

IMF WORKING PAPER

© 1994 International Monetary Fund

This is a Working Paper and the author would welcome any comments on the present text. Citations should refer to a Working Paper of the International Monetary Fund, mentioning the author, and the date of issuance. The views expressed are those of the author and do not necessarily represent those of the Fund.

INTERNATIONAL MONETARY FUND

WP/94/62

Monetary and Exchange Affairs Department

Government Securities versus Central Bank Securities
in Developing Open Market Operations--
Evaluation and Need for Coordinating Arrangements

Prepared by Marc Quintyn 1/

Authorized for Distribution by C. Enoch

May 1994

Abstract

In an indirect monetary policy framework, open market operations become the central bank's main instrument. In the initial stages, when financial markets are still undeveloped, selection of a financial instrument for those operations and the design of supporting arrangements to ensure the central bank's operational autonomy when using the instrument, are crucial issues.

Based on theoretical arguments and experience of a sample of countries that embarked on financial reforms, this paper argues that government securities are the preferred instrument because of their better capacity to develop financial markets. The use of government securities, however, requires the most complex supporting arrangements.

JEL Classification Numbers:

E52, E58, E61, H63

1/ The author would like to extend a special word of thanks to Catherine McAuliffe (AFR), who participated in the initial stages of the project while she was a member of MAE, and continued to provide valuable suggestions and comments throughout the entire project. He is also indebted to V. Sundararajan who stimulated this project and provided valuable comments during the drafting process. In addition, D. Bigman, C. Brown, C. Cottarelli, P. Dattels, D. Dueñas, C. Enoch, D. Hardy, D. Hoelscher, G. Iden, S. P. Leite, A. Leone, H. Mehran, H. Nishikawa, A. Op de Beke and M. Saal provided very useful comments on an earlier draft. The paper has also benefitted from discussions in an MAE internal workshop. The author also acknowledges assistance received by area departments. Finally, a special word of thanks goes to the authorities of several countries covered in this paper for their cooperation in submitting answers to the author's questionnaire. The author of course remains solely responsible for the ideas and opinions expressed in this paper.

Table of Contents

	<u>Page No.</u>
Summary	iv
I. Introduction	1
II. Background and Issues	3
1. The indirect monetary policy framework	3
2. The changing interface between fiscal and monetary operations	4
3. The nature of coordinating and supporting arrangements	7
III. Country Experiences	8
1. Open market (type) operations with government securities	8
a. Countries that have used government securities from the onset	8
b. Countries that in the process switched to government securities	10
2. Open market (type) operations with central bank securities	12
a. Countries that in the process switched to central bank securities	12
b. Countries that have used central bank securities from the onset	14
IV. Evaluation and Lessons	16
1. Does the financial instrument matter?	22
a. General observations	22
b. Central bank paper - specific arguments	23
c. Government securities- specific arguments	27
d. Summary	29
2. The search for solid supporting arrangements	30
a. case 1	31
b. case 2	31
c. case 3	31
d. case 4	32
e. case 5	33
V. Conclusions	36

Text Tables

1.	Selected Country Experiences with the Use of Treasury Bills and Central Bank Bills in Conducting Open Market (Type) Operations (OMO)	17
----	--	----

Charts

1a.	Korea: Interest Rate at Issue on MSBs and Corporate Bonds	26a
1b.	Korea: Outstanding Balances in the Money Market	26a
2a.	Indonesia: SBI, CD and Interbank Interest Rates	26b
2b.	Indonesia: SBI and SBPU Volumes Outstanding and Interbank Transactions	26b
3a.	Pakistan: Average Rate at Treasury Bill Auctions	34a
3b.	Pakistan: Trading Volumes in the Secondary Treasury Bills Market	34a
4.	Pakistan: Auctions Results and Interbank Rate Developments	36a

Appendix:	Government Deposits as a Monetary Policy Instrument	39
-----------	---	----

1.	The issue	39
2.	Selected country arrangements	40
3.	Evaluation and the need or coordinating arrangements	41
a.	Government deposits as monetary policy instruments: evaluation	41
b.	The need for coordinating arrangements	42
c.	Government deposits in or out of the central bank?	43
4.	Conclusion	44

References		45
------------	--	----

Summary

The transition to indirect instruments of monetary policy causes the operational activities of the central bank and the treasury to become more intertwined than before. Lack of coordinating arrangements will impair the central bank's operational autonomy, and hence the efficiency and effectiveness of its policy actions.

