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Monetary Policy Implementation at Different Stages of Market Development

By a Staff Team Led by Bernard J. Laurens

INTERNATIONAL MONETARY FUND
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Preface

The single most salient trend in the practice of monetary policy over the last two decades has been a move toward reliance on money market operations for monetary policy implementation. Nowadays, central bankers around the world agree on the economic benefits of market-based monetary instruments. The move has taken place in an environment where financial markets have become more integrated domestically and internationally. It also reflects the belief that allowing market forces to allocate financial resources brings about increased economic efficiency and growth. However, small economies, or countries with undeveloped financial markets, have found that a lack of competition in financial markets has complicated reliance on money market operations, at times forcing them to rely on direct instruments or moral suasion. In some larger countries, the process has been gradual and at times full of difficulties. Drawing on a variety of country experiences, this paper analyzes the reasons for these difficulties and proposes a stylized sequencing of reforms that enables an introduction of money market operations tailored to each country's particular circumstances.

The material in this paper was prepared in response to questions raised by some Executive Directors regarding the use of market-based monetary instruments in small economies or in countries with undeveloped financial markets and was discussed at an IMF Executive Board seminar on November 17, 2004. It was prepared under the direction of Hervé Ferhani (Senior Advisor, Monetary and Financial Systems Department) by a staff team led by Bernard J. Laurens that included Marco Arnone, Alina Carare, George Iden, Kentaro Iwatsubo, Rodolfo Maino, Obert Nyawata, Andrea Schaechter, and Stephen Swaray. Patricia Mendoza and Galina Menchikova provided outstanding secretarial support. Linda Griffin Kean edited the manuscript and coordinated production.

The paper has benefited from the comments of IMF Executive Directors and colleagues in the Monetary and Financial Systems Department (MFD) and in other departments in the IMF. This paper should not be reported as representing views or policies of the International Monetary Fund. The views expressed in the paper are those of the authors and should not be attributed to the IMF, its Executive Board, or its management.

Stefan Ingves
Director
Monetary and Financial Systems Department

Glossary of Monetary Instruments

The instruments are ordered starting with those that can be used in shallow money markets and ending with those that are effective only in developed money markets. Some of the instruments, i.e., reserve requirements and standing facilities, may be used at all stages of money market development.

- **Rules-based instruments**: Monetary instruments based on the regulatory power of the central bank. These include:
  - **Liquid asset ratios (LARs):** Requirements for a bank to hold minimum amounts of specified liquid assets, typically as a percentage of the bank's liabilities.
  - **Reserve requirements (RRs):** 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 which allow 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 used at the discretion of the central bank and bearing an interest rate linked to money market conditions. These are meant to influence the underlying demand and supply conditions for central bank money. They include:
  - **Open market–type operations:** Market-based monetary operations based on auction techniques regulated by the central bank. OMO-type operations involve (1) lending/borrowing with underlying assets as collateral, (2) primary market issuance of central bank securities or government securities for monetary policy purposes, and (3) acceptance of fixed-term deposits.
  - **Open market operations (OMOs):** Market-based monetary operations conducted by the central bank as a participant in the money market. OMOs involve (1) buying/selling assets outright on the secondary market and (2) buying/selling assets under a repurchase agreement in the repo market or through foreign exchange swaps.
  - **Auction techniques:** Used by central banks in their money market operations, these include: (1) volume tenders, with banks bidding only for volumes supplied by the central bank at a preset interest rate; and (2) interest rate tenders, with banks bidding for both 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.

Part I

A Framework for Sequencing Reforms

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I Overview

Central bankers around the world generally agree on the benefits for the economy of using market-based instruments to implement monetary policy. Following a trend initiated in the 1970s in industrial countries, central banks in most 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 these central banks has been 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.

The process was not without difficulties in those countries that 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 determine the timing and size of the central bank's money market operations.

The experience of countries at different stages of money market development shows that the timing and speed of moving toward reliance on money market operations to conduct monetary policy must be tailored to each country's particular circumstances. A stylized sequencing can be mapped into a four-stage process:

- Stage zero refers to the situation of post-conflict countries. Financial reforms involve reestablishing key functions in those areas where a central bank typically has responsibilities.
- Stage one in the process involves developing financial intermediation. Monetary policy relies 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 preset conditions.
- Stage two involves fostering interbank market development. Money market operations can be introduced at this stage, but rules-based instruments retain an important role. Countries with limited market participation—for instance due to the small size of their economy—may not progress beyond stage two.
- Stage three involves the diversification of markets. At the end of stage three, liquidity management can fully rely on money market instruments.

This paper supports the close integration of the work of the International Monetary Fund's area departments (i.e., 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.

II The Growing Reliance on Money Market Operations for Monetary Policy

Following a trend initiated in industrial countries in the 1970s (Box 2.1), central banks in emerging market economies and developing countries have moved toward reliance on money market operations for the implementation of monetary policy (Table 2.1), although they frequently continue to act as banker to the government. 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 general 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.

The Fund has encouraged this process, and technical assistance was provided to help countries make the transition. During 1999–2004, the Fund provided assistance to strengthen monetary policy implementation in more than 100 different countries (Table 2.2). Assistance was provided through advisory missions headed by Fund staff and including experts from cooperating central banks (33 missions per year on average), through 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 involved a total of more than 100 years of human effort 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.

Box 2.1. The Conduct of Monetary Policy

To conduct monetary policy, a central bank may choose to regulate money creation by commercial banks through administrative measures that 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 into 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 by requiring banks to maintain minimum balances with the central bank (reserve requirements). All of these are aimed at influencing the balance sheets 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). The use of money market operations also allows the central bank to influence financial markets.

In the 1970s, industrial countries started to move from a reliance on credit or interest rate controls toward a reliance on money market operations. This was a result 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 in use have varied by country, common trends can be observed:

- less frequent 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 preestablished conditions;
- increased use of market-based operations conducted at the discretion of the central bank to add or withdraw liquidity from the system; and
- reduced reliance on reserve requirements, with a concomitant reliance by governments on markets, rather than central banks, to finance their needs.

Table 2.1. Use of Monetary Instruments in a Sample of Countries
(percent 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: IMF, Monetary and Financial Systems Department, Information System for Instruments of Monetary Policy database. Data based on practices as of the end of 2001 in central banks from 23 developing, 23 emerging, and 23 developed countries.

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 their move toward greater reliance on money market operations, at times forcing them to resort to moral suasion. For larger countries, the process has been gradual and at times difficult. Some countries have been able to overcome the difficulties, but others, despite lengthy periods of adjustment, still cannot fully rely on money market operations for liquidity management. The problems 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 is most effective when the following initial conditions are met:

- stable macroeconomic environment and sound fiscal policies;
- sound and competitive financial system and adequate supervisory framework; and
- a sufficient degree of institutional autonomy and operational capacity at the central bank.

Money market operations can be introduced before these conditions are met, but their effectiveness will likely be somewhat limited until progress is made toward meeting these initial conditions.

This study assesses 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 is unrealistic. To be successful, policymakers need to follow these steps: (1) take stock of existing market infrastructure conditions; (2) draw an action plan to address existing weaknesses; and (3) adjust the mix of monetary instruments as progress is made.

The policy conclusions in this study are relevant both to small countries unable to develop diversified financial markets because of a lack of demand for financial products and to countries for which the challenge is to eliminate the obstacles to market

Table 2.2. Fund Technical Assistance in Monetary Policy Implementation (1999–2004)

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

Source: IMF, Monetary and Financial Systems Department.
[1]Europe includes the Baltics, Russia, and other countries from the former Soviet Union.

development. The study relies on an assessment of the experiences of a dozen countries or groupings of countries.[1] The group 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. Section III summarizes the country experiences embodied in the case studies by grouping the market infrastructure conditions into three broad categories: (1) macroeconomic conditions; (2) market participation; and (3) central bank institutional and operational position. Section IV discusses the implications for policy design and coordination. Section V proposes an agenda for action to strengthen monetary policy. Section VI discusses the sequencing of reforms, and Section VII analyzes the implications for Fund operations. Part II includes the 12 case studies.

[1]The countries included are: Democratic Republic of the Congo, Eastern Caribbean Currency Union, Egypt, The Gambia, Kyrgyz Republic, Malta, Tonga, Tunisia, Uganda, Ukraine, Vanuatu, and Zambia.

III Lessons from Country Experiences

Macroeconomic Conditions

Fiscal dominance has often hampered the effectiveness of money market operations. In some countries (Box 3.1), 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, which puts upward pressure on inflation and undermines the exchange rate. Fiscal dominance has also left the central bank unable to generate sufficient resources to bear the costs associated with undertaking money market operations to drain excess liquidity. This may be 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, resulting in losses for the central bank. Failure to establish a government securities market may also complicate the conduct of monetary policy because government securities are typically used as underlying assets for open market operations. This failure has also delayed financial market development in general, as the government securities market usually sets a benchmark for the money and bond markets.

Failure to develop a government securities market has prevented the establishment of a clear separation between money creation and government funding needs, which complicates 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 limiting its influence on 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 un-

Box 3.1. 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 evaporated, making it difficult to finance through the market. 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, particularly to buy unsold portions 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 and the resulting macroeconomic slippages, the monthly operating losses of the central bank were covered by fiscal revenues, underlining the need for the right balance between monetary and fiscal policies and especially for close coordination of 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. In the past, the government has been willing to issue treasury bills for monetary policy purposes, with the proceeds set aside in an account with the central bank. However, the proceeds were eventually 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.

able to withdraw excess liquidity created by fiscal imbalances because of the absence of counterparts to conduct monetary operations.

The central bank sometimes needs to withdraw liquidity from the system in a systematic and structural way, a situation referred to as "structural liquidity surplus."[1] This has complicated monetary policy or interfered with its transmission in countries with shallow markets (Box 3.2). 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 increased the 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 resulted in little overall impact on interest rates, credit conditions, or bank lending.

Market Participation Limitations

A common feature of the market structures in this sample of countries is the dominant role played by commercial banks in the financial sector. Free trading of financial instruments, for the most part, is confined to the markets for government securities, with only limited activity on the secondary market. Monetary policy therefore still largely relies on administrative measures (reserve requirements and standing facilities). When money market operations are used, they almost exclusively rely on auction techniques that are regulated by the central bank rather than on the procedures used by market participants when they deal with one another.

Shallow interbank markets have limited the effectiveness of money market operations by blocking or distorting a key aspect of the interest rate transmission channel.[2] A number of factors have hindered interbank market development, including the weak financial position of the participants, market segmentation, or chronic excess liquidity. Money market operations are effective when the central bank can deal with a selected number of banks and 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 3.3). In particular, banks that are cut off from the interbank market because of actual or perceived weaknesses 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, 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 continue lending and thereby to grow their way out of difficulty.

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, central bank operations aimed at developing markets have conflicted with operations aimed at achieving a monetary objective, creating the potential for confusion about the central bank's objectives.[3] In other cases, measures to limit interbank market rate 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 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.

Establishing active secondary markets for government or central bank securities has proved difficult. When such financial instruments have been introduced, they generally have been 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 for these securities have been slow to develop (Box 3.3). Difficulties in developing such markets can be traced to a reliance on policy instruments that do not support market development. For instance, several countries have relied on liquid asset ratios, which require financial institutions to hold a certain percentage of their liabilities in the form of government securities. Similarly, a lack of commitment to market-based funding of budget deficits and, therefore, continued reliance on captive sources of funding or on central bank credit and weak public debt management strategies have led to fragmented issuance of government securities which has in turn prevented the emergence

[1]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.

[2]See Appendix I for a survey of the various transmission channels.

[3]In 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.

Box 3.2. Country Examples of Structural Liquidity Surplus

In **Uganda,** large inflows of donor funds have contributed to excess liquidity because 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 currency appreciation. In response, the central bank undertook large-scale sterilization operations. However, these operations sometimes resulted in high volatility in both interest rates and bank reserves. The volatility in reserves has caused banks to seek a cushion larger than the required level of reserves, which has limited the impact of changes in the level of reserve requirements.

In **Zambia,** two factors have contributed to excess liquidity: (1) a punitive rediscount rate, which has induced banks to hold more liquid funds to avoid having to borrow from the central bank, and (2) 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 the 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 central bank credit to the government and to 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 costs associated with money market operations.

of benchmark issues. The lag in secondary market development also can be traced to structural limitations. Narrow investor bases, due to limited financial sector diversification, has left a dominant role for 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 development of secondary markets, including high transaction costs, weak systems for settling transactions, and the absence of a legal framework for repurchase transactions.

Institutional Shortcomings

Increased emphasis has been given to central bank autonomy in recognition of its benefits in boosting credibility and monetary policy effectiveness, yet 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 the effectiveness of money market operations in particular. Most notably, de facto

Box 3.3. 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 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 was shallow due to relatively high liquid asset ratio requirements, which may be satisfied by holding government securities. In addition, the requirement that secondary market transactions on government bonds be executed through the stock exchange may have prevented market development due to high transaction costs.

In **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. Development of the secondary market is also hindered by the fragmentation of the issues and the absence of dematerialization of the securities.

In **The Gambia,** the central bank law sets out several principal objectives for the central bank, but there is no established priority among them. In addition, the law fails to ensure the autonomy of the central bank, given that the minister of finance can override its policy decisions and that the law requires that many monetary policy decisions be referred to the minister for approval. Such a lack of autonomy has complicated liquidity management.

Box 3.4. Liquidity Forecasting Frameworks

Liquidity forecasting enables the central bank to determine how much liquidity to provide to or withdraw from the market in order to smooth undesirable fluctuations that can distort the implementation of monetary policy and result in excessive market volatility. Liquidity forecasting involves the centralization of a wide range of information on financial transactions that affect the main items of the central bank's balance sheet, including those 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:

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 acts 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 because 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.

Supply of bank reserves (changes)	=	Net foreign assets	Autonomous factors
	+	Net position of the government	
	+	Other items net	
	–	Currency in circulation	
	+	Lending to banks	Policy position

Source: International Monetary Fund (2000).

or de jure absence of a single objective for monetary policy has undermined the ability of the central bank to maintain monetary stability in the event of a conflict among the objectives being pursued (Box 3.3).

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 likely 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 have been able to overcome these difficulties by establishing an appropriate balance between monetary and fiscal policy early in the process of macroeconomic policy formulation, which highlights the need for fiscal and monetary authorities to be committed to monetary stability.

Weak liquidity forecasting frameworks (Box 3.4) have complicated monetary policy implementation in virtually all of the case studies. This is a consequence, for the most part, of a poor flow of information among 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. Weak liquidity forecasting capacity has also resulted from a policy decision to rely on administrative measures for monetary policy implementation and thereby to allow the central bank to be passive in the conduct of monetary policy, which obviates the need for a liquidity forecasting capacity. In turn, the absence of a liquidity forecasting capacity has delayed or constrained the central bank's ability to rely on money market operations.

Weak domestic payment systems have also hindered efficient liquidity management and have obstructed the development of money markets. Most notably, difficulties encountered by banks in tracking their positions at the central bank have encouraged maintenance of large excess reserves to meet settlement contingencies and have discouraged interbank trading. As a result, short-term rates have been slow to respond 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 securities traded in the secondary market, or for transferring the funds to pay for them, has obstructed market development for repurchase transactions. In turn, the lack of a repurchase framework has delayed the introduction of collateralized lending in the interbank market, therefore holding back interbank trading, particularly when there has been limited trust among participants.

IV Implications for Policy Design and Coordination

Market infrastructure weaknesses have undermined the transmission channels of monetary policy in the case study countries. In particular, the asset price channel is largely absent because there are no developed financial markets in which asset prices can be efficiently formed. The exchange rate channel may also be nonexistent in countries with a fixed exchange rate and may be weak in countries with floating, managed floating, or adjustable peg regimes due to the maintenance of controls on capital and/or current account transactions.[1] This means that the availability of credit and the interest rate channels are likely to be the most effective transmission channels of monetary policy. Furthermore, there are few sources of funding other than bank lending, and so monetary policy is transmitted via the impact of central bank actions on the balance sheet of the banking system.

Selecting a Monetary Framework: Prices Versus Quantities

The conduct of monetary policy through reliance on money market operations is based on the central bank's monopoly power to create money. The central bank either can set the price for base money or can target the quantity of money provided to the system. A lack of developed markets, and the corresponding lack of 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.[2] Quantity variables can be more reliably measured and monitored than financial prices, which may be distorted or discontinued for reasons outlined above. Another drawback of attempting to target interest rates in shallow markets is that the historical absence of market-determined interest rates leaves the linkage between the short-term rates and monetary aggregates and inflation less 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, and this can cause rigidity in the upward movement of rates. In the context of such markets, quantities (for example, of base money) rather than prices (that is, the interest rate) may be used as an operating target for monetary policy. In addition, when the technical capacity of the central bank is limited, the balance is likely to be tipped further away from anchors that rely on fine, well-informed judgments by policymakers and toward relatively simpler, rules-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. Many of the countries in this sample have adopted a monetary aggregate as a nominal anchor, and a number have adopted an exchange rate anchor, at least at some point.

Despite their appeal in less well developed markets, simple monetary policy frameworks may not perform well in handling shocks and may be sensitive to errors in assumptions about the demand for money. Although there is a long-term relationship between money growth and inflation, in the short-term, the reliability of targeting credit aggregates or the monetary base as a means 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 on a framework anchored to base money targeting—should not be overly rigid and should be accompanied by close monitoring of macroeconomic indicators to gauge the appropriateness of correcting deviations from the initial assumptions.

There is an option to start migrating away from simple rules-based monetary frameworks (such as pegged exchange rate regimes or explicit monetary

[1]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.

[2]See Schaechter (2001) on interest rate versus base money as operating target.

aggregate targeting) and toward monetary frameworks based on informed judgments by the central bank (such as monetary regimes based on monitoring a set of indicators and inflation targeting) after the 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 easy, even though it may appear attractive in terms of providing greater flexibility and allowing greater focus on a broad range of economic developments and relevant information. Indeed, although an explicit inflation target could help stabilize inflation expectations, a framework centered on inflation itself may prove difficult to implement unless some initial conditions are met, including an inflation forecasting capacity and structural reforms to strengthen the financial sector (Box 4.1).

Choice of Monetary Instruments

Mix of Rules-Based Instruments and Money Market Operations

In the implementation of monetary policy, it is critical that the monetary functions assigned to various instruments be in accord with the market infrastructure in place and with the institutional capacity of the central bank. The particular combination and role of instruments will depend on a variety of factors specific to a country's individual circumstances. In general, the mix of instruments depends on the extent of progress with financial reforms and on the depth and liquidity of the money market (which in turn has to do with the soundness of banks). In the early stages of market development, the central bank can rely on liquidity requirements (reserve requirements and liquid asset ratios) and standing facilities, hereafter, collectively referred to as "rules-based instruments." Liquidity requirements can be useful instruments for permanently absorbing 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 over 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—that is, they can facilitate the operations of the payment systems—in the event of unexpected liquidity shocks, inefficiencies in the redistribution of reserves by the interbank market, or weak capacity within the central bank for liquidity forecasting.

Open market–type operations can be introduced as soon as an interbank market is in place and the central bank has developed a liquidity forecasting capacity (even if it is still rudimentary). A market for interbank funds makes possible their redistribution among participants, thereby allowing the central bank to manage liquidity in the system as a whole, as opposed to managing the liquidity positions of individual financial institutions. A liquidity forecasting capacity allows the central bank to anticipate changes in its balance sheet that would result either in an excessive level of liquidity in the system, which may lead to excessive money creation by the banks, or in a shortage of funds, which may obstruct the smooth functioning of the payments system.

Box 4.1. 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, including accountability by the central bank for 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, and 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).

The speed with which the central bank can shift from rules-based instruments to money market instruments depends on its progress in strengthening both the interbank money market and the liquidity forecasting framework at the central bank. In particular, effective liquidity forecasting allows the central bank to make informed decisions about the timing and size of its discretionary monetary operations. In turn, better-informed discretionary operations effectively steer liquidity in the system to its optimal level and set up the technical conditions for a smooth functioning of the market. The central bank can therefore be less concerned about interest rate volatility that may arise due to forecasting errors and can set a wider interest spread between its deposit standing facility and its lending standing facility (hereafter referred to as the "corridor")—a desirable feature which encourages interbank market trading.

The central banks in some small countries have succeeded in engineering a process that has allowed effective reliance on money market operations. Typically, this has involved a 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 with standing facilities to set a corridor for interbank market rates (Box 4.2).

The central bank must ensure that the structure of its policy rates is conducive to interbank trading. In particular, the interest rates applied to various instruments must be internally consistent, and the spread between the interest rate applied to liquidity-providing operations and the rate applied to liquidity-absorbing operations must be wide enough to provide adequate incentives for banks to deal with one another in the interbank market. The stylized structure of central bank interest rates provided in Table 4.1 allows for a combination of a refinance standing facility and a deposit standing facility that creates room (or a corridor) for interbank market participants to deal with one another rather than to trade funds only 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 an excess of funds will have an incentive to trade first in the interbank market because recourse to the central bank either to deposit or to borrow funds would be less advantageous for both banks.

Box 4.2. Successful Money Market Experiences in Small Countries

In **Malta**, 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.

In **Vanuatu**, despite the limited number of banks (in this case four), the central bank has been able to rely successfully on variable rate tenders for auctioning central bank bills. The auctions are held regularly, and nonbanks are allowed to participate.

Selection of Money Market Instruments

Irrespective of which indicator or intermediate target 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 can be an interbank money market, a repurchase market (for example, for government securities), a secondary market in government securities, or even a foreign exchange market. The level of development, structure, and depth of the markets will affect which money market instruments are likely to perform better (open market operations or open market–type operations) and which auction technique can be used to structure these operations (Box 4.3).

Some small countries may be unable to fully rely on open market operations. They may not have the critical mass needed to allow for diversification of markets and financial institutions, or they may lack the ability to develop the market infrastructure, including functioning money markets, needed to support money market operations by the central bank as a participant in regular markets. In those cases, open

Table 4.1. 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 4.3. Typology of Money Market Operations

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

- Open market–type operations, which are market-based monetary operations based on auction techniques regulated by the central bank. OMO-type operations involve: (1) lending/borrowing against underlying assets as collateral; (2) primary market issuance of central bank securities or government securities for monetary policy purposes; and (3) acceptance of fixed term-deposits.
- Open market operations (OMOs), which are market-based monetary operations conducted by the central bank as a participant in the money market. These involve: (1) buying/selling assets outright on the secondary market; and (2) buying/selling assets in the repo market or through foreign exchange swaps.

Auction techniques: In their money market operations, central banks may use various auction techniques. With volume tenders, banks bid only for quantities 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). The central bank may announce a minimum rate (liquidity-providing operations) or a maximum rate (liquidity-absorbing operations).

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

Source: Laurens (1997).

market–type operations can be used to help introduce market-like processes before the markets are 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. They help make monetary policy intentions (as regards interest rates) explicit and help stabilize market expectations, which is an important consideration in shallow markets.

The selection of collateral to be accepted by the central bank when it provides liquidity should reflect the composition of the banks' portfolios. Government securities are the preferred assets for liquidity-providing monetary operations because they usually offer the lowest credit risk and are 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 requiring their use 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 is critical to ensure that the eligibility criteria for those assets adequately protect the central bank from incurring losses in its monetary policy operations.[3]

[3]See Appendix II for the European Central Bank (ECB) and Banque de France experiences.

V Agenda for Action to Enhance Monetary Policy Effectiveness

This section discusses broad guidelines for addressing the obstacles to reliance on money market instruments which are drawn from this review of country experiences. The case studies (which are included in Part II) confirm that there is no single way to proceed with reforms, but they also suggest some broad guidelines that may be useful to policymakers in all countries who are designing an agenda for action to enhance monetary policy effectiveness. For countries with a potential for market diversification, the objective is full dependence on open market operations for the liquidity management function of monetary policy. For countries that 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 liquidity management.

Curtailing Fiscal Dominance

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 with a history of fiscal dominance, the main challenges during the transition to reliance on money market operations relate to curtailing the ability of the government to rely on the direct credit of the central bank.[1] In the case of 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 central bank has been unable to control its balance sheet because of excessive reliance by the government on the credit of the central bank, which has led to injections of liquidity into 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 options are administrative measures or moral suasion to limit the adverse effects of these operations on its balance sheet.[2] 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.

Participation in a monetary union, particularly for small countries, can help the coordination of monetary and fiscal policy but does not guarantee fiscal discipline.[3] First, in 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 small countries, the central bank may have special human and technical resources to develop an institutional capacity for advising member countries' fiscal authorities or for developing and monitoring the fiscal convergence benchmarks, both of which facilitate the coordination of fiscal and monetary policy. However, a monetary union does not guarantee the achievement of a sustainable fiscal policy. Key to the effectiveness of any framework is the willingness and ability of members to abide by its requirements (Box 5.1).[4]

[1]Fiscal dominance also includes the central bank providing subsidized funds to priority sectors and conducting foreign exchange transactions at non-market-clearing levels. Such activities should be discontinued in the early stage of financial reforms.

[2]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.

[3]Participation in a monetary union entails loss of monetary policy independence and of the exchange rate as a mechanism to adjust to shocks. However, those losses may not be significant for small open economies whose freedom to pursue an independent monetary policy is restricted by the limited relevance of the exchange rate. Therefore, the benefits of monetary union participation in fostering fiscal discipline may be more important (Fasano, 2003).

[4]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 5.1. Fostering Fiscal Discipline in the Eastern Caribbean Currency Union

In the **Eastern Caribbean Currency Union (ECCU)**, the central bank was instrumental in helping the governments institutionalize a framework to coordinate monetary and fiscal policy. Furthermore, against the background of deteriorating budgetary positions and uncertain economic prospects for ECCU members, the Eastern Caribbean Central Bank has designed a set of policy rules in the form of fiscal benchmarks to ensure the ECCB's long-term sustainability, similar to those instituted in the monetary unions in Europe and West and Central Africa. However, the effectiveness of the benchmarks will not be ensured until they are considered by national authorities to be binding and enforcement mechanisms are in place to ensure compliance.

Market-based funding of the government, however, does not necessarily eliminate the potential for fiscal dominance.[5] In particular, large sales of government securities to finance a fiscal deficit may lead to rising 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. Reduced deficit levels not only ease the strains between the monetary and fiscal authorities but also reduce the need for the central bank to monetize the fiscal deficit and thereby enhance the chances for successful monetary policy.

In addition, early in the 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 also may be warranted until the government has gained sufficient confidence in running a public debt program and until the market has reached an adequate degree of maturity. Any such overdraft facility should be properly designed, however: 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 is desirable to maintain close communication between the monetary and fiscal authorities about policy formulation as well as to establish 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 establishment of coordination committees, which provide a means for policymakers to learn about one another's objectives and operating procedures and to help build consensus on how to conduct macro policies in a market-friendly manner. Such channels for communication are likely to be necessary until such time when fiscal policy is responsive to market discipline.[6]

Finally, in day-to-day policy implementation, government cash management and central bank liquidity management should be closely integrated. Indeed, early in the process of developing a market-based strategy for funding the fiscal deficit, markets may be thin, with few maturities and with most of those concentrated at the short end. This can constrain the use of fiscal and monetary policy in different areas of the market—the central bank typically interacts with the short end of the market, and the fiscal authorities typically raise funds on the long end. This makes it crucial that government cash management is closely coordinated with the central bank liquidity management exercise.[7] When markets deepen and become more liquid, it becomes feasible to consider separating the two activities.[8]

Dealing with a Structural Liquidity Surplus

In shallow markets, reliance on money market instruments is facilitated when the central bank conducts the bulk of its market operations in the form of liquidity-providing operations.[9] This reduces the scope for collusion or overshooting, even when the central bank's money market operations are not yet fully effective, because 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 instrument, it may not be able to achieve its quantitative objective at a preset interest rate, as it would with use of a volume auction, because the banks have multiple choices for asset allocation. The central bank would need to rely on interest rate auctions to ensure that it withdraws the desired amount of liquidity from the system and would thus face the risk that auction interest rates, and thereafter market rates, may overshoot.

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

[6]See Laurens and de la Piedra (1998).

[7]See Appendix III for a review of liquidity management and forecasting.

[8]See Laurens and de la Piedra (1998).

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

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.[10] This can be achieved by using reserve requirements to create a liquidity shortage in the system.[11] However, reserve requirements need to be designed in a way that 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 reserve ratio is high. In the early stages of interbank market development, banks may be allowed to satisfy reserve requirements by holding securities issued by the central bank for monetary policy purposes.[12] This creates a captive market for such securities (which would be issued to mop up excess liquidity) and thereby facilitates the introduction of auctions for the sale of the securities, in turn fostering market development (Box 5.2).

Whichever framework is adopted, 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, with the proceeds blocked in an account at the central bank, which means that the cost of mopping up liquidity is borne directly by the government. The central bank may also issue its own securities or accept deposits from the banks; in both cases, related costs are borne 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 crucial to have arrangements in place to ensure that any central bank losses are passed on to the government in a timely manner. Otherwise, there is the potential for profitability considerations to take precedence over monetary policy considerations, for example, if the central bank were to limit its sterilization operations to preserve its profitability. There are various arrangements to ensure that sterilization costs exceeding the profitability of the central bank are reflected in the fiscal accounts. These include issuing government securities for monetary policy purposes, providing compensation from the budget to the central bank to cover any sterilization costs borne by the central bank, or ensuring that the losses incurred by the central bank are compensated by a fiscal surplus, in order to balance a consolidated budget for the central bank and the government.[13]

Box 5.2. Measures to Limit the Distortionary Effects of Rules-Based Instruments

Weak market infrastructure can obstruct the use of money market instruments in various ways. With a limited number of participants, cartels or collusion may prevent markets from reflecting the true equilibrium conditions that would 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. Finally, in shallow markets, large-scale sterilization operations in response to capital inflows may put upward pressure on market interest rates, in turn creating incentives for further capital inflows.

To limit the distortionary effects of rules-based instruments, the central bank needs to minimize its burden on the banking system and its impact on the allocation of resources. Required reserves should be remunerated, particularly if the reserve ratio is high, and the remuneration rate should be in line with market rates and consistent with the other central bank policy rates (see Table 4.1). A system in which reserve requirements can be satisfied, at least in part, by holding securities issued by the central bank for monetary policy purposes is a superior alternative to a system in which reserve requirements can be satisfied only by holding deposits with the central bank. Indeed, such a mechanism, by creating a captive market for the securities, helps support the use of money market instruments to conduct monetary policy and thereby fosters market development.

Establishing Efficient Money Markets

An efficient interbank market in which banks can trade short-term instruments is a prerequisite for reliance on money market instruments. The first consideration is the appropriate number of market participants needed to ensure market efficiency. While there is no firm evidence, the experience gathered in the case studies suggests that interbank markets with as few as four or five participants can be efficient, provided none of them dominates the market.[14] Indeed, more than the number of participants,

[10]See Appendix IV for a review of country experiences with a liquidity surplus.

[11]When using reserve requirements for liquidity management, it is advisable to avoid frequent changes in the level of the ratio because of the potentially disruptive effects, particularly in shallow markets or when the distribution of excess reserves among banks is uneven.

[12]As evidenced by the country experiences presented in Appendix III, 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.

[13]While such a framework is a second-best solution, it can serve until a stronger one is set up.

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

what most promotes competition is that participants are discouraged from setting prices above the prevailing rates. The reason is that, in perfectly competitive markets, if they did not adhere to prevailing rates, 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 with shared economic interests, participation in a currency union can help reach the critical size needed for markets to emerge.

The development of the interbank market may be inhibited if banks are reluctant to deal with one another because of credit risk or because of a reluctance to reveal their commercial interests. These obstacles can be addressed in the short run by developing the use of collateral (such as government securities) or organizing clearing of interbank transactions on the books of the central bank (provided appropriate arrangements are in place to cover counterparts' risk) in order to ensure that settlements will be honored when interbank loans mature.[15] More fundamentally, concerns about the financial soundness of interbank market participants underscore the need for actions to strengthen their financial positions. In particular, banks must restructure their balance sheets by dealing with problem loans, diversifying their portfolios, and assessing risks more effectively.[16]

Strengthening Financial Market Infrastructure

To enhance monetary policy transparency and accountability, price stability should be the main objective of monetary policy.[17] To do this 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.

Central bank autonomy and transparency is being increasingly recognized not only as an aspect of good governance, but also as a means for promoting the credibility needed to formulate and implement monetary policy.[18] Greater transparency is an incentive for the monetary authorities to be more rigorous 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. They also help promote efficient markets because information about trading interests, trading volumes, and prices are central to price discovery. Disclosure of the central bank's liquidity forecasts can also help the banking sector form expectations about the overall liquidity situation. This can facilitate financial institutions' liquidity management and contribute to stabilizing liquidity conditions, thus enhancing market stability and development.[19]

An efficient financial sector infrastructure is vital to the smooth transmission of monetary policy actions.[20] The payment systems and the accounting and auditing systems are essential parts of that infrastructure. An efficient payment system facilitates the smooth operation of markets by ensuring that transactions are settled in a timely and reliable manner, while an efficient accounting and auditing system ensures that transactions are recorded appropriately and accurately, which is crucial for providing credible and timely information that allows markets to make sound decisions. More specific to monetary policy implementation, weak payment systems or central bank accounting frameworks can greatly complicate the implementation of a liquidity management and forecasting framework and, ultimately, jeopardize the central bank's ability to control its balance sheet.

[15]See also Bank for International Settlements (1996) and Appendix IV.

[16]See Hoelscher and Quintyn (2003) for a discussion on the effect on monetary policy of weak banking systems.

[17]See International Monetary Fund (1998).

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

[19]See World Bank (2001) for details.

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

VI Sequencing Reforms

A four-stage process can be identified to sequence the reforms needed to support the introduction of money market operations (Figure 6.1). While there is no single way to proceed, following such a sequence can help country authorities plan and execute the reform process, consolidate progress toward market development, and periodically assess progress before making a new policy move.

