improving domestic savings mobilization, and strengthening their market allocation.
2. **The process was not without difficulties in countries which did not succeed in developing their money markets.** A survey of country experiences shows that failure to establish a clear separation between money creation and government funding needs often limited the effectiveness of money market operations, as did limited market participation and the lack of an effective framework to decide on the timing and size of the central bank's money market operations.
3. **The experience of countries at different stages of money market development shows that the timing and speed at which money market operations can be relied upon to conduct monetary policy need to be tailored to each country's particular circumstances.** A stylized sequencing can be mapped in a four-stage process:
 - Stage Zero refers to post-conflict countries. Financial reforms involve reestablishing key functions in areas where a central bank typically has responsibilities.
 - Stage One in this process has to do with developing financial intermediation. Monetary policy will rely on rules-based instruments, that is instruments based on the regulatory power of the central bank, such as reserve requirements or deposit or refinance facilities available to the banks on demand, under certain pre-set conditions.
 - Stage Two has to do with fostering interbank market development. Money market operations can be introduced at this stage, but rules-based instruments will retain an important role. Countries with limited market participation, for instance due to the small size of their economy, may not go beyond Stage Two.
 - Stage Three has to do with the diversification of markets. At the end of Stage Three, liquidity management can fully rely on money market instruments.
4. **The conclusions of the paper support the close integration of the work of the Fund's area departments (surveillance or use of resources) with the Fund's technical assistance in monetary policy design and implementation.** This integration is particularly relevant for countries in transition to market-based frameworks for the implementation of monetary policy.

I. OVERVIEW

5. **Following a trend initiated in industrial countries in the 1970s (Box 1), central banks in emerging market economies and developing countries, though frequently continuing to act as banker to the government, have moved toward reliance on money market operations for the implementation of monetary policy (Table 1).** At the same time, they have continued to rely on reserve requirements and, at times, liquid asset ratios which create a captive demand for qualifying assets (typically government securities). This move was the counterpart in the monetary area to the trend toward enhancing the role of price signals in the economy. It has involved reducing direct government intervention in the economy, improving the capacity of financial institutions to mobilize domestic savings, and strengthening the role of market forces in the allocation of financial resources.

Box 1. The Conduct of Monetary Policy

To conduct monetary policy, a central bank may choose to regulate money creation by commercial banks by using administrative measures which set limits on the price (interest rate controls) or the quantity (credit ceilings) of bank borrowing and lending operations. Alternatively, it may seek to exploit its monopoly in the creation of base money (currency and commercial banks' balances with the central bank that can be converted in currency) to regulate overall liquidity conditions in the economy by influencing the underlying demand and supply conditions for central bank money. It does so by exchanging financial assets (domestic assets or foreign exchange) for its own liabilities (transactions hereafter referred to as money market operations), or requiring banks to maintain minimum balances with the central bank (reserve requirements). All of these are aimed at influencing the balance sheet of the commercial banks, either directly (through administrative measures) or indirectly, through the balance sheet of the central bank (money market operations and reserve requirements). In addition, the latter allows the central bank to influence financial markets conditions.

In the 1970s, industrial countries started moving from reliance on credit or interest rate controls toward reliance on money market operations in view of the increasing inefficiency of the former in a context where financial markets had become more integrated both domestically and internationally. In addition, allowing market forces to distribute financial resources was associated with increased economic efficiency and growth. While the instruments used have varied on the basis of country circumstances, common trends can be observed: (i) lesser recourse to open-ended/standing facilities which banks may use at their discretion to place funds with, or borrow funds from the central bank under certain pre-established conditions; (ii) increased use of market-based operations conducted at the discretion of the central bank to add or withdraw liquidity from the system; and (iii) reduced reliance on reserve requirements. Concomitantly, governments have ceased to rely on the central bank to finance their needs, and they have relied on the markets.

Table 1. Use of Monetary Instruments in a Sample of Countries
(in percent of number of countries in the sample)

	Developing Countries	Emerging Countries	Developed Countries
Credit and interest rate controls	4	22	0
Liquid asset ratio (LAR)	65	30	9
Reserve requirements	100	96	70
Open-ended/standing facilities	96	96	100
Discretionary and market-based	96	96	100

Sources: MFD, Information System for Instruments of Monetary Policy database. Data based on practices as of end-2001 in central banks from 23 developing, 23 emerging, and 23 developed countries.

6. **The Fund has encouraged the process and technical assistance was provided to help countries make the transition.** During the period 1999–2004, the Fund provided assistance to strengthen monetary policy implementation to more than one hundred different countries (Table 2). Assistance was provided through advisory missions headed by Fund staff with the participation of experts from cooperating central banks (33 mission per year on average); in the form of visits by central bank experts supervised by Fund staff (87 visits per year on average), and through workshops and training activities (7 per year on average), these actions amounted to more than one hundred man-years over the six-year period. Some regions received a larger share of the Fund assistance, including Africa and Europe. Assistance has continued at a steady pace in Africa and Asia, but declined during the period in Europe, the Middle East, and Central and Latin America.

Table 2. Technical Assistance in Monetary Policy Implementation (1999–2004)

	Number of Countries	Advisory Missions	Expert Assignments	Workshops and Training	Man-Year
Africa	25	43	184	5	38
Asia	21	23	148	11	23
Europe 1/	26	76	81	11	24
Central & Latin America	17	19	61	10	13
Middle East	20	36	48	4	10
Total	109	199	522	41	108

1/ Europe includes the Baltics, Russia and other countries from the former Soviet Union.

Source: Monetary and Financial Systems Department.

7. **The experience of emerging market economies and developing countries has been mixed.** Smaller countries have found that a lack of competition in financial markets has complicated reliance on money market operations, at times forcing them to resort to moral suasion. In larger countries, the process has been gradual and at times full of difficulties, which some of them have been able to overcome, while others, despite lengthy periods of adjustment, still cannot fully rely on money market operations for liquidity management. The problems encountered can be traced to weaknesses in the market infrastructure needed to ensure the effectiveness of money market operations. The country experiences show that reliance on money market interventions for the conduct of monetary policy has been most effective when the following initial conditions were met: stable macroeconomic environment and sound fiscal policies; sound and competitive financial system and adequate supervisory framework, along with a sufficient degree of institutional autonomy and operational capacity at the central bank. While money market operations can be introduced before these conditions are not met, their effectiveness is most likely to be somewhat limited until progress is made in meeting those initial conditions.

8. **The purpose of this study is to assess which guiding principles a central bank can apply to design an action plan to develop strong operational frameworks for monetary policy implementation.** Given the variety of country circumstances, a “one-size-fits-all” approach would not be realistic. To be successful, policymakers need to: (i) take stock of existing market infrastructure conditions; (ii) draw an action plan to address existing weaknesses; and (iii) adjust the mix of monetary instruments as progress is made. The policy conclusions are relevant both to small countries not able to develop diversified financial markets because of a lack of demand for financial products, as well as those for which the challenge is to eliminate the obstacles to market development.

9. **The study relies on the assessment of the experience of a dozen countries or groupings of countries.** It includes small countries with limited scope for developing diversified markets, some of which have been able to set up effective monetary policy frameworks, and larger countries which, at some point, had not yet managed to establish a strong market infrastructure due to weaknesses in policy implementation.² Section II summarizes the experiences embodied in the case studies by grouping the market infrastructure conditions into three broad categories: (i) macroeconomic conditions; (ii) market participation; and (iii) central bank institutional and operational position. Section III discusses the implications for policy design and coordination. Section IV discusses an agenda for action to strengthen monetary policy. Section V analyzes the implications for Fund operations.

II. COUNTRY EXPERIENCES

A. Macroeconomic Conditions

10. **Fiscal dominance has often hampered the effectiveness of money market operations.** In some countries (Box 2), a lack of fiscal discipline has undermined investor confidence, making it difficult for a government securities market to emerge. Government borrowing from the central bank tends to be associated with excess liquidity and demand in the economy, putting upward pressure on inflation and undermining the exchange rate. Fiscal dominance has also resulted in the inability of the central bank to generate sufficient resources to bear the costs associated with undertaking money market operations when draining excess liquidity. This may have been due to forced central bank lending to the public sector at large or to priority sectors at below-market rates: liquidity provided at low cost would have to be withdrawn at market rates, therefore resulting in losses for the central bank. Failure to establish a government securities market may also complicate the conduct of monetary policy since government securities are typically used as underlying assets for open market operations. This failure has also delayed financial market

² The country cases (Eastern Caribbean Currency Union, Democratic Republic of the Congo, Egypt, Kyrgyz Republic, Malta, The Gambia, Tonga, Tunisia, Uganda, Ukraine, Vanuatu, and Zambia) are presented in a Supplement.

development in general as the government securities market usually sets a benchmark for the money and bond markets.

11. Failure to develop a government securities market has prevented the establishment of a clear separation between money creation and government funding needs, therefore complicating the management of the balance sheet of the central bank. In some cases, the government's reliance on central bank credit, either to finance the budget deficit or to support state-owned entities, has made it difficult for the central bank to retain control over the size and composition of its balance sheet, in turn resulting in difficulties to influence effectively overall liquidity conditions. In extreme circumstances of low financial intermediation, monetary policy may not even be effective in containing the macroeconomic effects of temporary fiscal imbalances. This has happened in instances where, due to the absence of a functioning banking system, the central bank is unable to withdraw excess liquidity created by fiscal imbalances because of the absence of counterparties to conduct monetary operations.