Operational coordination is particularly needed in selecting the financial instrument used to conduct the central bank's open market operations and designing arrangements to reduce interference between monetary and debt management and stimulate financial market development.

Central banks in financially advanced countries typically intervene in the secondary markets for government securities, a practice that reduces interference between monetary and debt management to a minimum. When financial markets are undeveloped, central banks are unable to introduce genuine open market operations. They first have to influence monetary conditions by intervening in the primary securities market. If government securities are used, monetary and debt management take place in the same market, with the same instrument. Central banks sometimes prefer to use central bank paper to avoid this situation. Coordination between debt and monetary management is still necessary, however.

This paper addresses two related questions: first, does the financial instrument used in emerging open market type operations matter? Second, given the financial instrument, what are the basic requirements for a supporting arrangement to ensure (a) operational autonomy for monetary management and (b) financial market development?

The paper argues in favor of using government securities in emerging open market type operations because they are better able to serve as catalysts in financial market development and (b) there is a risk of losses associated with the use of central bank bills when absorbing large amounts of excess liquidity in the initial stages of financial reform. Although the cost of such operations has to be borne by the government on a consolidated basis, central bank losses should be avoided to preserve the institution's integrity and autonomy.

The effective use of government securities for open market type operations requires the highest degree of coordination between monetary and fiscal authorities. The arrangement should provide for mechanisms to (a) coordinate the amounts to be issued between monetary and fiscal authorities, (b) sterilize any overfunding of the government's budget for monetary management purposes, and (c) share the cost of this overfunding.

Reform agendas should give proper attention to these issues, as a lack of proper coordinating arrangements has been identified as a major source of delay in the transition to indirect instruments of monetary policy.

I. Introduction

Financial liberalization in general and the adoption of indirect instruments of monetary policy in particular, have a major impact on the relationship between the government and the central bank at both the *institutional* and *operational* level.

At the operational level, the activities of the central bank and the government (or treasury in particular) become more intertwined than under a system of direct, administrative monetary controls. This new situation calls for close coordination between monetary and fiscal authorities. Without such coordination, the central bank's *operational independence*--i.e. the ability to control the growth of its balance sheet, enabling it to achieve its policy goals effectively and neutralize any movements that may interfere with their pursuance--may be impaired. Operational autonomy itself is an indispensable building block on the road to the central bank's institutional autonomy, which is now generally considered as desirable to help in achieving the central bank's main policy goal, price stability.

One particular area where coordination is needed at the operational level between monetary and fiscal authorities is the selection and use of a financial instrument to conduct the central bank's open market interventions. Typically, in an indirect monetary policy framework, open market operations are the central bank's main instrument of monetary policy, supported by other instruments such as central bank credit to commercial banks and reserve requirements. The underlying financial instrument for open market interventions can be either private, government, or central bank securities. Alternatively, some countries use transfers of government deposits between the central bank's books and the commercial banks as the main monetary policy instrument. These transfers can, in principle, yield similar results as genuine open market operations. They are therefore sometimes used in the absence of well-developed financial markets.

In developed financial systems, open market operations typically take place in secondary markets for government securities, a practice that reduces the interaction between monetary and domestic public debt management 1/. Economies embarking on financial liberalization usually lack wide and deep financial markets. This situation necessitates central banks to conduct their open market operations in the primary, or issue markets of the selected security--at least in the initial stages, until financial markets are sufficiently developed to use secondary markets. Such operations are usually called *open market-type operations*.