- Stage zero describes the situation of post-conflict countries. At this stage, there is no scope for monetary policy, only for currency management.
- Stage one involves developing the role of banks in financial intermediation.
- Stage two involves fostering the development of interbank operations.
- Stage three is focused on developing 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.

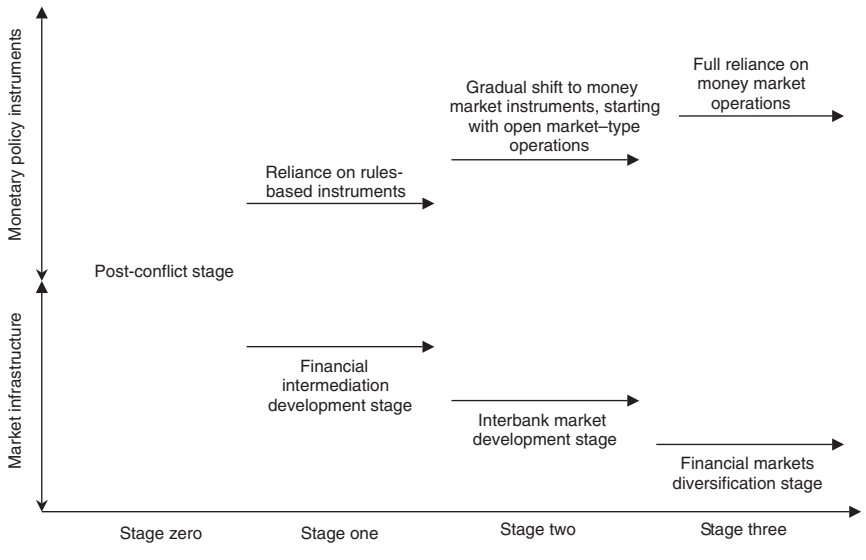
In post-conflict cases where there is no functioning monetary authority (stage zero), financial reforms involve a graduated approach to reestablishing key functions in areas where a central bank typically has responsibilities. Early on, strategic choices need to be made regarding the exchange rate regime. In the absence of banks, an emergency payment system needs to be established, and key financial legislation needs to be developed such as a central bank law and a banking law. A commonly accepted legal tender may need to be adopted to replace competing local community monies. Once key financial legislation is approved and prudential regulations are 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 only limited effectiveness if deposits in the banks are limited and most transactions are settled in cash. In such circumstances, monetary policy is confined to currency management.

Subsequently, financial reforms should then aim first at enhancing the role of banks in financial intermediation (stage one: financial intermediation development), so that a credit function can grow. A common feature of countries in the initial stage of market development is 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). On the asset side, the development of credit activity may be hampered by structural factors such as the difficulty of assessing the credit risk of debtors due to a lack of reliable financial documentation and a 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 must be addressed for financial intermediation to expand.

Developing the role of commercial banks in the payments system 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, development of the credit function in local currency must be preceded by development of an efficient payments and settlement infrastructure in order to encourage individuals and corporations to use the banking system to settle transactions. Once banks have developed a broad deposits base, they can expand their lending operations. Until the credit function of the banks has developed, however, 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.

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 that takes them to into stage three. At the end of stage one, countries should have in place rules-based monetary

Figure 6.1. Monetary Policy Implementation at Different Stages of Market Development



instruments and basic money market instruments (most likely, open market–type operations). In practice, it is difficult to draw a clear-cut dividing line between stages two and three, and the adjustments to the central bank's operating procedures will likely only involve a change in the weight given to the various monetary instruments. As illustrated in Table 6.1, the central bank will have to assess the role assigned to its monetary instruments with regard to the various monetary functions they can fulfill. This involves a high degree of discretion on the part of the central bank, but setting such objectives can facilitate the planning and execution of reforms, as well as the timing for periodic assessments of progress before new policy adjustments are made.

Once banks' credit function has expanded, interbank trading can grow (stage two: interbank market development). 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 to the central bank's balance sheet. As explained 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. If the banking system needs to borrow from the central bank, auctions of central bank refinancing can be a substitute for 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 an auctioning of the bank-by-bank refinancing quota.

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 liquidity management. 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 altogether) to levels that are commensurate with market turnover.

The central bank's concerns about the level of interest rates should not, however, lead it to maintain a continuous presence on the interbank market. Rather, interbank market rates should be allowed to fluctuate within a corridor that reflects the interest rate spread between a deposit standing facility and a refinance standing facility. The width of the corridor should be such that banks have an incentive to trade between themselves rather than with the central bank. Without such incentives, it is unlikely that an active market will emerge.

The emergence of an active interbank market is a necessary condition for diversification of financial

Table 6.1. Functions of Monetary Instruments at Stages Two and Three

	Stage Two: Interbank Market Development Stage			Stage Three: Financial Market Diversification Stage[1]	
	Standing facilities	Money market operations	Reserve requirements (RRs)	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 (1) if fine-tuning operations are not used actively, and (2) at the end of the maintenance period of RRs (if RRs are still used).	Money market operations (OMOs and OMO-type operations) are the main instuments 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/maximum 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 RRs 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.

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 (stage two). 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 6.1).

The choice of whether to rely on government securities or on central bank debt certificates for the conduct of monetary policy depends on 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 the extent of 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 for the longer term.

When the financial markets become diversified (stage three: financial markets diversification), 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 the increased sophistication of markets and, more broadly, a reduced role for the banking system in financial intermediation. Conversely, price information from markets can be

Box 6.1. Monetary Policy Implementation in Small Countries

Some small countries have been able to develop effective market-based operational frameworks for the conduct of monetary policy. Countries that have succeeded 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 to revert to direct controls.

Following the four-stage stylized process proposed in this paper, countries with limited market participation, in particular due to the small size of their economies, may not progress beyond stage two, 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 experiences gathered in the case studies suggest that interbank markets with four or five participants can be efficient provided none of them dominates the market.

Emergence of a functioning interbank market allows the central bank to start conducting monetary operations with a view toward managing 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. Operating such a framework requires development of a liquidity forecasting capacity at the central bank.

A possible mix of rules-based instruments and money market operations for such countries would involve reliance on money market operations conducted in the interbank market, supplemented with both 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. These may be maintained on average over the period. Assets eligible may include deposits with the central bank and, in incipient interbank markets, securities issued by the central bank for monetary policy purposes. To limit the distortionary effects, particularly if the ratio is high, deposits with the central bank should be remunerated at rates in line with market rates, and the securities eligible to satisfy the requirement should be issued through an auction.
- Standing facilities. Combining a deposit and a refinancing standing facility 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 for absorbing 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 can include central bank credit (when the central bank needs to lend to the system) or securities (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 and in line with market conditions.

Participation in a monetary union can help establish reliance on money market operations for the conduct of monetary policy. Although participation in a monetary union entails a loss of monetary policy independence and the loss of the exchange rate as a mechanism to adjust to shocks, those losses 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 potential benefits of monetary union 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 have sufficient human and technical resources to develop an institutional capacity for advising member countries' fiscal authorities, or for developing and monitoring the fiscal convergence benchmarks, and therefore for facilitating the coordination of fiscal and monetary policy. It is important to note, however, that a monetary union does not guarantee the achievement of a sustainable fiscal policy. Key to the effectiveness of any framework is the willingness and ability of members to abide by its requirements. Finally, participation in a monetary union can facilitate money market development. In particular, it may help reach the critical size for markets to emerge.

expected to have become reliable. Therefore, the central bank will need to rely on interest rates as the operating target of monetary policy. Quantitative variables can be retained, however, as information variables.

In diversified markets, the central bank has also a wider range of options for structuring 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 also rely on open market operations—OMOs—that is, operations conducted by the central bank as a participant in the money market. These include 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. OMOs allow the central bank to have both bank and nonbank counterparts, which can have merit in terms of boosting liquidity.

Even in the third stage, 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 counterparts and for relatively small amounts. However, reserve requirements and standing facilities can retain an important role in an operating framework where OMOs are used less frequently (for instance weekly), are conducted for large amounts, and serve a large number of market participants.[1] In such a framework, rules-based instruments take on the role of a safety valve for liquidity imbalances at individual financial institutions, and they can substitute for fine-tuning OMOs.[2]

[1]Reliance on less frequent OMOs allows the central bank to accept a wide range of assets as collateral.

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

VII Implications for Fund Operations

Countries have had mixed results in introducing money market instruments to conduct monetary policy, and this can be explained by the fact that insufficient attention has been given to the structural and institutional circumstances of individual countries. Therefore the delivery of technical assistance by the Fund in those areas needs to reflect the policy environment, and country authorities need to appreciate that technical adjustments are not likely to compensate for weaknesses in the supporting environment. This paper suggests the following implications in this context:

- Early on in the process of strengthening monetary policy conduct, the emphasis needs to be on the ability of the central bank to control its balance sheet.
- In shallow markets in an environment of fiscal dominance, the ability of monetary policy actions to compensate for an undesirable path for fiscal policy may be limited.
- Country circumstances affect 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 initial macroeconomic, market infrastructure, and institutional conditions.
- Using the four-stage process outlined in this paper to map a course of action to strengthen the policy environment and the central bank's monetary policy procedures will help the authorities plan and execute the reform process, as well as to periodically assess progress before making a new policy move.

As this paper makes clear, there is no single way to proceed with reforms, and therefore the structural and institutional circumstances must be assessed early in the Fund's policy discussions with member countries. In particular, any policy advice regarding the choice of a nominal anchor or a set of policy instruments needs to take into account not only macroeconomic considerations, but also the market infrastructure in place and the central bank's capacity to effectively implement a particular monetary framework. For instance, a move toward a floating exchange rate regime may seem desirable in order to foster greater trade and financial integration of the economy, especially in light of 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.

The conclusions of this study 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 being countries with shallow markets. The vehicles used to integrate the Fund's operations have varied depending on the stage of market development. For countries in the interbank market development and financial markets diversification stages (stages two and three), the Financial Sector Assessment Program (FSAP), in particular, has provided a valuable platform for conducting an in-depth assessment of the 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 stages of financial intermediation development, the overlap 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 proven to be effective (Box 7.1).

The next steps toward implementing the lessons of this study involve developing a menu of options for the implementation of monetary policy. This menu

Box 7.1. 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 June 2001–March 2002 and the subsequent Poverty Reduction and Growth Facility (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 Financial Sector Assessment Program (FSAP) mission to Tunisia found that the banking sector had strengthened but was not yet on a sound footing. However, the system appeared unlikely to suffer from a generalized crisis because 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 sectors). 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 in order 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, was recommended to 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 greater exchange rate flexibility.

should take into account the underlying impediments to market development, for example, high levels of partial dollarization, the size of the country, the ability 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 should be based on the conceptual framework developed in this study for structuring monetary advice to countries positioned at the different stages of market development, with a view toward strengthening their money markets. It should draw on the experience of countries that have successfully shifted to money market instruments as well as on the experience of countries still in transition, and it should involve a dialogue and outreach with member countries.

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Part II
Selected Country Experiences with Money Market Operations

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VIII Case Studies

Part II describes the experiences of a dozen countries or groupings of countries that have introduced and used money market operations for the conduct of monetary policy. Included are 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 were still in the process of establishing a strong market infrastructure to address weaknesses in policy implementation.

The countries or grouping of countries are from Africa (Democratic Republic of the Congo, The Gambia, Uganda, and Zambia), Asia (Tonga and Vanuatu), the Western Hemisphere (Eastern Caribbean Currency Union), the Middle East (Egypt and Tunisia), and Europe (Kyrgyz Republic, Malta, and Ukraine). They were selected because of their relevance to the study and because information was available from technical assistance reports of the Monetary and Financial Systems Department (MFD), reports from the Financial Sector Assessment Program (FSAP), and other Fund publications and papers such as Occasional Papers and Staff Reports.

The review of the country experiences is based on an analysis of developments during time periods that vary from one country to another. It seeks to depict the current status of monetary instruments in the various countries, although in some instances, further progress may have been achieved since the completion of the study. In addition, the paper uses a uniform terminology with regard to monetary instruments, and this may not always match the terminology adopted by the individual countries themselves. The terminology used is consistent with the definitions provided in the Glossary.

Democratic Republic of the Congo[1]

Background

For a number of years, the financial system in the Democratic Republic of the Congo (DRC) has operated in a climate of uncertainty due to political instability and fiscal mismanagement, further complicated by limited resources. This has resulted in major dysfunctions and evident weaknesses. In particular, the financial system became irrelevant in mobilizing savings and providing credit to the economy. In the context of a Staff Monitored Program (SMP) covering June 2001–March 2002, and of the subsequent Poverty Reduction Growth Facility (PRGF), the authorities have started to implement wide-ranging reforms with the assistance of the Fund's technical assistance program. In particular, a new law for the central bank was passed enshrining its independence and a new banking law was passed. In addition, the Central Bank of the Congo (BCC) has taken measures to remedy its weaknesses and help create conditions that will pave the way for a revival of financial intermediation.

Despite the significant progress made in macroeconomic stabilization, financial intermediation has not yet resumed in the DRC, reflecting continued low public confidence in the banking system. Several years of hyperinflation and a free fall of the exchange rate have undermined confidence in the Congo franc (CGF). Consequently, the banking sector, which forms the bulk of the formal financial sector, has played a limited role in the economy since the late 1980s or early 1990s, with the total assets of the banking sector at less than 5 percent of GDP at the end of 2002 (Table 8.1). It may take some time before confidence in the currency returns and the banking sector resumes a significant role.

The rate of financial penetration is very low. The DRC, with a population of about 55 million, has only 35,000 bank accounts, of which almost half are held by businesses. The settlement of transactions that go through the banking system is limited due to the prevalence of the informal sector, which operates mostly in cash—the result is that CGF bank deposits represent only 22 percent of the money supply in Congo francs. The contribution of the banking system to money creation is marginal, and for the most part, the activity of commercial banks is circumscribed to collecting government taxes, paying government expenditures, and opening letters of credit for the financing of exports. Since the commercial banks grant little or no credit to the private sector, money creation has taken place mainly through the issuance of BCC currency.

Table 8.1. Democratic Republic of the Congo: Financial System Structure
(as of December 2002)

	Number of Institutions	Total Assets (Percent of GDP)
Commercial banks	14	5
Nonbank financial institutions	5	Not available
Microfinance institutions	27	Not available

Source: Central Bank of the Congo.

Due to past hyperinflation, there remains a strong preference for foreign exchange as a vehicle for savings and for the settlement of large transactions. The former is also a consequence of currency instability in the past, and the latter is also due to the absence of large-denomination bank notes in local currency in a context of the virtual nonexistence of a payment system other than cash. The dollarization of the economy is reflected in the balance sheets of banks, two-thirds of which are in foreign currencies.

Financial intermediation has also suffered from weaknesses in policy implementation at the BCC. For years, the BCC has been hampered by inadequate operational autonomy and limited resources. Moreover, the low level of financial intermediation has made the use of conventional monetary policy instruments more difficult. This has resulted in major dysfunctions and evident weaknesses which have seriously limited the capacity of the commercial banks to provide financial services. In particular, the BCC has occasionally prevented banks from using their free reserves to obtain currency, resulting in nonfungibility between the components of base money. In turn, currency rationing and the associated nonfungibility of base money has resulted in the discounting of CGF deposits in commercial banks, with CGF bank deposits trading against CGF currency at a discount (*"décote"*). In the past the use of currency rationing had been prompted by the apparent inability of the BCC to produce sufficient amounts of bank notes. However, more recently, it appears that the BCC has relied on currency rationing as a substitute for conventional liquidity mopping-up operations which the low level of financial intermediation makes difficult or costly to undertake.

[1]Prepared by Bernard Laurens (Deputy Division Chief, Monetary and Financial Systems Department, MFD), based on MFD technical assistance missions of October 2001 and October 2002 (both headed by Bernard Laurens) which took place in the context of the definition and implementation of the PRGF with the DRC. The study covers developments through the end of 2003.

The Central Bank of the Congo

With the support of Fund technical assistance, progress has been made in strengthening the BCC's institutional capacity. During 2002, key financial legislation was enacted which reflects international best practices and provides a sound framework for strengthening the DRC's financial sector. In particular, a new law for the central bank was enacted that provides for its independence, and a new banking law has established sound bank licensing, liquidation, and supervisory frameworks.

Good progress was also made in strengthening the BCC's operational capacity. In particular, the BCC put in place key components of a framework to program currency issues; the net income position of the BCC was consolidated in the government position; and a Consultative Group on Monetary Policy was created to strengthen policy design and implementation. At the same time, the BCC adjusted interest rates to bring them in line with downward price developments, while keeping them positive in real terms.

However, the long-standing problem of the nonfungibility between the components of base money has remained. In practice, the BCC has not been able to guarantee the convertibility to currency of the banks' free reserves, and the rate of the discount (*décote*) has been very volatile and at times high (up to 40 percent) in response to changes in the balance between the supply and demand for bank money.

The BCC has been unable to rely on conventional monetary instruments due to the low level of financial intermediation, and it has frequently resorted to the practice of rationing currency. Furthermore, some of the monetary instruments used by the BCC to regulate overall liquidity in the system have caused distortions or have been costly. Until the end of 2002, certificates of deposits (CDs) had been used to "buy" currency from the market.[2] However, as their remuneration was brought in line with inflation, the demand for these CDs evaporated, since they no longer incorporated the implicit cost of the *décote*. BCC operations on the *décote* market were used to replace CDs, with the BCC receiving CGF notes against CGF bank money.[3] These operations proved costly, and they resulted in an increase of banks' reserves with the BCC and a correlative increase in the rate of the *décote*. The rate of the *décote* dropped in July 2002, as the BCC started to "liquify" banks' reserves. Recourse to *décote* operations in September–October 2002 lead again to a sharp increase in the *décote* rate. Finally, although issuing currency would have been less costly than *décote* operations, the BCC indicated that it lacked the foreign exchange to pay the related expenses. In addition, currency issues could have created additional demand for foreign exchange, while the *décote* operations resulted in an injection of bank money which could only be used for the payment of taxes. Therefore, currency issues would have had to be supplemented with sterilization operations, and one cannot rule out that the two operations combined could have generated costs in line with those of the *décote* operations.

[2]CDs were issued to finance the budget. However, they could be purchased only with cash, thus allowing the BCC, in its capacity as fiscal agent, to "buy" currency from the market which it could use to pay the government's expenses.

[3]BCC's operations on the *décote* market involved purchases of foreign currency or CGF banknotes against payments in CGF bank money at a premium.

Monetary Policy in the Context of Low Financial Intermediation

The Problem

Given that the discount (*décote*) has inhibited the operations of the financial system, the return to the fungibility of base money is a necessary initial condition for developing financial intermediation in the DRC. In particular, the nonfungibility of base money has had adverse consequences at the micro level on financial intermediation. Commercial banks need to make a distinction between customer deposits made in cash (cash deposits) and customer deposits resulting from transfers through the payment system (bank money deposits), the counterpart of which consists of reserves with the BCC. Therefore, three payment instruments in local currency circulate in the DRC: currency, cash deposits, and bank money deposits. While currency and cash deposits are traded at par (provided that the former are placed with a solvent bank), at times, bank money deposits are traded at a discount as compared with currency or cash deposits. The level of the *décote* varies depending on the supply (payments in bank money made by the BCC) and demand for bank money deposits (capacity of taxpayers to settle their taxes in bank money).

The nonfungibility of base money has also had adverse consequences on financial intermediation at the macro level. First, it has acted as a barrier to the provision by the commercial banks of payment services—for instance, checks are not accepted unless the beneficiary is willing to take the risk of having to pay the *décote* to obtain currency. Moreover, it is a barrier to banks' provision of credit to the economy. Currency is now the principal medium of settlement for economic transactions. The inaccessibility of banks' free reserves imposes an additional liquidity constraint because commercial banks cannot guarantee at all times or upon request the availability of currency to the beneficiary of a loan, even if they have free reserves with the BCC. In this context, arbitrage

activity between cash and bank money may become a lucrative business.

In the Congolese context, the activities of the financial system are limited to the provision of payment services. The bulk of CGF transactions that are intermediated by the financial system are related to government receipts and expenditures. Therefore, any imbalance between supply and demand of CGF banknotes reflects imbalances in the public sector which are not covered by the issuance of banknotes by the BCC, hence the *décote*.[4] Indeed, with a balanced budget for the public sector, the BCC should not need to have recourse to the rationing of currency. The BCC should be in a position to meet all payments requested by the government. However, the BCC has had to resort to currency issues to meet essential government expenditures, and it has not issued currency to meet the demands of commercial banks, with the result that free reserves at the BCC have accumulated (reinforcing the nonfungibility of base money and the *décote*).

The imbalances in the public sector originate from three sources. First, some payments executed by the BCC on behalf of the government are not reflected in the budget. Second, not all the operating losses of the BCC are accounted for in the budget in a timely manner. Finally, financial institutions that participate in the collection of taxes have retained part of the government's revenues to cover expenditures, and these are not recorded in the budget. The weaknesses in the information systems at the BCC, in the financial institutions, and in the public sector have prevented an assessment of the size of these outflows.

Establishing the Initial Conditions

A revival of financial intermediation is critical to the success of the reform agenda currently being implemented by the authorities. In particular, financial intermediation is necessary to release some of the constraints the BCC faces in implementing monetary policy, especially with regard to the control of overall liquidity conditions in the economy. More broadly, the banking system needs to support the private sector so that it becomes the engine of growth.

For banks to increase their role in payment systems, the *décote* must be eliminated. This is a necessary condition for smooth operation of the payment systems among solvent banks. It is also a necessary (but not a sufficient) precondition for resuming money creation (i.e., provision of credit to the private sector) in local currency.

Corrective measures implemented by the authorities in November 2002 did result in the virtual elimination of the *décote*. In order to prevent its reappearance in the future, the BCC needs to provide bank notes on demand to the banks that have positive reserve balances. As the BCC discontinues reliance on the rationing of currency, it will need to rely on a monetary instrument to sterilize any injection of liquidity into the system that is inconsistent with the monetary program. The introduction in late 2002 of BCC short-term bills has provided the BCC with such a monetary instrument (Box 8.1).

Under the current policy framework, where fiscal consolidation is one of the cornerstones of the program, strict adherence to the monthly treasury cash flow plan should prevent the buildup of imbalances in the system. This is particularly important because, at least until financial intermediation has deepened, the ability of monetary policy to compensate in a timely fashion for fiscal imbalances, even temporary ones, may be limited. Therefore, the execution of the cash plan at the ministry of finance needs to be closely coordinated with the liquidity forecasting exercise undertaken by the BCC. This is particularly important given the potential for excess liquidity to result in downward pressures on the exchange rate and upward pressures on inflation due to the high level of the pass-through.

A more thorough identification and quantification of the causes of the imbalances in the public sector will facilitate the coordination of monetary and fiscal

Box 8.1. Democratic Republic of the Congo: Monetary Policy Instruments

Reserve requirements

Set at 2 percent of local currency– and foreign currency–denominated deposits, they are held in local currency. This instrument has had limited impact in the past given the low level of deposits and the size of banks' free reserves. Making foreign currency deposits subject to reserve requirements would help constrain currency substitution by reducing the bias against local currency deposits.

Standing facilities

- Liquidity-providing: Commercial banks may obtain rediscount credit or emergency funding from the BCC against trade bills as collateral. However, in view of the low quality of trade bills, the BCC is considering restricting collateral accepted at the standing facilities to foreign exchange (i.e., short-term foreign exchange swaps).
- Liquidity-absorbing: This facility involves short-term BCC bills issued on demand to banks and direct investors. BCC bills offer a competitive rate of remuneration which takes into account interest rates on the dollar and inflationary expectations.

[4]"Public sector" encompasses the government budget, the BCC, and other government entities (i.e., commercial banks) that utilize, in one way or another, the payment systems.

policies by allowing the monetary and fiscal authorities to identify early on in the process potential deviations from the monetary program and by putting them in a position to decide on corrective measures in a timely and coordinated fashion. Consequently, actions have been taken to rehabilitate the accounts of the BCC in order to better assess its financial position; to strengthen banking supervision in order to assess potential sources of outflows through the financial institutions that participate in collection of public sector revenues; and to strengthen public accounting procedures to enable the ministry of finance to more effectively monitor the government's account on the books of the BCC.

The return to the fungibility of base money will result in an increase of deposits for transactions purposes, allowing the banks to resume their participation in money creation. In such a context, the BCC will be able to use the range of refinancing instruments already at its disposal. In particular, within the target for base money provided for in the monetary program, the BCC will be able to supply banks with reserves through short-term foreign exchange swaps.

Restoring the fungibility between the components of base money will involve shifting from the currency programming framework currently in place to a base money programming framework. In order to expand the current monetary programming framework, the BCC will need to strengthen the lines of communication among the various operational BCC directorates, and between the BCC and the ministry of finance. Such a framework will allow the BCC to analyze the autonomous sources of demand and supply of base money, and to decide which discretionary monetary operations to use to keep base money in line with assumptions in the monetary program. Such a framework can also be utilized for ex post analysis of actual flows, enabling the BCC to understand past trends and decide on appropriate corrective actions.

Financial Intermediation and Dollarization

Past macroeconomic instability and weak BCC policies have not only marginalized the banking sector but have also led to multiple forms of dollarization in the DRC (Box 8.2). Bank deposits represent only about 2 percent of GDP, and 80 percent of these are denominated in foreign currencies.[5] Total bank reserves of CGFs with the BCC exceeded the level of loans in CGFs, and bank money in CGFs is for the most part used for operations on behalf of the government. Transactions in the economy are also highly dollarized: they are either executed in dollars or indexed to the dollar. Accordingly, any excess supply of local currency has a direct inflationary impact due to the limited demand for local currency and the high pass-through of exchange rate changes into prices (i.e., such excess supply results in additional demand for foreign exchange in the market).

Dollarization of deposits has occurred mostly through unremunerated foreign currency–denominated demand deposits. These deposits reflect a reluctance to hold balances in domestic currency for transaction purposes because of high inflation, rather than interest rate arbitrage. As they are converted into CGFs, they can be utilized to settle transactions.

With limited financial intermediation, dollarization of large transactions is also encouraged by the low purchasing value of CGF banknotes. This is because the face value of banknotes in CGF has not been adjusted to reflect the evolution of prices in the economy. For instance, the note with the highest face value (CGF 100) is equivalent to less than US$0.30. When this note was introduced in 1998, it was worth as much as US$70.

As financial intermediation develops, increased dollarization could mean additional costs and risks for the financial system. First, dollarization reduces the

Box 8.2. Democratic Republic of the Congo: Forms of Dollarization

Dollarization may be partial (the local currency is the legal tender but financial or real transactions can be denominated in dollars) or total (another currency—typically but not necessarily the U.S. dollar—is the predominant or exclusive legal tender). Within partial dollarization one can distinguish the following:

- *payments* dollarization (or *currency substitution*), use of foreign currency for transaction purposes;
- *financial* dollarization (or *asset substitution*), residents' holding of financial assets or liabilities in foreign currency; and
- *real* dollarization, indexing, formally or de facto, of local prices and wages to a foreign currency.

While data on residents' holdings of foreign currency is not always available, dollarization can be assessed by analyzing the balance sheets of domestic banks, comparing the ratio of onshore foreign currency deposits to total onshore deposits. Loan dollarization reflects deposit dollarization but is often less intense because of banks' holdings of large liquid dollar assets. Loan dollarization is generally lower than deposit dollarization because banks often hold sizable liquid correspondent accounts or sovereign assets abroad.

Source: Gulde and others, 2004.

[5]At the end of 2001, average foreign currency deposits to total deposits in Africa reached 33.2 percent (see Gulde and others, 2004).

seignorage base that is associated with the issuance of domestic currency. Second, there is evidence that dollarized financial systems are increasingly vulnerable to solvency and liquidity risks when the degree of financial dollarization increases, while real dollarization lags behind. In particular, higher bank loan dollarization could increase the risk that the quality of bank portfolios deteriorates as loans are not necessarily issued to borrowers with foreign exchange income. Dollarization also limits the central bank's role as lender of last resort in the event of a run on foreign currency deposits, which could destabilize the banking system (including the local currency segment). Therefore, as financial intermediation is developed, it is important to avoid certain actions that might further reinforce dollarization in the DRC and to take measures that support a re-intermediation in local currency.

Monetary policy can affect the degree of financial dollarization through the interest rate spread between currencies. The authorities should, however, resist using interest rates to prop up the exchange rate because such a strategy could generate difficulties in the long run. In particular, it could increase the lending rate for domestic currency and thus encourage dollarization of loans, thereby increasing the vulnerability of the financial sector to sudden exchange rate fluctuations, as explained above. Therefore, monetary policy should continue to be guided by price stability objectives.

In the DRC, as in other low-income countries, most of the deposits in commercial banks are demand deposits maintained primarily for transaction purposes. Therefore, a process of re-intermediation in local currency will need to be supported by the development of an efficient payments and settlement infrastructure for local currency–denominated transactions. In addition, as the DRC consolidates the gains made in stabilizing the macroeconomic framework, the demand for savings instruments in local currency will rise. In such a context, the offering by the BCC of a short-term instrument, as discussed above, will facilitate the process of re-intermediation in local currency by restoring parity between the CGF and the dollar at a given inflation rate and anticipated depreciation in the exchange rate.

The face value of CGF banknotes must be adjusted to better reflect the use of the currency for transaction purposes. Bank notes in denominations larger than those currently in circulation should be introduced as soon as possible to facilitate the use of the CGF in large transactions. At the same time, the BCC must continue to provide banknotes in the smaller denominations that are still in use by a large proportion of the population.

Finally, the ability to find outlets for stable demand deposits and to generate revenue will depend on the environment in which credit activity is carried out. Accordingly, it is essential that the DRC authorities make every effort to build the pillars of sound banking activity by complementing the new banking law with the following measures: (1) completion of bank restructuring; (2) establishment of prudential regulation and bank supervision processes in line with international standards; (3) completion of public enterprise sector reform; (4) creation of a business environment conducive to the development of an efficient private sector; and (5) promotion of an appropriate legal framework governing contracts and efficient judicial administration.

Conclusions and Lessons

The following conclusions and lessons can be derived from the experience of the Democratic Republic of the Congo:

- Despite the significant progress made in macroeconomic stabilization, the economy and the financial system continue to be heavily dollarized. Furthermore, financial intermediation has not resumed, and the commercial banks continue to play a limited role in the payment system and in providing credit to the economy. Consequently, the conduct of monetary policy has been difficult, and fiscal discipline has been key to stabilization of the macroeconomic framework.
- The BCC is discontinuing its reliance on the rationing of currency as a monetary policy instrument. Although this has resulted in the nonfungibility between the components of base money, it is a necessary initial condition for monetary policy to become a relevant exercise.
- As the BCC discontinues its reliance on the rationing of currency, it will need to rely on monetary instruments to sterilize any injection of liquidity into the system that is inconsistent with the monetary program.
- Although the BCC started offering short-term bills to the banks to adjust overall liquidity in the system, until financial intermediation has deepened, the ability of monetary policy to compensate for even temporary fiscal imbalances in a timely fashion may be limited. Therefore, the execution of the cash plan at the ministry of finance needs to be closely coordinated with the liquidity forecasting exercise undertaken by the BCC.
- Further progress in centralizing all the operations of the public sector into the budget would facilitate the conduct of monetary policy, as would enhancing the quality of financial data. Progress in these areas, particularly by facilitating a timely identification of public sector outflows by source, will enhance the coordination of monetary and fiscal policies and facilitate systemic liquidity management by the BCC.

Eastern Caribbean Currency Union (ECCU)[1]

Path Toward Regional Monetary Integration

The successful road toward monetary integration among Eastern Caribbean countries comprised several different stages that are relevant to this study. During the British colonial era, notes issued by foreign commercial financial institutions circulated along with coins from the United Kingdom. Between 1910 and 1920, three different Boards of Commissioners of Currency started issuing currency in Trinidad and Tobago, Barbados, and British Guyana, respectively. In 1946, a unified decimal currency system was adopted based on the West Indian dollar, and in 1950, the British Caribbean Currency Board (BCCB) was established, which had the prerogative to issue notes and coins at an exchange parity of 4.8 West Indian dollars to one pound sterling.

After Trinidad and Tobago and British Guyana exited the BCCB (in 1962 and 1965, respectively), it was replaced in 1965 by the Eastern Caribbean Currency Authority (ECCA), and the West Indian dollar was replaced by the Eastern Caribbean dollar at the same parity.[2] Following the pound sterling devaluation of 1967 and Barbados's departure from the ECCA in 1972—to establish its own central bank—the ECCA headquarters was moved to St. Kitts. The foreign exchange coverage, originally set at 70 percent, was reduced to 60 percent in 1975. The ECCA later shifted the link of the Eastern Caribbean dollar from the pound to the U.S. dollar and assumed a more ambitious and expansive role by becoming a cosignatory for establishing the Multilateral Clearing Facility in the Caribbean Community and Common Market (CARICOM), which replaced the existing bilateral clearing agreement in 1973.

The Eastern Caribbean Central Bank (ECCB) replaced the ECCA in 1983. The move followed the launch of the Organization of Eastern Caribbean States (OECS) with the 1981 Treaty of Basseterre which institutionalized political and economic cooperation among the Caribbean territories.[3] The Eastern Caribbean dollar, the common currency shared by OECS countries, was pegged to the British pound at EC$4.80=£1 from 1950 to 1976, and since then to the U.S. dollar at the market cross-rate of EC$2.70=US$1. The recent experience of the peg system shows an unaltered parity of the exchange rate and a fully self-supported convertibility where member countries have pooled all their foreign reserves.

Monetary Policy Environment

Institutional Framework

The quasi-currency board promotes stability through a strong foreign exchange position that backs the currency issued. The backing ratio is detailed as external assets net of commercial bank foreign currency deposits with the ECCB, divided by demand liabilities. This implies, in practice, a limit on domestic assets of 40 percent of Eastern Caribbean dollar–denominated demand liabilities. However, the minimum level of pooled reserves can be no lower than 60 percent of its demand liabilities, which consists of reserve money—bank reserves and currency. The backing ratio has evolved from 82.1 percent in 1990 to 97.1 in 2003.