Box 2. Country Examples of Fiscal Dominance

In *Ukraine*, following the 1998 Russian financial crisis, the government relied heavily on borrowing from the central bank to finance its deficit and to service public debt. Consequently, confidence in government securities tended to evaporate, making financing through the market difficult, and confidence has been slow to improve. In *Tonga*, most changes in monetary and exchange rate operations require approval of the executive branch of government. At times, this has resulted in direct central bank lending to the government, in particular, to buy any unsold portion of the government securities offered at the primary auction. The associated liquidity expansion contributed to excess liquidity in a context of limited monetary policy instruments available for sterilization. Furthermore, the weak financial position of the central bank prevented issuance of market instruments in sufficient amounts for sterilization purposes, resulting in greater reliance on reserve requirements. Eventually, the central bank resorted to credit ceilings. In the *Democratic Republic of the Congo*, the operating losses incurred by the central bank, together with the low level of financial intermediation, imposed limits on the ability of the central bank to undertake monetary operations to sterilize excess liquidity. In order to prevent central bank losses resulting in macroeconomic slippages, the monthly operating losses of the central bank are covered by fiscal revenues, underlining the need for the right balance between monetary and fiscal policies, and particularly government cash flow management and central bank liquidity management. In *The Gambia*, the authorities use both treasury bills and central bank bills for monetary policy purposes. In the past, the government has been willing to issue treasury bills for monetary policy purposes, with the proceeds blocked in an account with the central bank. However, eventually the proceeds were used by the government, and the central bank did not have the resources to issue its own bills in sufficient quantities for monetary policy purposes.

12. Situations where the central bank needs to withdraw liquidity from the system in a systematic and structural way³ (hereafter referred to as structural liquidity surplus) have complicated monetary policy or interfered with its transmission in countries with shallow

³ A structural liquidity surplus may build up due to capital or foreign aid inflows or export booms in commodity-producing countries, leading to an increase in international reserves.

markets (Box 3). In particular, when the volume of transactions in the markets is not commensurate with the size of the central bank's operations, liquidity absorbing money market operations have led to overshooting and volatility of interest rates. At times, the inability of the central bank to undertake effective monetary policy actions to deal with excess liquidity has resulted in excessive domestic lending or pressures on the exchange rate. More broadly, excess liquidity has blunted the impact of changes in monetary policy on interest rates and bank lending, and liquidity-absorbing monetary operations have had little impact on interest rates, credit conditions, or bank lending.

Box 3. Country Examples of Structural Liquidity Surplus

In Uganda, large inflows of donor funds contributed to excess liquidity since the government would typically sell those funds to the central bank, and spend the local currency. Inflows of donor funds also contributed to pressures for an appreciation of the currency. In response, the central bank undertook large-scale sterilization operations. However, these operations sometimes resulted in high interest rate volatility and high volatility in bank reserves. The volatility in reserves has caused banks to seek a larger cushion above the required level of reserves, which has in general limited the impact of changes in the level of reserve requirements. In *Zambia*, two factors have contributed to excess liquidity: (i) a punitive rediscount rate, which has induced banks to hold more liquid funds to avoid having to borrow from the central bank, and (ii) a lack of proper monetary instruments for managing short-term liquidity. *Vanuatu* has suffered from excess liquidity due to large government payouts from retirement deposits that were not fully absorbed by issuance of central bank bills. Banks may also have been reluctant to purchase sufficient volumes of central bank bills. However, prudent risk management on the part of the banks has prevented an expansion of domestic credit and inflationary pressures. In *Tonga*, excess liquidity built up in the system because of an expansion of the central bank credit to the government and to the banks in support of their lending operations to public enterprises. Eventually the central bank had to resort to bank-by-bank credit ceilings because of its inability to support the financial cost associated with indirect instruments for liquidity management.

B. Market Participation Limitations

13. **A common feature of the market structure in our sample of countries is the dominant role played by commercial banks in the financial sector.** Markets in which financial instruments can be freely traded are, for the most part, confined to government's securities markets with limited activity on the secondary market. Therefore, monetary policy has still largely relied on administrative measures (reserve requirements and standing facilities). When money market operations are used, almost exclusively they rely on auction techniques that are regulated by the central bank rather than on the procedures used by market participants when they deal with each others.

14. **Shallow interbank markets have limited the effectiveness of money market operations by blocking or distorting a key aspect of the interest rate transmission channel.**⁴ A number of factors have hindered interbank market development, including the weak financial

⁴ See Appendix I in the Supplement for a survey of the transmission channels.

position of the participants, market segmentation, or chronic excess liquidity, Money market operations are effective when the central bank, while dealing with a selected number of banks, can expect its liquidity providing or withdrawing operations to be disseminated to all financial institutions. Therefore, when the interbank market is shallow, liquidity impulses from the central bank are not effectively transmitted (Box 4). In particular, banks that are cut off from the interbank market because of actual or perceived weakness in their balance sheets are forced to turn to the central bank to meet any temporary liquidity shortfalls. The presence of weak banks may interfere with the interest rate and credit availability transmission channels in other ways, in particular because such banks may be tempted to react to an increase in interest rates (which, other things being equal, will dampen the demand for credit) by lowering their credit standards to be able to continue lending to grow their way out of difficulty.

Box 4. Country Examples of Market Participation and Institutional Limitations

In *Ukraine*, the interbank market suffered from the weak financial position of some of the banks. The dormant state of the interbank market substantially weakened the interest rate transmission channel. In *Tunisia*, turnover on the interbank market has been low and volatile, mainly because banks have had easy access to liquidity from the central bank. Recently, the central bank has curtailed its readiness to systematically meet bank requests under its standing facilities in an effort to promote interbank market development and pave the way for reliance on open market operations. In *Egypt*, the high number of financial intermediaries was not sufficient to ensure competitive outcomes for government securities auctions, due to the dominant position of four large public banks. Furthermore, the secondary market for government securities is shallow due to relatively high liquid asset ratio requirement, which may be satisfied by the holding of government securities. In addition, the requirement for secondary market transactions on government bonds to be executed through the Stock Exchange may have prevented market development due to high transaction costs. In the case of *Malta*, the Treasury holds weekly auctions of treasury bills, the vast majority of which are held by banks. However, due to the high excess liquidity in the banking system, banks tend to hold the government securities until maturity. The turnover on the secondary market is therefore very low, and most of the transactions are with the central bank, which functions as a market-maker. The development of the secondary market is also hindered by the fragmentation of the issues and absence of dematerialization of the securities. In *The Gambia* the central bank law sets out several principal objectives of the central bank, but there is no established priority among the objectives. In addition, the law does not ensure the autonomy of the central bank since the Minister of Finance can override its policy decisions. In addition, the law requires many of the monetary policy decisions to be referred to the Minister for approval. Such a lack of autonomy has at times complicated liquidity management.

15. **At times, central bank efforts to promote market activity have stymied longer term market development**, for instance, when the central bank has acted as a market maker for government securities. Furthermore, at times central bank operations aiming at developing markets have conflicted with operations aimed at achieving a monetary objective, creating a danger of confusion about the central bank's objectives.⁵ In other cases, measures to limit interbank market rates volatility, for instance through the readiness of the central bank to meet individual banks' liquidity needs, have prevented interbank market trading. On the other hand, such a market may not

⁵ In the case of Malta, the operations of the central bank in the government securities markets may have led to the perception that it attempted to manage interest rates across the yield curve.

function if participants cannot rely on central bank action to ensure adequate liquidity and steady interest rates. Some countries have found it difficult to strike an appropriate balance in this regard.

16. **Establishing active secondary markets for government or central bank securities has proved to be a difficult task.** When such financial instruments have been introduced, most of the time they were offered through an auction mechanism, either for monetary policy purposes (central bank bills, and at times government securities) or to finance the budget deficit (government securities). However, efficient secondary markets were slow in developing. (Box 4). Difficulties in developing such markets can be traced to reliance on policy instruments which do not support market development. For instance, in several countries reliance on liquid asset ratios, whereby financial institutions are required to hold a certain percentage of their liabilities in the form of government securities, has hampered market development. Similarly, a lack of commitment to market-based funding of the budget's deficit and, therefore, continued reliance on captive sources of funding or on central bank credit has hindered market development, and weak public debt management strategies have led to fragmented issuance of government securities which have prevented the emergence of benchmark issues. Limited secondary market development can also be traced to structural limitations. Narrow investor bases, due to limited financial sector diversification, has led to a dominant role played by the banking sector. In some cases, a low level of confidence in the public sector has also prevented the development of an investor base. Technical factors have also constrained secondary markets development, including high transaction costs, weak systems for the settlement of transactions, and the absence of a legal framework for repurchase transactions.

C. Institutional Shortcomings

17. **Despite increased emphasis given to central bank autonomy in recognition of its benefits in boosting credibility and monetary policy effectiveness, a number of countries still exhibit significant weaknesses in this regard.** Several of the case studies illustrate the implications of weak central bank institutional frameworks on the effectiveness of monetary policy in general, and money market operations in particular. Most notably, *de facto* or *de jure* absence of a single objective assigned to monetary policy has undermined the ability of the central bank to maintain monetary stability in the event of a conflict between the objectives pursued (Box 4).