Participating governments maintain accounts with the central bank through which transactions are effected with other governments and with regional and international organizations. Member countries have unrestricted access to the common reserve pool and the ECCB can only issue the common currency against foreign exchange, with bank notes coded according to the country to which they are issued. Given the currency issued by each member, the ECCB, in its capacity as fiscal agent, can allocate profits to the member governments accordingly and can impute reserves for each of them as the sum of currency in circulation and its net claims on the government and the commercial banks in each of the member countries.

The ECCB was established by the Eastern Caribbean Central Bank Agreement Act of 1983, which defines the power and scope of the ECCB. The Uniform Banking Act of 1993 specifies the operational framework for financial institutions.

The Articles of Agreement allow the ECCB to provide credit to member countries to assist them with seasonal credit needs (temporary advances) and to service the members' "special deposit" loans—reserve requirements which reached EC$30.8 million at the end of 1998. In addition, the ECCB provides credit in the form of holdings of treasury bills, holdings of government securities, and holdings of corporate bonds, with maturities not exceeding 91 days, 15 years, and 10 years, respectively.

The monetary council and the board of directors are the two separate bodies in charge of governing the

[1]Prepared by Rodolfo Maino (Senior Economist, Monetary and Financial Systems Department, MFD), based on van Beek and others (2000). The study covers developments through 2003.

[2]The ECCA included the Leeward Islands and the Windward Islands with the exception of Grenada, which finally joined in November 1968, after originally establishing a political union with Trinidad and Tobago.

[3]The six member countries and two territories of the ECCB are Anguilla, Antigua and Barbuda, Dominica, Grenada, Montserrat, St. Kitts and Nevis, St. Lucia, and St. Vincent and the Grenadines. With the exception of Anguilla, they are all members of CARICOM.

ECCB. The former, which is the most important decision-making authority for the ECCB, comprises the governor, chairman, and deputy governor—who are appointed by the monetary council—and one representative director for each member state. The chairmanship rotates every year. The monetary council meets at least three times a year to set the main guidelines for monetary policy. The 10 members of the board of directors meet five times a year. The board is in charge of administering the bank and taking care of international economic relations.

As in other currency boards, the central bank authorities acknowledge that the main device available to them for achieving price stability is to uphold the credibility of the fixed exchange rate regime. In this regard, the bank is also responsible for regulating money and credit, strengthening credit and exchange conditions, and fostering a robust financial structure aiming at regional growth and economic development. In this vein, member countries are able to smooth differences (i.e., risk-pool) in the timing of inflows into the reserve pool arising from the different composition of member countries' exports. In addition, they are able to achieve economies of scale in central bank operations by smoothing out overhead costs.

The ECCB's monetary operations are guided by a monetary program that involves setting up explicit operational ceilings through the allocation of a global limit to members in proportion to each government's share of total regional recurrent revenue. Although this limit has not been enshrined in the legislation, it is well defined by the ECCB for its own operations. It is calculated in terms of the monthly average of the monetary liabilities of the previous year. The actual credit available is the amount of the allocation net of all outstanding balances and arrears.

Fostering Fiscal Discipline

The ECCB has designed a set of specific policy rules in order to foster the fiscal prudence and policy coordination that are needed for participation in a monetary union pegged to another currency. First, the ECCB is helping the governments to institutionalize financial programming as a tool for fiscal management. Second, in 1995, the ECCB created a two-tranche fiscal reserve facility. The first tranche is funded with portions of the profits that the ECCB distributes annually and that governments deposit, at their discretion, in facility accounts at the central bank. These resources are freely accessed by governments. The use of the second tranche of this facility has to be approved by the monetary council because these resources were conceived as savings to be used only as a last resort and/or to help deal with natural disasters.

In addition, against the background of the deteriorating budgetary positions and uncertain economic prospects of ECCU members, the ECCB has designed a set of policy guidelines in the form of fiscal benchmarks to ensure long-term sustainability, along the lines of those instituted for the monetary unions in Europe and in West and Central Africa. These include such benchmarks as a government current account surplus of 4–6 percent of GDP, an overall government budget deficit of no more than 3 percent of GDP, total central government debt outstanding of no more than 60 percent of GDP, and debt service payments of no more than 15 percent of current revenue. However, to be fully effective, this framework would need to be considered binding by the national authorities and enforcement mechanisms to ensure compliance would need to be put in place. Indeed, recently several members of the ECCU have been confronted with serious fiscal crises.

Monetary Policy Instruments and Issues

The ECCB Articles of Agreement instruct the central bank to extend, discretionally, credit to any participating member under specific conditions. The sum of the maximum amounts that the central bank can lend, including outstanding balances on "special deposit loans" typically exceeds the 40 percent global limit on domestic assets. The ECCB Articles also authorize the ECCB to use discount and rediscount rates, as well as differential rates and ceilings for various classes of transactions (Box 8.3). The monetary council regularly reviews the operations of monetary instruments.

In addition to reserve requirements, the ECCB conducts conventional monetary policy through standing facilities. In this regard, the ECCB is allowed to employ discount and rediscount rates, establish differential rates and ceilings for various classes of transactions, determine priority areas for credit distribution in cooperation with member governments, and establish a schedule of reserve requirements (including marginal required reserves) that can vary with the type of deposit.

Bank interest rates are unregulated. However, a minimum savings deposit rate was established in January 1985, in order to encourage small savers.[4] At the same time, the ECCB started to remunerate bankers' U.S. dollar deposits at internationally competitive rates, with the aim of encouraging commercial banks to invest foreign currency in the area. In addition, and in order to discourage deposit outflows, the ECCB allows bankers' deposits to be exchanged at the official exchange rate.

Although the ECCB has emergency powers to intervene in the event of a systemic problem, there is no lender-of-last-resort facility (LOLR) at the ECCB.

[4]The minimum savings deposit rate was initially set at 4 percent and lowered to 3 percent in September 2002.

Box 8.3. Eastern Caribbean Central Bank: Monetary Policy Instruments

Reserve requirements

Since the ECCB's inception, there has been a reserve requirement of 6 percent on all deposits. Before March 1994, commercial banks were instructed to maintain reserves based on the average deposits during the four preceding weeks and to hold the reserves for four consecutive weeks. After March 1994, ECCB adopted weekly maintenance periods, with reserves based on average weekly deposits and held for one week. All reserves are held in EC dollars and they are not remunerated.

Standing facilities

- Rediscount window: In place since 1988, it works as an incentive for banks to invest in government securities.
- Discount rate: Last altered in October 2001, this rate is intended to influence banks' lending rates and thereby economic activity. Nevertheless, the discount rate is not used by banks because it is higher than the rediscount rate for treasury bills.

With a majority share of foreign-owned banks and given the low exposure to international systemic crises that could undermine the system as a result of external shocks, the need to enact a LOLR facility has not been a priority, and there is no explicit system of deposit insurance.

Before March 1994, commercial banks were obliged to hold in reserve for four consecutive weeks 6 percent of the average of all deposits during the four preceding weeks. After March 1994, the ECCB implemented weekly reserve requirements, with reserves of 6 percent of average weekly deposits held for one week. Although credit ceilings were never used, right after its inception, as noted previously, the ECCB encouraged banks to invest foreign currency within the region by remunerating them at internationally competitive interest rates, and it allows deposits to be exchanged upon demand at the official cross-rate to discourage capital outflows.

In the mid-1980s, the ECCB established an interbank market in an effort to assist the commercial banks in managing their liquidity and to facilitate the lending and borrowing of available reserve balances between commercial banks in a timely and cost-effective manner. The ECCB performed the role of broker and guaranteed the funds; interest rates were fixed. In October 2001, the ECCB introduced changes to the arrangements governing the interbank market. Under the new arrangement, a Bulletin Board Service, facilitated by the central bank, replaces the ECCB's brokerage service. This service can be used by the commercial banks on a daily basis to advertise funds available for lending and to source funds for borrowing. Commercial banks negotiate on a bilateral basis for the use of excess funds in the banking system and set the terms and conditions of each loan without the intervention of the ECCB. In the conduct of interbank transactions, commercial banks can either enter into informal unsecured agreements, or can choose to enter into secured arrangements, whether by offering collateral or by repurchase agreements.

The rediscount window for treasury bills established in 1988 under the existing country limits induces trading of government securities, thereby supporting this secondary market. Taking into account its commitment to a high foreign exchange backing ratio, the bank discounts the bills obtained under the existing credit lines to members and uses the window to build up its portfolio of domestic treasury bills. The discount rate is a policy rate which has become somewhat meaningless today. Although originally designed to influence bank lending rates and economic activity, the discount rate usually serves an announcement function, given that it has been infrequently changed and that it is not tailored to be an effective monetary instrument. Consequently, given the monetary council's decision to set the discount rate at a higher level than the rediscount rate for treasury bills, banks are not usually interested in this use of the discount window.

Structural Factors and Financial Market Infrastructure

The financial system of the Eastern Caribbean states has been dominated by commercial banks (Table 8.2). Among the approximately 43 banks in existence in June 2002, 9 were domestic with 23 percent share of assets, 30 were foreign-owned, and 4 were government controlled. Seven foreign-owned banks, with headquarters in Canada, Trinidad and Tobago, France, and the United Kingdom, accounted for more than 50 percent of the total assets of banks and other deposit-taking institutions. In the financial sectors of Antigua and Barbuda, Dominica, Grenada, St. Lucia, and St. Vincent and the Grenadines, foreign banks enjoyed a majority share ranging from 50 to 90 percent. Private domestic banks controlled a majority share of assets only in Anguilla. In Montserrat, the state-owned bank had a majority share, while in St. Kitts and Nevis, the national banks and foreign banks controlled the same share of assets.

On October 19, 2001, the East Caribbean Securities Exchange (ECSE) was officially launched to provide member states with a regional trading market for primary and secondary securities—both equity and gov-

Table 8.2. Eastern Caribbean Currency Union: Financial System Structure
(as of June 2002)

	Number	Assets (millions of EC$)	Percent of Total Assets
Banks	43	11,082.7	83.8
Private			
Domestic	9	2,534.3	19.2
Foreign	30	6,664.9	50.4
State-owned	4	1,883.5	14.2
Institutional investors	122	n.a.	n.a.
Insurance companies			
Life and retirement	35	n.a.	n.a.
Nonlife	75	n.a.	n.a.
Composite companies	12	n.a.	n.a.
National insurance funds	6	1,176.9	8.9
Other nonbanks	107	969.7	7.3
Total financial system	278	1,3229	100

Source: Eastern Caribbean Central Bank.

ernment and private debt securities. Supported by electronic trading and remote access and regulated by a uniform Securities Act of 2001, the exchange comprises 47 owners of which the ECCB is the largest. Only seven companies were listed by the end of 2004, and secondary trading volumes have been low. Notwithstanding the limited scope for active debt management provided by the currency board, the possibility of opening up the ECSE to other countries in the region would enable replacing foreign currency–denominated debt with domestic debt, thereby ameliorating external vulnerability.

Although the institutional framework for a regional financial market has been established, financial markets are still segmented by country. With low volumes of intra-ECCU financial transactions (apart from trade financing), there has been no tendency for interest rates to converge. At the same time, net holdings of bank assets by other banks in the ECCU are low, reflecting that most transactions are trade related. Finally, there is little cross-country holding of government securities among ECCU members.

The banking system is well developed and exhibits a ratio of deposits to GDP in excess of 145 percent. Even so, some government-controlled banks are facing harsh conditions and operating under increasing stress, and the level of non-performing loans—as a percentage of total loans—hovered around 14 percent in March 2002.

Conclusions and Lessons

The following conclusions and lessons can be derived from the experience of the Eastern Caribbean countries:

- Despite the turbulence that affected the international financial arena in the last decades, the monetary stability in the Eastern Caribbean countries provides an example of successful and long-standing monetary cooperation.
- The monetary and exchange arrangements have served the region well, fostering confidence through stable domestic prices anchored in a peg to the U.S. dollar.
- The monetary framework of the ECCU imposes strict limits on the ability of the central bank to extend credit to member countries, and has thereby contributed to price, exchange, and financial stability. On the other hand, fiscal virtue remains a precondition to secure the success of the ECCU, and the absence of mechanisms to ensure compliance with fiscal benchmarks has undermined the effectiveness of the framework in fostering fiscal discipline.
- Efforts to expand monetary cooperation through the integration of national money and capital markets paves the way toward an even more robust economic union, by allowing a move from the current segmentation of financial markets to an eventual consolidation into a single, regional, financial space.

Egypt[1]

Path to the Adoption of Money Market Operations

Until the early 1990s, Egypt's banking system was highly controlled, and the financial system was characterized by a high degree of governmental planning and control. The Central Bank of Egypt (CBE) maintained interest rate and credit controls on the banking system. Banks were subject to specific credit limits, and public enterprises received loans on preferential terms. Highly negative real rates of return on domestic savings deposits contributed to a heavily dollarized economy. By 1990-91, slightly more than half of all deposits were denominated in foreign currency. Banks were subject to a relatively high reserve requirement of 25 percent on domestic currency liabilities and a somewhat lower rate of 15 percent on foreign currency deposits, which encouraged foreign currency holdings. Government deficits were largely financed by the CBE, which thereby accumulated a large stock of unmarketable government securities with a low interest rate.

Faced with high inflation, fiscal imbalances, and weak economic performance, the authorities began an economic reform program in early 1991 which was designed to enhance market forces in financial markets and in monetary policy implementation. An auction for 91-day treasury bills was introduced in January 1991, with auctions of 6-month and 12-month bills introduced within the following 15 months. At the same time, bank lending and deposit rates were liberalized, and within the next two years, credit ceilings on bank lending were removed. The reserve requirements were reduced to 15 percent (from 25 percent) on domestic currency deposits and to 10 percent (from 15 percent) on foreign currency deposits. In addition, CBE lending to banks was tightened by the introduction of a penalty rate on such lending of 2 percent over the most recent treasury bill auction rate. The reform program also included introduction of prudential regulations for banks and strengthened bank supervision. In addition, some banks were recapitalized and the preferential lending schemes were eliminated, which reinforced market forces in the allocation of credit.

The reform program, including fiscal and monetary reforms, led to a number of positive effects: inflation dropped dramatically, real interest rates became positive, and the share of foreign currency deposits in broad money declined significantly as confidence increased. The comprehensive package of reforms resulted in a turnaround in perceptions of the Egyptian economy, contributing to sizable and persistent capital inflows.[2]

Monetary Policy Environment

Institutional Environment and Monetary Policy Framework

During the 1990s, the primary objective of the CBE with respect to monetary policy was to "ensure the stability of the Egyptian currency." In practice, this meant fixing the nominal exchange rate of the Egyptian pound (£E) with respect to the U.S. dollar, a policy that succeeded in reducing the inflation rate from around 20 percent to the low single digits for a sustained period. However, excessive credit growth during the late 1990s, combined with external imbalances, precipitated a series of devaluations (in the context of an exchange rate band system) starting in 2001. These were followed by a move to a more flexible exchange rate regime in 2003.[3]

In parallel to its move away from giving priority to the exchange rate as the nominal anchor, the CBE is preparing to implement an inflation targeting framework, which should be in place in the medium term. During the transition period, the CBE has adopted an implicit inflation targeting regime, with M2D (M2 domestic) used as an intermediate target. In addition, the CBE has established a monetary policy committee (MPC) that consists of nine members: the governor and his two deputies, and six members chosen on the basis of their expertise in monetary economics and financial intermediation. The conduct of monetary policy is vested with the MPC.

The government enacted a revised banking law in 2003 (the Law on the Central Bank and the Banking and Monetary System), which specified that the objective of monetary policy was to "achieve price stability [. . .] in the framework of the Government's general economic policy." The current presence on the CBE's board of directors of three members representing the ministries of finance, planning, and foreign trade may dilute the central bank's independence somewhat, but they are only three individuals out of a total board membership of 15. The CBE is independent in terms of instruments and the numerical representation of targets, and the targets themselves should be jointly agreed upon by the central bank and the government.

[1]Prepared by George Iden (former Senior Economist, Monetary and Financial Systems Department, MFD), based on MFD work in the context of the Financial Sector Assessment Program (FSAP) for Egypt and the December 2002 Monetary and Exchange Affairs (MAE) technical assistance mission to Egypt on strengthening the institutional framework for implementing monetary policy that was headed by Kal Wajid. The study covers developments through the end of 2004.

[2]For detailed discussion of the Egyptian reforms and their positive effects, see Alexander, Baliño, and Enoch (1995); and Handy and others (1998).

[3]The real effective exchange rate depreciated by over 40 percent between mid-2002 and early 2004.

Table 8.3. Egypt: Financial System Structure
(as of June 2004)

	Number	Assets (millions of £E)	Percent of Total Assets
Banks			
Private	**49**	**269,586**	**40.2**
Domestic (private and joint venture)	35	232,745	34.7
Foreign (branches of foreign banks)	14	36,841	5.5
State-owned	7	**363,555**	**54.3**
Commercial	4	322,470	48.2
Specialized	3	41,085	6.1
Institutional investors[1]			
Insurance companies	20	18,614	2.8
Pension funds[2]	617	14,199	2.1
Collective investment schemes[3]	15	2,669	0.4
Money market mutual funds[3]	6	1,170	0.2

Source: Central Bank of Egypt.
[1]The equity market capitalization (market value of shares) amounted to £E172 billion or 36.4 percent of GDP at the end of June 2004.
[2]Refers to private funds supervised by EISA.
[3]Actually in business.

Financial Market Infrastructure

Egypt has some 57 banks (Table 8.3), although the commercial banking sector is dominated by four state-owned banks. The latter account for slightly more than half of total commercial bank assets and a somewhat higher share of deposits because they have a relatively large deposit base.[4] The dominance of the state in the banking system has been and continues to be a significant impediment to the role of market forces in the intermediation of funds and the allocation of credit.

Approximately 14 banks engage in an active interbank money market. These banks account for about 85 percent of the market. Generally, the interbank loans are not collateralized, although there is an active repo (repurchase agreement) market among banks as well. The interbank interest rate is volatile and reacts strongly to changes in excess reserves, in contrast to the interest rate on treasury bills, which is very sticky and often goes for long periods with very little movement.

Treasury bills are auctioned regularly—weekly for 91-day bills, nearly weekly for 182-day bills, and occasionally for one-year bills. The mode is a variable priced auction in which the bidders pay the price that they successfully bid. The treasury bills are mainly held by commercial banks and by the CBE. The auctions are conducted by the CBE on behalf of the ministry of finance (MOF). The results are reported in the newspaper, with the reported yield as the weighted average of the successful bids. Interest rates in these auctions have at times shown very limited variability. Moreover, the rates in the treasury bill market generally do not appear to reflect movements in rates in the interbank market. Since the move to a more flexible foreign exchange regime in early 2003, treasury bill rates have been much more flexible, and by May 2003, they had moved up to the 12–13 percent range, in line with rates in the interbank market.[5]

The MOF sporadically issues fixed-rate bonds. Outstanding maturities include 3-, 7-, and 10-year bonds. There is a legal limit of £E15 billion on new outstanding bonds that are nontaxable. Bonds can be traded over the stock exchange, but volumes are light. The secondary market for government securities is relatively shallow. Bonds must be traded on the stock exchange. The introduction of an electronic book entry system for treasury bills in June 2002 appears to have encouraged secondary market development. In addition, in July 2004, the CBE started a primary dealers systems, with 13 banks approved to operate as primary dealers. A unit has been set up in the MOF to consider primary dealer applications from banks. Primary dealers that are banks are expected to be regulated by the CBE, with nonbank primary dealers regulated by the Capital Market Authority.

[4]Plans to privatize these banks have been prepared. In particular, the authorities announced in September 2004 that one of the public sector banks, which was identified, was scheduled to be privatized.

[5]The upward trend in interest rates helped to stabilize the exchange rate, and the premium in the parallel market fell steadily until it had essentially disappeared by October 2004, together with strong current account inflows.

Box 8.4. Egypt: Monetary Policy Instruments

Reserve requirements

Set at 14 percent for Egyptian pound (£E) deposits and 10 percent for foreign currency deposits (with maturities of less than three years in the first case only). Reserves on domestic deposits are not remunerated; those on foreign currency deposits are remunerated at LIBOR (London interbank offered rate). Use of treasury bills to satisfy the reserve requirement was discontinued in March 2003. Vault cash does not count toward required reserves. Reserve averaging is permissible over a two-week maintenance period.

Standing facilities

- Discount window: only occasionally used, in part because of its high cost to banks.
- Overnight repo facility: accessible by all banks at most once during any week and within a £E 100 million ceiling; the rate charged is the discount rate.

Money market instruments

- Central bank deposit auctions were introduced in September 2002 as open market–type operations. They may be announced on any weekday and in practice occur about three times a week, although the frequency varies. Fixed volume auctions are offered. Discretion is used in determining the maturity of auctions, although generally longer maturities are offered when there is a greater need to absorb liquidity. In particular, maturities were increased from one and two weeks initially, to four weeks, then three months and six months, in response to increased need to absorb liquidity.
- Treasury bill auctions: The Central Bank of Egypt (CBE) can ask the ministry of finance (MOF) to issue treasury bills in excess of its needs and to deposit the proceeds in an account with the CBE; however, this technique is rarely used.
- Repo operations: The CBE uses repos to provide temporary liquidity to banks, with treasury bills as collateral. Duration ranges from 1 to 14 days.
- Reverse repo operations: The CBE uses reverse repos to absorb liquidity from banks, with treasury bills as collateral. Reserve repos were introduced in 2004, and they are gradually replacing CBE deposit auctions.

Regarding the foreign exchange market, in conjunction with the move to a more flexible exchange rate already mentioned, the CBE began allowing a subset of banks to trade foreign exchange on an informal, voluntary basis. An interbank convention on foreign exchange trading was adopted and ratified by banks in 2004. It is expected that this formalization of the foreign exchange interbank market will help minimize the risk of a resurgence of a large parallel market spread and its attendant effects on confidence.

Monetary Policy Instruments

As shown in Box 8.4, the CBE has a number of money market instruments. It has not used explicitly administrative measures for almost a decade. The discount window is available for use by each bank to discount treasury bills up until maturity without any limitations; banks use it only occasionally, in part because of the relatively high cost. Repo operations, which were first introduced in 1993, have been used extensively by the CBE to inject liquidity in a flexible way (the short maturity of the repos has enabled the CBE to reduce liquidity quickly by simply waiting for outstanding repos to mature). In order to deal with a situation of liquidity surplus in the system, in September 2002, the CBE introduced deposit auctions. This was an important addition to the CBE's set of monetary instruments, because it previously had essentially no instrument to withdraw liquidity. In 2004 the CBE started absorbing liquidity with reverse repos based on treasury bills as collateral. Furthermore, in view of the volatility of the interbank overnight rate, the Monetary Policy Unit of the CBE is exploring the possibility of introducing a corridor for interbank market rates, and work is also underway on refined methods for assessing the stance and effectiveness of monetary policy.

Conclusions and Lessons

The main lessons from Egypt's experience with reliance on money market operations for the conduct of monetary policy are the following:

- Past attempts to manage interest and exchange rates have limited the scope for reliance on money market operations for the implementation of monetary policy. The move to a flexible exchange rate regime in 2003, which led to interest rate flexibility, has allowed greater reliance to be placed on money market operations.
- Similarly, the planned privatization of one of the big four public sector banks is expected to increase the effectiveness of money market operations for the implementation of monetary policy, because the measure will enhance the market orientation of Egypt's financial sector.
- The CBE was able to gradually modernize and strengthen its instruments, in particular to address the challenges to liquidity management arising from liquidity surplus in the system. The CBE first introduced deposit auctions, and subsequently supplemented those operations with reverse repo operations.

The Gambia[1]

Background

Reliance on money market instruments to conduct monetary policy was introduced in The Gambia in the mid-1980s, following the serious economic imbalances that resulted from the directed lending policies started in the mid-1970s.[2] By 1985, the Gambian Cooperative and Development Bank (GCDB), which had been established to implement the directed lending policies, was faced with a mounting number of non-performing loans which, coupled with insufficient collection efforts and inadequate provisioning, created a continuous need for financing from the Central Bank of The Gambia (CBG). The development model pursued by the government of using policies and institutions to provide directed and subsidized credit to preferred sectors became unsustainable.

In June 1985, The Gambia began implementing a comprehensive adjustment program (the Economic Recovery Program, ERP) which included reforms in the financial sector that encompassed both institutional and policy reforms. Institutional reforms were directed mainly at restructuring the GCDB and resolving the issue of its non-performing loans. Policy reforms were aimed at liberalizing the financial sector with the purpose of promoting the development of a more competitive banking system and efficient financial markets.

One of the first steps in the reform process was to pass the Central Bank of The Gambia Act (CBG Act) and the Financial Institutions Act. The CBG Act was designed to strengthen the role and authority of the CBG so as to improve its ability to formulate and implement independent monetary policy and to regulate and supervise the financial system. With this mandate, the CBG began the process of moving from administrative measures to money market operations to conduct monetary policy. By May 1986, all interest rates were freed and the CBG began to rely more on the primary sales of treasury bills as its main instrument of liquidity management.

To further improve liquidity management, by September 1990, the CBG started issuing its own bills, the CBG bills, with characteristics identical to those of the treasury bills and issued using auctions that were similar in format. The CBG also introduced a rediscount window to provide financing to banks. In 1992 a uniform unremunerated reserve requirement was introduced for all Gambian financial institutions. Since 1992, the CBG has made no further significant changes to its monetary policy instruments. It still continues to rely primarily on primary sales of treasury and CBG bills as the main instruments of monetary policy. However, the experience of The Gambia during 2002–03 with reliance on money market operations was mixed. Weak internal controls in the CBG, combined with a poor conduct of monetary policy and insufficient authority over interest rate policy in the face of large fiscal slippages, led to a continuous decline in the effectiveness of money market operations during this period. Monetary policy targets were missed frequently and excessive money supply drove up inflation and caused a slump in the local currency on the foreign exchange market. The loss of confidence in the CBG's conduct of monetary policy aggravated the deterioration in the monetary environment. In the beginning of 2003, the CBG had to increase its reliance on reserve requirements (by significantly increasing the minimum requirements) in order to curb excessive growth in reserve money, and interest rates were increased gradually from 15 percent in July 2002 to 31 percent in August 2003.

Monetary Policy Environment

Institutional Framework

Although the basic objective of the CBG Act was to strengthen the role and authority of the CBG in the formulation and implementation of monetary policy, the institutional framework for the conduct of monetary policy in The Gambia is still not clearly defined. The objectives of, and roles and responsibilities for, monetary policy are blurred. The CBG Act sets out the principal objectives of the central bank as: (1) to regulate the issue, supply, availability, and international exchange of money; (2) to promote monetary stability; and (3) to promote a sound financial structure and credit and exchange conditions conducive to the orderly and balanced economic development of the country. There is no established priority among these objectives other than an implied order of importance based on the order in which they are stated. Furthermore, the law does not ensure the autonomy of the CBG because the minister can override CBG policy, forcing the CBG to carry out the policy of the minis-

[1]Prepared by Stephen Swaray (Senior Economist, Monetary and Financial Systems Department, MFD), based on MFD work in the context of the December 2001 mission to discuss medium-term technical assistance needs to serve as input into a three-year Technical Cooperation Action Plan (TCAP), and the subsequent April and October 2002 technical assistance missions (both headed by Udaibir Das) on strengthening the central bank and the financial system. The study covers developments through the end of 2003.

[2]The decade between 1975 and 1985 witnessed a decline in real growth, accelerating inflation, and a deteriorating external payments position, in response to a variety of external shocks coupled with the implementation of inappropriate policies. In particular, the government started to intervene actively in the development process through the establishment of financial institutions designed specifically to provide subsidized directed credit to the groundnut sector, the country's major cash crop. The financial system and monetary policy were relegated to the role of mobilizing the savings of the population and allocating credit to the preferred agricultural sector.

ter without requiring any disclosure or placing any time limit on the override authority. In addition, the law requires many of the CBG's monetary policy decisions to be referred to the minister for approval. In addition, there has been a lack of internal controls in CBG operations, especially in its foreign exchange operations. Currently, the CBG does not have any formal investment guidelines or policies governing its foreign exchange operations and does not have a robust segregation between front and back office functions. In this regard, the use of outright sales and purchases of foreign currencies to monitor overall liquidity in the system has been problematic. In summary, it is clear that the CBG lacks full autonomy and is therefore not sufficiently well positioned to conduct monetary policy effectively.

Monetary Framework

Among the three objectives outlined in the CBG Act, the CBG has chosen price stability to be the principal operational objective of monetary policy, tempered by its aim also to support the broad policy goals of strengthening the external balance and promoting economic activity. To achieve price stability, the CBG conducts monetary policy within a reserve money framework. Net domestic assets of the CBG, together with net foreign assets and net claims on government, are the central benchmarks that guide the conduct of monetary policy.

The long-term liquidity targets of the CBG necessary to achieve its objective are in place and are currently derived in the context of the Poverty Reduction Growth Facility (PRGF). However, the forward-looking, short-term liquidity forecasting framework is undeveloped, and its development would require improved coordination between the CBG and the ministry of finance, together with substantial improvements in the ministry's internal reporting system. Although the CBG takes the exchange rate into account in its monetary policy decision making, its stabilization does not appear to be an important monetary policy objective.

Macroeconomic Performance

Economic performance in The Gambia has been mixed since the introduction of money market operations for the conduct of monetary policy. While GDP growth has been predominantly strong and inflation moderate, there have been significant slippages in the implementation of the budget, which has led the government to continue to borrow heavily from the domestic banking and public enterprise sectors to finance its fiscal deficit. The fiscal deficit (excluding grants) has varied between $3^1/_2$ percent of GDP and $8^3/_4$ percent over the years. The fiscal slippages have necessitated increased recourse to government domestic financing, which has raised the stock of domestic debt to about 33 percent of GDP. Due to the rapid expansion in credit to the government, the treasury bill rates have remained high, varying between $12^1/_2$ percent and 15 percent, although recently they have increased to 24 percent. Lending rates have also been consistently in excess of 25 percent.

On the external front, the external current account deficit, excluding official transfers, has also remained high over the period, averaging around 11.8 percent of GDP. Partly as a result of this, the Gambian currency (the dalasi) has been depreciating—by 12 and 27 percent in 2001 and 2002, respectively, in U.S. dollar terms (end-of-period rates).

Inflation performance, just like overall economic performance, has been mixed. Inflation fell in 1994 to 1.7 percent but increased subsequently to almost 7 percent on average, following an instance of political instability. After the return to constitutional government, inflation moderated once more, reaching 1 percent by the end of 2000. In 2002, however, inflationary pressures again developed, with inflation in that year averaging 8.6 percent (compared to 4.5 percent in 2001 and 0.9 percent in 2000), and with end-of-period inflation reaching 13 percent (compared to 8.1 percent in 2001 and 0.2 percent in 2000). In addition, the consumer price index in The Gambia may understate actual inflation because it is based on outdated weights stemming from a 1976 household survey among the low-income Banjul population. That inflation may be understated is also indicated by the strong growth of broad money and reserve money of more than 20 percent on average over the past four years, and the depreciation of the dalasi by about 50 percent in SDR and U.S. dollar terms.

The persistent weak fiscal performance has been the main source of pressure on monetary aggregates and on interest rates. In 2002, broad money rose by 35 percent, compared to a target of 13 percent. Some 24 percentage points of that increase in broad money stemmed from a mushrooming in credit extension to the private sector, apparently associated with speculation in real estate and foreign exchange. This excessive credit growth was sustained by a rise in reserve money of 34 percent, a substantial proportion of which appears to have resulted from liquidity injections by the CBG associated with foreign exchange losses.[3] Corrective action by the CBG was late and

[3]Some of these losses result from seasonal smoothing operations by the CBG coupled with the rapid depreciation in the dalasi exchange rate. In addition, a number of foreign exchange transactions involved extremely wide spreads, implying that the transactions' counterparties earned large profits at the expense of the CBG.

initially inadequate: the treasury bill rate was raised gradually from 15 percent in June 2002 to 25 percent in June 2003, while minimum reserve requirements were extended to include foreign currency deposits and increased from 14 percent to 16 percent in April 2003. However, broad money growth failed to slow down, and annual growth reached 52 percent, while private sector credit more than doubled in the year ending June 2003. In July, the CBG further increased minimum reserve requirements to 18 percent and, in August, it raised the treasury bill rate to 31 percent. Clearly, the CBG has been facing a difficult macroeconomic environment within which to implement monetary policy, particularly on account of weak fiscal performances.

Table 8.4. The Gambia: Banking System Structure
(as of 2001)

	Millions of Dalasis	Millions of U.S. Dollars	Percent of GDP
Total assets	2,903	172	47
Total loans	750	44	12
Total deposits	1,864	110	30
GDP	6,125	362	

Sources: Central Bank of The Gambia (CBG) and IMF staff estimates.

Structure of the Financial System

By every indicator, the financial system of The Gambia is small and underdeveloped.[4] It comprises the Central Bank of The Gambia (CBG), 6 commercial banks, 11 insurance companies, 52 Village Savings and Credit Associations (VISACAs), and numerous microcredit institutions. There are also 11 foreign exchange bureaus operating under license from the CBG and an active unofficial market.

The banking sector overwhelmingly dominates the financial system,[5] although it is small in both absolute and relative terms. Total banking sector assets are equivalent to about 40 percent of GDP. Total loans, however, are equivalent to only 9 percent of GDP (Table 8.4). All banks in The Gambia are now virtually privately owned.[6]

The banking system is highly concentrated, with the largest bank in the country dominating the market both in terms of deposits (52 percent) and of loans extended (38 percent). The top three banks account for 86 percent of the market in terms of loans and 95 percent in terms of deposits. The balance sheet structure of Gambian banks reflects the highly embedded credit risk in the economy, a preference for liquid, low-risk assets, and the intermediation of official and private transfers. As of June 2002, loans accounted for less than one-fourth of banks' total assets, reportedly reflecting primarily the dearth of bankable projects and creditors' inability to exercise their rights. The largest portion of bank assets—about one-third—was placed in treasury bills. As a result, liquidity in the banking system as a whole is high, even though there are significant bank-to-bank variations.

The banking sector has been very profitable, with average after-tax profits at about 4.6 percent of assets at the end of 2001. The high level of profitability derived by banks from treasury bill holdings has so far provided no incentives to reduce rates or spreads for private lending.

All banks have significant open foreign exchange positions, with long positions ranging from 20 percent to 53 percent of their capital. In the existing environment, with the domestic currency depreciating, the returns on investments in foreign currency are a sizable source of the banks' income. It also means, however, that the banks are vulnerable to unexpected exchange rate movements. Moreover, the banks are exposed to adverse movements in exchange rates through their impact on the credit risk of their borrowers.

Market Infrastructure

Interbank Money Market

Six banks dominate the money market in The Gambia. A dalasi interbank market does not exist in the real sense of the term, except for a few ad hoc interbank transactions. The banks invest their excess funds in treasury bills, and despite a 3 percent margin between the treasury bill rate and the CBG refinance rate, banks seldom deal with one another, and they prefer to use the CBG's refinance facility despite its high cost. The participation of nonbank public institutions, particularly social security funds, in treasury bill auctions has increased, but total investments are still insignificant, and purchased bills are almost without exception held until maturity.

[4]A small financial system is usually defined by M2 smaller than US$1 billion, which is the size of a small bank in an industrial country. The World Bank Financial Sector Discussion Paper No. 6 lists about 60 such countries—The Gambia among the smallest ones, with M2 only slightly above US$100 million.

[5]Banking system assets account for about 97 percent of total financial sector assets. Of the rest, 2 percent belong to insurance companies and 1 percent to microfinance institutions.

[6]The government's direct participation in banks is now limited to the 10 percent it holds in one bank. Of the six banks, foreign individuals and companies own at least 70 percent shares in three of them and substantial amounts (30 percent and over) in the others.

Competition in the money market is very limited. First, the demand for short-term funds is limited and the number of potential participants is very small. Second, most activities in the short-term market are centered on trade, primarily re-exports. As a result, all banks are on the same side of the market in that they are all influenced by the same seasonal, cyclical, or external factors. The structure of the banking system and the uniform effects of seasonal, cyclical, or external events on all participants are also the main reasons for the lack of an interbank market.

The Foreign Exchange Market

Like the interbank money market, the interbank market for foreign exchange has played a limited role in distributing foreign exchange in the economy. The structure of the foreign exchange market in The Gambia consists of the central bank, commercial banks, exchange bureaus, and moneychangers.[7] While the central bank and the commercial banks handle mainly large transactions, involving international financial transactions, exchange bureaus deal mainly in cash. Large traders who use these exchange bureaus to acquire foreign exchange directly from the public often directly "own" the latter. Partly as a result of the prevalence of cash transactions on the foreign exchange market, specifically for the re-export trade and large bank charges, the exchange bureaus have become the preferred depository or source of foreign exchange.

The foreign exchange market is completely liberalized, and since 2001, commercial banks have been allowed to accept foreign currency deposits. CBG maintains exposure limits for banks and exchange bureaus for prudential purposes. Any amount above the limit must be offered for sale within seven days of the weekly meeting of the foreign currency review committee, which is chaired by the CBG and includes representatives of the commercial banks and the foreign exchange bureaus. Banks and exchange bureaus would normally be expected to submit their bids for purchases and sales together with the desired exchange rate, at the weekly meeting of the official market participants. In practice, there is more demand than supply of foreign currency, since all market participants prefer to buy foreign exchange at the same time at the interbank rate and there is therefore an absence of selling activity. In this context, the interbank market resembles more of an auction system. As in the interbank money market, banks and exchange bureaus prefer to deal directly with the CBG.

CBG's foreign exchange transactions have not been subject, however, to suitable internal controls and have helped undermine the effectiveness of using outright purchases and sales of foreign currencies as an instrument to influence overall liquidity conditions. As mentioned above, a major part of liquidity injections in 2002 stemmed from losses that the CBG incurred by conducting foreign exchange transactions.

Government and Central Bank Debt Market

The CBG issues treasury bills on behalf of the government for purposes of financing the deficit. Treasury bills are auctioned at 91-, 182-, and 364-day maturities—with the latter (one-year) maturity being a recent innovation. Bills are auctioned as a block, with bidders choosing the maturity desired. The CBG auctions treasury bills at a uniform price and, because of the prevailing climate of excess liquidity, accepts all bids. The amount of bills outstanding as at the end of 2001 was D2 billion, of which over 50 percent were 91-day bills, although the share of 182-day bills has been increasing. Commercial banks hold just over 50 percent of all treasury bills outstanding. The secondary market is modest and primarily consists of the rediscount facility at the CBG and its sales of rediscounted bills.

The CBG also issues its own bills with 91-day and 182-day maturities, of which the latter (three-month) bills account for the vast majority. Central bank bills are the same as treasury bills except for the issuer. The bulk of central bank bills are owned by commercial banks. There is no organized securities market in The Gambia.

Monetary Policy Instruments

The CBG has essentially three instruments to manage banking system liquidity: (1) primary market sales of treasury and central bank bills and secondary market sales of treasury bills from its own portfolio and at its own discretion to absorb liquidity; (2) a rediscount window, which is a standing facility, used at the initiative of banks and nonbanks; and (3) reserve requirements, which are been used increasingly actively (Box 8.5). Due to current liquidity conditions, most operations exist to absorb liquidity and are carried out through primary sales of treasury and central bank bills, while rediscount operations and secondary sales of treasury bills are quite limited. Banks are also subject to a liquid asset ratio, which currently does not represent a constraint and is primarily used as a prudential instrument. In effect, primary sales of treasury

[7]Both the banks and the bureaus are licensed by the CBG to deal in foreign exchange and to participate in the foreign exchange market. Moneychangers were licensed starting in 2002. There are also money transfer offices (such as Western Union), which operate without direct transfer of foreign exchange into the country. The bulk of foreign exchange inflows, mainly remittances, have been channeled through Trust Bank, which also serves as an agent for Western Union.

Box 8.5. The Gambia: Monetary Policy Instruments

Liquid asset ratio

Set at 30 percent of deposits. Eligible assets mostly include treasury and central bank bills.

Reserve requirements

Set at 18 percent of deposits, in the form of unremunerated deposits with CBG.

Standing facilities

Rediscount window: Allows banks to obtain funds on demand against accepted collateral (treasury and central bank bills). No limit to access, as long as bank complies with liquid asset ratio. Rate applied is sets above treasury bill rate (currently 300 basis points).

Money market instruments

- Primary market sales of treasury and central bank bills: Issued using uniform price auction in maturities of 91, 182, and 364 days; issued on a fortnightly basis. This is the main discretionary instrument of liquidity management.
- Secondary sales of treasury bills: Consist of sales of rediscounted bills; used to absorb liquidity from market in between primary market sales of securities.

and central bank bills represent the main monetary policy instrument in The Gambia.

The amount of bills issued in the primary market at any given time (usually a combination of both treasury and central bank bills) reflects both maturing bills (to be rolled over) and an extra amount for monetary policy purposes. The extra amount is placed into a special account—the "sterilized account"—at the CBG. The special account is, in principle, blocked so that inflows to it are sterilized. In practice, however, the treasury draws on this account as funds are needed. These treasury withdrawals have been seriously undermining the CBG's monetary policy actions, but the CBG has insufficient autonomy to stop the process, which from the treasury's point of view, is required by the high fiscal deficit. The CBG also does not have the resources to pay interest on a large amount of its own bills. Occasionally, the CBG uses sales of treasury bills from its own portfolio as an instrument to absorb liquidity in between auctions. But as indicated, this portfolio is small, thereby limiting the effectiveness of secondary market sales of treasury bills as an instrument of monetary policy.

The CBG maintains a standing facility—the rediscount window—through which banks, at their discretion, can obtain cash for their bill holdings from the CBG. These discounts are without limit as long as a bank holds bills above the minimum liquid asset ratio. Under these operations, the ownership of the collateral is transferred to the central bank for its whole residual maturity. Financing, therefore, is granted for a period corresponding to the maturity of the underlying collateral. The interest rate charged is the rediscount rate, which is set at 3 points above the treasury bill rate (see below).

In June 1998, reserve requirements were unified across deposits and were set at a rate of 14 percent of total deposits. In 2003, the CBG reverted to the use of reserve requirements as an active policy device. During the first half of 2003, reserve requirements were gradually increased to 18 percent and were extended to include foreign currency deposits.

Interest Rates

The treasury bill rate is the key interest rate in The Gambia, because most other interest rates are linked to it. This rate varied little up to 1998 but since then rose from 12.5 percent to 14 percent in 1999 and further to 23 percent before mid-2003. The treasury bill rate was increased further to 26 percent in July 2003 and then to 31 percent in August 2003. As noted, the rediscount rate is set at 3 percentage points above the treasury bill rate. The CBG's secondary market rate for selling bills is 1 percentage point below the treasury bill rate. The "bank rate"—the rate for lending to parastatals and for emergency loans—is 2 percentage points below the treasury bill rate.

The spread between lending and deposit rates has also remained unchanged at about 13–14 percentage points, which is even higher than in other countries in the region. The high spreads can be explained by a combination of factors, including the high credit risk inherent in the economy, the inefficient legal and institutional framework, the oligopolistic nature of the banking system, and its small size.

The CBG is concerned about the level of nominal and real interest rates. The current high rates, in addition to putting pressure on the budget, also hamper economic activity and may pose a severe threat to the banking system, given that the only borrowers willing to pay such high real interest rates are usually very risky ones. However, this must be balanced against the CBG's commitment to keeping inflation low.

Conclusions and Lessons

The following conclusions and lessons can be derived from the experience of The Gambia with reliance on money market instruments:

- Following financial sector reforms of the early 1990s, inflation performance in The Gambia was

encouraging, suggesting that progress in the implementation of monetary policy can still be achieved in small, underdeveloped, and concentrated financial systems with the use of very simple money market operations—mainly primary sales of treasury and central bank bills, a refinance window, and occasional secondary market sales of treasury bills.

- These strong performances occurred, however, against the background of an increased buildup of domestic debt and persistently high interest rates (including treasury bill rates), as a result of continued sales of sizable amounts of treasury and CBG bills in pursuit of a tight monetary policy stance. Since most interest rates are linked to the treasury bill rate, all interest rates have remained high in real terms, which has posed a significant challenge to monetary policy.
- More recently, weak internal controls in the CBG, combined with a weak monetary policy and insufficient authority over interest rate policy in the face of large fiscal slippages, have led to a continuous decline in the effectiveness of money market instruments for the conduct of monetary policy.

Finally, the experience of The Gambia shows that expansionary fiscal policy constitutes a setback to effective monetary policy and to sustaining low inflation in the context of shallow markets.

KYRGYZ REPUBLIC[1]

Monetary Policy Environment

Background and Motivation for Adopting Money Market Instruments

At the time of independence in 1991, the Kyrgyz Republic had a planned economy modeled after that of the former Soviet Union. The National Bank of the Kyrgyz Republic (NBKR) allocated credit according to the financial plan among banks and sectors. Interest rates were controlled, and the currency was the Russian ruble.

Market-related reforms were introduced beginning in 1992-93. In May 1993, the Kyrgyz Republic was among the first republics of the former Soviet Union to introduce its own currency, the som. Market reforms were introduced to improve efficiency and included the removal of controls on interest rates. A reserve requirement system and credit auctions were introduced in 1992 and 1993, respectively, to manage overall liquidity in the system, and by mid-1994 virtually all of the refinancing was being auctioned. Treasury bill auctions were introduced in 1993, although most of the domestic credit for the government was financed by the NBKR.

As the interbank market developed, banks began to rely on it for their liquidity needs, and the NBKR began phasing out the credit auctions, which were stopped completely in January 1997. NBKR subsequently introduced a Lombard facility and an emergency credit facility. In 1997, repos were introduced. In 2000, central bank bills were introduced as an instrument of monetary policy, and the NBKR began holding weekly auctions. Also that year, the NBKR introduced foreign exchange swaps, and these have at times been used extensively as a monetary tool since then.[2] In 2001, the reserve requirement was reduced from 20 percent to 10 percent.

Framework for Monetary Policy Implementation

The primary objective of the NBKR, as defined in the Law on the National Bank of the Kyrgyz Republic of 1992 (and confirmed in a new law adopted in 1997) is to maintain price stability. The NBKR was granted operational independence by that legislation. Specifically, all government agencies are prohibited from interfering with issues under the jurisdiction of the NBKR, including monetary policy implementation.

In the Kyrgyz Republic, monetary policy is implemented in the context of a managed floating exchange regime with no preannounced path for the exchange rate, and the NBKR intervenes in the market to smooth fluctuations in the value of the som and to meet international reserve targets. The Kyrgyz Republic accepted Article VIII in March 1995, thus permitting exchange rate convertibility for current transactions. However, it retains controls on capital transactions.

The NBKR uses broad money, including foreign currency deposits, as its intermediate target and the monetary base as its operational target. The monetary aggregates are targeted on a quarterly basis, while the weekly operations target is excess reserves in the banking system.

Macroeconomic Performance

The Kyrgyz Republic is relatively small, with a population of about 5 million. Total GDP in 2001 was approximately US$1.5 billion, and per capita GDP was about US$300 per year. The Kyrgyz Republic's macroeconomic performance has been strong in recent years. Like other countries of the former Soviet Union, following its independence, the Kyrgyz Republic suffered a period of high inflation and falling output. Inflation was over 2,000 percent in 1992 and about 1,000 percent in 1993. However, the Kyrgyz Republic stands out as one of the pioneers of economic reform, and since 1994, inflation has been on a downward trend, with the exception of the inflationary shock from the Russian financial crisis of 1998. The inflation rate has declined significantly since 1999. The 12-month inflation rate fell to 3.7 percent in 2001, from 9.6 percent in 2000 and 39.9 percent in 1999, mainly reflecting appropriately tight monetary and fiscal policies. The fiscal adjustment in 2001 was impressive, with the deficit falling from 9.2 percent of GDP in 2000 to 5.0 percent in 2001. The current account deficit declined to 1.0 percent of GDP in 2001, from 5.7 percent in 2000 (versus 15.0 percent in 1999). The real GDP growth rate was approximately 5.5 percent per year in 2000 and 2001.

Structure of the Financial System

The financial sector is dominated by a banking sector with weak penetration. At the end of 2001, the total assets of the banking system were equivalent to only about 7 percent of GDP (Table 8.5). Banks in the Kyrgyz Republic have shown a limited capacity to at-

[1]Prepared by George Iden (former Senior Economist, Monetary and Financial Systems Department, MFD), based on MFD work in the context of the July 2001 technical assistance mission on monetary operations that was headed by Greta Mitchell Casselle; MFD work in the context of the Financial Sector Assessment Program (FSAP) for The Kyrgyz Republic. The study covers developments through the end of 2003.

[2]In 2001, for example, the NBKR conducted swap transactions totaling approximately US$38 million, with average maturity of five days.

Table 8.5. Kyrgyz Republic: Financial System Structure
(as of July 2002)

	Number of Institutions	Assets (millions of soms)
Commercial banks	19	5,897
Assets to GDP (percent)	7.4	
Deposits to GDP (percent)	3.5	
Special credit institutions *of which* KAFC	10	1,005
Credit unions	357	311
Insurance companies *of which* State-owned	24	124

Source: National Bank of the Kyrgyz Republic (NBKR) and Ministry of Finance.

tract deposits, and lending is geared to the short term, owing to underdeveloped credit skills and low confidence in the banking system. Banking sector problems have arisen frequently since 1993, when solvency problems first emerged after the NBKR tightened monetary policy to control inflation. In 1995, regulations were introduced that require on-site inspections and provisioning for doubtful loans; this led to the revelation that about half of all commercial banks had negative net worth and that about 60 percent of the banking sector's loans were considered unrecoverable.

In late 1995, a comprehensive financial sector reform program was introduced to liquidate and restructure insolvent banks and improve the legislative and regulatory framework. The program incorporated a wide range of measures, including a new central bank law, a banking law, a bankruptcy law, and a mandatory chart of accounts for all banks. By mid-1998, these reforms led to improvements in bank intermediation, including the emergence of a small core of healthy banks. Nevertheless, weaknesses remained, including insufficient and poorly enforced bank regulation and supervision, which is due in part to weaknesses in financial reporting by banks.

The economy and the banking system were hit by the Russian crisis of 1998, both directly and indirectly through the subsequent devaluation of the som, the collapse of one of the largest industrial conglomerates, and the bankruptcy of two of the country's largest banks. The Russian crisis also revealed gaps in institutional capacity and corporate governance, delays in the development of financial and legal infrastructures, deficiencies in banking supervision, and the lack of banking services.

As of July 2002, 19 commercial banks were operating in the Kyrgyz Republic, including several subsidiaries of foreign banks. The NBKR is encouraging consolidation of these banks. During 1999 and 2000, banks experienced substantial declines in asset quality. However, during the following year, gross nonperforming loans as a percentage of total loans stabilized at about 13 percent (about 5 percent net of provisions), bank capitalization increased substantially, and banks generally returned to profitability. Two banks, accounting for approximately 14 percent of total bank assets, are state-owned, and the remainder are privately owned. The banking sector is not highly concentrated, with the three largest banks accounting for only about 31 percent of total bank loans.

The volume of funds intermediated by the commercial banking sector remains limited. Banks lend funds in both national and foreign currency, primarily to a few enterprises in the industrial and services sectors. There is an acute shortage of basic financial services, including depository and payment services and credit for the majority of the population. Services are especially limited or nonexistent in rural areas.

The Basel standards on capital adequacy were adopted in June 1995, and new regulations passed in December 1998 increased the capital requirements for establishing a new bank. The NBKR, which is responsible for banking supervision, has had difficulties with regulatory enforcement. At least some of the problems arise because of weaknesses in the judicial system which result in pressure being brought to bear on the courts by vested interests. Other weaknesses can be traced to accounting problems and to the need to improve the legislation covering bankruptcy and liquidation. There has been some recent progress. For example, in 2002 a new law was enacted that requires the courts to accept the balance sheets of commercial banks as certified by the NBKR in bankruptcy cases.

The capital market in the Kyrgyz Republic is at an early stage of development and is not a significant source of funds. The Kyrgyz Stock Exchange (KSE) opened in May 1995, but market capitalization has grown slowly, from the equivalent of US$4 million at the end of 1999 to US$33 million in May 2001 ($2^1/_4$ percent of 2001 GDP).

The market for government debt securities is underdeveloped. The treasury bill market contracted sharply after the Russian crisis in 1998, with the volume of treasury bills held by commercial banks falling from approximately som 490 million in June 1998, to som 86 million in June 1999. Confidence in government securities has suffered from the government's failure to always pay promptly when debt matures. In addition, the market for government debt

Box 8.6. Kyrgyz Republic: Monetary Policy Instruments

Reserve requirements

Set at 10 percent of all deposit balances, except domestic interbank deposits. Requirements are the same for domestic and foreign currency deposits, and reserves for foreign currency deposits are held in domestic currency. They are computed over a two-week period, and reserve averaging is permitted. They are remunerated based on the weighted average deposit rate for each bank.

Standing facilities

NBKR maintains a noncollateralized overnight lending facility for banks. Lending must meet reserve requirements, and it stands at a penalty rate of 1.2 times the average rate at the previous auction for the 28-day NBKR bills. Risk for the NBKR is minimized by the manner in which the facility for selling NBKR bills is operated. NBKR funds are added to a bank's account as the last transaction of one day and withdrawn as the first transaction the following day.

Money market operations

- NBKR bills are auctioned weekly, on a very limited basis. Treasury bills are also auctioned weekly. Both auctions are at a variable price.
- Repo and outright transactions in government securities are conducted on a limited basis, due to the limited quantities of government and central bank securities. The NBKR's portfolio includes som 2.38 billion in nonmarketable debt, in accordance with the law "On Restructuring the Government's Debt to the NBKR" and which the NBKR used in reverse repo transactions for monetary purposes.
- Spot and especially swap operations in the foreign exchange market are frequently used for monetary purposes.
- Government deposits with the NBKR have been varied for liquidity purposes, because of limited quantities of securities for conventional open market operations.

soured a few years ago when a bond issued by a government entity failed, and the government did not stand behind the bond. The market has begun to recover, with banks' holdings of treasury bills increasing to som 255 million in mid-2001 and to som 460 million in June 2002, but this was still equivalent to only 0.5 percent of estimated 2002 GDP. In December 2002, with the regularization of financial relations between the NBKR and the ministry of finance, an additional som 850 million of treasury bills were issued. In addition, all non-interest-bearing securities held by the NBKR were restructured according to an IMF technical assistance mission's recommendations.

Monetary Policy Instruments

The NBKR uses money market instruments and has developed several such instruments to manage liquidity (see Box 8.6). In part because of the thin markets for government and NBKR securities, the NBKR relies heavily on foreign exchange spot and swap transactions as instruments of monetary policy. The NBKR's other instruments are reserve requirements, weekly auctions of NBKR bills, and repo operations. In addition, the NBKR has a noncollateralized overnight lending facility for banks. In order to sterilize a recent inflow of foreign exchange, the government increased its deposits with the NBKR in view of the limited potential for conventional open market operations.

The NBKR has not developed its liquidity projections and does not forecast liquidity on a daily basis. One of the main weaknesses is the absence of adequate short-term projections for the government's cash flow. Consequently, interbank interest rates can sometimes be particularly volatile and can exhibit seasonal patterns.[3] The NBKR does not attempt to maintain an interest rate corridor for rates in the interbank market. In addition, income averaging for the reserve requirement scheme is insufficient to stabilize interbank rates.

Market Infrastructure

The NBKR's development and use of money market instruments is particularly constrained by shallow financial markets. In addition to the relatively small size of the stock of government securities (approximately 5 percent of GDP), one of the main reasons for the thin market in government securities is that the bulk of domestic public debt is held by the NBKR in the form of non-interest-bearing securities with no specified maturity. As of mid-2001, non-NBKR investors held government securities amounting to only about 0.8 percent of GDP, while the NBKR held government securities amounting to approximately 4 percent of GDP.[4] The market for NBKR bills is even

[3]A change in the NBKR's procedures for setting interest rates on "overnight" credits, which took effect in March 2002, may have contributed to a subsequent reduction in volatility in interbank rates.

[4]According to an agreement between the NBKR and the ministry of finance, these government securities will be transformed into marketable treasury bills and medium-term government bonds which will gradually be redeemed over a 10-year period. The remuneration on the bonds will be approximately inflation plus 1 percent, and they can be used for repo operations.

shallower than the market for government securities, with the outstanding stock of NBKR bills amounting to approximately som 16 million, or less than 0.1 percent of GDP.

Although steps have been taken to increase the amount of treasury bills in the system, the thin market for these bills has contributed to a scarcity of suitable collateral, both for NBKR lending operations and for the interbank market, and has constrained the NBKR's use of repo operations (and reverse repo operations) as an instrument of monetary policy. In addition, the segmentation of the interbank market, caused in part by the presence of weak banks, has interfered with the proper distribution of liquidity injections among banks. The Kyrgyz Republic is also highly dollarized, with approximately 60 percent of deposits in foreign currency. Finally, currency holdings somewhat exceed deposits, reflecting a low, though somewhat improving, level of trust in banks.

Channels of Transmission of Monetary Policy

The two main channels through which monetary policy changes are transmitted are foreign exchange market adjustments and the availability and cost of credit. Buying foreign exchange or engaging in swap operations tends to increase domestic liquidity. Also, because the Kyrgyz Republic has a flexible exchange rate system, an expansive monetary policy would tend to depreciate the som, stimulating exports and retarding imports. A contractionary policy would have the reverse effects. The effects would also be felt through the banking system: an expansionary policy would increase the level of excess reserves, putting downward pressure on the interbank interest rate and reducing the cost of lending. There would also be effects on the level of credit as a result of changes in the availability of credit.

Conclusions and Lessons

The main lessons from the Kyrgyz Republic's experience with reliance on money market operations for the conduct of monetary policy are the following:

- Money market operations have been conducted in the context of a shortage of securities and conventional collateral by means of foreign exchange operations, especially foreign exchange swaps. More recently, the authorities have taken steps to increase the quantity of treasury bills through phased securitizing of government debt held by the NBKR.
- Monetary policy implementation has been hindered by weak liquidity projections, in part because of undeveloped projections of governmental budgetary flows.
- The small stock of marketable government and central bank securities and the resulting thin markets have retarded the NBKR's development of open market operations and have limited collateralized lending, including repo and reverse repo operations. However, authorities have taken steps gradually to increase the stock of marketable government securities.

MALTA[1]

Path to Reliance on Money Market Instruments

Malta's gradual process of financial liberalization started in 1990 and was to be fully completed upon accession to the European Union (EU) in 2004. Policy measures included elimination of price controls, liberalization of interest rates, lifting of capital controls, introduction of market-based monetary policy instruments, and reduction of the government's involvement in the financial sector. At the outset, interest rates were controlled and rigid. Nominal rates had hardly changed over nearly three decades. The Central Bank of Malta's (CBM's) only monetary policy instruments were interest rate controls and liquidity requirements. All deposit money banks were state-owned, which severely reduced the scope for competition. Financial markets were nonexistent. No interbank borrowing took place, and there was no real market for government securities and the few other instruments. The banking sector was very liquid as a result of balance of payments surpluses.

Financial market liberalization preceded capital account liberalization. The reforms of the heavily regulated financial system commenced in a favorable economic environment, with large levels of international reserves, low inflation, and a low level of public debt. The first steps taken by the CBM between 1990 and 1994 included tying bank lending rates to the CBM's discount rate, eliminating preferential lending arrangements (except for mortgage rates which remained in effect for social reasons until April 2000), and removing ceilings for bank deposit rates (but at the same time setting minimum rates for savings deposits). Trading of government stocks and equities commenced on the Malta Stock Exchange (MSE) in 1992. Treasury bill rates, which had formerly been administered, were determined by auctions. A new banking act was approved that brought banking legislation in line with EU practice. The amended CBM Act empowered the CBM with more authority to carry out monetary policy, but fell short of providing it with full independence.

Capital account liberalization commenced in the early 1990s and was subsequently extended, and Malta took further steps to liberalize and develop the financial system. The government reduced its equity participation in the banking system, holding only a 25 percent stake in one commercial bank by 1999. Lending and deposit rates were gradually liberalized. Remuneration of banks' excess reserves was eliminated, and reserve requirements were made more flexible by allowing reserve averaging and lengthening the maintenance period. The weekly trading sessions for government securities on the MSE were replaced by daily sessions. Treasury bill auctions were conducted regularly, and longer maturities were introduced. On the foreign exchange market, the CBM started to quote exchange rates on a real-time basis in 1995. It introduced foreign exchange swaps as an additional tool.

Monetary Policy Environment

Institutional Framework

The newly amended CBM Act, effective October 1, 2002, assigns the CBM the primary objective of maintaining price stability. Before the amendment, the act assigned the CBM multiple objectives, but the CBM interpreted its mandate to maintain price stability by using the exchange rate as the nominal anchor. The amendments, all in line with requirements for EU membership, also strengthened the legal and operational independence of the CBM and explicitly prohibited central bank financing of public sector deficits.

The governor of the CBM is solely responsible for decisions on monetary policy. The governor is advised by the newly established monetary policy advisory council. The governor and deputy governor are appointed by the president of Malta, on advice of the prime minister, for a period of five years and are eligible for reappointment. Together with three other directors, they comprise the board of directors. The other three directors are appointed by the prime minister for a period of five years and are also eligible for reappointment.

Monetary Framework

The CBM operates monetary policy within the framework of an exchange rate peg. The Maltese lira (Lm) has been pegged to a currency basket since 1972. The weights of the three currencies currently in the basket (euro, U.S. dollar, and pound sterling) reflect Malta's external trade pattern. The lira was devalued only once, after the European Exchange Rate Mechanism (ERM) crisis in 1992. The exchange rate peg has contributed to moderate inflation in Malta. Since 1996, inflation averaged 2.6 percent, close to the rate in the currency basket countries.

The CBM's flexibility in conducting monetary policy is also constrained by a required minimum reserve cover for CBM liabilities. Specifically, under the CBM Act, the CBM is obliged to maintain foreign exchange reserves at a minimum of 60 percent of the CBM's liabilities (monetary base plus other deposit liabilities). The CBM's stock of official reserves has over many years fully covered the monetary base and recently in-

[1]Prepared by Andrea Schaechter (Economist, Monetary and Financial Systems Department, MFD), based on MFD work in the context of the Financial Sector Assessment Program (FSAP) for Malta. The study covers developments through the end of 2003.

creased due to the balance of payments surplus (143 percent at the end of 2002). Official reserves in terms of broad money stood at 29 percent at the end of 2002 and covered about nine months of imports.

Macroeconomic Performance

Malta's economy is highly dependent on a few sectors, such as tourism and manufacturing, and is therefore heavily influenced by external developments. Malta is a small island, with a population of 395,000 and a GDP per capita of over US$9,200 (one of the highest among the EU accession countries). Tourism accounts for about 30 percent of GDP and manufacturing for about 25 percent. Electronic products make up 75 percent of manufactured exports. The government's involvement in the economy remains high, notwithstanding the ongoing reform strategy of reducing the government's stake in enterprises. Public administration and state-owned enterprises account for about 23 percent of GDP and employ about one-third of Malta's workforce.

Strong growth in deposits, combined with a slowdown in credit expansion, caused a rapid build-up of liquidity in the banking system since 2001. The growth in deposits accelerated to annual rates exceeding 10 percent due to widening interest rate spreads over the basket currencies, the weak performances of equity markets, the lack of alternative investment vehicles in Malta, and a tax amnesty in 2002 that encouraged some capital to flow back to Malta. On the other hand, a sluggish economy markedly weakened the demand for credit, especially within the private sector, to growth rates below 3 percent in 2002 (compared with more than 10 percent in each of the previous four years).

Structure of the Financial System

The banking sector is by far the largest segment in Malta's financial sector (Table 8.6). Malta has never experienced any banking crises. The banking sector consists of a domestic and an international component which operate independently of one another. The domestic component is highly concentrated, comprising only four banks. Two of these are roughly the same size, and they dominate the system, accounting for more than 90 percent of domestic system assets and similar shares of the deposit and loan markets for residents. The two large banks also dominate the insurance and securities industries, through subsidiaries and affiliates in these sectors. Government involvement in the banking system has been significantly curtailed. The international component consists of nine international banks and one offshore bank that deals with nonresidents in foreign currency. With one exception, the international banks consist of branches and subsidiaries of Austrian and Turkish banks, which have established offices in Malta mainly for tax purposes. They have no significant links to the domestic banking system. The last offshore bank was to relinquish its offshore status at the end of 2003.

The level of financial intermediation in Malta is relatively high: M2 exceeds 150 percent of GDP, and credit extended to the private sector exceeds 90 percent. This is largely the result of many years of stability in the banking system, which has not experienced any major crises or economic/financial shocks.

The Maltese banking system is healthy but exposed to the country's narrow economic base. Bank loan portfolios are highly concentrated. Loans to the tourism, retail trade, manufacturing, ship repair/shipbuilding, and construction sectors are the most impor-

Table 8.6. Malta: Financial System Structure
(as of end 2002)

	Number	Assets (millions of Lm)	Percent of Total Assets	Percent of GDP
Deposit money banks	5	3,911	58.0	232.1
International banks	9	2,569	38.1	152.5
Off-shore banks	1	266	3.9	15.8
Insurance companies[1]	21	251	3.8	14.9
Life	5	168	2.6	10.0
Nonlife	16	82	1.3	4.9

Source: Central Bank of Malta and Malta Financial Services Authority.
[1]Since three insurance companies are composite companies, the subtotals of life and nonlife companies do not add up to the total insurance companies. Data for assets are end-2001.

tant, along with loans to households. Lending to nonresidents is insignificant, and more than 95 percent of lending to residents is denominated in Maltese lira.

Market Infrastructure

Maltese Lira Money Markets

Turnover in Maltese lira money markets is very low due to the excess liquidity in the banking system and the small number of banks. Money markets consist of an unsecured cash market and a treasury bill market. There are no interbank repo or sell/buy-back markets and no other instruments such as commercial paper or certificates of deposits. In the past, the lack of legislation that recognizes netting in times of bankruptcy has prevented the development of a repo market, but new legislation was put in place since 2003.

Interbank lending is unsecured and has been dormant since 2001. Turnover in 2002 was only 6 percent of GDP, less than half of the already low turnover in 2001. All four banks have credit lines with each other, and these are typically reviewed on an annual basis. Deals are arranged over the telephone. The CBM monitors interbank exposures by requiring banks to report their deals. Interbank transactions are highest for the one-week maturity bracket.

Interbank interest rates are closely aligned with the CBM Central Intervention Rate. They have exhibited hardly any volatility because all banks tend to be on the same side of the market. In September 2002, the CBM launched the weekly fixing of two interbank rates, MIBOR (Malta Interbank Offered Rate) and MIBID (Malta Interbank Bid Rate), in the following tenors: overnight, 1 week, 1 month, 2 months, 3 months, 6 months, 9 months, and 1 year. The rates have so far been purely indicative, because no trades have been conducted. Nevertheless, the fixing should prove useful once liquidity conditions change and it can be conducted on a daily basis.