18. **A sound institutional framework is not a sufficient condition for success in conducting monetary policy.** Although the law may define a clear primary objective for the central bank, lack of operational autonomy may undermine policy effectiveness. This is even more so in countries where macroeconomic weaknesses or shallow financial markets limit the range of policy instruments available to the central bank. Nevertheless, even countries subject to some form of fiscal dominance were able to overcome these difficulties by establishing appropriate balance between monetary and fiscal policy early on in the process of macroeconomic policy formulation, highlighting the need that the fiscal and monetary authorities be committed to monetary stability.

19. **Weak liquidity forecasting frameworks (Box 5) have complicated monetary policy implementation in virtually all of the case studies.** Limited progress in this area was for the

most part the consequence of a poor flow of information between the units within the central bank responsible for financial operations (i.e., currency, reserve management and foreign exchange operations, refinancing operations, operations with the government) and between the central bank and the Treasury. At times, weak liquidity forecasting capacity has also reflected a policy decision to rely on administrative measures for monetary policy implementation, allowing the central bank to adopt a passive attitude in conducting monetary policy, which does not require developing a liquidity forecasting capacity. In turn, the absence of a liquidity forecasting capacity has delayed reliance on money market operations, or has created difficulties for reliance on such instruments.

Box 5. Liquidity Forecasting Frameworks

Liquidity forecasting enables the central bank to decide on how much liquidity to provide to or withdraw from the market with the objective of smoothing undesirable fluctuations that could distort the implementation of monetary policy and result in excessive market volatility. It involves the centralization of a wide range of information on financial transactions which affect the main items of the central bank's balance sheet, including the sources of base money creation which are not under the control of the central bank (autonomous factors), and those which are under its direct control (policy position). The supply of bank reserves can be derived as:

$$\begin{array}{rcll} \text{Supply of bank reserves} & = & \text{Net foreign assets} & \\ \text{(changes)} & + & \text{Net position of the government} & \\ & + & \text{Other items net} & \\ & - & \text{Currency in circulation} & \\ & + & \text{Lending to banks} & \end{array} \left. \begin{array}{l} \} \\ \} \end{array} \right\} \begin{array}{l} \text{Autonomous factors} \\ \\ \text{Policy position} \end{array}$$

The autonomous factors are beyond the control of the central bank in the very short run or—more generally—not related to monetary policy actions. When the central bank act as a banker to the government, the ability of the government to prepare accurate cash-flow projections and share them with the central bank is vital since variations in the net position of the government often account for the most significant changes in liquidity supply. In contrast, the “policy position” comprises central bank lending to banks through a standing facility, and net lending through discretionary money market operations.

Source: IMF (2000).

20. **Weak domestic payment systems have also hindered efficient liquidity management and have obstructed the development of money markets.** Most notably, the difficulties encountered by the banks in tracking their position at the central bank has encouraged maintenance of large excess reserves to meet settlement contingencies, and it has discouraged interbank trading. Therefore short-term rates have been slow to respond well to changes in liquidity conditions resulting from the central bank's monetary operations, and the central bank has encountered difficulties in managing liquidity in the system. Also, the absence of efficient and cost effective systems for transferring ownership of the securities traded in the secondary market, or the funds to pay for them has obstructed market development or repurchase transactions. In turn, the lack of a repurchase framework has delayed the introduction of collateralized lending in the interbank market, therefore helping back interbank trading, particularly when there has been limited trust between participants.

III. IMPLICATIONS FOR POLICY DESIGN AND COORDINATION

21. **The weaknesses in the market infrastructure that were discussed have undermined the transmission channels of monetary policy.** In particular, the asset price channel is largely absent because there are no developed financial markets in which asset prices are formed efficiently. The exchange rate channel may also be nonexistent in countries with a fixed exchange rate, or weak in countries with floating, managed floating, or adjustable peg regimes due to the maintenance of controls on capital and/or current account transactions.⁶ Therefore, the availability of credit and the interest rate channels are likely to be the most effective transmission channels of monetary policy. Furthermore, since there are few sources of funding that could be an alternative to bank lending, monetary policy will be transmitted via the impact of central bank actions on the balance sheet of the banking system.

A. Selecting a Monetary Framework: Prices versus Quantities

22. **The conduct of monetary policy through reliance on money market operations is based on the central bank monopoly to create money. The central bank can either set the price for base money, or it can target the quantity it provides to the system.** The lack of developed markets, and therefore reliable price information, may force the central bank to rely on quantities (monetary aggregates, credit, or components of the central bank's balance sheet) as indicators or intermediate targets for monetary policy.⁷ Unlike financial prices, which for reasons outlined above, may be distorted or discontinued, quantity variables can be more reliably measured and monitored. Another drawback of interest rate targeting in shallow markets is also the historic absence of market-determined interest rates, so that the linkage between the short-term rates and monetary aggregates and inflation is not clearly understood. At the same time, in the early stages of financial reforms, decisions to modify official interest rates may remain politically charged, even if the law gives the central bank full authority to adjust its policy rates, thereby causing rigidity in the upward movement of the rates. In the context of such markets, quantities—for example, of base money—rather than the interest rate may be used as an operating target for monetary policy. In addition, where the technical capacity of the central bank is limited, the balance is likely to be tipped further away from an anchor that relies on fine, well-informed judgments by policymakers and toward relatively simpler, more rule-based frameworks. Therefore, simple money rules (such as relatively mechanical money/credit growth targets) or simple exchange rate rules (such as a fixed exchange rate regime) may be the preferred option for anchoring monetary policy. In our sample,

⁶ However, when the substitutability between domestic and foreign assets is high the exchange rate channel may play a role due to a high response of the exchange rate to policy-induced changes in interest rates. This is the case in dollarized economies.

⁷ See Schaechter (2001) on interest rate versus base money as operating target.

many countries have adopted a monetary aggregate as a nominal anchor, and a number, at least at some point, an exchange rate anchor.

23. **It is important to recognize that simple frameworks may not perform well in handling shocks, and may be sensitive to errors in assumptions about the demand for money.** Despite the long-run relationship between money growth and inflation, in the short-term, the reliability of targeting credit aggregates or the monetary base to manage the central bank's balance sheet depends on the stability of their relationship to the ultimate target of monetary policy, regardless of the size or stage of development of the markets. Therefore, reliance on a monetary program for the conduct of monetary policy, in particular the implementation of a monetary framework anchored on base money targeting should not be overly rigid, and it should be accompanied by close monitoring of macroeconomic indicators to gauge the appropriateness of correcting a deviation from the initial assumptions.

24. **The migration from simple rules-based monetary frameworks (such as pegged exchange rate regimes or explicit monetary aggregate targeting) to monetary frameworks based on informed judgments on the part of the central bank (such as monetary regimes based on the monitoring of a set of indicators, and inflation targeting) becomes an option when financial markets have matured, and the central bank has developed a research capacity in monetary and economic analysis.** In particular, in countries with shallow markets, inflation targeting is generally not an easy option, attractive though it may appear to be in terms of providing greater flexibility and allowing greater focus on a broad range of economic developments and relevant information. Indeed, while an explicit inflation target could help stabilize inflation expectations, a framework centered on inflation itself may prove difficult to implement if some initial conditions are not met, including an inflation forecasting capacity and structural reforms to strengthen the financial sector (Box 6).

B. Choice of Monetary Instruments

Mix of rules-based instruments and money market operations

25. **In the actual implementation of monetary policy, it is critical that the monetary functions assigned to the various instruments be in accord with the market infrastructure in place, and the institutional capacity at the central bank.** In general, the mix of instruments depends on progress achieved in financial reforms, on the depth and liquidity of the money market (which in turn has to do with the soundness of banks). Therefore, the particular combination and role of instruments will depend on a variety of factors specific to countries' individual circumstances. In the early stages of market development, the central bank can rely on liquidity requirements (reserve requirement and liquid asset ratios) and standing facilities (hereafter referred to as rules-based instruments) to conduct monetary policy. Liquidity requirements can be useful instruments to absorb permanently liquidity from the market. Standing facilities, which allow banks to deposit funds with, or borrow funds from the central bank at their discretion, can play a fine-tuning function. However, the central bank may need to place limits on the ability of individual banks to access its

refinance standing facilities so that it can maintain a sufficient degree of control of its balance sheet. Standing facilities and reserve requirements (when they are allowed to be maintained on average during the maintenance period), can also play a useful buffer function (i.e., they facilitate the operations of the payment systems) in the event of unexpected liquidity shocks, inefficiencies in the redistribution of reserves by way of the interbank market, or when the central bank's liquidity forecasting capacity is weak.

Box 6. Initial Conditions for Inflation Targeting

The initial conditions for inflation targeting can be divided into four groups. First is a mandate to pursue an inflation objective, accountability of the central bank in meeting this objective, sufficient autonomy to set monetary instruments accordingly, and transparency in policy formulation and implementation.

Second, there is a need to ensure that the inflation target will not be subordinated to other objectives: monetary policy should not be dominated by fiscal priorities; the country's external position should be sufficiently stable to enable monetary policy to focus on achieving the inflation target. At the outset, inflation should be low enough to ensure a reasonable degree of monetary control.

Third, the financial system should be developed and stable enough so that monetary policy is not sidetracked by concerns about the health of financial institutions. Markets should be sufficiently well developed to enable monetary policy to be implemented using market-based instruments.

Fourth, the central bank needs the proper policy tools to influence inflation on the basis of a reasonable understanding of the links between the stance of policy and inflation. Exchange rate objectives must be clearly subordinated to the inflation target, and foreign exchange market interventions or changes in policy interest rates intended to influence the exchange rate should aim at smoothing temporary shocks so that inflation objectives can be attained. Fiscal policy and public debt management activities should be coordinated in support of the inflation target; this calls for a clear separation between money creation and government funding needs.

Source: Carare and others (2002).

26. **As soon as an interbank market is in place, and the central has developed a liquidity forecasting capacity (although it may still be rudimentary), open market-type operations can be introduced.** A market for interbank funds makes possible their redistribution between participants, therefore allowing the central bank to manage liquidity at the level of the system as a whole, as opposed to managing each financial institution's liquidity position. A liquidity forecasting capacity to anticipate changes in the main items of the central bank balance sheet is also required so that the monetary authorities are in a position to take appropriate action to offset any change that would result either in an excessive level of liquidity in the system, which may result in excessive money creation by the banks, or in a shortage of funds, which would obstruct the smooth functioning of the payments system.

27. **The speed with which the central bank will be able to shift from rules-based instruments to money market ones will depend on progress achieved in establishing an interbank money market as well as progress in strengthening the liquidity forecasting framework at the central bank.** In particular, an effective capacity to forecast liquidity

developments in the system (that is, to forecast changes in the central bank's balance sheet) will allow the central bank to make informed decisions on the timing and size of its discretionary monetary operations. In turn, better informed discretionary operations will effectively steer liquidity in the system to its optimal level, and set up the technical conditions for a smooth functioning of the market. Therefore, less concerned about the interest rate volatility that may arise due to forecasting errors, the central bank will be more inclined to set a wider interest spread between its deposit standing facility and its lending standing facility (hereafter referred to as the "corridor") that would otherwise be the case—a desirable feature to encourage interbank market trading. As evidenced by country experiences, the central bank in some small countries has succeeded in engineering a process that has allowed effective reliance on money market operations. Typically this has involved reliance on discretionary money market operations conducted in the interbank market, supplemented with reserve requirements that can be met on average over the period and standing facilities to set a corridor for interbank market rates (Box 7).

Box 7. Successful Experiences in Small Countries

In the case of *Malta*, the privatization of the banks and the entry of a foreign bank helped strengthen competition in the interbank market, allowing the Central Bank of Malta to successfully manage overall liquidity conditions through reliance on a mix of rules-based and money market instruments. The set of monetary instruments has included weekly auctions of central bank term deposits, standing facilities, and a reserve requirements system with averaging provisions. Privatization of the commercial banks has increased the degree of competition, although interest rates have at times been sticky and slow to respond to changes in policy rates. The experience of *Vanuatu* illustrates that despite the limited number of banks (in this case four), the central bank was able to rely successfully on variable rate tenders for auctioning central bank bills. The auctions are held regularly, and participation was broadened by allowing nonbanks to participate in the auctions.

28. **The central bank needs to ensure that the structure of its policy rates is conducive to interbank trading.** In particular, it needs to ensure that the interest rates it applies to its various instruments are internally consistent and that the spread between the interest rate it applies to liquidity providing operations and its liquidity absorbing operations is wide enough to provide incentives for banks to deal with each other in the interbank market. The stylized structure of central bank interest rates that is provided in Table 3 allows for a combination of a refinance standing facility and of a deposit standing facility which creates room (or a corridor) for interbank market participants to deal with each other rather than to trade funds with the central bank. In a situation where there is an adequate amount of liquidity in the system, a bank with a shortage of funds and one with excess funds will have an incentive to trade first in the interbank market since having recourse to the central bank either to deposit or to borrow funds would be less advantageous for both banks.

Selection of money market instruments

29. **Irrespective of the indicator or intermediate target that the central bank adopts, it needs to rely on a market where it can interact with banks at its discretion to add liquidity**

to, or withdraw liquidity from the market. This market could be an interbank money market, a repurchase market (for example, on government securities), a secondary market in government securities or even a foreign exchange market. The extent of development, structure, and depth of these markets will determine which money market instruments are likely to perform better (open market operations or open market-type operations), and the auction technique that may be used to structure these operations (Box 8).

Table 3. Stylized Structure of Central Bank Interest Rates

Level	Central Bank Interest Rates
Highest	Penalty charged on overdrafts
	Penalty charged on shortfalls on reserve requirements
	Refinancing standing facility rate
	Deposit standing facility rate
Lowest	Remuneration of required bank reserve balances
	Remuneration (if any) of excess reserve balances

Source: Baliño and Sundararajan (1997).

Box 8. Typology of Money Market Operations

Money market operations: Monetary instruments that are used at the discretion of the central bank and bearing an interest rate linked to money market conditions. They aim at influencing the underlying demand and supply conditions for central bank money. They include:

- **Open market type operations**, which are market-based monetary operations based on auction techniques that are regulated by the central bank. OMO-type operations involve: (i) lending/borrowing against underlying assets as collateral; (ii) primary market issuance of central bank securities or government securities for monetary policy purposes; and (iii) accepting fixed term-deposits.
- **Open market operations (OMO)**, which are market-based monetary operations conducted by the central bank as a participant in the money market. They involve: (i) buying/selling assets outright on the secondary market; and (ii) buying/selling assets in the repo market, or foreign exchange swaps.

Auction techniques. In their money market operations central banks may use various auction techniques. With volume tenders, banks bid only for volumes supplied by the central bank at a pre-set interest rate. With interest rate tenders, banks bid for the amount and the rate; the central bank charges the rates offered (multiple-rate auction) or the cutoff rate (uniform-rate auction).

Fine-tuning operation: An irregular OMO executed to deal with unexpected liquidity shocks.

Source: See Laurens (1997).

30. **Some small countries may not be able to fully rely on open market operations.** They may not have a critical mass that is needed to allow a diversification of markets and financial institutions, or the ability to develop the market infrastructure, including functioning money markets, that is needed to support regular open market operations that are conducted by the central bank as

participant in regular markets. Open market-type operations can help introduce market-like processes at a stage when markets are not yet well developed. To be effective these operations need to be carefully structured. Generally, the central bank can use various auction techniques, including interest rate or volume tenders. When markets are not developed or are prone to collusion or to monopolistic behavior, volume tenders may be preferable, and they help make monetary policy intentions (as regards interest rates) explicit and stabilize market expectations, an important consideration in shallow markets.

31. **The selection of collateral accepted by the central bank when it provides liquidity should take into account the composition of the banks' portfolios.** Government securities are considered the preferred assets used by the central bank to conduct liquidity-providing monetary operations because they usually offer the lowest credit risk and often the most actively traded securities in the market. However, in a context of limited market development and limited diversification of financial instruments, commercial banks may be short of such assets, and limiting the list of acceptable collateral to these assets could undermine the operational efficiency of monetary policy. Therefore, the central bank may need to broaden the list of accepted collateral to nonnegotiable assets and bank claims on the private sector. At the same time, it will be critical to ensure that the eligibility criteria for those assets provide adequate protection to the central bank from incurring losses in its monetary policy operations.⁸

IV. AGENDA FOR ACTIONS TO ENHANCE MONETARY POLICY EFFECTIVENESS

32. **The objective of this section is to discuss broad guidelines that can be followed to address the obstacles to reliance on money market instruments.** The review of country experiences confirms that there is not a single way to proceed with reforms. It also allows identifying broad guidelines that may be relevant for all countries, and useful to policymakers when designing an agenda for action to enhance monetary policy effectiveness. For countries with a potential for market diversification, the objective is to fully depend on open market operations for the liquidity management function of monetary policy. For countries which cannot expect to establish diversified financial markets, the objective is to reach a stage where they can rely on a combination of open market-type operations and rules-based instruments, with the latter still playing an important role in the liquidity management.

A. Curtailing Fiscal Dominance

33. **The chances for a successful reliance on money market operations are dependent on the establishment of a sound financial relationship between the central bank and the government.** For countries that have had a history of fiscal dominance, the main challenges facing the transition to reliance on money market operations has to do with curtailing the ability of the

⁸ See Appendix II in the Supplement for the ECB and Banque de France experiences.

government to rely on the direct credit of the central bank.⁹ As evidenced by country experiences outlined in the Supplement, in countries with shallow markets the central bank has continued to act as banker to the government. This has frequently involved the provision of direct credit from the central bank to finance the budget deficit. In a number of countries, the inability of the central bank to control its balance sheet was due to excessive reliance of the government on the credit of the central bank, leading to injections of liquidity in the system which the central bank could not absorb through money market operations due to the limited development of markets. In such cases, the central bank's only way out was to resort to administrative measures or moral suasion to limit the adverse effects of these operations on its balance sheet.¹⁰ Therefore, until the government is able to fund its operations in the market, the coordination of monetary and fiscal policy should rely on a joint exercise between the central bank and the treasury aimed at setting a binding limit on the ability of the government to obtain funds from the central bank.