The Maltese treasury holds weekly auctions for treasury bills with a 91-day maturity. Auctions are held even when the government has no borrowing requirement in order to maintain some liquidity in the treasury bill market and set a yield curve. Treasury bills with other maturities (1 to 12 months) are held less frequently. The CBM does not participate in primary auctions. At the beginning of 2003, there were 15 issues of treasury bills outstanding, with remaining maturities from 4 to 164 days and a total value of Lm 219 million. The treasury has a threshold of Lm 300 million in treasury bills that it can issue without parliamentary approval.

The vast majority of treasury bills (about 87 percent) are held by banks. The minimum bidding volume in the primary auctions was raised to Lm 20,000 in 2002, in line with the authorities' policy to focus on the wholesale market. Due to the high excess liquidity in the banking system and the small number of investment vehicles, banks tend to hold treasury bills until maturity. The turnover on the secondary market for treasury bills is therefore very low, at 7.2 percent of GDP in 2002. Most treasury bill transactions are with the CBM (43 percent), which quotes bid and offer prices. Treasury bills are not dematerialized (but dematerialization is planned), and trading is over the counter and unregulated.

In the government securities (treasury bills and government bonds) market, the CBM aims to ensure liquidity and install investor confidence (in particular for retail investors), and thereby to contribute to orderly conditions and stability. To achieve these objectives, the CBM quotes bid and offer prices based on yields with a yield spread of 5 basis points for wholesale transactions and 10 basis points for retail transactions. The CBM cannot bid in the primary market but serves as a buyer for any investor who would like to receive proceeds before maturity date. The CBM then makes the purchased bills available for sale.

The CBM's pricing role in the government securities market appears to cause confusion among some market participants. Even though the CBM follows the prices established at the primary auctions and carefully observes market transactions and adjusts its prices accordingly, the pricing pattern has been surprisingly steady. This has created a perception among some market participants of an attempt to stabilize the government securities prices. Such suggestions could call into question how solid the yield curve is beyond the range of active treasury bill maturities.

Government Stock Market

Secondary market trading in government securities is very thin. Government stocks are traded on the MSE. Trading volumes shrunk significantly in 2002, to only 2.4 percent of GDP. Given the build-up of liquidity in the banking system, the poor performance of equity markets, and widening spreads between Maltese and foreign government bond yields in recent years, new issues of government securities have been heavily oversubscribed, and investors have been reluctant to trade them afterward in the secondary market. Also undermining secondary market liquidity has been the highly fragmented nature of debt stock (36 bonds outstanding at the end of 2002), the participation of the governmental Sinking Funds in the government debt market, and the previously mentioned pricing role of the CBM in government securities.

Foreign Exchange Markets

The most active financial market in Malta is the foreign exchange market, with a turnover of 167 percent

of GDP in 2002. However, given the openness of the Maltese economy, this turnover rate is still relatively low. More than 95 percent of all transactions are spot. As in most countries, forward contracts typically have maturities between 3 and 12 months. Transactions between banks and the public account for about two-thirds of all foreign exchange operations, and transactions between foreign exchange bureaus and the public account for about 4 percent. Most banks are close to the regulatory limit for open foreign currency positions and therefore pass on any additional open foreign exchange positions to the CBM. Bid-ask spreads between credit institutions have narrowed to about 0.37 percent, compared to 0.25 percent for transactions with the CBM. A wider bid-ask spread for government and parastatals of 0.5 percent (compared to 0.25 percent for banks) provides some incentive for them to deal with banks. However, when the size of their transactions is too large, they directly deal with the CBM.

Monetary Policy Instruments

Auctions of Term Deposits and Repurchase Agreements

The CBM's main monetary policy instruments for steering short-term interest rates are auctions of term deposits and repurchase agreements with securities. Depending on the liquidity situation of the banking system, every Friday the CBM conducts either of those two operations (Box 8.7). They have a 14-day maturity and are settled on the same day. Auctions are at variable rates, with each bank having to pay its successful bidding rate (i.e., American-style auction). However, the rates are within a narrow corridor of 5 basis points above the CBM central intervention rate for repos and 5 basis points below the central intervention rate for term deposits. The CBM honors all bids in this corridor, except when it views the bidding amount as clearly inconsistent with its liquidity forecast. Its liquidity management approach is therefore accommodating. In 2001, when Malta experienced a balance of payments deficit, the CBM predominantly conducted liquidity-injecting operations. With the turnaround of the balance of payments situation, the CBM has conducted only liquidity-absorbing auctions of term deposits. Typically, three out of the four eligible counterparts participate in the operations.

Securities that can be used for repurchase agreements are government bonds and treasury bills, but the CBM Act also allows acceptance of other eligible assets. In practice, the CBM requires the use of government bonds unless a bank does not have enough government bonds in its portfolio. In such cases, treasury bills may be used, in certificate form, provided that the actual transfer of ownership is effected on the same day. The only risk-control measures are initial margins of 2 percent. However, the CBM plans to introduce valuation haircuts and variation margins similar to those used by the European Central Bank. As noted previously, until the passage of new legislation in 2003, the lack of legislation recognizing netting in times of bankruptcy prevented development of an interbank repo market.

Standing Facilities

The CBM's standing facilities create a 350-basis-point corridor for the overnight money market rate. The lower boundary is set by the CBM's overnight deposit facility. This facility is available to deposit money banks upon request at the end of the day. Maltese banks frequently use the overnight deposit facility at the end of the reserve period. This is the result of the limited options for using short-term liquidity given the smallness of the financial system and the

Box 8.7. Malta: Monetary Policy Instruments

Reserve requirements

Set at 4 percent of deposits, and remunerated at a fixed rate of 2.7 percent (cash in vault is not counted as eligible asset). Averaging provisions apply. CMB may impose penalties for noncompliance of up to 5 percentage points above CBM's rate applied to its overnight standing lending facility.

Standing facilities

An overnight deposit facility is combined with an overnight lending facility ("standby loan") to form a corridor of 350 basis points for interbank market rates. A pool of collateral for the lending facility is pledged in advance in favor of the CBM, allowing the lending facility to be activated automatically to cover end-of-day overdrafts.

Money market instruments

- Auctions of term deposits: Conducted regularly (weekly), with 14 days maturity, using multiple-rate interest rate tenders. Main discretionary instrument in situation of excess liquidity.
- Repo operations: Conducted regularly (weekly), using multiple-rate interest rate tenders. Acceptable securities include treasury bills and bonds. Main instrument when the system is short of liquidity.

fact that most banks are on the same side of the market. Deposits with the deposit facility averaged Lm 10.5 million per month during 2001–02. This compared to about Lm 125 million of required reserves on average.

The CBM's overnight lending facility sets the upper limit for overnight money market rates. It is available upon request by banks or can be used automatically when the settlement account is overdrawn at the end of the day. For that purpose, banks have pledged a pool of securities to the CBM. The marginal lending facility has been used only occasionally (in four separate months over the past $2^1/_2$ years), with borrowing averaging Lm 2.6 million per month, lower than deposits with the CBM.

Reserve Requirements

Banks operating in Malta are required to hold 4 percent of deposits and other liabilities with the CBM. Required reserves are remunerated at a fixed rate of 2.7 percent. Required reserves have to be held in the currency that is used as the accounting base of the bank.[2] Vault cash is not counted as an eligible asset. Required reserves are calculated based on the average of the end-of-month balance of the two months proceeding the maintenance period, and full averaging over the holding period is allowed. Reserve shortfalls used to be given a fixed penalty rate of 8 percent. Under the amended CBM Act, the CBM may impose a penalty of up to 5 percentage points above its marginal lending rate.

Foreign Exchange Operations

The CBM maintains the peg to the currency basket by standing ready to buy and sell (spot) the basket currencies in the market and by maintaining an appropriate interest rate spread to reflect the risk premium. The CBM quotes real-time exchange rates for spot and forward trades and stands ready for spot transactions in the three currencies of the basket. The bid-ask spread for spot deals is 0.25 percent, and for forward deals, is 0.25 percent plus the premium or discount depending on the interest rate differential.

[2]This policy is relevant for former offshore or international banks that have acquired a license to operate in Malta (rather than only operating from Malta). Holding required reserves in the currency that they use as their accounting base reduces exchange rate risk.

Conclusions and Lessons

The following conclusions and lessons can be derived from Malta's experience with reliance on money market instruments:

- Low inflation rates have been the result of a successful pegging of the currency and a consensus about the importance of the peg to achieving price stability. The lack of CBM independence (until the 2002 CBM Act amendments), including the possibility of financing fiscal deficits through the CBM and the assignment of multiple objectives through the CBM Act, was not misused. Capital controls, which were recently lifted, also facilitated maintenance of the peg.
- The sequencing—first liberalizing financial markets, later eliminating capital controls—has helped to avoid any currency or banking crises. However, the approach has been very gradual, stretching over more than a decade.
- The combination of weekly auctions of term deposits or repos, standing facilities at penalty rates, and reserve averaging have allowed effective liquidity management. However, trading activity in the money market has remained low, due to excess liquidity of the banking system and the small size of the market.
- Certain institutional elements impede market development:
  - CBM's operations in the government securities markets may have led to the perception that it still seeks to manage interest rates across the yield curve. Such suggestions could call into question how solid the yield curve is beyond the range of active treasury bill maturities.
  - Dematerializing treasury bills would encourage the development of a repo market.
  - Impediments to the use of repos have just been eliminated and should help to build up a repo market.
  - Public debt management could be used more effectively to help develop more liquid securities markets, for example, through the reduction in the fragmentation in the debt stock.
- The privatization of the deposit money banks—in particular, the sale of one large bank to a foreign owner—has increased the degree of competition. Nevertheless, interest rate volatility has been minimal.

Tonga[1]

Adoption and Reversal of Reliance on Money Market Operations

Shortly after it was established in 1989, Tonga's central bank (the National Reserve Bank of Tonga, or NRBT) shifted from administrative measures to money market instruments to conduct monetary policy. However, when confronted with rapid credit growth in 1994 and 1995, the NRBT had to resort to administrative measures owing to its inability to support the financial costs involved in a tightening of monetary policy.

During the first half of 1990s, the NRBT gradually shifted reliance from administrative measures to money market instruments to conduct monetary policy: interest rate controls were progressively phased out and fully liberalized in 1991, and credit controls, mainly in the form of a maximum loan-to-deposit ratio, were eliminated in 1993. Concomitantly, the NRBT introduced three new policy instruments: non-interest-rate-bearing reserve requirements (at 5 percent of banks' deposits); issuance of NRBT notes on weekly basis;[2] and a refinance standing facility.

At the same time, the NRBT allowed the entry into the market of two foreign commercial banks, with a view to increasing competition. Commercial bank credit to the private sector increased significantly during 1993–95, and international reserves declined markedly, calling for a tightening of monetary policy.

The attempt to tighten monetary policy in 1995 revealed the weak financial position of the NRBT. The NRBT lacked revenues and had no financial support from the government, and it would need to issue significant amounts of notes to tighten overall liquidity conditions, which would have resulted in large operating losses. Several factors were responsible for the NRBT's weak financial condition, including the following. At the creation of the NRBT, currency in circulation was covered by claims on the government, which did not yield a return. Also, the amount of paid-up capital was very limited, and substantial resources were absorbed in the construction of a new headquarters building.[3] Ultimately, the NRBT resorted to higher reserve requirements (the ratio was raised from 5 percent to 10 percent in 1995) and moral suasion to dampen credit growth. In 1998, the NRBT was forced to discontinue issuing the more expensive three-month central bank bills (at 5.5 percent).[4] In 1998–99, in addition to informal credit ceilings, the NRBT raised the reserve requirement ratio further from 10 percent to 12 percent, increased the NRBT's minimum lending rate (MLR) from 7 percent to 9 percent, and imposed a 30 percent deposit cash margin on all new loans with the exception of export and tourism sector loans. Subsequently, the growth of credit was contained and official reserves stabilized in 1999, allowing the removal of the 30 percent cash margin. However, in response to a loss of official reserves, the reserve requirement ratio was raised from 12 percent to 15 percent, and the MLR was further increased to 12 percent in 2000.[5]

During the course of 2000, faced with higher reserve requirements, banks reduced their holdings of NRBT bills to fund an expansion of credit, which in turn resulted in pressures on international reserves. Eventually, the NRBT had to impose formal credit ceilings, which have since remained the main monetary policy instrument in Tonga. Concomitantly, the NBRT discontinued the issuance of NBRT notes because of the financial cost associated with their placement.

Monetary Policy Environment

Institutional Framework

In Tonga, monetary policy is implemented in the context of a pegged arrangement with a horizontal band, whereby the value of the pa'anga is determined based on a weighted basket of currencies comprising the Australian dollar, the Japanese yen, the New Zealand dollar, and the U.S. dollar.[6] The exchange rate is managed on a day-to-day basis by the NRBT on the basis of the movement of the basket of currencies. With foreign exchange control regulations, Tonga is in a position to maintain some monetary policy independence.

The monetary objectives of the NRBT are defined as promoting monetary stability and the soundness of the financial system and fostering conditions for economic development. The NRBT aims to keep inflation

[1]Prepared by Kentaro Iwatsubo (Summer Intern, Monetary and Financial Systems Department, MFD) and George Iden (former Senior Economist, MFD), based on a February 1999 Monetary and Exchange Affairs (MAE) technical assistance mission to Tonga, led by Hidaeki Suzuki, and on IMF Country Report No. 03/37. The study covers developments through the end of 2003.

[2]Initially only 56-day maturity notes were offered at a 4.5 percent interest rate. In 1994, securities with maturities between 28 days and five years were added. More than 90 percent of the securities were acquired by commercial banks.

[3]For a more detailed discussion, see IMF Country Report No. 03/37, p. 5.

[4]The NRBT also stopped issuing one-month NRBT bills (at 3.5 percent) in 2001.

[5]The deposit and lending rates by commercial banks in Tonga have been very sticky; consequently, changes in the MLR hardly affected commercial banks' behavior.

[6]The pa'anga was pegged to the Australian dollar until 1991. The Asian crisis and the sharp drop in reserves in 1997–98 led the authorities to introduce a 2 percent band in March 1998. In 2000, the band was widened to 5 percent and the Japanese yen was included in the currency basket since Japan became more important as a trading partner.

low and gross foreign reserves equivalent to or greater than three months of total imports. In addition, the NRBT recognizes that exchange stability is essential for price stability in Tonga, given the high pass-through of the exchange rate to the price level, which reflects that more than half of the items on the CPI basket are imported goods.

The NRBT pursues these objectives in close consultation with the government. Most changes in monetary and exchange rate operations require approval of the executive branch of government, making the NRBT subject to political pressures.[7] In particular, the exchange rate has not always reflected the economic fundamentals because there are political pressures to prevent the depreciation of the pa'anga to contain inflation. At times, pressure to prevent a currency depreciation has come from corporations with foreign debt denominated in U.S. dollars. Furthermore, the limited operational autonomy of the NRBT has at times resulted in direct central bank lending to the government, in particular as it is called to buy any unsold portion of the government securities offered to investors in order to finance the budget. The interest rates on government bonds are based on the yields curve of deposit rates in the market, adjusted for tax-exemption and risk premium. The associated reserve money creation has contributed to excess liquidity, given the limited policy instruments at the disposal of the NRBT to sterilize excess liquidity in the system.

Macroeconomic Performance

Although real GDP growth temporarily strengthened to 6.5 percent in 1999–2000, it slowed to only 0.5 percent in 2000–01 and was estimated at 1.6 percent in 2001–02. The contraction of the economy occurred because of a decline in the level of activity in the agricultural sector. An increase in the current account deficit to 8.1 percent of GDP in 2000–01 led foreign reserves to fall to the level of 1.75 months of imports, which was about half the level in 1998–99. During 2000–01, the pa'anga depreciated against the U.S. dollar by a total amount of 20.8 percent, which consisted of normal basket movements of 6.8 percent and the remainder due to adjustments by the NRBT. Because more than 50 percent of the CPI basket is based on imported commodities, the inflation rate increased from 5.3 percent in 1999–2000 to 7 percent in 2000–01, and to 10.4 percent in 2001–02.

The sharp depreciation of the pa'anga against the U.S. dollar was necessary to dampen foreign reserve losses in the wake of fiscal and monetary expansion in 2000–01. Because Tonga has had no flexible monetary policy instruments, exchange rate movements have sometimes helped to affect aggregate demand through the impact of import prices on real income. However, the use of exchange rate adjustments as a monetary policy instrument is not necessarily effective because depreciation can easily lead to further inflation.

Structure of the Financial System and Market

Tonga's financial sector is composed of five institutions: the NRBT, three commercial banks, and one state-owned development bank (Table 8.7). Until 1993, only two banks operated in Tonga, including a state-owned development bank established to promote rural development by investing resources obtained mainly from external borrowing. One of the commercial banks established in 1993 was a branch of a foreign bank; the other was a locally incorporated bank. A small insurance sector completes the financial sector.

Monetary Policy Instruments

In conducting monetary policy, the NRBT attempts to monitor the net domestic assets of the banking system. Limiting domestic credit expansion is considered essential to dampen the demand for imports and prevent a deterioration of international reserves. Following the unsuccessful attempt to rely on open market operations, the NRBT now relies on a combination of credit ceilings and reserve requirements to achieve its intermediate objectives (Box 8.8).

In a context of a structural excess of liquidity, the short-term liquidity facility does not play any operational role, and the NBRT has not had a discretionary instrument to absorb excess liquidity since it discontinued issuing NBRT notes in 2001. Changes in reserve requirement ratios have been used to influence the demand by the financial system for central bank reserves above the clearing balance needed for settlement purposes. They were instrumental in mopping up structural excess liquidity that built up in relation to direct NBRT credit to the government.

Following a period during which the NRBT relied on moral suasion to monitor the growth of bank credit, in 2002 the NRBT introduced formal individual credit ceilings on the commercial banks and the state-owned development bank.[8] The recourse to credit ceilings became necessary due to the absence of effective money market instruments to regulate overall liquidity in the banking system. In particular, issuing NBRT notes

[7]The NRBT governor is appointed for a period of five years and is eligible for reappointment. Responsibility for policy and affairs lies with the board of directors, which comprises the governor and six other directors appointed by the executive branch.

[8]The NRBT did not specify sanctions for noncompliance with the credit ceilings. The June 2002 experience shows that two banks complied, while the other two did not.

Table 8.7. Tonga: Financial System Structure
(as of 2001)

	Assets (millions of pa'anga)	Percent of Total Assets	Percent of GDP	Number of Institutions
Commercial banks	200.4	81.6	72.3	3
State-owned development bank	45.1	18.4	16.3	1
Insurance companies	n.a.	n.a.	n.a.	6
Total	245.5	100.0	88.6	10

Sources: Tonga authorities and Fund staff estimates.

was no longer a viable option, given the high costs involved and the weak financial position of the NBRT. Meanwhile, rapid credit growth has highlighted the limited effectiveness of administrative measures and the need to restore conditions for using money market operations.

Box 8.8. Tonga: Monetary Policy Instruments

Credit ceilings

These are imposed on the net domestic assets of each individual bank, within a global ceiling on net domestic assets of the banking system. Credit ceilings are set quarterly by the NRBT, and they have been the main monetary policy instrument in Tonga since 2000.

Reserve requirements

These were introduced in 1993. They are not remunerated. The ratio was raised from 5 percent to 10 percent in 1995, to 12 percent in 1998, and to 15 percent in 2000.

Standing facilities

Short-term liquidity facility: This allows the banks to borrow from the NRBT for a short term (normally for less than a month), using government bonds or the NRBT notes to the NRBT as collateral. The discount rate charged by the NRBT on these short-term loans is 17 percent per year during the first 10 days, and 19 percent thereafter, as of August 2002.

Money market instruments

Central bank bills: NRBT bills were introduced in the mid-1990s; they were discontinued in 2001 owing to the high cost to the NBRT associated with their placement. The NBRT bills were replaced by treasury bills, and the associated costs are thus now financed by the government budget.

Channels of Transmission of Monetary Policy

The credit ceilings have been the main monetary policy instrument since 2000 due to the NRBT's inability to support the financial costs associated with money market operations for liquidity management.[9] The weak financial position of the NRBT stems from high interest payments and administrative expenses.

The NRBT experienced the most significance losses during 1996–98, associated with the issuance of NRBT notes. In those years, interest payments rose from 46.8 percent of operating income in 1996, to a peak of 63.9 percent in 1997, and to 55.3 percent in 1998. Administrative expenses also represented a large share of operating income over the previous eight years. Those expenses rose from 27.9 percent of operating income in 1995, to 47.7 percent in 1997, and to 42.3 percent in 1998. More recently, administrative expenses dominated the other items of the NRBT's operating expenditure, rising to 46.8 percent of operating income in 1999, compared with 38.9 percent in the case of interest payments.[10]

Interest rates do not play a significant role in monetary operations in Tonga because the NRBT has taken the stance since 2001 that it cannot afford to conduct open market operations. The interest rates charged on government bonds have not reflected the movement of inflation, and recently have been far below the inflation rate. One important implication is that interest rate policy has failed to support the government's more flexible exchange rate policy, and consequently excess demand has continued and foreign reserves have declined. The NRBT is required to buy any unsold portion of government bonds, with the result that it must issue reserve money to finance government operations. This has contributed to inflation and to a loss of foreign reserves.

[9]Excess liquidity resulted from credit expansion associated with operations with the government and public enterprises.

[10]In 2002, the government approved a proposal to strengthen the NRBT through a recapitalization, reflecting the cost of monetary policy in the budget for 2002–03 and subsequent years.

Conclusions and Lessons

Tonga's experience illustrates that, when the central bank is in a weak financial position, reliance on money market operations faces difficult challenges:

- In the absence of budgetary support, the central bank was unable to absorb excess liquidity and therefore relied on financial repression to conduct monetary policy.
- The NRBT resorted to bank-by-bank credit ceilings because of its inability to support the costs associated with money market operations.
- Although recently the government has been a net creditor to the banking system, political interference in the conduct of monetary policy has at times weakened the effectiveness of monetary policy when the central bank has had to finance the government and public enterprises by issuing reserve money, which has eventually led to further inflation.
- With the central bank unable to rely on money market operations, the depreciation of the currency may have helped to reduce aggregate demand and prevent foreign reserve losses, but at the expense of raising inflation.

TUNISIA[1]

Path to Reliance on Money Market Operations

Throughout the 1970s and until the mid-1980s, Tunisia's monetary policy relied on credit and exchange and capital controls. Credit controls involved bank-by-bank credit ceilings, interest rate controls, and mandatory requirements for banks to channel credit to strategic sectors. Exchange and capital controls were used to ensure that domestic savings would be used to finance domestic investments rather than the acquisition of foreign assets. These policies led to macroeconomic imbalances and the emergence of serious problems in the banking system, as the system for controlling and funneling credit to strategic sectors proved increasingly inefficient. In the mid-1980s, the authorities responded with the implementation of wide-ranging stabilization and structural reforms. Key objectives of the reforms were to reduce direct government intervention, strengthen the role of market forces in the allocation of financial resources, improve the capacity of financial institutions to mobilize domestic savings, and enhance competition among banks and strengthen their financial soundness.

The initial phase of financial reforms (1987–93) culminated with the completion of current account convertibility (Table 8.8). Liberalization of lending rates was initiated early in the process and followed a gradual path; the requirement of prior approval for granting bank loans was eliminated, and the regulatory constraints imposed on the balance sheet of commercial banks were relaxed. Concomitantly, comprehensive prudential bank regulations were introduced. Early in the reform process, the Central Bank of Tunisia (BCT) modernized its monetary policy framework: the role of the rediscount window was reduced, and reliance on money market operations to conduct monetary policy was gradually enhanced. At the time Tunisia accepted the obligations of Article VIII of the Fund's Articles of Agreement in January 1993, lending rates had been almost completely liberalized, the prudential framework for the banking system had been significantly strengthened in line with the recommendations of the Basel Committee on Banking Supervision, and progress had been made in liberalizing the trade regime. However, capital controls were pervasive; banks were still subject to mandatory lending requirements to priority sectors and to limitations on their ability to undertake foreign currency-denominated transactions. The authorities intend to eventually adopt a floating exchange rate regime.

Following current account convertibility, greater emphasis was placed on shifting to greater reliance on money market operations to conduct monetary policy (1994–present). Soon after the completion of current account convertibility, the authorities introduced a spot interbank foreign exchange market (1994). Following the lifting of all restrictions on lending rates and the elimination of mandatory lending requirements to priority sectors (late 1996), intervention in the money market became the main monetary instrument of the BCT (early 1997). The implementation of a plan to restructure non-performing loans (NPLs) to public enterprises resulted in a strengthening of the financial structure of the banks (allowing the minimum capital adequacy ratio to be raised from 5 percent to 8 percent). Gradually, banks were allowed greater freedom in undertaking foreign currency operations. In parallel, the stock market was modernized, thus allowing corporations to diversify their funding sources and encouraging the public to invest in the market.[2] Trade liberalization continued, in particular through the negotiation of a free trade agreement with the European Union. Finally, efforts were made to modernize the institutional and operational framework for public debt management.

Environment for Monetary Policy Conduct

Institutional Framework

The primary objectives of the BCT as defined in its charter include preserving the value of the currency and supporting the economic policies of the government. The latter objective has motivated the implementation of an activist monetary policy aimed at supporting the development needs of Tunisia. Until late 1996, commercial banks were subject to mandatory lending requirements to priority sectors and lending rates were regulated. Following the lifting of these controls, interventions in the money market became the main monetary instrument, but BCT's policies continued to encourage lending to certain sectors until

[1]Prepared by Bernard Laurens (Deputy Division Chief, Monetary and Financial Systems Department, MFD), based on MFD work in the context of the Financial Sector Assessment Program (FSAP) for Tunisia, and Laurens and Sarr (2003), and a joint MED-MFD Supplement to the Staff Report for the 2003 Article IV Consultation. The study covers developments through October 2004.

[2]Measures were adopted in 2001 requiring all securities issued in Tunisia, regardless of nature, to be registered in book entry format. Furthermore, the management and administration of securities accounts traded on the market can only be carried out by credit institutions. Consequently, authorized intermediaries are subject to the supervision of the BCT and of the Financial Market Board, each in its own area of competence. In the same context, a code grouping all legislation governing mutual investment funds was issued in 2001. Other measures in recent years included easing of conditions for opening stock savings accounts to encourage the public to open such accounts.

Table 8.8. Tunisia: Adoption of Money Market Operations

Year	Monetary Sector	Financial Sector	External Sector
1987	Liberalization of deposit and lending rates begins.	Introduction of comprehensive bank prudential regulations.	
1988	Rediscount operations limited to priority sector loans. Money market operations are started.	BCT prior approval for granting bank loans is eliminated.	
1989	Reserve requirements are reactivated.	Introduction of treasury bill auctions.	Creation of money market in foreign exchange.
1991		Relaxation of mandatory bank holdings of government securities.	
1992	Interest rate ceiling set at money market monthly average rate (TMM) plus 3 percentage points. Reduction in scope of preferential credit rates.	Strengthening of prudential regulations for the banking sector.	
1993		Adoption of new auditing standards for the financial statements of banks.	Article VIII accepted.
1994		New banking law sets framework for a more market-oriented system. Audits of commercial banks completed; restructuring plans implemented. Introduction of negotiable treasury bills.	Creation of interbank foreign exchange market.
1996	Lifting of all lending rates controls. Elimination of mandatory lending requirements to priority sectors.		
1997	BCT intervention in money market becomes main monetary instrument.	Privatization of *Banque du Sud*.	Forward covers introduced. Maximum buying/selling spread for spot transactions eliminated.
1998 1999		Strengthening of prudential norms for the banking sector.	
2000		Merger of *Banque de Développement Économique* (BDET) and *Banque Nationale de Développement* (BNDT) and merger with *Société Tunisienne de Banque* (STB).	
2001	Efforts to strengthen liquidity forecasting framework. Three-month reserve repos introduced.	Enactment of new banking law. Introduction of liquidity ratio.	
2002	Amendment of the reserve. requirements system	Privatization of *Union Internationale de Banque* (UIB)	
2003	Introduction of open market operations (OMOs).	Framework for repos is introduced.	

Source: IMF Country Report No. 02/120 and Central Bank of Tunisia (BCT).

October 2002, and short-term interest rates exhibited remarkable stability, at least until the end of 2000.[3]

A statutory limit on the amount of government securities the BCT can hold for monetary policy purposes may have encouraged reliance on private paper in the conduct of monetary policy, including bank claims on strategic sectors, thus reinforcing credit policy considerations in the conduct of monetary policy.[4] Such a limit may also have placed a constraint on the ability of the BCT to conduct open market operations with government securities.

Monetary Framework and Macroeconomic Policies

During the past decade or so, monetary policy in Tunisia has been implemented in the context of a managed floating exchange regime whereby the BCT intervenes in the market with a view to maintaining a stable real exchange rate against a basket of currencies weighted according to the country's main trading partners and competitors. This policy amounted to a constant real exchange rate rule according to which the authorities adjusted periodically the nominal exchange rate so as to maintain the real exchange rate constant. This approach allowed the main exporting sectors to record good performances. In the most recent period, in guiding its exchange rate policy, the BCT has also begun to take into account a broader set of indicators to gauge the competitive position of producers.

At the same time, extensive restrictions on capital inflows and outflows were aimed at ensuring that domestic funds financed domestic investments.[5] This policy allowed the BCT to pursue an independent monetary policy which has been very prudent over the period: the BCT focused on setting the target rate of expansion in credit to the economy around the rate of nominal GDP growth. The objectives set by the authorities were met over the last decade or so: credit to the economy has been broadly in line with domestic demand, and the authorities have shown their willingness to tighten monetary policy in order to moderate domestic demand when necessary.

Fiscal management was also significantly strengthened over the past decade: the consolidated central government budget deficit declined from 6 percent of GDP in 1991 to 2.4 percent in 2001. This adjustment was sustained even during the periods when private demand was growing quickly, during the periods 1991–93 and 1997–99. Public debt has been stable at about 60 percent of GDP since the mid-1990s.

The conjunction of constant real exchange rate targeting with very prudent monetary and fiscal policies, restricted capital flows, and comprehensive structural improvements has resulted in successful macroeconomic performance. In particular, inflation declined from over 5 percent in the early 1990s to 1.9 percent in 2001; real GDP and real export growth averaged 4.8 percent and 7.4 percent during the last decade.

Structural Factors

Tunisia's financial system is dominated by the banking sector, in which state ownership continues to be extensive (Table 8.9). The state has majority positions in three of the largest commercial banks, in a newly created bank specializing in microfinance, in the largest insurance company, and in two specialized insurance companies. It also operates the social security institutions that dominate the provision of retirement benefits and has 50 percent participations in the development banks. A comprehensive program for modernization and restructuring of the banking sector began in 1997. It has involved the privatization of several commercial banks and the merger of several development banks and their transformation into full-fledged commercial banks.[6] The other components of the financial system have grown significantly but remain small compared with the banking sector.

Despite measures to encourage financing from the securities markets and alternative sources of funding, bank credit continues to be the predominant source of external finance for Tunisian enterprises. Consequently, the level of private sector indebtedness is very high. Moreover, corporate debt is predominantly short-term, and long-term credits are indexed to short-term money market rates, making the cash flow position of borrowers highly sensitive to changes in the level of interest rates.[7]

Tunisia's strong macroeconomic performances contrast with the relatively weak financial position of the banking system: NPLs are high (NPLs net of provisions accounted for 15.1 percent of total loans at the end of 2003) and stress tests show a large exposure to credit risk.[8] While no empirical evidence is available,

[3]IMF Country Report No. 02/119.

[4]BCT's holdings of government securities are limited to 10 percent of recurrent government revenues.

[5]While the convertibility of the dinar is at a very advanced stage for nonresidents, capital controls for residents are pervasive.

[6]Noteworthy is the privatization of Union Internationale de Banques (UIB) in November 2002, involving the sale of a controlling share to foreign investors.

[7]In a sample of 1,500 enterprises, the average debt-asset ratio exceeds 65 percent, and it reaches 80 percent in the construction sector; two-thirds of corporate debt is short term.

[8]On the positive side, the sector's profitability is high, and the system is protected from external competition due to extensive capital controls. Furthermore, to help banks improve the financial soundness of their portfolios and to strengthen their financial positions, greater flexibility was introduced in the conditions for writing off doubtful claims, reducing from four to two years the period to allow the write-off of frozen claims.

Table 8.9. Tunisia: Financial System Structure
(as of December 2003)

	Assets (millions of dinars)	Percent of Total Assets	Percent of GDP
Commercial banks	23,415	75.1	72.8
of which state-controlled	*10,634*	*34.1*	*33.0*
Development banks	987	3.2	3.1
Offshore banks	1,765	5.7	5.5
Nonbank financial institutions (NBFIs)[1]	1,203	3.9	3.7
Insurance companies[2]	1,300	4.1	4.0
Pension funds[2]	2,500	8.0	7.7
Total	31,170	100.0	96.8

Source: Tunisian authorities.
[1]NBFIs include leasing and factoring companies and merchant banks.
[2]As of the end of 2000.

one could argue that the credit policy considerations in monetary policy conduct may have delayed the development of the credit culture. The resulting substandard allocation of credit to the economy may have led to higher credit risk and NPLs. The longstanding involvement of the government in the financial sector may have contributed to a lack of efficiency and distortions in credit allocation.

Market Infrastructure

The money market, which is composed of the interbank market and markets for certificates of deposits, commercial paper, and treasury bills, remains shallow. In particular, turnover in the interbank market has been low and volatile, mainly as a result of banks' easy access to liquidity from the BCT, as mentioned above, as well as the rigidity of interest rates.