34. Participation in a monetary union, particularly for small countries, can help foster fiscal discipline and the coordination of monetary and fiscal policy in several ways.¹¹ First, as for any monetary union, fiscal virtue is critical to mitigate the risk of an undesirable policy mix between member countries' decentralized fiscal policies and the union's centralized monetary stance. Therefore, monetary unions lead naturally to arrangements that foster fiscal discipline and policy coordination, such as fiscal convergence benchmarks. Second, in the case of small countries, the central bank is the agency most likely to be in a position of strength in terms of the human and technical resources to develop an institutional capacity that can be used to advise member countries' fiscal authorities, or to develop and monitor the fiscal convergence benchmarks, therefore facilitating the coordination of fiscal and monetary policy. However, a monetary union does not guarantee the achievement of a sustainable fiscal policy. Key to its success is the existence of enforcement mechanisms to ensure the effectiveness of the framework (Box 9).¹²

⁹ Fiscal dominance also includes central bank's provision of subsidized funds to priority sectors; conducting foreign exchange transactions at nonmarket clearing levels. Such activities should be discontinued in the early stage of financial reforms.

¹⁰ In the Democratic Republic of the Congo, the central bank resorted to a rationing of currency; in Tonga, it resorted to bank-by-bank credit ceilings and moral suasion.

¹¹ Participation in a monetary union entails losing monetary policy independence and the exchange rate as a mechanism to adjust to shocks. However, that loss may not be significant for small open economies if the degrees of freedom for an independent monetary policy were restricted due to the relevance of the exchange rate. Thus, the benefits that participation may bring in fostering fiscal discipline may be more important (Fasano, 2003).

¹² Analysis of the cost and benefits of a monetary union needs to take into account factors outside the scope of this paper, including patterns of trade, correlations of economic growth, and political and institutional considerations.

Box 9. Fostering Fiscal Discipline in the Eastern Caribbean Currency Union

In the case of the *Eastern Caribbean Currency Union* (ECCU), the central bank was instrumental in helping the governments to institutionalize a framework to coordinate monetary and fiscal policy. Furthermore, in 1995 the Eastern Caribbean Central Bank (ECCB) set up a mechanism allowing governments to draw on dedicated resources at the ECCB to be used in a last-resort case and to help deal with natural disasters. Against the background of deterioration in budgetary positions and uncertain economic prospects for an ECCU member, the ECCB has designed a set of policy rules in the form of fiscal benchmarks to ensure the long-term sustainability, along the lines to those instituted in the context of the monetary unions in Europe and in West and Central Africa. However, the effectiveness of the benchmarks will not be ensured until they are made binding and enforcement mechanisms, by the ECCB or the national authorities, are in place to ensure compliance.

35. **Market-based funding of the government, however, does not necessarily eliminate the potential for fiscal dominance.**¹³ In particular, large sales of government securities to finance the fiscal deficit may lead to raising interest rates, which in turn may result in pressure to reduce the volume of securities issued and instead to monetize the fiscal deficit. To overcome these difficulties, governments should institute programs of fiscal control. Reductions in deficit levels would not only ease strains between the monetary and fiscal authorities, but would also reduce the need for the central bank to monetize the fiscal deficit, and thereby enhance the chances for successful monetary policy. In addition, in the early stages of development of a government securities market, it may not be feasible to completely eliminate direct central bank credit to the government. Maintenance of an overdraft facility may be warranted until the government has gained sufficient confidence in the running of a public debt program, and the market has reached an adequate degree of maturity. Such an overdraft facility should, however, be properly designed: it should be remunerated at a market rate, and limits should be established to ensure that it operates as a “safety valve” rather than as a permanent source of funding. During this intermediate period, it will be desirable to maintain close communication between the monetary and fiscal authorities early on in the process of policy formulation as well as formal channels for balanced coordination, including appropriate safeguards to ensure that fiscal policy does not dominate the conduct of monetary policy. Balanced coordination between monetary and fiscal policies can be improved by the setting up of coordination committees which provide a means for members to learn about each other’s objectives and operating procedures, along with help in building consensus on how macro policies should be conducted in a market-friendly manner. Such channels for communication are likely to be necessary until such a time when fiscal policy is responsive to market discipline.¹⁴

36. **Finally, in day-to-day policy implementation, government cash management and central bank liquidity management should be closely integrated.** Indeed, in the early stages of

¹³ See Sundararajan, Dattels, and Blommestein (1997), and IMF and World Bank (2001) for a survey of best practices regarding market-based public debt management frameworks.

¹⁴ See Laurens and de la Piedra (1998).

development of a market-based strategy for funding the fiscal deficit, markets may be thin, with few maturities, mostly concentrated at the short end. This constrains the ability for fiscal and monetary policy to operate in different areas of the market (the central bank typically interacting with the short-end of the market, and the fiscal authorities raising funds on the long-end), and so the coordination of debt management and monetary operations is crucial. Therefore, government cash management needs to be closely coordinated with the central bank liquidity management exercise.¹⁵ When markets are deep and liquid, a separation of the two activities can be envisaged.¹⁶

B. Dealing with Structural Liquidity Surplus

37. **Reliance on money market instruments in shallow financial markets is facilitated when the central bank conducts the bulk of its market operations in the form of liquidity providing operations.**¹⁷ In such instances, even when the central bank's money market operations are not yet fully effective, the scope for collusion or overshooting is reduced since the banking system needs to borrow from the central bank. Therefore, in the short-term, the central bank can achieve a particular liquidity objective and still control the interest rate at which it lends to the system, for instance by using a volume tender. However, when the central bank needs to withdraw liquidity from the system through a market based instruments, it may not be able to achieve its quantitative objective at a pre-set interest rate, as would be the case if the central bank was to use a volume auction, because the banks have multiple choices of asset allocation. The central bank would need to rely on interest rate auctions to ensure that it would withdraw the desired amount of liquidity from the system, thus facing the risk that auction interest rates, and thereafter market rates, may overshoot.

38. **The central bank can rely on rules-based instruments in the early stages of market development to force banks to borrow from the central bank.**¹⁸ This can be achieved through reliance on reserve requirements to create a liquidity shortage in the system.¹⁹ However, reserve requirements need to be designed in a way which limits the potential for market distortions; in particular, the required reserves in the form of deposits with the central bank should be remunerated at a rate that is in line with market rates, particularly if the ratio is high. In the early stages of interbank market development, the central bank may also allow banks to satisfy the reserve

¹⁵ See Appendix III in the Supplement for a review of liquidity management and forecasting.

¹⁶ For a discussion see Laurens and de la Piedra (1998).

¹⁷ It is agreed that a liquidity surplus does not hamper monetary policy transmission in deep markets.

¹⁸ See Appendix IV in the Supplement for a review of experiences in this regard.

¹⁹ In using reserve requirements for liquidity management purposes it is, however, advisable to avoid frequent changes in the level of the ratio in view of the disruptive effects this may have, particularly in shallow markets or when there is unevenness of the distribution of excess reserves among banks.

requirements by the holding of securities issued by the central bank.²⁰ By creating a captive market for such securities (which would be issued to mop up excess liquidity), the measure would facilitate the introduction of auctions for the sale of the securities, therefore fostering market development (Box 10).

Box 10. Measures to Limit the Distortionary Effects of Rules-Based Instruments

Weak market infrastructure can obstruct the use of money market instruments in various ways. The creation of cartels or collusion due to a limited number of participants may prevent markets from reflecting the true equilibrium conditions that would otherwise be observed in a market with wider participation. In addition, moral suasion exercised on public banks may weaken competition and undermine market-determination of interest rates. Also, large-scale sterilization operations in response to capital inflows in a context of shallow markets may put upward pressure on market interest rates, in turn increasing the incentives to further capital inflows.

To limit the distortionary effects of rules-based instruments, the central bank needs to ensure that its burden on the banking system, as well as the effects on the allocation of resources, is minimized. Therefore, required reserves should be remunerated, particularly if the reserve ratio is high, and the remuneration should be at a rate which is in line with market rates and consistent with the other central bank policy rates (see Table 3). A reserve requirements system that could be satisfied, at least partly, by the holding of securities issued by the central bank for monetary policy purposes would be a superior alternative to a reserve requirement to be satisfied only by the holding of deposits with the central bank. Indeed, such a mechanism, while creating a captive market for the securities, would help support the use of money market instruments to conduct of monetary policy as it would foster market development.

39. **Whichever framework is adopted, it is important to recognize that the costs associated with sterilization operations, which reflect the cost of conducting monetary policy in this particular macroeconomic context, are ultimately a fiscal problem.** The central bank can use a variety of operating procedures to borrow funds from the market. In some cases, the government allows the central bank to issue government securities and the proceeds from the sales are blocked in an account at the central bank. In this case, the cost of mopping up liquidity is directly borne by the government. The central bank may also issue its own securities or accept deposits from the bank; in both cases, related costs are born by the central bank. However, those costs may exceed the profitability of the central bank and may even lead to large losses for the central bank. In such cases, it is important that arrangements are in place to ensure that the losses of the central bank are passed on to the government in a timely manner. This is crucial to avoid the potential for profitability consideration to take precedence over monetary policy considerations, as would be the case if the central bank was to limit its sterilization operations to preserve its profitability. Various arrangements may be implemented to ensure that sterilization costs exceeding the profitability of the central bank are reflected in the fiscal accounts, including issuance of

²⁰ As evidenced by the country experiences presented in Appendix III in the Supplement, other rules-based measures may be used, such as mandatory deposits with the central bank, or switching government deposits from the commercial banks to the central bank.

government securities for monetary policy purposes, compensation from the budget to the central bank if sterilization costs are borne by the central bank, or by ensuring that the losses incurred by the central bank are compensated by a fiscal surplus, leading to a balanced consolidated budget of the central bank and of the government.²¹

C. Establishing Efficient Money Markets

40. **An efficient interbank market where banks can trade short-term instruments is a prerequisite for reliance on money market instruments.** The first issue to be considered is the number of market participants needed to ensure market efficiency. While there is no firm evidence on what is the minimum number of participating banks to ensure competition in the market, the experience gathered in the case studies suggests that interbank markets with four or five participants can be efficient provided none of them dominates the market.²² Indeed, more than the number of participants, what matters most to promote competition is to ensure that participants are discouraged from setting prices above the prevailing rates. The reason for this note of caution is that in perfectly competitive markets, if they did so, other participants could enter the market quickly and find it profitable. In this context, measures to increase the effectiveness of the interbank market involve removing barriers to entry. Privatizing state-owned banks can also help eliminate market segmentation, and opening access to foreign banks can help upgrade banking skills. In the case of small countries that share economic interests, participation in a currency union can help reach the critical size that is needed for markets to emerge.

41. **The development of the interbank market may also be inhibited by the reluctance of banks to deal with each other, because of credit risk, or because of reluctance to reveal commercial interests to each other.** A way to address these obstacles in the short run is to develop the use of collateral (such as government securities), or to organize clearing of interbank transactions on the books of the central bank (provided appropriate arrangements are in place to cover counterparty risk) in order to ensure that settlements will be honored when interbank loans mature.²³ More fundamentally, concerns about the financial soundness of interbank market participants call for actions to strengthen their financial position. In particular, banks must restructure their balance sheets by dealing with problem loans, diversifying their portfolios, and assessing risks more effectively.²⁴

²¹ While such a framework is a second best solution, it can serve until a stronger one is set up.

²² These findings for small countries are corroborated by a recent study by the Group of Ten (2001) on the consequences of financial sector consolidation in large countries.

²³ See also BIS (1996) and Appendix IV in the Supplement.

²⁴ See Hoelscher (2003) for a discussion on the effect on monetary policy of weak banking systems.

D. Strengthening Financial Market Infrastructure

42. **To enhance monetary policy transparency and accountability, price stability should be the main objective of monetary policy.**²⁵ To perform this function efficiently requires setting up an institutionalized, transparent mechanism for resolving divergences between monetary and fiscal policies, including placing explicit and binding limits on the amount of credit that the central bank can grant to the government; ensuring that the central bank has the means to manage the level of liquidity in the banking system; and protecting the central bank from undertaking quasi-fiscal activities that may erode its autonomy.

43. **Central bank autonomy and transparency is being increasingly recognized, not only as an aspect of good governance, but as a means for promoting the credibility which is needed to formulate and implement monetary policy.**²⁶ Greater transparency is an incentive for the monetary authorities to bring about a greater degree of rigor in the formulation of strategies and the choice of instruments. Transparency and the timely flow of information are also crucial for the development, stability, and soundness of the financial system. It also helps promote efficient markets. Information made available about trading interest and prices at which market participants are willing to transact is central to price discovery. Such information may include trading volumes and prices. Disclosure of the central bank's liquidity forecasts can also help the banking sector form expectations on the overall liquidity situation. This can facilitate financial institutions' liquidity management and contribute to stabilizing liquidity conditions, thus market stability and development.²⁷

44. **An efficient financial sector infrastructure is vital to the smooth transmission of monetary policy actions.**²⁸ The payment systems and the accounting and auditing systems are an essential part of that infrastructure. They ensure that transactions are settled in a timely and reliable manner and that such transactions are recorded appropriately and accurately. An efficient payment system facilitates the smooth operations of markets while an efficient accounting and auditing system is crucial for providing credible and timely information that allows markets to make sound decisions. More specifically, regarding monetary policy implementation, weak payment systems or central bank accounting frameworks can greatly complicate the implementation of a liquidity management

²⁵ See IMF (1998).

²⁶ Desirable transparency practices are set out in the IMF's *Code of Good Practices on Transparency in Monetary and Financial Policies*.

²⁷ See IMF and World Bank (2001) for details.

²⁸ Effective coordination between the financial supervisor and the monetary authorities is critical to underpin market development.

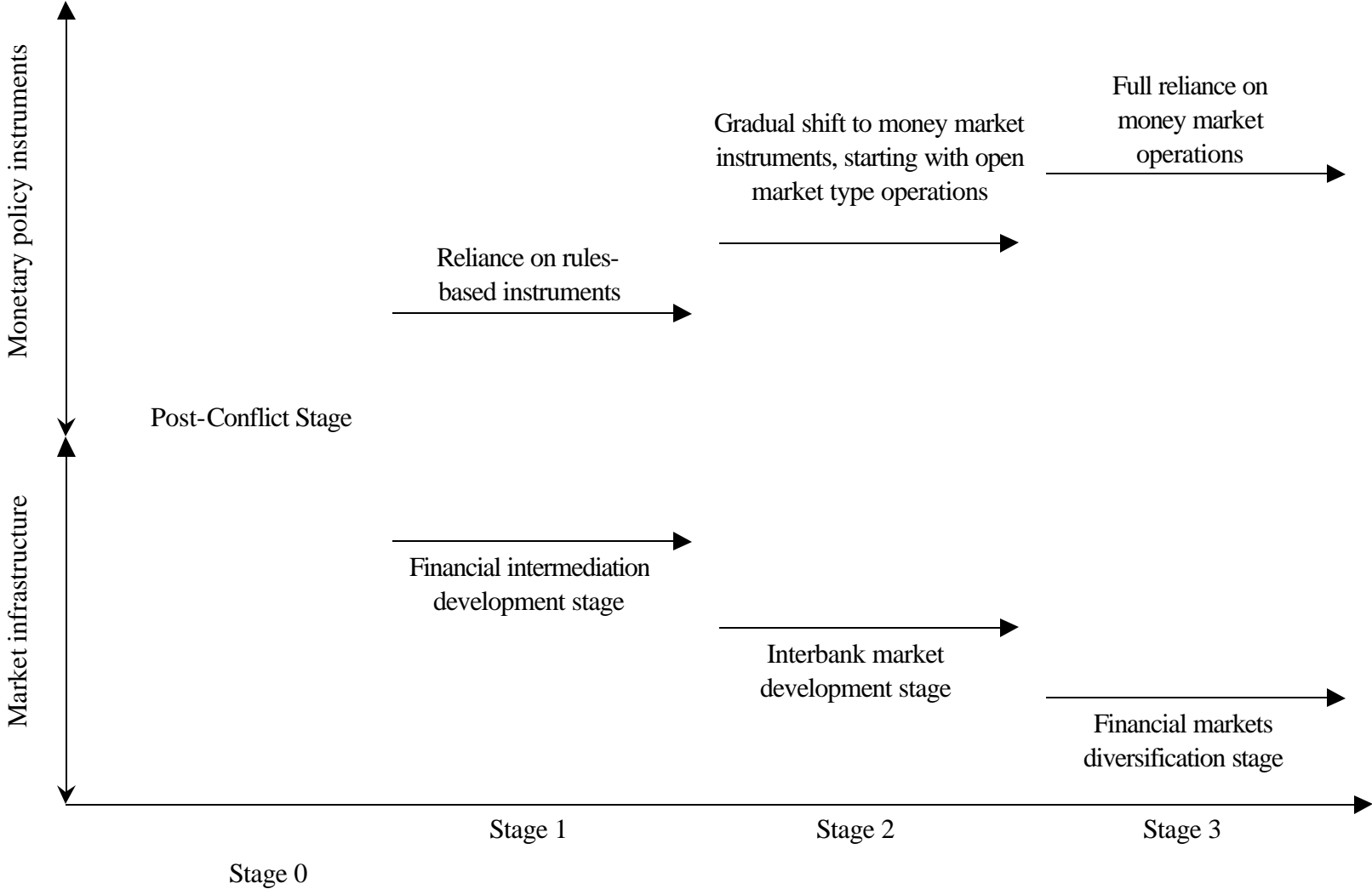
and forecasting framework and, ultimately, jeopardize the central bank's ability to control its balance sheet.

V. SEQUENCING OF REFORMS

45. **A four-stage process can be identified to sequence the reforms that are needed to support the introduction of money market operations (Figure 1).** While there is not a single way to proceed, following such a sequence can help country authorities plan and execute the reform process, consolidate progress towards market development, as well as to undertake periodic assessments of progress made before making a new policy move. *Stage zero* concerns post-conflict countries. At this stage, there is no scope for monetary policy but only for currency management. *Stage one* involves developing the role of banks in financial intermediation. *Stage two*—to foster the development of interbank operations. The *third stage*—to develop financial markets and instruments so that the money market is well integrated with the other segments of the financial markets, including the secondary market for government securities and the foreign exchange market. At the end of stage three, monetary policy can rely fully on money market operations.

46. **In post-conflict cases with no functioning monetary authority, financial reforms involve a graduated approach in reestablishing key functions in areas where a central bank typically has responsibilities.** Early on, strategic choices need to be made regarding the exchange rate regime. In the absence of banks, an emergency payment system needs to be established, and work initiated on key financial legislation such as the central bank law and the banking law. Early on, a commonly accepted legal tender needs to be adopted to replace competing local community monies. Once key financial legislation is approved and prudential regulations drafted, commercial banks can be licensed, and the emergency payment system can be replaced by a payment system through the banking system supervised by the central bank. In post-conflict cases where a central bank and commercial banks still exist, there may be a need to review financial legislation to bring it in line with international best practices. Reserve requirements may be in place, but may have limited effectiveness when deposits in the banks are limited, and most transactions are settled in cash. In such circumstances, monetary policy is confined to currency management.