Starting in 1989, the government began to reduce reliance on captive sources of funding. However, the lack of a firm commitment to market funding of the budget and weak institutional arrangements for public debt management have resulted in only limited success for the auctions, which at times had to be postponed, and have left a shallow secondary market. In order to confront financing requirements that could not be met through securities issues, on several occasions the Treasury resumed reliance on captive funding sources. In turn, the limited and uncertain supply of securities has been a deterrent to secondary market trading because it has encouraged investors to hold the securities until maturity. Secondary market trading is also hindered by weak commitment on the part of the primary dealers to promote market development, accounting rules that do not require valuation of securities at market value, and a long delay in the settlement and delivery of securities (four days). However, the introduction in 2003 of a legal framework for repo transactions should encourage market development.[9]

Channels of Transmission of Monetary Policy

Most deposit and lending rates in Tunisia are (de facto) indexed to the money market rate. Therefore, changes in official interest rates are reflected quickly in other interest rates throughout the financial system. Given that bank credit continues to be the predominant source of external finance for Tunisian enterprises, the transmission of monetary policy through the interest rate channel is potentially strong, in that changes in official interest rates can quickly alter the cash-flow positions of borrowers by altering the average cost of borrowing through the re-pricing of banks' loans.

This responsiveness may have generated some reluctance on the part of the monetary authorities to make interest rate changes. It is worth noting that interest rates in Tunisia have shown very limited volatility during the past ten years, although it must also be added that inflation has remained low during this time.

This state of affairs suggests that the BCT has not relied on interest rate signals to regulate overall monetary conditions or to respond to shocks. Instead, monetary policy has affected aggregate demand by altering the quantity or availability of credit. In this context, the direct involvement of the government in the loan market (through the development banks and the public com-

[9]The legal framework defines a repo as a transaction involving the purchase of securities with transfer of full ownership, at a price agreed at the time of the initial purchase and with the commitment on the part of the seller/buyer to buy back/hand back the securities at a date and price agreed at the time of the initial transaction.

mercial banks) may have been instrumental in the conduct of monetary policy in a context in which interest rates were not, or could not be, actively used.

Monetary Policy Instruments

The BCT has developed a comprehensive set of rules and money market instruments to manage banking system liquidity (Box 8.9). The weekly seven-day tender for repurchase operations is the main discretionary instrument. It is supplemented by standing facilities which allow banks, at their own initiative, to obtain or place liquidity at the official intervention rates (but at penalty rates compared to those reflecting market conditions) and by nonremunerated reserve requirements. The combination of the weekly tender for repurchase operations with the standing facilities creates a corridor for money market rates.

Typically, the Tunisian banking system has an aggregate liquidity deficit and is reliant on refinancing from the BCT. This is due to the liquidity-absorbing effect of autonomous factors of liquidity generated by banknotes in circulation, and the liquidity-absorbing effect of reserve requirements. In this environment, the BCT acts as a supplier of liquidity (through the standing facilities and the discretionary monetary operations) and thus steers money market interest rates. However, at times the system has experienced a structural liquidity surplus owing to large capital inflows. While the BCT has the appropriate instruments to deal with excess liquidity (in particular, deposit auctions), it has complicated monetary policy implementation because of the multiple objectives of the central bank.[10]

Weekly seven-day tenders for repurchase operations are the main discretionary instrument for liquidity management. Until June 2004, participating banks bid the amount of money they wished to transact at the fixed interest rate specified in advance by the BCT (fixed-rate auction). In June 2004, the BCT began using a multiple rate auction system, whereby banks bid for the amount and the rate and the BCT charges the rates offered. In the event that bids received from participating banks exceed the volume of liquidity the BCT is prepared to provide, the BCT proceeds to a pro rata allotment of the individual bank's bids, depending on the ratio between total bids and total liquidity to be allotted.

Given the shallowness of the interbank market, the BCT has not been in a position to receive signals on the level of market rates. Furthermore, given the room for independent monetary policy, the BCT could have deviated from monetary and foreign exchange conditions in foreign financial markets. However, BCT's interest rate policy (in particular, the policy decisions regarding the official intervention rate) has been cautious: deviations from conditions in foreign financial markets have been avoided, and domestic interest rates have been kept positive in real terms.

Until recently, BCT's readiness to systematically meet bank requests under its standing facilities, combined with a narrow corridor for interbank market rates, prevented the development of the interbank market. The credit policy considerations in the conduct of monetary policy also prevented market development.[11] In addition, weak capacity to carry out liquidity forecasts made it difficult for the BCT to take an active stance in managing overall liquidity in the system. In particular, the volume of credit auctioned to the banks in the seven-day tender for repurchase operations (volume tender) was determined by a prediction of banks' expected demand rather than by monetary policy considerations. Therefore, if the demand of credit was overestimated, the remaining liquidity was left unsold. Conversely, if the demand for credit was underestimated, the credit was pro-rated to the banks on the basis of their respective bids. Banks in need of additional BCT credit had recourse to the refinance standing facilities and could obtain additional liquidity.

Reserve requirements have not been used actively for liquidity management purposes. Averaging provisions over a one-month period with regard to compliance allowed credit institutions to smooth out daily liquidity fluctuations (i.e., those arising from the fluctuation in the autonomous factors of liquidity).

The de facto reliance on the standing facilities to manage overall liquidity in the system led to the dominant position of the BCT in the interbank market. In particular, the narrow corridor for interbank market rates has resulted in limited incentives for interbank trading and has inhibited the development of liquidity management skills in the banks.

Conclusions and Lessons

The main lessons from Tunisia's experience with reliance on money market operations to conduct monetary policy are the following:

- In the context of a predetermined exchange rate, monetary policy independence was retained through the maintenance of capital controls. The targeting of a rate of expansion in credit to the economy provided the anchor for price expectations.

[10]Nondebt-creating capital inflows (mostly foreign direct investment, FDI) were about US$650 million in 2000, about 40 percent of which were from the privatization of public enterprises.

[11]The following changes in the implementation of monetary policy in 2001 led to a more active monetary policy: (1) end-of-day settlement operations are conducted at rates that differ from the official intervention rate (± 1/16 percent); (2) introduction of three-month reverse repo operations; and (3) broadening of the range of collateral for BCT refinancing (treasury bills, claims on priority sectors, and claims on other sectors in equal shares).

Box 8.9. Tunisia: Monetary Policy Instruments

Reserve requirements

These are calculated as monthly averages. They must amount to 2 percent of domestic currency-denominated sight and term deposits and similar instruments (i.e., certificates of deposits) with an initial maturity below three months; 1 percent for term deposit and similar instruments with initial maturity between three months and less than two years; and 0 percent for term deposits and similar instruments of two years or more. They are not remunerated, and they are not actively used as a monetary policy instrument.

Standing facilities

- One- to seven-day reverse repurchase operations: Bank may request liquidity against delivery of collateral at a premium over the official intervention rate (+ 100 basis points). Accepted collateral includes treasury bills and banks' claims on priority and other sectors.
- End-of-day (overnight) settlement operations: Banks may request liquidity against delivery of collateral or place liquidity at the official intervention rate plus/minus a spread. Accepted collateral includes treasury bills and banks' claims on priority and other sectors.

Money market operations

- Weekly seven-day tender for repurchase operations: The BCT invites bids for seven-day repurchase operations. The BCT decides on the amount to be injected, and the bids are allocated using a multiple price auction (as of June 2004). Accepted collateral includes treasury bills and bank claims on corporations that are deemed to be financially sound.
- Deposit auctions: When the banking system as a whole is overly liquid, deposit auctions are used instead of credit auctions to mop up excess liquidity. Bids are ranked and accepted according to the rate that is proposed (interest rate auction); they cannot exceed that of the weekly seven-day tender for repo operations.
- Three-month reverse repurchase operations: the BCT invites bids for three-month reverse repurchase operations. Accepted collateral is limited to treasury bills only.

- The use of monetary policy to encourage lending to all sectors regarded as central to Tunisia's development strategy, together with limited progress in modernizing public debt management, delayed reliance on open market operations. However, the BCT has been able to ensure an adequate provision of credit to the strategic sectors of the economy without jeopardizing price stability.
- The BCT retained control over the main components of its balance sheet. However, rationing rather than competitive mechanisms were used for base money allocation.
- The structural liquidity deficit of the banking system has facilitated reliance on rationing for liquidity management, including the ability to target multiple objectives (i.e., price and quantities).
- Although capital controls allowed the conduct of an independent monetary policy, interest rate management has been cautious.
- State ownership in the financial system may have facilitated achieving credit objectives. However, the high number of NPLs in a context of high growth suggests that this policy mix may have amplified credit risks for the banking system.
- From an operational perspective, reliance on money market operations for monetary policy conduct calls for development of the money and government securities markets and for strengthened liquidity forecasting arrangements.
- As Tunisia moves toward greater exchange rate flexibility and toward capital account liberalization, greater interest rate flexibility will be needed. In this context, money market operations (i.e., open market operations) for the allocation of base money will need to be further developed. The BCT has already started moving in this direction.[12]

[12]See Laurens and Sarr (2003).

UGANDA[1]

Adoption of Money Market Operations

Uganda has been relying on money market operations since the beginning of economic reforms in the late 1980s. Critical elements of the reform efforts included a substantial withdrawal of government from commercial activities and the elimination of controls on prices, interest rates, and bank credit. Similar reform efforts were also brought to bear on the trade and exchange regimes, culminating in current account convertibility in 1993 and liberalization of the capital account in 1997.

Overall macroeconomic performance has been robust, with economic growth in excess of 6 percent over the last decade. Inflation has been substantially reduced from the double-digit figures of the early 1990s, to less than 4 percent on average between 1999 and 2003. The large inflow of donor funding resulted in the buildup of significant import cover (up to six months of imports of goods and nonfactor services), and this substantially reduced the size of the emerging budget deficits and related government borrowing. Donor support and prudent macroeconomic policies both contributed to these sustained high rates of economic growth and low inflation.

Reliance on money market operations has not been without challenges, especially given Uganda's underdeveloped financial market and the need for substantial sterilization operations to address the liquidity implications of the release of donor funds. Another challenge for the Uganda authorities has been pressure for the real exchange rate to appreciate consequent on the large external inflows. Specifcially, Uganda has a floating exchange rate, and the large donor inflows have often generated pressures for an appreciation of the Uganda shilling, which complicates exchange rate policy as the authorities are concerned about the implications for competitiveness and the ability to adjust to other shocks. Additional pressures are generated on domestic liquidity as the government spends the donor funds. Unlike many developing countries, Uganda's monetary policy operations have not been subjected to undue fiscal dominance, thanks to donor assistance for budgetary operations. Treasury bill operations have been primarily for liquidity management.

[1]Prepared by Obert Nyawata (Senior Economist, Monetary and Financial Systems Department, MFD), on the basis of MFD work in the context of the Financial Sector Assessment Program (FSAP) for Uganda, the technical assistance missions on monetary policy implementation of August 2001 and January 2002 (both headed by Abdessatar Ouanes), and the mission of March 2004 (headed by Stephen Swaray) on monetary policy implementation. The study covers developments through the end of 2003.

Institutional Framework for Monetary Policy

The Ugandan Constitution stipulates that the Bank of Uganda (BOU) promote and maintain the stability of the value of the currency and, in addition, encourage and promote economic development through effective and efficient operation of a credit system. The BOU Statute states that the objectives of the central bank are to maintain monetary stability and external reserves, as well as to participate in Uganda's economic growth and development programs. At the same time, the BOU believes the overriding objective of monetary policy is to contain annual inflation at below 5 percent while maintaining a flexible exchange rate that is responsive to changes in Uganda's terms of trade.

Structure of Financial Sector

Although the BOU has managed to attain its main policy objective (low and stable inflation), it operates in the context of a low level of monetization and a shallow financial market. Cash constitutes about one-quarter of broad money, which is only about 15 percent of GDP, and assets of the financial system are only about 30 percent of GDP.

The financial sector is dominated by commercial banks. As of December 2003, there were 15 commercial banks, of which 11 were foreign banks, 7 nonbank credit institutions, 9 securities firms and finance companies, 19 insurance companies, 2 pension funds, and 83 microfinance institutions and credit unions (Table 8.10). Commercial banks accounted for slightly over 80 percent of total system assets, while other financial institutions played only a minor role. The banking sector is characterized by a large share of foreign ownership and high loan and deposit concentration, with the four largest banks in the system (one previously state-owned), accounting for about 70 percent of total sector assets, 63 percent of total loans, and 71 percent of total deposits.

The increase in treasury bill issues at times has exerted upward pressure on interest rates and added to the already strong disincentives to private sector lending development.[3] The rise in interest rates, as well as the volume of treasury bill issues, implied an increase in the interest payments on treasury bills, adding to budgetary costs. In fiscal year 2000-01, interest costs accounted for 5.4 percent of budgetary revenues. Although still small relative to GDP, interest costs increased from 0.15 percent of GDP in 1999 to 0.89 percent of GDP in 2002.

[2]Over 50 percent of government's expenditures has been covered by donor funds.

[3]Outstanding treasury bills rose from less than 2 percent of GDP prior to 1999 to over 5 percent of GDP in 2001, with issuances persistently exceeding redemptions.

Table 8.10. Uganda: Financial System Structure
(as of December 2003)

	Assets (billions of shillings)	Percent of Total Assets	Number of Institutions	Percent of GDP
Commercial banks	2,990	83.5	15	22.6
Nonbank credit institutions	144	4.0	7	1.1
Insurance companies	115	3.2	19	0.8
Pension funds	293	8.2	2	2.5
Microfinance and credit unions	40	1.1	83	0.3
Total	3,582	100.0	126	29.5

Source: Bank of Uganda.

Monetary Policy Implementation and Instruments

To achieve its objectives, the BOU has set a monetary program that is consistent with the economy's overall macroeconomic framework. Uganda has introduced major changes in its monetary policy framework in order to contain the excessive volatility in interest rates that resulted from liquidity management operations, particularly in 2000 and 2001. These operations were conducted mainly through a mixture of foreign exchange interventions and treasury bill auctions, with the latter bearing the greater part of the burden during the early stages. The volatility in interest rates abated due to the BOU's increased reliance on short-term instruments for day-to-day liquidity management (repos) and the use of a judicious mix of treasury bill auctions and foreign exchange interventions for sterilization operations. In practice, the BOU's money market interventions now seek a gradual rather than abrupt attainment of the reserve money path determined by the monetary program. The new monetary policy framework has entailed changes in the use of various instruments. In addition to the reserve money target, the BOU monitors a broad range of variables.

The large capital inflows associated with donor assistance have called for large-scale sterilization operations in the form of outright sales of foreign exchange and treasury bill auctions. Foreign exchange sales have tended to appreciate the exchange rate, thereby adversely affecting the country's competitiveness. In addition, volatility in the exchange rate has caused exporters and importers to speculate on the value of the shilling.

Foreign inflows have, on occasion, slowed the depreciation of the real exchange rate, thereby impairing the scope for adjusting to terms of trade shocks in order to safeguard export competitiveness. Initially, the BOU responded by reducing its foreign exchange sales to the market in order to allow the exchange rate to depreciate in response to the terms of trade shock and shifted the burden of liquidity absorption to treasury bills. Subsequently, the BOU shifted the burden somewhat toward more foreign exchange sales in the policy mix for sterilization operations.

Structural Excess Liquidity Problem

As noted above, sustained capital inflows have at times complicated the BOU's conduct of monetary and exchange rate policies. On the monetary front, the challenge for the BOU has been to preserve its inflation objective by neutralizing the effects of the government-injected liquidity as donor funds are released into the system. This has been done through sterilization operations which at times have resulted in interest rate volatility due to weaknesses in the monetary management framework and the shallow money market.

While it lasted, the volatility of interest rates undermined the BOU's capacity to signal a clear and consistent policy stance. For example, the BOU's two policy rates—the rediscount rate and the bank rate which are both set at a margin over the treasury bill rates—became ineffective as monetary policy signals, because they reflected the volatility of treasury bill rates.[4] The rediscount rate has become the policy rate the BOU uses to signal its desired monetary policy stance.

Interest rate volatility also undermined the BOU's ability to extract meaningful information on monetary conditions from the market. Both the monetary authorities and the financial system lacked a benchmark interest rate to which returns on loans and other financial assets could be linked and from which liquidity overhangs could be gauged.

[4]Subsequent to a more active use of repos for short-term liquidity management, interest rate volatility declined. The policy changes were introduced in the context of Monetary and Exchange Affairs (MAE) technical assistance to the BOU after an FSAP mission.

Interest rate volatility, which was caused by the large fluctuation of bank reserves, had implications for the conduct of monetary policy.[5] In particular, the sharp movements in bank reserves meant that the excess funds were not lendable and therefore posed little threat of transmission through the credit channel of monetary policy. This has allowed the BOU some flexibility in conducting sterilization operations, while at the same time preventing it from becoming too complacent about the potential surge in credit and its inflationary consequences.

Swings in bank reserves stem from factors that are endogenous and exogenous to the interventions of the central bank. On the one hand, the limited development of the financial markets has made it difficult for banks to manage liquidity effectively. The bunching of capital inflows—which are dependent on disbursements related to projects implemented by nongovernmental organizations (NGOs) and on government investment expenditures—results in the sporadic conversion of large sums of foreign exchange into shillings and sporadic exchange rate volatility.

Monetary Policy Transmission

In general, high credit risk, combined with inefficiencies in the banking and payment systems and poor physical infrastructure, impedes monetary policy transmission and the supply of credit to the private sector, particularly in rural areas such as Uganda. Money and securities markets are highly illiquid, owing to the lack of creditworthy counterparts in the financial system. Under such circumstances, commercial bank liquidity and interest rates become volatile, reflecting both the size and bunching of foreign currency inflows and outflows and the weaknesses in the management of liquidity. When this situation occurs, the interest rate and credit channels of monetary policy do not function as well as might be expected in a more well developed financial market. With the elimination of financial repression and improvement in the liquidity management framework in Uganda, the signaling role of interest rates has been restored and changes in policy rates are increasingly transmitted to the entire spectrum of interest rates and the entire yield curve.

Small as it is, credit to the private sector is of some significance to prime corporate borrowers and may also influence the transmission of monetary policy, though to what degree remains an empirical issue. Repos have become the instrument of choice for day-to-day liquidity management, with a judicious mix of foreign exchange operations and treasury bill issues addressing the sterilization needs.

[5]Excess reserves have fluctuated between 10 percent and 50 percent of required reserves.

Monetary Policy Instruments

Since the initiation of reforms, the BOU shifted to a combination of rules-based instruments and money market operations to conduct monetary policy (Box 8.10). The monetary policy instruments at its disposal include reserve requirements, standing facilities (rediscount window for treasury bills, a refinance standing facility), and discretionary and money market operations (treasury bills, repurchase agreements, and foreign exchange sales). In addition, the BOU has been a significant participant in the foreign exchange markets, in conjunction with its need to undertake sterilization operations as part of the conduct of monetary policy. In practice, the BOU has relied on a mix of treasury bill issuance and foreign exchange sales for its sterilization operations.

The BOU has developed a liquidity management plan which separates the management of short-term "temporary" and long-term "structural" liquidity resulting from government domestic expenditures financed through foreign donor inflows. The BOU uses repos for fine-tuning "temporary" liquidity variations and a mix of foreign exchange sales and net treasury bill issuance to sterilize structural liquidity, with clear signaling of sterilization and intervention actions in the foreign exchange market. Overall, these actions have resulted in lower volatility of interest rates and have helped anchor market expectations.

Conclusions and Lessons

The following conclusions and lessons can be derived from the experience of Uganda with implementation of monetary policy:

- Fiscal dominance has not been a problem in Uganda, mainly because of sources of foreign financing. Treasury bills are solely for liquidity management. In this context, prudent macroeconomic policies have enabled Uganda to control inflation.
- Financial liberalization, increased confidence in the banking system, and improved liquidity management practices have enhanced the signaling capabilities of interest and exchange rates.
- Notwithstanding ongoing challenges, the BOU has stayed the course on money market instruments. There has been no tendency for policy reversals. Uganda's experience demonstrates that a combination of rules-based instruments and money market operations can be effective even under conditions of limited market development, provided supporting policies are in place.
- Over time, self-liquidating repo transactions can help to counter seasonal and short-term swings in liquidity, and repos are now being more actively used to deal with day-to-day liquidity

Box 8.10. Uganda: Monetary Policy Instruments

Reserve requirements

Reserve requirements are set at 10 percent for demand deposits and 9 percent for term and savings deposits, with a two-week maintenance period. They are not remunerated and are held in domestic currency for both local and foreign currency deposits. Reserve averaging is permitted up to 50 percent of the required reserves.

Standing facilities

- Rediscount window for treasury bills: For bills with remaining maturity of 91 days or less. The rediscount rate is now the policy rate that is fixed by the BOU to signal its desired monetary policy stance. The rediscount rate is based on four primary market observations of the 91-day treasury bill auction rate plus a policy margin.
- Automatic borrowing window: Accessible at the discretion of banks up to 5 percent of required reserves and up to five days. Collateral includes only treasury bills with remaining maturity of 91 days or less. The interest rate is equal to the rediscount rate plus a 1 percent margin.

Money market instruments

- Weekly treasury bill auctions: Issued solely for monetary policy purposes with the costs accounted for in the government's annual budget. Bills are issued with maturities of 91, 182, 273, and 364 days.
- Repos: Repos are decided based on liquidity conditions and are used for fine-tuning operations.
- Sales of foreign exchange: Sales of foreign exchange are being used in tandem with treasury bill auctions for sterilization purposes.

management, while treasury bill issues and foreign exchange operations are used for sterilization operations.

- The BOU has responded to the potential for interest rate volatility with a mechanical adherence to a base money path by smoothing its liquidity management operations in a manner that does not amplify interest rate volatility. Greater emphasis on sterilization through sales of foreign exchange (thus lower net treasury bill issuance) has allowed a steadier execution of the base money program.
- Uganda's experience also illustrates the importance of the central bank communicating clearly with the market. At times, market volatility refelcted uncertainties in the perceptions by the market of the intentions of the central bank. Conversely, during periods when there was clarity, market stability increased. The shallowness of the market may have amplified the response of the market to shocks.

Ukraine[1]

Path to Reliance on Money Market Operations

The introduction of money market operations to conduct monetary policy in Ukraine followed the move to replace the karbovanets with Ukraine's permanent currency, the hyrvnia (HRV), in 1996. Due to the political importance attached to the monetary conversion, the authorities made a concerted effort to ensure its success. In particular, great significance was attached to the stability of the exchange rate in the period preceding the announcement of the conversion. In effect, this gave the National Bank of Ukraine (NBU) the political mandate for tight financial policies during 1996.

With this mandate, the NBU began a process of financial liberalization, including the gradual introduction of money market operations to conduct monetary policy and the phasing out of directed credit and bank-by-bank credit ceilings. The main monetary instruments that were introduced at these beginning stages were reserve requirements, a variety of money market operations, and a limited standing facility. The political mandate for tight policies, the resulting fiscal adjustment, and growing activity in the nascent domestic treasury bill market allowed the NBU to limit its credit expansion to the government. It also reduced pressures on the commercial banks to provide directed credits. As a consequence of these developments, the exchange rate remained broadly stable throughout the year, and in September 1996, Ukraine introduced its new currency.

Ukraine's progress toward financial liberalization was disrupted by the financial crises that hit many Asian economies during the second half of 1997 and hit Russia in mid-1998. The reversal of investor sentiment and the ensuing capital outflows put monetary policy under pressure. In 1998, when the Russian crisis broke, the confidence of domestic and foreign investors in Ukraine was weakened, and in particular, demand for Ukrainian government debt collapsed. A significant depreciation of the hryvnia followed, and a vicious cycle emerged of flight from government securities and rising real interest rates. With reduced access to international and domestic creditors, the government once again relied heavily on borrowing from the NBU to finance the budget deficit and to service public debt. This borrowing was in the form of NBU purchases of government securities in the primary market for treasury bills.

Starting in 2000, Ukraine managed to recover substantially from the Russian crisis and to achieve significant growth in its own economy. However, the government securities market was slow to recover following the rescheduling of government debt in 1998. Furthermore, the low level of treasury bills outstanding limited the scope for reliance on some of the money market instruments that the NBU had developed.

Monetary Policy Environment

Institutional Framework

The NBU's responsibilities for the formulation and conduct of monetary policy are defined by the constitution, passed in 1996, and the Law of Ukraine on the National Bank of Ukraine (NBU law), passed in 1999. According to the NBU law, the central bank's primary objective is to ensure the stability of the Ukrainian monetary unit. The NBU law also requires the bank to support other government economic and financial objectives, such as promoting macroeconomic stability, economic growth, and employment, under the condition that this support does not create a conflict with the primary objective of the NBU.

In pursuing the goal of stability of the monetary unit of Ukraine, the NBU has chosen to target the nominal exchange rate rather than reserve money.[2] In granting operational responsibility to the NBU for the conduct of monetary policy, the law authorizes the NBU to use a range of specified monetary policy instruments and to take other measures as necessary to achieve its objective.

Macroeconomic Performance

The onset of the Russian crisis disrupted the good macroeconomic performances recorded in the mid-1990s: gross international reserves fell sharply, and the sharp depreciation of the hryvnia during this period led to an upturn in inflation. However, fiscal policies were restrained, and, subsequently, macroeconomic balance was restored. The currency was allowed to float in 1999, and since 2000 the monetary policy framework has been characterized by a de facto fixed exchange rate against the U.S. dollar. Ukraine's macroeconomic performance since 1996 has gone through periods of stability, interspersed with crises, reflecting in part the poor policy environ-

[1]Prepared by Stephen Swaray (Senior Economist, Monetary and Financial Systems Department, MFD), based on MFD work in the context of the Financial Sector Assessment Program (FSAP) to Ukraine, and on MFD technical assistance mission of April 2004 (headed by Inci Ötker-Robe). The study covers developments up to October 2004.

[2]The NBU has been pursuing a nominal exchange rate target to a large extent due to undeveloped monetary transmission mechanisms and unpredictable dynamics of the money demand. The authorities have argued that exchange rate stability was desirable in an open economy like Ukraine since in the short run the exchange rate has a direct impact on inflation.

ment and in part, adverse economic shocks. Fiscal and monetary policies have been inconsistent, and Ukraine's initial defense of its exchange rate in mid-1998 proved counterproductive. However, the country achieved significant economic progress and access to international markets was regained with the Eurobond issues in 2003 and 2004.

Structure of the Financial System

The Ukrainian financial system is small and concentrated in commercial banking. Assets in Ukraine's 158 active banks amounted to 40 percent of GDP at the end of 2003 (Table 8.11). The other financial subsector of significance is insurance, where premiums account for about 2.0 percent of GDP in 2002. Other financial institutions such as pension funds, credit unions, and leasing companies together account for less than 1 percent of GDP.

The banking system is composed mainly of a large number of private banks, and concentration is low by international standards. The ten largest banks held 54 percent of assets as of December 2003. There are two wholly owned state banks, which together account for about 10 percent of total bank assets. Foreign involvement in the sector has been relatively modest, particularly in comparison to other countries in Central and Eastern Europe. Besides the seven wholly owned foreign banks, there are another 13 banks that are partly foreign, which together account for 16 percent of total bank assets.

The growth of banking aggregates between 1998 and 2003 was remarkably high. The rapid rise in deposits reflected macroeconomic stability, increased public confidence in the banking system, and a significantly reduced use of cash relative to bank money. However, per capita bank deposits in Ukraine are still far lower than in comparable countries. Credit expansion has been even faster than the expansion in deposits, as the ratio of stock of credits to stock of deposits rose from 103.7 percent in 1999 to 115.2 percent in 2003.[3]

The long period of economic instability promoted dollarization, but in the more stable recent conditions, dollarization of deposits has fallen much faster than the dollarization of loans. At the end of 2003, 32 percent of deposits and 38 percent of bank loans were denominated in foreign currencies, compared to 44 percent and 45 percent, respectively, at the end of 1999. The wide differentials between hryvnia and foreign currency interest rates, coupled with a stable exchange rate, made loans in dollars seem very attractive to borrowers.[4]

Money Market Infrastructure

The Government Domestic Debt Market

The market for Ukrainian government domestic securities is thin and fragmented, and the volume of securities suitable for secondary market trading is small. About two-thirds of domestic government securities are restructured bills which are held by the NBU. Furthermore, the small stock is fragmented into large numbers of issues with different maturity dates, and most issues are small in size,[5] making secondary trading difficult. Turnover in the secondary market has been small and volatile despite a well-functioning online automatic quotation and trading system (called "PFTS") and adequate depository facilities offered by NBU.

The Interbank Money Market

The interbank market in Ukraine has been characterized by high volatility of hryvnia interbank rates.[6] Furthermore, interbank lending has been concentrated in short maturities, and the market is segmented. These deficiencies have weakened the monetary transmission mechanism. In particular, a number of commercial banks have maintained substantial excess reserves.

Over the years, the poor functioning of the interbank market has been related to credit risk, in a context where there has been limited amounts of securities to be used in repurchase transactions or as collateral.[7] In addition, neither did the NBU intervene actively to offset fully exogenous liquidity shocks, nor did the NBU standing facilities serve effectively to limit interbank interest rate fluctuations, in part because many banks lacked eligible collateral and the NBU imposed limits on the use of these facilities. Finally, some problems in the interbank market have emerged due to unanticipated effects of the successful introduction of the single treasury account and delays in establishing the proper coordination of

[3]Commercial bank credit to the economy grew by 62 percent, 41 percent, 48 percent, and 64 percent between 2000 and 2003, respectively, while deposits grew by 47 percent, 32 percent, 43 percent, and 58 percent, respectively.

[4]Interest rate spreads between loans in domestic and foreign currency were 6.9 percent in 2003, 10.5 percent in 2002, 18 percent in 2001, and 21.3 percent in 2000 (December data).

[5]For example, 66 new issues were sold in 2003.

[6]For example, the overnight rate rose from 8.1 percent at the end of May 2001, to 35.1 percent at the end of June 2001. The volatility declined somewhat thereafter, until another spike occurred in November 2003.

[7]As of end 2003, treasury securities amounted to HRV 2.6 billion. Total domestic government securities held outside the central bank amounted to 1.5 percent of the GDP, of which more than 90 percent was held by banks.

Table 8.11. Ukraine: Financial System Structure

	2001	2002	2003
Number of banks	152	157	158
Total assets (millions of hryvnia, HRV)	47,204	67,774	104,873
In percent of GDP	23.4	31.1	39.7
Number of insurance companies	328	338	357
Total assets	3,007	5,300	9,030
Premium revenue (millions of HRV)	3,031	4,442	9,135
Number of investment and mutual funds	362	—	—
Total assets (millions of HRV)	—	—	—
Number of pension funds	15	23	47
Total assets (millions of HRV)	60	55	—
Number of credit unions	>400	>450	—
Total assets (millions of HRV)	50	90	—

Sources: National Bank of Ukraine (NBU) and Ukraine Ministry of Finance.

liquidity management between the monetary and fiscal authorities.

Monetary Policy Implementation and Instruments

After independence in 1991 and up until 1996, monetary policy in Ukraine relied on administrative measures designed to provide credit to preferred sectors of the economy at subsidized interest rates as well as to provide liquidity to finance the government's substantial budget deficits. The commonly used instruments were directed credit, refinance credit, interest rate controls, and bank-by-bank credit ceilings. During this period, the economy performed poorly: inflation was consistently in triple digits or more (by 1993, it was 10,000 percent), and output was continuously contracting—the cumulative decline in reported GDP is estimated at more than 50 percent through 1996.[8]

In 1996, Ukraine introduced its own permanent currency. The importance attached to a successful introduction of the hryvnia resulted in a substantial easing of pressure for directed lending by commercial banks and the NBU. Moreover, demand for refinancing credit in 1996 was very moderate as banks exhibited caution in their general lending activity to the nongovernmental sector, in part because of their own fragile state. Instead, banks preferred to maintain large holdings of unremunerated excess reserves.

In parallel, the NBU began the process of financial liberalization, including the gradual introduction of money market operations to conduct monetary policy and the phasing out of directed credit and bank-by-bank credit ceilings. Concurrently, basic market infrastructure, including a treasury bill market, was developed to facilitate reliance on money market operations to conduct monetary policy. At the end of the process, the NBU could rely on a combination of rules-based instruments (reserve requirements) and money market operations to manage longer-term trends in liquidity (Box 8.11).[9]

The NBU also had the option to use open market operations, involving the buying and selling of treasury bills in the secondary market and repurchase (repo) or reverse repo operations, but it did not frequently use such money market operations.[10] The NBU's toolkit has also included standing facilities, and the interest rates for these facilities have been set administratively by the NBU. Finally, the NBU has intervened in the foreign exchange market, and this eventually became its main instrument of monetary policy.

Reflecting the generally good performance of the budget and the rapid expansion of the treasury bill market, the NBU was able to effectively regulate liquidity and conduct monetary policy during 1996 and part of 1997. Policy was tightened at the beginning of 1996, through increases in the required reserve ratios for both domestic and foreign currency deposits, in an effort to quickly reduce excess reserves at commercial banks. This action was followed by tight credit policies, with the NBU restricted refinancing by limiting

[8]Poor economic performance has also reflected unsuccessful fiscal and tax reforms.

[9]Refinancing facilities are subsumed under the heading "money market instruments" because these instruments are at the initiative of the NBU.

[10]The NBU started to use more actively reverse repos and to issue CDs in mid-2004.

Box 8.11. Ukraine: Monetary Policy Instruments

Reserve requirements

Reserve requirements used to be set at differentiated rates depending on maturity and currency denomination. Effective October 1, 2004, demand deposits became subject to an 8 percent reserve requirement and time deposits to a 7 percent requirement (both domestic and foreign currency deposits). Reserves must be held in domestic currency over an averaging period of one month. As of August 2004, banks are required to maintain a daily minimum balance of 70 percent of required reserves (earlier 60 percent minimum and before that full averaging was allowed). The NBU has been lowering the reserve requirement in line with the reduction in inflation.

Standing facility

- Discount rate: The discount rate serves as (de jure) benchmark interest rate for money market participants set by the NBU to benchmark the cost of money. As such, it is the lowest of the NBU's lending rates, but no transactions are carried out at that rate.
- Deposit facility: Interest rates are fixed by the NBU. Only banks that do not borrow from the NBU can use the deposit facility. Maturity ranges are 2–7 days, 8–21 days, and 22–30 days.

Money market instruments

- Refinancing facilities: Three types of regular refinancing facilities are available to commercial banks: secured overnight loans, unsecured overnight loans, and refinancing up to 365 days. Collateral accepted by the NBU is limited to government securities for the overnight credit, but a broader list of collateral is accepted for loans in other maturities. To use these facilities, banks must meet specific conditions relating to capital and solvency and must have a good track record of loan repayment to the NBU. The use of these facilities is limited, and stricter criteria are applied for unsecured overnight credit than other credit. The total amount of refinancing cannot exceed a certain percentage of the commercial bank's paid up capital. Interest rates on refinancing loans cannot be lower than the NBU's discount rate. The interest rates on overnight loans are set by the NBU, while loans on other maturities are provided with price or quantity tenders. Effective March 2004, the NBU set the rates daily depending on the liquidity conditions in the market and differentiating the interest rate on secured and unsecured overnight loans.
- NBU's Certificate of Deposits (CDs): CDs with maturities from 1 to 180 days can be auctioned to commercial banks to mop up excess liquidity in the system. Interest rates on CDs are set by the NBU. CDs can be traded in the secondary market and be used as collateral in the interbank market.
- Repurchase (repo) and reverse repo operations: Repos and reverse repos can be used to fine-tune liquidity on a day-to-day basis, either to absorb or provide liquidity against government securities (foreign exchange can be accepted in bilateral repos). They may be sold on a bilateral basis or through auctions.
- Outright purchases or sales of securities: The NBU can conduct outright operations with government securities. Purchases of securities can be conducted on a bilateral basis or through an auction mechanism and sales through an auction mechanism. The NBU holds only restructured debt in its portfolio.
- Foreign exchange market operations: Foreign exchange operations have been used as a monetary policy instrument to regulate liquidity in the system. In fact, foreign exchange intervention has been the main instrument of liquidity management.

both the number of auctions and the use of its refinance standing facility and with periodic NBU sterilization operations to offset its frequent net purchases in the exchange market. The NBU maintained its relatively tight credit policy during the first nine months of 1997, and strong participation of nonresidents in the treasury bill market allowed the budget to be financed without recourse to borrowing from the NBU.

Most nominal interest rates (which by then had been completely freed) began to fall in 1996 as inflation came down sharply. Average commercial bank lending and deposit rates declined following several reductions in the statutory NBU refinance rate during this period. Nongovernmental borrowing did not increase in response to the fall in the commercial bank lending rates, however, because of the cautious lending policies of commercial banks. Indeed, with the yield on three-month treasury bills remaining high, commercial banks found holding treasury bills an attractive alternative to extending loans. It is not clear whether this crowded out lending to the nongovernmental sector, because the commercial banks had previously kept large unremunerated excess reserves. The volume of treasury bills sold increased steadily, reflecting in part the rapid rise in the participation of nonresident investors in the market, particularly in the second half of 1996 and through the third quarter of 1997.

The onset of the financial crisis that hit many Asian economies during August and September 1997 influenced investor perceptions of Ukraine. The foreign exchange and treasury bill markets became increasingly erratic during the fourth quarter of 1997, and investors started withdrawing due to concerns regarding the stability of the exchange rate and Ukraine's ability to repay. During this period, the NBU sold a considerable

amount of foreign reserves to protect the exchange rate. At the end of October, the authorities announced a number of measures to ease pressures in the foreign currency market and to help keep the hryvnia within its band. These included increased interest rates,[11] tightened reserve requirements, large-scale open market operations, and measures to enhance the attractiveness of treasury bills (including lowering the cutoff price and shortening their maturity). However, these measures were not sufficient to stem the loss of reserves associated with the decision to maintain the band.

The reversal of investor sentiment and the ensuing capital outflows put monetary policy under considerable pressure. When the crisis broke, the confidence of domestic and foreign investors in Ukraine weakened and, in particular, demand for Ukrainian government debt collapsed. A significant depreciation of the hryvnia followed, and a vicious cycle emerged of flight from government securities and rising real interest rates. With reduced access to international and domestic creditors, the government had to rely on borrowing from the NBU to finance the budget deficit and to service public debt. The flight from government debt and the rising real interest rates eventually led to the rescheduling of about US$5 billion worth of outstanding government securities and a substantial reduction in their net present value.

During 2000-03, monetary policy actions were aimed at maintaining a stable exchange rate against the U.S. dollar and building up external reserves, while keeping monetary expansion in line with the growth and inflation objectives. Reflecting the generally good performance of the external sector during this period, the NBU enhanced its purchases of foreign exchange from the interbank markets. As a result, net international reserves grew from –$0.6 billion at the end of 2000 to $5.1 billion by the end of 2003. Part of the liquidity generated from these purchases remained unsterilized, and consequently, monetary aggregates were expansionary.[12] The expansion in monetary aggregates was, however, accommodated by strong growth in real money demand, stemming from the higher-than-expected growth of real GDP, regained confidence, and the phasing out of large amounts of noncash (barter) transactions. Annual inflation fell from 19.2 percent at the end of 1999 to 6.1 percent at the end of 2001, to –0.6 percent at the end of 2002, although it rose to 8.2 percent by the end of 2003. The nominal exchange rate depreciated only marginally, from 5.22 hryvnia to the U.S. dollar at the end of 1999, to 5.30 at the end of 2001, and to 5.32 at the end of both 2002 and 2003.

In line with reduced inflation, the NBU cut its discount rate several times (from 45 percent at the beginning of 2000 to 7 percent at the end of 2003). Similarly, the NBU cut its overnight lending rate from 30 percent to 8 percent by the end of 2003. It also lowered the reserve requirement from 17 percent in 1999 to 7 percent for time deposits and 8 percent for demand deposits (effective October 2004). Because of the reduced cost of funds to the banks and the expansion in liquidity, nominal interest rates for loans in domestic currency to the economy declined from a weighted average of 52 percent in 1999 to 18 percent at the end of 2003. Overall, over the period 2000–03, the NBU was able to maintain the stability of the exchange rate, build up its external reserves, and achieve a decline in inflation.

Conclusions and Lessons

Ukraine's experience reveals that reliance on money market operations to conduct monetary policy may be complicated by the following factors:

- Fiscal dominance—monetary policy performed poorly in all those years in which the NBU was used to meet the financing needs of the budget.
- Poor target choice—the initial defense of the exchange rate at the onset of the Russian crisis, which later proved counterproductive, complicated the successful implementation of monetary policy.
- Underdeveloped government domestic debt market—the underdeveloped debt and securities market and the absence of a sufficient amount of securities with which to conduct sterilization and collateralized operations effectively rendered many of the money market operations inoperable.
- Deficiencies in the interbank market arising largely from weaknesses in the banking system, the absence of suitable instruments to use as collateral, and the poor intervention strategy of the NBU—these deficiencies weakened the monetary transmission mechanism and complicated reliance on money market operations to conduct monetary policy.

However, Ukraine was able to effectively conduct monetary policy between 1996 and 1997, and achieved a significant reduction in inflation over that period, largely by the use of simple rules-based and open market–type instruments, including reserve requirements, a Lombard facility, credit auctions, and primary market outright transactions in government securities. Similarly, during 2000–03, the NBU was able to maintain the stability of the exchange rate, build up its external reserves, and achieve a decline in inflation.

[11]The statutory refinance rate was raised three times during October–November 1997, from 16 percent to 35 percent, and 12-month treasury bill yields were increased from 27 percent to 38 percent.

[12]Base money grew by 40.1 percent, 37.4 percent, 33.6 percent, and 30.1 percent, respectively, between 2000 and 2003, while broad money grew by 45.5 percent, 41.9 percent, 41.8 percent, and 46.5 percent, respectively, during the same period.

VANUATU[1]

Path to Reliance on Money Market Instruments

Since its independence in 1980, monetary management in Vanuatu has remained underdeveloped. In 1988 the Reserve Bank of Vanuatu (RBV) started to impose a reserve requirement on all banks, the so-called Statutory Reserve Deposit (SRD), which requires banks to keep 10 percent of all residents' local currency (vatu) demand, time, and saving deposits with the RBV. This requirement was primarily for prudential reasons. The RBV also had a lender-of-last-resort facility (the Advance Facility), which was used more often by nonbanks than banks.

Early in 1998, the financial system came under stress when social unrest prompted the government to allow the public to withdraw their retirement savings from the Vanuatu National Provident Fund (VNPF). In response to a sharp rise in liquidity in the financial system, the RBV introduced liquidity asset ratios, the so-called Prescribed Reserve Asset (PRA) requirement. The PRA required banks to hold 16 percent of vatu deposit liabilities in the form of government securities and/or RBV notes. In addition, the RBV raised the base lending rate of the Advance Facility by 5 percentage points, to almost 11 percent, to indicate to the market that it was prepared to defend the vatu exchange rate. The commercial banks followed the RBV's move and increased their deposit and lending rates.

Because this action was not sufficient to absorb excess liquidity, the RBV also started to issue its own securities, RBV notes. These measures produced positive results: the financial system stabilized, confidence in the vatu recovered, and official reserves were significantly increased. At the end of 1998, the RBV started to phase out the PRA requirement, but still retained the SRD requirement, although its design was modified. The original SRD requirement had been based on all the demand, time, and saving deposits of residents in vatu, but the new SRD also included 50 percent of residents' demand deposits in foreign currency. At the same time, reserve holdings no longer had to be held in a blocked account at the RBV, and the banks were allowed to meet the reserve requirement on average during the maintenance period.

The introduction of the PRA requirement was intended, not for monetary policy purposes, but rather to facilitate the placement of government bonds by creating a captive market, in a context where the payouts by the VNPF were financed largely through the liquidation of its holdings of government bonds and the issuing of new government bonds. As an instrument of monetary policy, the usefulness of the PRA requirement was limited. A change in the PRA requirement was likely to affect interest rates which, in turn, would influence the demand for credit and, therefore, monetary conditions. However, the quantitative effect of a change in the PRA requirement on interest rates, and subsequently on monetary conditions, was difficult to determine. The quasi-absence of a secondary market in government securities and the shallowness of the financial sector also made it difficult to use the PRA requirement as an effective monetary policy instrument.

At the same time, the RBV became more active in the primary market for RBV notes. The RBV notes have become the most tractable instrument of monetary operations since their introduction in 1998. Two new credit facilities were also introduced: the Rediscount Facility and the Repurchase Facility. These facilities made the Advance Facility superfluous and it was therefore abolished in May 1999. In the meantime, the rediscount rate became the RBV's benchmark rate.

Monetary Policy Environment

Institutional Framework

The primary objective of the RBV, as explicitly stated in the Reserve Bank Act, is to promote monetary stability. Monetary stability is defined as a stable value of money both at the domestic level (price stability) and at the external level (exchange rate stability).[2]

The RBV Act specifies that the RBV and the ministry of finance are both monetary institutions. There is a close working relationship between these organizations, which can be characterized as being on equal terms. A representative of the ministry of finance is a member of the board of the RBV; and the RBV is represented on committees advising the government on macroeconomic, monetary, and budget affairs. However, Article 25(h) of the RBV Act gives the minister of finance the power to give directives to the RBV, with which the RBV must comply. Legally, then, the RBV is not an autonomous institution. In practice, however, the RBV has a high degree of autonomy, in

[1]Prepared by Kentaro Iwatsubo (Summer Intern, Monetary and Financial Systems Department, MFD) and George Iden (former Senior Economist, MFD), based on "20 Years of Central Banking in Vanuatu," Reserve Bank of Vanuatu; a February 1996 Monetary and Exchange Affairs (MAE) technical assistance mission (headed by George Iden); and on IMF Country Reports No. 02/265 and No. 02/266. The study covers developments through the end of 2003.

[2]See Reserve Bank of Vanuatu (2000).

particular with regard to the formulation and implementation of monetary policy.[3]

The government's fiscal position has sometimes contributed to excess liquidity in the financial system, which in turn has reduced the effectiveness of monetary policy. The government has an advance facility with the RBV, and its continuing resort to this facility in the last few years, due to cash flow problems, has contributed to excess liquidity. In 2003, the advance facility was reduced from 500 million vatu to 400 million. Coordination between monetary and fiscal policies and the relationship between the RBV and the ministry of finance have thus been especially important where financial markets are shallow.

Monetary Framework

In Vanuatu, monetary policy is implemented in the context of a fixed exchange rate regime under which the value of the vatu (VT) is determined on the basis of an undisclosed transactions-weighted (trade and tourism receipts) basket of currencies of Vanuatu's major trading partners. The RBV quotes rates daily for vatu. Buying and selling rates of vatu against the currencies in the basket are quoted once a day, with margins ranging between 0.25 percent and 0.3 percent around the middle rate. In general, the RBV has not intervened in the foreign exchange market to defend the exchange rate, but it could do so if necessary.

There are no capital controls in Vanuatu and therefore not much room for an independent monetary policy. Within the exchange rate regime, the RBV attempts to guide monetary developments, including domestic credit conditions. The RBV formulates a target for its international reserves (at least six months of imports). In order to maintain official reserves at adequate levels, besides conducting monetary policy, the RBV has issued several guidelines for foreign exchange sales to the banks.[4]

Macroeconomic Performance

Vanuatu maintained macroeconomic stability with moderate inflation and a GDP growth rate of $4^1/_4$ percent during 1991–95. Several shocks, however, resulted in a deterioration of overall macroeconomic performance from 1996 to 2000, with the growth rate declining to $1^1/_2$ percent. In the mid-1990s, political instability eroded investor confidence.[5] Following social unrest in January 1998, the government decided to permit unconditional withdrawals of retirement savings of the VNPF, as noted previously. The payouts by VNPF led to a sharp rise in liquidity in the banking system. Only part of the liquidity was sterilized by the RBV. That decision and the attempt to devalue the vatu fueled devaluation expectations, which caused large capital outflows.[6] Because of the VNPF crisis, the official reserves of the RBV decreased dramatically, from the equivalent of around six months of imports to less than three months of imports.

In recent years, the political situation has not been very stable, with frequent changes in the government. Economic growth has not fully recovered. Favorable weather conditions and major public investment boosted growth to 2.5 percent in 2000. However, two cyclones in 2001 resulted in significant crop loss, with real GDP contracting by nearly 2 percent. Inflation remains subdued, increasing from $2^1/_2$ percent in 2000 to $3^1/_2$ percent in 2001, largely due to the impact of oil prices on utility and transportation costs.

Structure of the Financial System and Market

Vanuatu's financial sector includes the RBV, four commercial banks (a government-owned bank, a locally owned bank, a subsidiary of a foreign bank, and a branch of a foreign bank), a number of trust and insurance companies, the VNPF, and several smaller financial institutions. In 2001, a merger reduced the number of commercial banks to four. At present, the largest bank has almost 70 percent of total bank assets. Moreover, one of the remaining four banks is an "exempted bank," which means that it has a domestic banking license but is not allowed to do business in local currency. Vanuatu also has a prominent offshore financial center (OFC), which in 2001 comprised 36 banks with offshore banking licenses and 16 insurance companies (Table 8.12). Offshore banks are regulated by the International Banking Act of 2002 and are supervised by the RBV, as are domestic banks. Offshore banks are not allowed to accept local de-

[3]As an illustration of its intervention in monetary policy, when the government did not agree with the RBV's decision to devalue the vatu in 1998, it revoked the decision of the RBV within a few days.

[4]During the financial crisis in 1998, the RBV issued a guideline that it would sell foreign exchange to the banks for current transactions only. In addition, in June 2001, the RBV enforced a regulation that it would sell foreign exchange to the banks in minimal amounts of US$1.0 million per client. In September, the amount was lowered to $250,000.

[5]Following the general election in 1995, the government changed three times in 1996, and continued instability led to the dissolution of parliament in 1997.

[6]In the aftermath of the Asian financial crisis in 1998, several countries such as Papua New Guinea, Fiji, and the Solomon Islands devalued their currencies by 20 percent. Shortly afterward, because of the VNPF crisis, the RBV followed suit. However, the government immediately revoked the RBV decision on the grounds that the devaluation could potentially have a high cost if it were to spark an inflation-wage spiral.

Table 8.12. Vanuatu: Financial System Structure
(as of end 2001)

	Assets (billions of vatu)	Percent of Total Assets	Number of Institutions	Percent of GDP
Commercial banks	43.1	11.2	5	147.2
of which: state controlled	*2.7*	*0.7*	*1*	*8.5*
Nonbank financial institutions	—	—	—	—
Offshore banks	337.5	87.9	36	1061.3
Insurance companies	0.5	0.1	3	1.6
Pension funds	3.1	0.8	1	9.7
Total	384.2	100.0	45	1219.8

Source: Vanuatu authorities.

posits from, or make loans to, residents in Vanuatu. Prior to 2003, when the new act came into effect, offshore banks were supervised by the Financial Service Commission. After implementation of the act, offshore banks fell to 24 (as of October 2003), with 10 applicants under review.

As of the end of December 2001, the total assets of the financial system were about 387.9 billion vatu, equivalent to 1,219.8 percent of GDP (see Table 8.12). If offshore banks are excluded, however, the total asset drops to 50.4 billion vatu, equivalent to 158.5 percent of GDP. Given the restrictions on the ability of the offshore banks to deal in domestic currency and to do business with domestic banks, the commercial banks play a dominant role in the domestic financial system and the offshore banks have no direct impact on the conduct of monetary policy.

The activities of the offshore banks, nevertheless, are likely to have an indirect impact on monetary conditions. The "trust funds" accepted from nonresidents are usually deposited with one of the domestic banks. The banks, in turn, deposit the funds with banks abroad, primarily in their European or Asian offices. However, a small segment leaks into the domestic system, and then becomes part of the money supply. Domestic banks sometimes make loans in foreign currency to residents, mainly for expatriates and local businesses engaged in foreign trading, but the amount of foreign currency loans is small.

Monetary Policy Instruments

The developments during the financial turmoil in 1998 made the RBV aware of the need to strengthen monetary arrangements. Since then, the RBV developed several money market instruments to manage overall liquidity in the system (Box 8.12). Open market operations in RBV notes have been the main discretionary instrument since 1998; they are supplemented by the SRD and two standing facilities.

The SRD requirement applies to all demand, savings, and time deposits of residents in vatu, and to 50 percent of the residents' demand deposits in foreign currency. The rationale for including only the foreign currency demand deposits is that they are almost entirely held by residents for payments of current transactions in foreign currency (mainly imports), while the time and saving deposits in foreign exchange can be reasonably assumed to be deposited through Vanuatu's offshore financial center. By including foreign currency deposits in the reserve requirements, the RBV can limit the availability of the banks' liquidity for private sector lending and reduce excess liquidity. Therefore, the RBV is in a better position to control monetary developments.

Banks are free to choose the currency in which they hold the required reserves, that is, in vatu or the currency in which the deposits are held. However, to date banks have always held the required reserves in vatu.

RBV notes are auctioned through a variable-rate tenders system whereby the allotment interest rate is equal to the interest rate offered by each individual bid. Auctions are held on an irregular basis. The RBV notifies banks and nonbanks of the tender of the notes several days in advance through advertisements in the local newspapers. The decision to issue a given amount of RBV notes to achieve a desired level of the money supply (intermediate target) depends on the reserve money program run by the RBV.

The RBV does not attempt to use the SRD for short-term liquidity management, and the level of the ratio has not been adjusted since 1998. In case of unwarranted high (low) liquidity, the RBV can absorb (inject) liquidity from (into) the financial system through issuing higher (lower) amounts of RBV notes. Under circumstances of very tight liquidity, the RBV might decide not to hold auctions.

Box 8.12. Vanuatu: Monetary Policy Instruments

Reserve requirements

Reserve requirements are calculated as monthly averages and must amount to 10 percent of deposits. The current requirement includes 50 percent of residents' demand deposits in foreign currency as well as all the demand, time, and saving deposits of residents in vatu. This was the only monetary instrument for about a decade, since it was first instituted in 1988 until 1998.

Standing facilities

- Discount Facility: Banks can sell (rediscount) treasury bills and/or RBV notes with up to a 90-day maturity to the RBV.
- Repurchase Facility: Banks sell government bonds and/or RBV notes to the RBV and subsequently buy back the securities at a specified date and price. In the period between the sale and the repurchase of the securities, the RBV provides the bank with temporary liquidity. The discount rate applies to these operations.

Money market operations

RBV notes: The RBV intermittently auctions these RBV notes, which have maturities of 28, 91, 119, and 182 days. RBV notes with maturities of 119 and 182 days were introduced in April 2002. The RBV issues the notes to absorb excess liquidity. Since 1998, monetary policy is mainly conducted by open market operations in RBV notes. (The RBV notes of 119 and 182 days are no longer issued, because competition in the financial sector is low which results in high interest costs for the RBV.)

There is no secondary market in RBV notes in the sense of banks trading among themselves. However, the notes can be and are rediscounted or used in repo transactions with the RBV. Since their introduction, RBV notes have been partially successful in absorbing excess liquidity from the financial system. Due to the ever-increasing liquidity in 1998 and early 1999, the RBV was forced to issue increasing amounts of notes, which were almost all absorbed by the banking system.

The Rediscount and Repurchase Facility can be also used by the RBV as a monetary instrument to affect the total amount of liquidity by setting an upper limit to the credits or by changing the rediscount rate. These facilities are designed to provide liquidity to the banks in the event of temporary liquidity needs. The rediscount facility makes it possible for the banks to sell (rediscount) treasury bills and/or RBV notes with 90 days or less to maturity. Through the repurchase agreements, the RBV offers the possibility for banks to borrow for a short period of time from the RBV using treasury bills and/or RBV notes as collateral.

Channels of Transmission of Monetary Policy

The interest rate applied to borrowing under the Rediscount and Repurchase Facility is the rediscount rate. By making this more or less expensive, the RBV is able to affect liquidity in the financial system. The transmission of monetary policy through the interest rate channel has been successful to only a limited degree in Vanuatu. The main reasons include the high structural liquidity in the financial system and the relatively limited competition among banks. In addition, banks are very cautious in extending new loans. Consequently, banks can sometimes be slow to follow interest rate changes by the RBV.

The first, and for a long time the only, credit facility through which the banks could borrow from the RBV was the Advance Facility, which was established in the 1980s and abolished in 1999, following the establishment of the Rediscount Facility and the Repurchase Facility. The rate charged for borrowing under the facility was the RBV's official interest rate (the base lending rate). Borrowing under the facility was not encouraged. In fact, the rate incorporated a penalty element to ensure that banks in need of short-term liquidity turned first to the interbank market before seeking funds from the RBV.

During the period when the Advance Facility was in force, banks often had ample liquidity needs, which discouraged them from having recourse to the RBV's credit facility. Even under the circumstances, the signaling role of the base lending rate remained unimpaired. This was clearly demonstrated during the financial crisis in 1998. After the Advance Facility was abolished on May 1999, the rediscount rate of the Rediscount Facility and the Repurchase Facility became the benchmark rate, and it too incorporates a penalty element, like the Advance Facility's base lending rate. The RBV uses the rediscount rate as a key variable in monetary operations.

Market Infrastructure and Liquidity Surplus Problem

As described earlier, there is no secondary market in RBV notes. The government security market is also very limited, with virtually no secondary market.[7] In

[7]In early 2003, the RBV and the ministry of finance agreed on the issuance of a substantial amount of treasury bills (VT 400 million, of which approximately half were already issued by May 2003). These bills, used as collateral, assisted banks in accessing the credit facilities of the RBV.

general, the absence of secondary markets in government securities and RBV notes has not impinged on the effectiveness of monetary policy because RBV has been in a position to achieve its goals by the combination of the SRD and regular issuance of RBV notes in the primary market. However, the issuance of RBV notes has not always been fully effective in mopping up excess liquidity. For the purpose of risk management or for other reasons, banks with excess liquidity may decide to hold the liquidity rather than invest in RBV notes. So far, the resulting excess liquidity in the system has not been a source of inflation given the investment opportunities in Vanuatu.

Conclusions and Lessons

The main lessons from Vanuatu's experience with monetary policy implementation are the following:

- The shallowness of Vanuatu's interbank market and the small number of banks have inhibited the effectiveness of money market operations. However, the combination of reserve requirements and open market–type operations have in general allowed the monetary authorities to manage overall liquidity conditions satisfactorily.
- In the context of shallow financial markets, coordination of monetary and fiscal policies is especially important. A good relationship between the central bank and the ministry of finance has fostered such coordination.
- Absence of secondary markets for government and central bank securities has not prevented effective liquidity management. Auctions of the short-term central bank notes, coupled with averaging provisions for the reserve requirements, proved to be an effective mix of instruments.
- Excess liquidity in the system has put banks in a situation in which they can decide freely how to use and allocate these resources. However, prudent management on the part of the banks has prevented an expansion of domestic credit and inflationary pressures.

Zambia[1]

The Path to Reliance on Money Market Operations

Zambia's path to reliance on money market operations to conduct monetary policy has been similar to that of many other countries in sub-Saharan Africa. Following independence, the Zambian economy was dominated by state enterprises, administered prices, and trade protection. In this environment, the financial sector and monetary policy were geared toward the provision of subsidized credit to the state enterprises. Monetary policy relied on administrative measures and on credit and capital controls—involving credit ceilings, interest rate controls, and exchange controls—in order to channel resources to the preferred state enterprises. After nearly two decades of controls, macroeconomic performance deteriorated sharply and major problems emerged in the financial sector such that by the early 1990s, it was clear that the policy of direct lending and the provision of subsidized credit to preferred sectors had become unsustainable.

At the beginning of 1992, Zambia embarked upon a program of financial liberalization as part of an overall macroeconomic reform program. The first step in the process of financial reform was to free interest rates, which was followed by a freeing of wages and prices. At the same time, a program of privatization was instituted. The external sector was also liberalized in stages between 1992 and 1994, beginning with the dismantling of controls on capital account transactions and followed by gradual, but eventually complete, deregulation of capital controls.

Money market operations were first introduced in 1993, with the implementation of treasury bill auctions, followed in 1995 by daily auctions of credit and deposits to commercial banks. These were soon complemented by the introduction of rediscount facilities and active management of the statutory reserve requirements.

Monetary Policy Environment

Monetary Objectives and Operating Targets

The Bank of Zambia (BoZ) defines price stability as the ultimate objective of monetary policy. In order to achieve this objective, the authorities implement a reserve money program, where commercial banks' cash balances in the BoZ settlement account (excess reserves) are the operating target and reserve money is the intermediate target. Direct quantity targeting is therefore preferred to an interest rate target, given the difficulty of setting the interest rate consistent with the inflation target and the high volatility of the expected inflation.

The BoZ pursues its objective of price stability in the context of a managed float, with no preannounced path for the exchange rate and with a target for reserve money as the nominal anchor. Quite often, however, the central bank focuses excessively on exchange rate stability (as reflected in frequent foreign exchange auctions and interventions), concentrating less on conventional monetary policy. This attachment to multiple policy goals has at times generated some inconsistencies between the stated objective of price stability and the activities aimed at exchange rate stability.

Structure of the Financial Sector

The financial system in Zambia is small and underdeveloped and operates in the context of a low level of monetization. The ratio of M2 to GDP has been at a level of only about 15–20 percent between 1998 and 2003, compared with an average of about 35 percent for sub-Saharan African countries as a group. The system is dominated by the banking sector whose assets amount to about 90 percent of total financial system assets at the end of 2001 (Table 8.13). In terms of foreign equity participation, about three-fourths of banking system capitalization is foreign. Dollarization is also high: about half of deposits and one-third of loans are in foreign currencies.

The Zambian banking system comprised 15 commercial banks with assets equivalent to about 25 percent of GDP in 2001 (Table 8.13). The largest domestic bank is state-controlled, although it is in the process of being privatized. It holds about one-fifth of the banking system deposits, has the largest branch network, and has the second largest customer base. Four large banks, which are subsidiaries of multinational banks, held 63 percent of assets and 71 percent of loans in 2001. Their market share increased in the late 1990s as a result of a flight to quality following the failure of nine local banks during 1994–98. Other commercial banks are small, with the five smallest banks accounting for less than 1 percent of banking system assets in 2001. The banks participate intensively in investments in government securities and foreign exchange trading, which are their main sources of revenue.

The nonbank financial sector, which includes two development and savings banks, three building societies, and a handful of leasing companies, is small

[1]Prepared by Marco Arnone (Economist, Monetary and Financial Systems Department, MFD) and Stephen Swaray (Senior Economist, MFD), based on MFD work in the context of the Financial Sector Assessment Program (FSAP) to Zambia, the June and October 2001 technical assistance missions on monetary and financial sector issues (both headed by Thordur Olafsson), and the January and September 2003 technical assistance missions on monetary and foreign exchange operations (both led by Susana Crossa Sosa) The study covers developments through the end of 2003.

Table 8.13. Zambia: Financial System Structure
(as of December 2001)

	Number of Institutions	Assets	
		In billions of kwacha (K)	Percent of GDP
Banks	15	3,460	26.5
Nonbank financial institutions			
Development and savings banks	2	253	1.9
Building societies	3	37	0.3
Leasing companies	10	95	0.7
Microfinance institutions	98	. . .	. . .
Exchange bureaus	45	. . .	. . .
Other (investment/venture)	4	. . .	. . .
Pension funds	17	590	4.5
Insurance companies	6	96	0.7
Subtotal: nonbank financial institutions		4,531	34.6
Total			

Sources: Bank of Zambia and Lusaka Stock Exchange.

both in absolute terms and relative to the size of the economy. The stock market is equally small, with stock market capitalization equivalent to about 8 percent of GDP in March 2002.

Market Infrastructure

The money market in Zambia is traditionally concentrated in the overnight maturity segment, although there have been improvements in the longer-term maturity segment, with more active use of loans of 2- to 14-day maturity (term money market). Use of longer-term maturities is, however, sporadic. Total loans amounted to 3.4 trillion kwacha (equivalent to around US$750 million), or 26 percent of GDP, in the first six months of 2002.

The interbank market is usually characterized by excess liquidity. The lack of instruments to manage short-term liquidity, together with insufficient BoZ smoothing operations and a punitive rediscount rate, has induced banks to hold liquid funds in their current account at the BoZ. Banks also use short-term liquidity to be able to buy foreign exchange at very short notice. Operating in a context of excess liquidity means that the BoZ has to constantly withdraw liquidity to meet its operating target (i.e., commercial banks' current account with the BoZ). This has tended to constrain liquidity management because the BoZ does not have a sufficient amount of government securities to sterilize the excess liquidity.

The overnight interbank money market has also been characterized by significant interest rate volatility, for a variety of reasons including limited windows for funds at the BoZ, a costly rediscount facility, volatile flows of cash between the government and the private sector, and market segmentation.[2] The interbank rates also show a high degree of seasonality related to government flows and tax payments, with spikes concentrated at the end of (almost) every month. This seems to indicate a cyclical reduction of available liquidity in the interbank market at the end of each month; as a consequence, a statistically predictable component of the liquidity forecasting exercise might not be adequately taken into consideration.

The interbank market is supplemented with a government securities market (Box 8.13). The primary market is organized by the BoZ, which maintains and processes all transactions relating to these securities through its book entry system. Although the BoZ is supposed to act only as the government debt-issuing agent, it has, in practice, a large degree of flexibility in deciding the terms at which securities are auctioned: it decides the amount of securities to issue and determines the cut-off rate. Up until March 2001, tenders of government securities were managed as uniform-price auctions, in which bidders paid the price of the lowest acceptable bid. Since then, a multiple-price tender system has been in place. Bids at the cut-off price are prorated based on the size of bids. The BoZ's rather large responsibility in deciding the terms at which securities are auctioned has removed from the

[2]For instance, the overnight rate ranged between 7 percent and 130 percent in 2001, and between 9 percent and 80 percent in the first six months of 2002.

Box 8.13. Zambia: Government Securities Market

In 1993, as part of a larger program of financial liberalization, the government of Zambia introduced an auction arrangement for pricing and distribution of government securities. The objective of this reform was to enable the government to cover its expenditures in a way that was less distorting than other alternatives (direct advances from the BoZ or distorted taxation) and to enhance the development of financial markets by providing an instrument of collateral, a benchmark interest rate, and a means of managing liquidity.

The market for securities underwent significant changes, including the introduction of a multiple-price format for tender sales and the opening of tenders to corporations and individuals. The range of securities has been expanding over time, with treasury bills issued in maturities of one to nine months, and government bonds issued in maturities of one to two years. Off-tender (noncompetitive) sales of government securities have also been introduced to cater to the small investor who is unable to meet the minimum requirement bid size for the auction. The largest holders of government securities have been banks (around 70 percent), followed by pension funds.

A secondary market for government securities does exists, although it is very thin, and prices are determined by negotiation between interested parties rather than two-way pricemaking.

government much of the incentive for efficient liquidity forecasting and cash flow management. This in turn has hampered the ability of the BoZ to forecast and fine-tune liquidity in the system.

A secondary market for government securities does exist, although it is very thin because investors—individuals, corporations, or banks—prefer to hold securities until maturity. Commercial banks typically purchase the securities first to meet the liquid asset ratio and, second, as an alternative investment to low-quality private sector lending opportunities. Other investors hold the securities because the interest payment offers sizable revenue.

Channels of Transmission of Monetary Policy

The foregoing analysis of the structure of the financial sector and the existing market infrastructure in Zambia reveals a case in which the traditional monetary transmission mechanisms do not operate as effectively as might be expected under a more developed financial system. While it has been possible to transmit some monetary policy signals through the interest rate channel, via the treasury bill rate, the other channels (credit, exchange rate, and asset prices) have been either very weak or nonexistent.

The most important direct signal the BoZ provides to the market is related to the treasury bill auction, held weekly. The auction rate is the base for the determination of the Bank Rate, which in turn is used by the commercial banks to guide them in setting deposit and lending rates. However, even in this case, bank lending rates, while being flexible upwards in response to movements in the treasury bill rate, are rigid downward, indicating sluggishness in the transmission mechanism of monetary policy. The oligopolistic market structure in the banking sector is the primary root cause of these rigidities.