Figure 1. Monetary Policy Implementation at Different Stages of Market Development



47. **Financial reforms should then aim first at enhancing the role of banks in financial intermediation** (*Financial Intermediation Development Stage*), so that a credit function can grow. A common feature of countries in the initial stage of market development has to do with the shallowness of financial intermediation. Incentives for banks to collect deposits may be low due to easy access to central bank credit (for instance, under preferential central bank refinance schemes to support priority sectors), or injection of liquidity in the system due to direct central bank credit to the government. On the asset side, the development of credit activity is hampered by structural factors such as the difficulty of assessing the credit risk of debtors due to the lack of reliable financial documentation and the weak legal framework. Weaknesses in the functioning of the judicial system may also be a source of uncertainty, in particular regarding the use of collateral. All of these deficiencies need to be addressed for financial intermediation to expand.

48. **Developing the role of commercial banks in the payments systems can help develop the credit function.** In the initial stages of financial intermediation, deposits in commercial banks are mostly demand deposits maintained for transaction purposes. Therefore, the development of the credit function in local currency needs to be preceded by the development of an efficient payments and settlement infrastructure to encourage individuals and corporations to use the banking system to settle transactions. Once the banks have developed a broad deposits base, they can expand their lending operations. Until the credit function of the banks has developed, there is limited scope for money market operations to be effective. Furthermore, the central bank is most likely to provide a broad range of banking services to the government. Therefore, monetary stability will be contingent upon the establishment of a separation between money creation and government funding.

49. **Countries with shallow markets are either at the end of stage one, or have already entered stage two. The challenge for them is to design a reform program to enter into stage three.** At the end of stage one, countries are expected to have in place rules-based monetary instruments and basic money market instruments (most likely open market-type operations). In practice, it will be difficult to draw a clear-cut dividing line between stage two and stage three, and the adjustments to the central bank's operating procedures will involve a change in the weight that is given to the various instruments. As illustrated in Table 4, the central bank will have to assess the role it wants to assign to its monetary instruments with regard to the various monetary functions they may fulfill. This will involve a high degree of judgment on the part of the central bank, and setting objectives can facilitate the planning and execution of reforms, as well as periodic assessments of progress made before making a new policy adjustment.

Table 4. Functions of Monetary Instruments at Stage Two and Three

	Stage Two: Interbank Market Development Stage			Stage Three: Financial Market Diversification Stage 1/	
	Standing Facilities	Money Market Operations	Reserve Requirements (RR)	Standing Facilities	Money Market Operations
Liquidity management function	Lending through refinance standing facility may be used within a quota to prevent loss of monetary control	OMO-type operations are introduced. Volume tenders for liquidity providing operations amount to auctioning a refinancing quota.	Useful to create a liquidity shortage in the market.	Continue to play an important role (i) if fine tuning operations are not used actively, and (ii) at the end of the maintenance period of RR (if RR are still used)	Money market operations (OMO and OMO-type operations) are the main instrument for managing liquidity
Signaling function	Changes in interest rates serve to signal monetary policy stance	If volume tenders are used, the interest rate charged by the central bank is used to signal monetary policy stance	Changes in ratio signal a change in monetary policy stance	Changes in interest rates signal durable policy stance shift. They may be preceded by change in money market operations rates.	Volume tenders rate, or minimum rate in interest rate tenders can be used to signal monetary policy stance
Fine tuning function	Banks adjust their liquidity position through the deposit and refinance facilities.	Market rates should be allowed to fluctuate within a corridor (there is limited scope for discretionary fine-tuning operations)	Indirect impact	Limited role	Fine tuning operations are used to steer market rates within the corridor. Active fine tuning operations allow the central bank to eliminate reserve requirements, and reduce the role of standing facilities.
Buffer function	Refinance facility can be used to cover end-of-day clearing imbalances	OMO-type operations are not designed to play a buffer function	May be effective if averaging provisions apply and RR are high.	Intra-day credit is needed to operate a real-time gross settlement system. Refinance facility can be used to cover end-of-day clearing imbalances	Indirect impact

1/Countries at the end of stage three may choose to maintain reserve requirements for the buffer function. Alternatively, they may choose to rely exclusively on fine tuning money market operations.

50. **Once banks' credit function has expanded, interbank trading can grow (*Interbank Market Development Stage*).** At this stage the central bank is in a position to start conducting monetary policy by managing the overall liquidity conditions in the system. Monetary policy can therefore be anchored on the central bank's balance sheet. As indicated earlier, given the lack of developed markets and reliable price information, the central bank will need to rely on quantities (monetary aggregates, credit, or components of the central bank's balance sheet) as indicators or intermediate targets for monetary policy. As the interbank market deepens, the central bank can gradually shift the balance of instruments from rules-based instruments to money market operations. In presence of a banking system that needs to borrow from the central bank, auctions of central bank refinancing can be a substitute to the bank-by-bank refinancing quotas that may have been in place prior to the emergence of an interbank market. The auctioning of central bank refinancing will amount to the auctioning of the bank-by-bank refinancing quota.

51. **The central bank can rely on reserve requirements to force banks to borrow from the central bank.** In such circumstances, reserve requirements play a critical role in the liquidity management function. Subsequently, the central bank can rely on liquidity providing money market operations. Alternatively, the central bank can use reserve requirements to reduce its borrowing needs from the banks (rather than eliminating it all together) to levels which are commensurate with market turnover.

52. **The central bank's concerns regarding the level of interest rates should not, however, lead to its continuous presence on the interbank market.** Rather, interbank market rates should be allowed to fluctuate within a corridor that would result from the interest rate spread between a deposit standing facility and a refinance standing facility. The width of the corridor should allow interbank market rates to fluctuate. Furthermore, it will provide an incentive for banks to deal with each other in the interbank market rather than with the central bank. Failing such incentives, it is unlikely that an active market will emerge.

53. **The emergence of an active interbank market is a necessary condition for a diversification of financial markets and instruments, but it is not a sufficient one. Indeed, small countries may not be able to go beyond the Interbank Market Development Stage.** Still, the central bank will be able influence liquidity in the system through monetary operations to change the size or composition of its balance sheet, using a combination of rules-based instruments (reserve requirements and standing facilities), and money market instruments (OMO-type operations) involving auctions of collateralized central bank lending; primary market issuance of

central bank debt certificates or government securities for monetary policy purposes; or auctions of fixed term-deposits (Box 11).²⁹

Box 11. Monetary Instruments for Small Countries

Reserve requirements

Reserve requirements can be maintained on average over the period. Assets eligible can include deposits with the central bank and, in incipient interbank markets, central bank securities issued to withdraw excess liquidity. To limit the distortionary effect, particularly if the ratio is high, deposits with the central bank can be remunerated at rates in line with market rates, and the central bank securities eligible to satisfy the requirement issued through an auction.

Standing facilities

Combining a deposit and a refinancing of standing facilities to form a corridor for interbank market rates can both help stabilize the market and provide room for market development.

Money market operations

Auctions of central bank credit (when the central bank needs to lend to the system) or of central bank bills (when the central bank needs to borrow from the system). The central bank can use volume tenders, but needs to ensure that the interest rate it applies is positive in real terms.

54. **The choice between reliance on government securities versus central bank debt certificate for the conduct of monetary policy is much a matter of country circumstances,** including whether there is already a government securities market, whether the government's credibility is sufficiently well established to allow the development of a government securities market, and how well developed are the working relationships between the government and the central bank. In cases where both financial instruments are in place, it is important that the Ministry of Finance and the central bank do not compete on the same part of the yield curve. Central banks typically focus on the front part of the curve, whereas governments tend to borrow in the longer-term.

55. **When the financial markets become diversified (*Financial Markets Diversification Stage or the third stage*), the central bank can rely on market prices as the operating target for monetary policy.** At this stage, quantitative variables are likely to become less reliable guides for monetary policy because of increased sophistication of markets and, more broadly, a reduced role of the banking system in financial intermediation. Conversely, price information from markets can be expected to have become reliable. Therefore, the central bank will

²⁹ A summary of the paper findings and conclusions for small countries is presented in an Appendix.

need to rely on interest rates as the operating target of monetary policy. Quantitative variables can however be retained as information variables.

56. **In diversified markets, the central bank has also a wider range of options to choose from to structure its money market operations.** In addition to the money market instruments that can be used during the interbank market development stage, the central bank can rely on open market operations, that is, operations conducted by the central bank as a participant in the money market, including sales or purchases of securities outright on the secondary market (typically government securities); sales or purchases of securities under a repurchase agreement in the repo market; or even foreign exchange swaps which involve a simultaneous spot and forward transaction in domestic currency against a foreign currency. OMO allow the central bank to have both bank and nonbank counterparties, which can have merits in terms of boosting liquidity.