The interest rate channel, through the money market, has not functioned as strongly as expected. As indicated, the interbank money market in Zambia is characterized by high volatility in interest rates and average excess liquidity. The high volatility in interest rates has been attributed to the limited availability and high cost of BoZ liquidity facilities, volatile flows of cash between the government and the private sector, and market segmentation. In addition, monetary operations as implemented in Zambia do not provide sufficient guidance to the short-term money market about the policy stance of the BoZ. Monetary operations tend to provide policy signals for the three- to four-week maturities and upward, leaving the shortest end of the money market—especially the overnight interbank—to fluctuate wildly, within the range of 10 percent to more than 80 percent. These deficiencies have tended to weaken the interest rate monetary transmission channel.

Monetary Policy Instruments

In light of the limited effectiveness of transmitting monetary policy signals in Zambia through traditional market-based channels, and in light also of the fact that the framework for monetary policy is itself still in transition, the BoZ has had to rely on a combination of rules-based instruments and money market operations to conduct monetary policy. The most important instruments have been reserve requirements (RRs) and a minimum liquid asset ratio (LAR) (Box 8.14). In particular, the RRs have been increased on repeated occasions to adjust structural liquidity imbalances. A wide range of money market instruments have been introduced in order to reduce reliance on the RRs and LAR because use of these instruments require substantial portfolio adjustments, which are not easy to implement at short notice. However, repo operations have only been conducted infrequently as the BoZ does not have enough treasury bills in its portfolio to withdraw the excess liquidity from the market on a regular basis.

Box 8.14. Zambia: Instruments of Monetary Policy

Liquid asset ratio

Banks are required to hold 35 percent (up from 25 percent in 2001) of their kwacha deposits in liquid form (cash and excess reserves with the BoZ or in treasury bills). Averaging provisions over the weekly maintenance period apply.

Reserve requirements

Reserve requirements apply to kwacha and foreign currency deposits and are held as a non-remunerated kwacha and foreign currency deposits with the BoZ. The ratio is subject to frequent changes in response to liquidity developments in the system. (For example, the RR was increased from 8 percent to 11 percent in December 2000, increased to 15 percent in January 2001, lowered to 10.5 percent in March 2001, increased to 12.5 percent in June 2001, increased to 15 percent in December 2001, and increased again to 17.5 percent in December 2002.) There is a seven-day maintenance period, and averaging provisions apply.

Standing facilities

Discount facility: If the market is short of liquidity, banks can rediscount treasury bills at the BoZ with a penalty rate. During a given month, banks are permitted to discount bills by an amount up to 10 percent of their regulatory capital. Above this limit, an additional penalty of 7 percent is applied. Because the overall penalty is usually very high and complex to calculate, banks are reluctant to make use of this facility.

Money market instruments

- Deposit auction: These are used to absorb excess liquidity. The BoZ may decide to auction (via multiple price tender) deposits to banks. The BoZ retains the right to reject offers that are, in its judgment, not consistent with market fundamentals. The maturity of deposits depends on how long the BoZ estimates the excess liquidity situation will prevail. To date, these auctions usually have been undersubscribed, despite the banks' excess liquidity.
- Credit auctions: These provide credit to the banks. In the recent period, this facility has seldom been used, given the structural excess liquidity in the system.
- Outright sales/purchases of government securities: The BoZ may withdraw or inject liquidity through outright sales or purchases of government securities.
- Repurchase operations: In 2002, the BoZ started using repurchase (repo) operations (maturity of 2 to 12 weeks) on government securities to withdraw liquidity. Ultimately, repo operations are expected to replace the BoZ term deposit auctions. Repo operations have only been conducted infrequently because the BoZ does not have enough treasury bills in its portfolio to withdraw the excess liquidity from the market on a regular basis. The repo documentation in place also allows the BoZ to conduct reverse repo operations, which could replace the credit auctions.

Conclusions and Lessons

The following conclusions and lessons can be derived from the experience of Zambia with reliance on money market operations to conduct monetary policy:

- Money market instruments do not seem to have led to a significant reduction in monetary growth, but inflation has been reduced.
- The effectiveness of monetary transmission mechanisms has been diminished by the oligopolistic market structure coupled with the excess liquidity in the banking system, which have caused rigidities in market rates and prevented the transmission of monetary policy signals.
- An overall lack of credibility in the financial sector reform process and frequent backtracking have affected market sentiment and created great difficulties in bringing money supply and inflation under tighter control.
- Money market operations have had limited effectiveness in stabilizing banking system liquidity due to attempts to achieve multiple objectives, which have resulted in inconsistencies between the stated objective of price stability and a de facto objective of exchange rate stability.
- A long history of hyperinflation in Zambia has given rise to the persistence of inflationary expectations, which have made it difficult to achieve single-digit inflation.
- The high degree of dollarization has imposed significant constraints on the implementation of monetary policy by creating an environment in which there is large volatility in exchange rates.

Appendix I Channels of Transmission of Monetary Policy[1]

One key to conducting monetary policy effectively is an efficient transmission mechanism through which monetary policy actions affect aggregate demand in an economy and ultimately inflation (see Figure A1.1). The nature, speed, and intensity of the transmission from the variables directly under the control of the central bank—for example, short-term interest rates or base money—to those variables that most directly affect conditions in the nonfinancial sector—loan rates, deposit rates, asset prices—determine not only the extent of the overall effectiveness of monetary policy, but also the type of instruments that can be used effectively.

The functioning of the transmission mechanism, and hence the effectiveness of monetary policy, in a given economy depends on the structure of the economy and its financial system. In particular, a number of factors are at play here: (1) the degree of competition in the banking sector, (2) the extent of access to alternative domestic funding sources, (3) the depth of money and capital markets, (4) the extent of government involvement in financial markets, (5) the liquidity of the financial system, (6) the degree of financial intermediation, (7) the prevailing exchange rate system, (8) the extent of liberalization of current and capital accounts, and (9) the degree of development of the foreign exchange market. These all influence the speed and intensity of the transmission mechanism and therefore the extent to which monetary instruments can be relied upon to transmit monetary policy signals through the normal channels.

Interest Rate Channel

Monetary transmission through the interest rate channel, regarded by many as the main channel of monetary policy transmission, occurs when changes in the monetary policy stance induce changes in the overall level of interest rates in the economy, and those in turn affect the overall level of absorption, through their effects on the demand for credit and the available income of borrowers and lenders. Changes in interest rates alter the marginal cost of borrowing, leading to changes in investment and savings and thus to variations in aggregate demand; they have also a cash flow effect on borrowers and savers.

Predictability of the response of lending and deposit rates to changes in money market rates will depend on the degree of competition in the banking sector, the extent of access to alternative domestic funding sources, and the depths of money and capital markets. In competitive markets for credit, changes in the overall level of interest rates are likely to affect lending and deposit rates rapidly. Conversely, in a highly concentrated banking sector with a small number of banking institutions, oligopolistic pricing will likely make the response of lending and deposit rates to changes of money market rates sluggish and asymmetrical. In addition, the presence of state-owned or state-subsidized banks that are under little pressure to maximize profits and are under pressure to achieve political goals can diminish the responsiveness of lending and deposit rates to monetary policy.

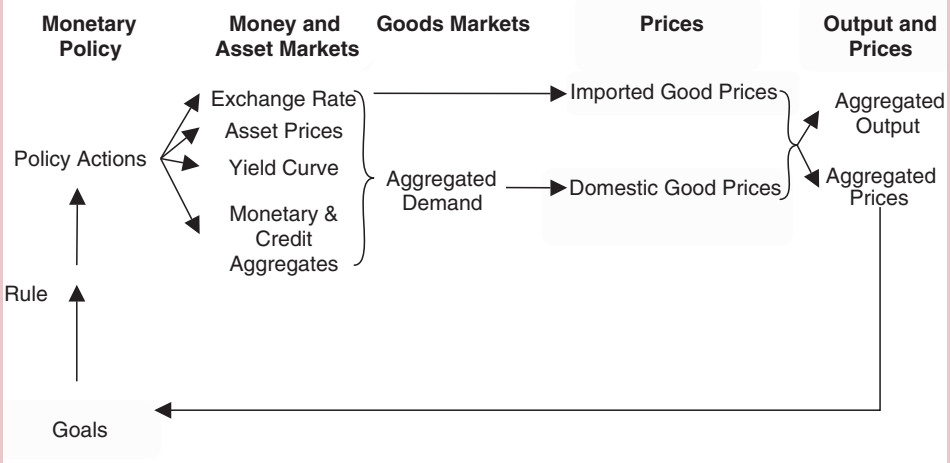
The behavior of lending and deposit rates may also depend on the extent to which households and firms have access to alternative domestic funding or investment sources, most notably through security markets. Alternative sources of financing or investment for households and firms tend to limit the monopolistic power of banks. Moreover, if the banking sector and the securities markets are well integrated and if bank loans, bonds, and stocks are close substitutes, then banks may be forced to enhance the responsiveness of the interest rates under their control.

The depth of money and capital markets can also have an important bearing on how policy controlled rates affect lending and deposit rates, and on the ultimate objective(s) of the central bank.[2] A shallow or noncompetitive financial market can amplify volatility of money market interest rates. If money market rates are highly volatile, banks may not adjust lending

[1]Prepared by Bernard Laurens (Deputy Division Chief, Monetary and Financial Systems Department, MFD), with inputs from Rodolfo Maino (Senior Economist, MFD), and Alina Carare (Economist, Information Notice System, INS). See also Kamin, Turner, and Van't Dack (1998), and Taylor (1999).

[2]See Bank for International Settlements (1998) for a discussion about the ultimate objective(s) of the central bank.

Figure A1.1. Stylized Representation of the Channels of Transmission



and deposit rates quickly to those rates, for administrative or customer-relations reasons.

Asset Price Channel

Monetary transmission through the *asset price channel* occurs when changes in the monetary policy stance affect asset prices in the economy (in particular, equity or the value of collateral), which in turn induces changes in consumption and investment through the wealth effect and the implications on the financing cost of investments.

The main factor influencing the effectiveness of the asset price channel is the level of development and importance of bond, equity, and real estate markets in the economy. Where long-term bond markets are important, for example, an increase in short-term interest rates normally leads to a decline in bond prices, and, consequently, a decline in aggregate demand due to reduced wealth. The more developed such markets are, the stronger will be the effectiveness of this channel in transmitting monetary policy signals.[3]

The composition of financial portfolios also affects the effectiveness of the asset price channel. When most savings are intermediated through the domestic banking system, and relatively small portions of households or corporate portfolios are invested in securities whose value varies with market conditions, the more restricted will be the impact and intensity of the asset channel. On the other hand, the more diversified household and corporate portfolios are, the more sensitive such portfolios will be to monetary policy actions affecting asset values.

Exchange Rate Channel

Monetary transmission through the *exchange rate channel* occurs when changes in the monetary policy stance lead to changes in the exchange rate. This affects the competitiveness of domestically produced goods and services vis-à-vis goods and services produced abroad and hence affects the relative demand for both domestic and foreign goods and services.

The exchange rate channel of monetary policy does not exist under a fixed exchange rate regime; among exchange rate regimes that allow flexibility, the exchange rate channel will work more strongly with higher degrees of exchange rate variability allowed within the regime. In addition, the role of the exchange rate channel will increase with an absence of capital controls and in a foreign exchange market characterized by substitutability between domestic and foreign assets. For economies with underdeveloped financial systems, the exchange rate channel becomes irrelevant, usually because of controls on foreign exchange operations. The greater the substitutability between domestic and foreign assets, the greater the response of the exchange rate will be to policy-induced changes in interest rates, and hence the larger the impact of monetary policy will be through that channel.

[3]Key traits of developed markets are the existence of active secondary markets that are responsive to alternative asset prices and the ability to borrow against such assets through swaps or collateral arrangements.

Availability of Credit Channel

Monetary transmission through the *availability of credit channel* occurs when changes in the monetary policy stance affect the quantity of credit that is available, regardless of (or in addition to) what happens to interest rates. The credit channel emphasizes how asymmetric information and the cost of enforcing contracts may create agency problems in markets. Two channels of monetary transmission arise: (1) the bank lending channel, which looks at the impact of monetary policy on the capacity of banks to lend to firms, and (2) the balance sheet channel, which looks at the impact of monetary policy on the capacity of firms to borrow from markets in response to changes in their net worth arising from monetary policy decisions.

The financial condition of a country's banking system is one of the most important factors influencing the transmission of monetary policy signals through the credit channel. The financial condition of the banking system is an important determinant not only of the cost but also of the availability of bank loans. If the financial position of the banking system is weak, reflected by low capital/asset ratios and/or high non-performing loans, banks will tend not to respond to monetary policy impulses. The weaker the financial system, the more likely the asset price channel is to be irrelevant. Weaknesses in the banking system can also be reflected in terms of asymmetries of information and limited enforceability of contracts. Where such asymmetries exist or when there is weak governance and judicial structures limiting the enforcement of contracts, banks may also not respond to monetary policy impulses.

Structural Factors

In addition to the foregoing channel-specific factors, there are a number of other factors of a macroeconomic nature that have a significant influence on the efficiency of the channels of transmission. The extent of government intervention in financial markets may influence the monetary transmission channel in three ways: (1) through explicit or implicit interest rate controls or other limits on financial market prices, (2) through explicit or implicit limits on bank lending, and (3) through selective credit policies. Any of these situations is likely to impede the smooth functioning of markets and the transmission of monetary policy signals through them, and hence the conduct of monetary policy with market-based instruments.

Structural excess liquidity in the financial system also impairs the effectiveness of the transmission channel of monetary policy. Although they do not do so directly, the policy measures taken by central banks to sterilize excess liquidity may weaken the transmission channel. The high cost of mopping up excess liquidity has at times prevented central banks from raising their policy interest rates. This is especially the case when the financial position of the central bank is weak such that high sterilization costs may result in large losses for the central bank which are not reflected directly and in a timely way in the government's budget—a situation which in itself would result in an injection of liquidity into the system. In this context, the constraint imposed on interest rates may distort the optimal interest rate policy and hence limit the effectiveness of monetary policy through the normal channels. The use of liquid asset ratios (LARs) to sterilize excess liquidity may also lead to distortions in interest rates by creating a captive market for the assets that are eligible to fulfill the requirement. High and nonremunerated reserve requirements to sterilize excess liquidity may also lead to distortions as the implied tax affects only the deposit-taking financial institutions and their customers, and not other parts of the financial system.

Appendix II Eligible Assets: European Central Bank and Banque de France[1]

The European Central Bank's System of Eligible Assets

The Statute of the European System of Central Banks requires that all Eurosystem credit operations be based on adequate collateral. The list of eligible assets includes all assets that can be used as underlying collateral and that fulfill the eligibility criteria. Two categories of assets are eligible for Eurosystem monetary policy operations and intra-day credit: (1) tier-one assets, which are marketable debt instruments fulfilling the uniform euro-area-wide eligibility criteria specified by the European Central Bank (ECB), and (2) tier-two assets, which are additional marketable and nonmarketable assets that are of particular importance for national financial markets and banking systems.

Debt certificates issued by the ECB qualify as tier-one assets. For other debt instruments, the eligibility criteria aim at ensuring that they meet high credit standards, are transferable in book-entry form, and are listed or quoted on a regulated market. Tier-one assets are eligible for all monetary operations that are based on underlying assets.

National central banks may consider as eligible other assets, known as tier-two assets, which are of particular importance to the national financial systems. The eligibility criteria for tier-two assets are established by the national central banks, subject to the minimum eligibility criteria established by the ECB. They include either debt instruments or equities of entities that are deemed to be financially sound and are easily accessible to the national central bank. Tier-two assets are not normally used in Eurosystem outright transactions. In addition, four national central banks have included nonmarketable instruments in their national lists of tier-two assets (Table A.2.1).

The Banque de France has carried out credit risk assessment since it was set up some 200 years ago.[2] These assessments are currently expressed by way of ratings, which indicate companies' ability to meet their financial commitments.

Ratings were originally intended to facilitate the implementation of monetary policy: by awarding ratings to companies, the Banque de France was able to make a selection from among the collateral for bank refinancing presented by commercial banks and only retain the claims on companies with the highest ratings.

The Banque de France Rating System

Ratings remain useful from this perspective, notwithstanding the Banque de France's participation in the Eurosystem since 1999. Central bank refinancing based on bank loans still represents 40 percent of the total volume of collateral used by French banks (including for monetary policy operations and the allocation of intraday loans in the large-value payment system). The remaining 60 percent consists of negotiable securities issued by French and foreign public and private issuers.

Designed to meet the requirements of monetary policy, the Banque de France's information system has been progressively opened up to the banking industry at its request and now acts as a banking information service: ratings are thus used by commercial banks for business development purposes and for monitoring client risk.

The General Secretariat of the Commission Bancaire also uses company ratings when conducting off-site controls and on-site investigations of credit institutions, because ratings constitute reliable indicators of bank portfolio quality.

The Banque de France rating is a concise expression of all the economic and financial information gathered on nonfinancial companies; it reflects the Banque de France's overall assessment of the company to meet its financial commitments at a horizon of two years.

The rating is given by the Banque de France on the basis of the analysis of data, including accounting and financial data from the company's accounting documents, data relating to bill payment incidents and bank liabilities reported by credit institutions, legal information (i.e., judgments handed down by commercial or civil courts ruling on commercial cases), and

[1]Prepared by Bernard Laurens.
[2]See Banque de France (2003).

Table A.2.1. Eligible Assets in Germany, France, Austria, and Ireland

	Germany	France	Austria	Ireland
Type of assets	Trade bills, bank loans to corporations	Bank loans to corporations	Bank loans to corporations	Mortgage-backed promissory notes
Minimum residual maturity	1 month	More than 2 days	10 days	1 day
Maximum residual maturity	6 months for trade bills. 2 years for bank loans	Less than 2 years	2 years	Duration of refinancing operation
Credit assessment of enterprise by the central bank	At least one debtor evaluated as eligible	Debtor of bank loan evaluated as eligible	Debtor of bank loan evaluated as eligible	Issuers' credit ratings is assessed as well as quality of pool of loans

Source: European Central Bank website: www.ecb.int

information relating to companies' economic and financial environment, in particular their managers, stakeholders, and affiliated companies. This information is communicated to the company and to credit institutions governed by the French Banking Act for their own use only; these institutions may neither publish it, nor pass it on to third parties, especially to information agencies.

The Banque de France rating has three elements: (1) a rating indicating the level of turnover, (2) a credit rating expressing the assessment made of the company, and (3) a payment rating indicating the company's ability to make payments on time.

The credit rating given to affiliated companies takes account of the financial position of the economic group to which they belong when the Banque de France has access to consolidated accounting documents or is able to carry out a reliable financial survey of the group. Holding companies are therefore given a credit rating known as a group rating, after the Bank has analyzed both the financial position of the group as a whole and other available information on the holding company. Subsidiary companies are given one of the following three credit ratings depending on their position within the group: a "group" rating (based mainly on the analysis of consolidated accounts); an "influenced" rating (based on the comparison of company accounts and consolidated accounts); and an "autonomous" rating (based on the analysis of company accounts).

Five credit ratings are available:

- A credit rating 0 is awarded to companies for which the Banque de France possesses no recent accounting documents and about which it has received no unfavorable information.
- A credit rating 3 is an excellent rating reserved for companies enjoying the best Banque de France assessment of their creditworthiness and whose ability to meet their financial commitments is guaranteed beyond any possible doubt.
- A credit rating 4 is given to companies that are able to satisfactorily meet their financial commitments, notwithstanding certain factors of fragility or uncertainty.
- A credit rating 5 is given to companies whose ability to meet their financial commitments gives cause for concern for any of the following reasons: an imbalance in the financial structure, low earnings, a significant amount of payment incidents, legal representatives or financial links with other companies that give cause for concern.
- A credit rating 6 is attributed to companies whose ability to meet their financial commitments gives cause for serious concern due to any of the following reasons: extreme imbalances in the financial structure, persistently poor results for three straight years, occurrences such as the loss of half of the equity capital, legal proceedings, legal representatives prompting particularly serious concern, the company's inability to meet its commitments, and similar factors.

There are three payment ratings:

- payment rating 7 indicates that, in the last six months, payments have been made on time, or that incidents reported during that period are of little importance and do not reflect real cash flow difficulties.
- payment rating 8 indicates that the company's cash flow difficulties do not appear to cast serious doubts on its creditworthiness.

- payment rating 9 is given when reported payment incidents denote serious cash flow difficulties and seriously jeopardize the company's solvency.

Payment ratings 8 and 9 are attributed primarily on the basis of the bill payment incidents reported to the Banque de France.

In order to make a comprehensive assessment of a company, the Banque de France rating also takes into account the information available on its management, as long as this information is in the public domain. In the specific case of sole proprietorships, the Banque de France awards a legal entity rating to the sole proprietorship and a natural person rating to the sole proprietor, while complying with the general principle of repercussions and transparency between the two ratings. The Banque de France rating given to natural persons exercising a management function or to sole proprietors, is expressed by the figures 000, 040, 050, or 060. Sole proprietors are informed of any ratings other than 000: (1) 000 rating: the information collected by the Banque de France on the manager or the sole proprietor gives no cause for concern; (2) 040 rating: the information calls for vigilance;[3] (3) 050 rating: the information gives cause for concern;[4] and (5) 060 rating: the information gives grave cause for concern.[5]

An important difference between the Banque de France rating and ratings provided by ratings agencies is that rating agencies generally assess the risk on issues rated on markets and take into account the guarantees received, while the Banque de France analyzes the intrinsic situation of companies or groups of companies without taking guarantees into account. In addition, there are few companies excluding banks and insurance companies that are awarded a rating by a major international agencies (in 1999, 4,781 companies world-wide, of which around 60 were located in France); many more firms receive a Banque de France rating (180,000 per year in France).

[3]This rating is given to a manager who holds office as a legal representative in a company that has been put into judicial liquidation within the previous five years, or in at least two companies that have payment ratings of 9; a sole proprietor whose company has been given either a credit rating of 4, or a payment rating of 8 accompanied by a credit rating of 0.

[4]This rating is given notably to the following individuals: a manager who holds office as a legal representative in two companies that have been put into judicial liquidation within the previous five years, or to a manager required to pay the debts of the legal entity, whatever the amount of the pecuniary liability; a sole proprietor whose company has been given a credit rating 5, or a payment rating of 9 accompanied by a credit rating of 0.

[5]This rating is given notably as follows: a manager who holds office as a legal representative in three companies that have been put into judicial liquidation within the last five years, or who is personally the subject of a decision of the courts; a sole proprietor whose company has been given a credit rating 6.

Appendix III Enhancing Liquidity Management and Forecasting

The central bank needs to develop a framework to monitor and forecast short-term liquidity developments in the system on a continuous basis, so that its discretionary operations are consistent with its ultimate and intermediate objectives. The main purpose of establishing a framework to monitor and forecast short-term liquidity developments is to create an information set which puts the central bank into a position to smooth changes in liquidity conditions (with a view toward creating stable liquidity conditions and limit market volatility) and to ensure that its monetary operations are consistent with the monetary program (Table A.3.1). By allowing the central bank to take well-informed monetary decisions, such a framework allows the central bank to communicate with the market in an effective manner and, through an appropriate communication policy, helps market participants to clearly distinguish between changes in the monetary policy stance and temporary "noises."

Table A.3.1. Standardized Central Bank Balance Sheet

Assets	Liabilities
Liquidity providing OMO and/or OMO–type operations	Bank's holdings on current accounts (Required reserves and excess reserves)
Refinance standing facility	Liquidity-absorbing money market operations
Credit to the government	Deposit standing facility
Net foreign assets	Banknotes in circulation
	Net government deposits
	Other factors (net)

Can be rearranged as follows

LIQUIDITY SUPPLY/ABSORPTION THROUGH MONETARY POLICY OPERATIONS

"Liquidity-providing money market operations" } *Discretionary*
minus "Liquidity-absorbing money market operations" } *Operations*
plus "refinance standing facility" } *Standing*
minus "deposit standing facility" } *Facilities*

Equals

AUTONOMOUS FACTORS
"banknotes in circulations"
plus "government deposits"
minus "credit to the government"
minus "net foreign assets"
plus "other factors (net)"

Plus

RESERVES
"banks' holdings on current accounts"

Source: IMF's Monetary and Exchange Affairs Department, or MAE (2000) (as of 2003 the Monetary and Financial Systems Department, or MFD), and European Central Bank (2001).

The country experiences show that forecasting the effects of the government's operations on liquidity poses the greatest difficulties. A lack of cooperation between the treasury department and the central bank and the specific organization of the spending procedures are often the main impediments to accurate projections of government cash flows. In addition, in countries with exchange rate pegs and large foreign exchange interventions, net foreign assets may be volatile and difficult to predict. However, since foreign exchange operations are typically settled with a lag of two days, there is some room for the central bank to adjust unwanted liquidity fluctuations. Similar challenges can be posed for currency projections, particularly when a country is on the path of remonetization after a period of high inflation. Overall, experience indicates that establishing a strong liquidity forecasting framework may be a lengthy process, in particular because this requires concomitant progress in establishing frameworks for forecasting government cash flows (a task which typically is carried out by the treasury), and for forecasting foreign assets and currency in circulation.

Appropriate arrangements are also needed to absorb unexpected liquidity shocks in the system. It is in this context that the buffer function of reserve requirements and standing facilities plays a critical role. In particular, averaging provisions for reserve requirements allow banks to smooth out daily liquidity fluctuations because transitory reserve imbalances can be offset by opposite reserve imbalances within the same maintenance period. This mechanism also works to the benefit of the central bank because it reduces the need for frequent intervention in the market which may otherwise be warranted due to deviations from liquidity forecasts.[1] Similarly, standing facilities, by allowing banks at their own discretion (subject to a penalty in terms of cost/yield) to make deposits at the central bank, or to receive short-term liquidity from the central bank, play a stabilizing role and reduce the need for frequent central bank discretionary monetary operations.

[1]The buffer function is important in the early stages of the implementation of a liquidity forecasting framework as the quality of the forecasts might be low at the beginning.

Appendix IV Cross-Country Experiences with a Liquidity Surplus

In **Mexico,** the central bank has been using mandatory remunerated deposits to attain a creditor position in the money market. In 1997, Banco de México's stance in the money market went from creditor to debtor, essentially due to the considerable amount of foreign assets accumulated in the course of the year. In order to strengthen monetary policy tools, Banco de México's Board of Directors decided that, as of September 1998, credit institutions would be under obligation to establish deposits at the central bank, with an indefinite maturity. The distribution of such deposits among credit institutions would be conducted according to their total liabilities, and the institutions would be remunerated at the 28-day interbank loan rate. Afterwards, Banco de México would replace any liquidity withdrawn on the grounds of the establishment of said deposits, by means of very short-term open market operations. Using these combined measures, Banco de México moved toward attaining a creditor stance in the money market, allowing for increased control over short-term interest rates.

Spain experienced excess liquidity during 1973-92 due to the Bank of Spain's (BOS's) net lending to the government and to capital inflows. Excess liquidity was sterilized to control inflationary tensions, and after Spain joined the EU in 1986, to prevent excessive appreciation of the peseta. The BOS used several nonmarket instruments to generate an operational deficit. Changes in nonremunerated reserve requirements were frequent from 1973 to 1981. By 1978, the authorities had settled on a 5.75 percent ratio and adopted as a principle that the ratios would not be changed for short-run control purposes. However, in 1979, banks were required to place special deposits with the BOS which were remunerated at below-market rates and were replaced later with much higher special remunerated required reserves. After 1990, nonremunerated required reserves were gradually brought down to the current 2 percent level. Remunerated reserve requirements were substituted with mandatory holdings of BOS bonds (at below-market rates). However, there was also room for the use of market instruments.

Systemic liquidity increased in the **Netherlands** after 1987 due to foreign exchange operations by the De Nederlandsche Bank N.V. (DNB) and decreases in treasury balances. These developments threatened to cause considerable and prolonged money market surpluses, which would have complicated the DNB's ability to target short-term interest rates and to defend the guilder. To create an operational deficit that facilitated defense of the guilder, the DNB used two instruments: a mandatory market-rate-remunerated deposit facility and the issuance of DNB bills. The deposit facility was introduced in 1988. The amount to be deposited at the facility (money market cash reserve) was fixed at the start of every cash reserve period, based on short-term liabilities. The short period of the facility, one to two weeks, facilitated adjustments to ensure operational shortages. Banks could use the amounts of their individual cash reserve accounts as collateral at the central bank. In 1994, the DNB also started issuing six-month certificates of deposit at market rates to mop up liquidity on a monthly basis.

During the late 1980s and mid-1990s, **East Asian countries** experienced large capital inflows that were absorbed by a range of sterilization and administrative measures. In 1993, one-third of the net capital inflows into the Asia Pacific Economic Cooperation (APEC) developing countries were absorbed by the central bank in foreign currency reserves. Many APEC countries reduced liquidity in the system by switching government deposits from the commercial banks to the central bank. In **Malaysia**, the authorities transferred government and public pension fund deposits from the banking system to special accounts in the central bank. Public firms in **Indonesia** were obliged to convert their commercial bank deposits into Bank of Indonesia certificates. In **Thailand**, government deposits at the central bank increased from 25 percent of total deposits in 1987 to 82 percent in 1992. Increases in statutory reserves were used in the **Philippines**, **Malaysia**, and **Korea**. Both the Korean and Malaysian authorities also conducted open market operations to sterilize liquidity.

Appendix V Selected Country Experiences with Interbank Market Development

The experiences of India, Italy, Korea, Thailand, and Turkey are analyzed regarding the involvement of the central bank in the process, participants in the interbank market, and the degree of centralization of the interbank market.[1]

Involvement of the Central Bank

The development of the interbank market is a stage-by-stage process and the experience of Italy, Korea, Thailand, and Turkey show that the central bank can play an active role in using the interbank market as a "playground" where monetary policy operations can be conducted and in which it could become an important player.

In **Turkey,** in the 1980s the banking system was highly segmented, with public banks reluctant to lend to private banks, in part because of political considerations. Similarly, private banks tended to minimize their transactions with other commercial banks for competitive reasons, in a context where many of them belonged to different industrial groups. Competition and rivalry among industrial groups often made their banks reluctant to deal with each other directly. As a result, activity in the interbank market was very limited. However, banks were willing to participate if the central bank was the counterpart. This situation prompted the central bank to develop a framework for an interbank market in which it acted as a blind broker, that is, as the counterpart of all transactions; it operated as a broker in that it borrowed only when it could on lend the proceeds at the same interest rate. In order to cover the credit risk, all transactions intermediated by the central bank had to be backed by acceptable collateral, such as government securities.

In **Thailand**, a repurchase market with the central bank was created in 1979, with a view to further developing the fledging money market and provide the central bank with a mechanism to monitor and, if necessary, to intervene in the market. Participants were allowed to place buy and sell orders with the central bank, indicating the amount, interest rate, and maturity of the desired transactions. Then, the central bank tried to match the orders and determine a single "market" repurchase rate (that is, a fixing). If needed, the central bank intervened to absorb or inject liquidity.

In **Italy**, although an over-the-counter interbank market was operating for a long time, the central bank was prompted to take action because oligopolistic behavior led to segmentation of the market. Also, the subsequent excessive volatility of the market was an impediment to using interest rates as a channel of transmission for monetary policy. In 1990, the central bank promoted the establishment of a screen-based interbank market, participation in which was on a voluntary basis. This was accompanied by a modernization of the payment system, enabling real-time and direct movement of funds on banks' centralized accounts with the central bank.

In **Korea**, in the late 1980s, the central bank promoted the establishment of brokers and dealers for call transactions in order to enhance the adjustment function of the interbank market and break the segmentation of the existing call market between bank and nonbank financial institutions (NBFIs).

Participants in the Interbank Market

The interbank market is the segment of the money market where financial institutions can trade their deposits held at the central bank. Consequently, participation in the interbank market is generally confined to financial institutions with a current account at the central bank, and it may or may not include NBFIs, depending on whether or not they are authorized to maintain current accounts with the central bank. In **Korea**, however, although NBFIs did not maintain a settlement account with the central bank, they were allowed to participate in the interbank market. While participation of NBFIs could have contributed to enhancing market liquidity, eventually it resulted in

[1]Prepared by Bernard Laurens, based on Mehran, Laurens, and Quintyn (1995) for Italy, Korea, Thailand, and Turkey; and Reddy (1999) for India.

market segmentation because of differences in the pattern of transaction behavior. The integration of the interbank market with the over-the-counter market among NBFIs was eventually achieved at the end of the 1980s, with the nomination of brokers and dealers for call transactions as mentioned above.

In **India**, the call money market was predominantly an interbank market until 1990. The Reserve Bank's policy relating to entry into the call money market was gradually liberalized to widen participation and provide more liquidity. In particular, entities that could provide evidence of surplus funds were permitted to route their lending through Primary Dealers (PDs). The minimum size of operations for routing transactions was also gradually reduced in order to increase the number of participants. In this context, banks and PDs are operating as both lenders and borrowers, while a large number of financial institutions and mutual funds are operating only as lenders. In May 2001, the central bank started phasing out his participation in the call market. The move has been made to develop a pure interbank call money market and to facilitate a further deepening of the term money market.

Degree of Centralization of the Interbank Market

Although central banks play a catalytic role in interbank market development, typically they do not intend to centralize transactions on their books. When that occurs, as in the case of **Turkey** with the establishment of the "official" interbank market intermediated by the central bank, direct transactions among banks should be permitted. Moreover, the establishment of a centralized interbank market in Turkey was seen only as a temporary arrangement to "educate" participants and thus facilitate direct transactions. In the case of **Italy**, participation in the centralized market was on a voluntary basis, and the market operated outside the central bank, which only provided settlement arrangements in support of market transactions.

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