57. **However, the central bank may choose to retain some degree of reliance on rules-based instruments.** Exclusive reliance on OMOs, in particular fine-tuning operations to deal with unexpected liquidity shocks, reduces the need for shock absorbers such as reserve requirements or standing facilities. Implementing such a framework involves conducting frequent OMOs, typically with a reduced number of counterparties, and for relatively small amounts. However, reserve requirements and standing facilities can retain an important role in the context of an operating framework whereby OMOs are less frequent (for instance weekly), are conducted for large amounts, and with a large number of market participants.³⁰ In such a framework, rules-based instruments fulfill a role of a safety vale for liquidity imbalances at individual financial institutions.³¹

VI. IMPLICATIONS FOR FUND OPERATIONS

58. **The mixed results with the introduction of money market instruments for the conduct of monetary policy can be traced to insufficient attention given to structural and institutional circumstances of countries.** Therefore, the delivery of technical assistance by the Fund in those areas needs to be mindful of the policy environment, and country authorities need also to appreciate that technical adjustments are not likely to compensate for the weaknesses in the supporting environment. In this context, the following observations can be made:

- Early on in the process of strengthening monetary policy conduct, emphasis needs to be placed on the ability of the central bank to control its balance sheet.

³⁰ Reliance on less frequent OMOs allows the central bank to accept a wide range of assets taken as collateral.

³¹ See Blenck, Hasko, Hilton and Masaki (2000) for a presentation of alternative monetary policy framework in this regard.

- In shallow markets, one has to be realistic about what monetary policy can deliver in an environment of fiscal dominance. The ability of monetary policy actions to compensate for an undesirable path for fiscal policy may be limited.
- One has also to be realistic with regard to the set of instruments the central bank will be able to develop. In particular, some countries will not be in a position to develop effective open market operations. However, provided that the central bank has a reasonably good command of its balance sheet, it will be able to achieve its objectives through the use of simple but robust money market instruments operated in the interbank market.
- The elaboration of an action plan to strengthen monetary policy implementation should be preceded by an assessment of the macroeconomic, market infrastructure and institutional initial conditions.
- Mapping the actions to strengthen the policy environment and the central bank's monetary policy procedures following the four-stage process that is proposed in the paper will help the authorities plan and execute the reform process, as well as undertake periodic assessments of progress made before making a new policy move.

59. **As the preceding sections have made clear, while there is not a single way to proceed with reforms, one needs to factor in the structural and institutional circumstances early on in process of the Fund's policy discussions with member countries.** In particular, any policy advice regarding the choice of a nominal anchor or of a set of policy instruments needs to take into account, not only macroeconomic considerations, but also the market infrastructure in place, as well as the central bank's capacity to effectively implement a particular monetary framework. For instance, a move to a floating exchange rate regime may be desirable in view of greater trade and financial integration of the economy, and the unpredictable implications of structural changes on the equilibrium exchange rate. However, implementation of a flexible exchange rate regime in the absence of a liquid interbank foreign exchange market could lead to excessive exchange rate volatility. In turn, this may lead to a "fear of floating" syndrome on the part of the central bank and, ultimately, a policy reversal.

60. **The conclusions of the paper support the close integration of the work of the Fund's area departments operations (surveillance or use of resources) with the Fund's technical assistance operations.** The benefits of integrating area departments' work and technical assistance in monetary and foreign exchange issues, is particularly relevant when structural and institutional aspects have a bearing on the choice of a monetary framework and operating procedures at the central bank, a case in point for countries with shallow markets. The vehicles that have been used to integrate Fund's operations have differed based on the stage of development of markets. For countries in the interbank market development and financial markets diversification stages, the Financial Sector Assessment Program (FSAP), in particular, has provided a valuable platform for an in-depth assessment of a country's structural and institutional circumstances that

have a bearing on the effectiveness of monetary policy frameworks and instruments. For countries in the post-conflict or initial stage of financial intermediation development, the overlapping in the field of Fund surveillance or use of resources missions on the one hand, and Fund technical assistance operations, on the other hand, has proved to be an effective vehicle (Box 12).

Box 12. Synergies Between Fund Operations: Selected Country Experiences

Use of Fund resources and technical assistance: Democratic Republic of the Congo

Technical assistance (TA) to the central bank started in the context of the Staff-Monitored Program covering the period June 2001–March 2002, and of the subsequent PRGF. Close coordination of TA by the Monetary and Financial Systems Department (MFD) with the work of the African Department (AFR) was achieved by participation of MFD staff in AFR missions as well as joint missions in the field at the time of the negotiation for the PRGF and its first and third reviews. TA work in central bank accounting, monetary programming, and monetary instruments provided inputs for the design of the PRGF, including an action plan to strengthen the operational capacity at the central bank.

Surveillance and technical assistance: Tunisia

The FSAP mission to *Tunisia* found that the banking sector had been strengthened but was not yet on a sound footing. However, the system appeared unlikely to suffer from a generalized crisis since there was limited exposure to foreign currency risk due to limited capital mobility. In addition, macroeconomic risks were limited in view of the conservative and consistent macroeconomic policies. Regarding monetary policy implementation, the FSAP mission found that the central bank had developed a comprehensive set of indirect policy instruments, and that efforts in the most recent period had aimed at stimulating the development of the money market. However, the implementation of monetary policy continued to be guided by credit policy considerations (the collateral eligible at the central bank's refinance operations was limited to banks' credits granted to priority sector). Despite the extensive modernization of the government securities market, shortcomings in the primary market were still present, and the secondary market was shallow. In this context, the FSAP mission recommended freeing monetary policy from credit policy considerations to enhance the development of the money market and the development of a modern credit culture. Greater reliance on government securities for monetary policy, in a context of a renovated government securities market, would allow full reliance on open market operations. Subsequently, policy advice was provided in the context of the Article IV consultation on a strategy to liberalize the capital account and develop a monetary framework to support a move to exchange rate flexibility.

61. **Going forward, the next steps involve developing a menu of options for the implementation of monetary policy that takes into account the underlying impediments to market development**, including high level of partial dollarization, the small size of the country, the inability of the government to fund its operations on market-terms, structural excess liquidity, weak implementation capacity at the central bank, or weak banking systems. Such follow up work will be based on the conceptual framework developed in the current paper for structuring monetary advice to countries positioned at the different stages of market development, with a view to strengthening their money markets. It will draw on the experience of countries that have successfully shifted to money market instruments as well as countries still in transition, and it will involve a dialogue and outreach will member countries.

Monetary Policy Implementation in Small Countries

62. **Some small countries have been able to develop effective market-based operational frameworks for the conduct of monetary policy.** Countries that succeeded had typically achieved significant progress in establishing a strong market infrastructure, although the money market may have been restricted to a well functioning interbank market and at times, a thin government securities market. Countries that did not succeed in establishing competitive markets have at times been forced to resort to moral suasion, or even reverted to direct controls.
63. **Following the four -stage stylized process proposed in the paper, countries with limited market participation, in particular due to the small size of their economy, may not go beyond Stage Two, that is the “Interbank Market Development Stage.”** For countries to be able to reach such a stage of market development, they need to have developed an efficient payments and settlement infrastructure to encourage individuals and corporations to use the banking system to settle transactions. Once the banks have developed a broad deposit base, they can expand their lending operations. They also need to have made significant progress in establishing a sound and competitive banking system so that an interbank market can emerge. The experience gathered in the case studies suggests that interbank markets with four or five participants can be efficient provided none of them dominates the market.
64. **Emergence of a functioning interbank market allows the central bank to start conducting monetary operations with a view to manage overall liquidity conditions in the system.** Henceforth, monetary policy can be anchored on the central bank’s balance sheet, and the shift from rules-based instruments to money market operations can be initiated, with a view to influence liquidity in the system through monetary operations to change the size or composition of the central bank’s balance sheet. It needs to be emphasized that such operating such a framework requires the development of a liquidity forecasting capacity at the central bank.
65. **A possible mix of rules-based instruments and money market operations for such countries would involved reliance on money market operations conducted in the interbank market, supplemented with reserve requirements that can be met on average over the period and standing facilities to set a corridor for interbank market rates, as follows:**
- **Reserve requirements.** They may be maintained on average over the period. Assets eligible may include deposits with the central bank and, in incipient interbank markets, central bank securities issued to withdraw excess liquidity. To limit the distortionary effect, particularly if the ratio is high, deposits with the central bank can be remunerated at rates in line with market rates, and the central bank securities eligible to satisfy the requirement issued through an auction.
 - **Standing facilities.** Combining a deposit and a refinancing of standing facilities to form a corridor for interbank market rates can both help stabilize the market and provide room for market development. Reliance on standing facilities is particularly useful to absorb temporary liquidity

shocks, in a context where the market infrastructure may not be in place to allow the central bank to undertake fine tuning money market operations.

- **Money market operations.** Auctions of central bank credit (when the central bank needs to lend to the system) or of central bank bills (when the central bank needs to borrow from the system). The central bank can use volume tenders, but needs to ensure that the interest rate it applies is positive in real terms.

66. **Participation in a monetary union can help establish reliance on money market operations for the conduct of monetary policy.** Participation in a monetary union entails losing monetary policy independence and the exchange rate as a mechanism to adjust to shocks. However, that loss may not be significant for small open economies if the degrees of freedom for an independent monetary policy were restricted due to the relevance of the exchange rate. Thus, the benefits that participation may bring in fostering fiscal discipline, such as through the implementation of fiscal convergence benchmarks, may be more important. Also, in the case of small countries, the central bank is the agency most likely to be in a position of strength in terms of the human and technical resources to develop an institutional capacity that can be used to advise member countries' fiscal authorities, or to develop and monitor the fiscal convergence benchmarks, therefore facilitating the coordination of fiscal and monetary policy. Finally, participation in a monetary union can facilitate money market development. In particular, it may help reach the critical size that is needed for markets to emerge.

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