Irrespective of the financial instrument chosen--government or central bank securities--their use for open market operations creates an interface between monetary and debt management and, therefore, makes coordination at

1/ Hereafter the term debt management invariably refers to domestic public debt management.

the operational level between monetary and fiscal authorities a necessity to preserve the central bank's autonomy. Good coordinating arrangements will strengthen the central bank's operational autonomy, its credibility in the market and financial market development in general.

This paper reviews the relative merits and drawbacks of government and central bank securities as the underlying financial instruments for open market (type) operations, as well as the necessary features the supporting coordinating arrangements should take on, to ensure the central bank's operational independence when using these instruments. ^{1/} The paper will primarily focus on these issues from a monetary management point of view. A detailed analysis from the perspective of debt management is largely outside its scope.

Although the need for coordination between monetary and fiscal authorities is not exclusive for economies in transition, the unknown and unfamiliar nature of the issues in the initial stages of financial reform and the need to develop financial markets make it necessary to put a lot of emphasis on proper coordinating arrangements from the onset of the reform process.

The topics under discussion have received little attention in literature as well as in practice. Yet, their importance should not be underestimated because, as the paper illustrates, lack of solid supporting arrangements has in some cases led to stalling or even backtracking in the transition to indirect instruments of monetary policy. On the other hand, good arrangements have proven beneficial for the efficiency and effectiveness of monetary management. The design of coordinating arrangements should therefore be a core element of every reform agenda.

The paper is structured as follows. Chapter II provides the analytical background and sets out the issues. Chapter III reviews selected country experiences with respect to the choice of a financial instrument for open-market (type) operations and the design of the supporting coordinating arrangements. Chapter IV assesses, on the basis of the country experiences, the relative merits of intervention instruments and reviews the supporting arrangements as the critical elements for a successful transition to

^{1/} The analysis is primarily based on a survey conducted in a cross-section of approximately 20 countries at different stages of financial liberalization and development. While not exhaustive, the survey covers a broad spectrum of countries, highlighting features and circumstances that have led to both successful and disappointing experiences in the use of government and central bank securities in the conduct of monetary policy. As used in this paper, the term "country" does not in all cases refer to a territorial entity that is a state as understood by international law and practice. As used here, the term also covers some territorial entities that are not states but for which statistical data are maintained on a separate and independent basis.

indirect monetary control. Chapter V sets out some general conclusions. The appendix briefly discusses the use of government deposits as a monetary policy instrument in a market-based environment and the coordinating arrangements needed for them to perform their role properly. Although only a few countries use transfers of government deposits as a monetary policy instrument, it is useful to draw some attention to the advantages and drawbacks related to their use in the context of this paper.

II. Background and Issues

In order to identify the issues at stake and place them in the proper context, it seems useful to recall first the salient features of an indirect monetary policy framework. Subsequently, the interactions between fiscal and monetary operations are identified and the need for coordinating arrangements spelled out.

1. The indirect monetary policy framework

When analyzing the interactions between fiscal and monetary operations in a market-based financial system, it is important to bear in mind two key aspects of an indirect monetary policy framework. The first one is the nature of the monetary policy interventions; the second is the instrument-mix to conduct those interventions.

- Types of interventions. From an analytical point of view, two types of monetary interventions can be distinguished (Meek, 1989). The first type relates to the central bank's macroeconomic management: dynamic monetary policy actions that influence bank reserves to achieve broader monetary targets in line with the country's macroeconomic economic strategy.

The second type of intervention is (short-term) liquidity management aimed at smoothing out sharp and undesirable liquidity fluctuations. Too large and too frequent fluctuations would endanger the achievement of the central bank's monetary policy goals and hamper the smooth development and functioning of the financial markets and, in emerging markets, commercial banks' liquidity management as well. These interventions take on a more defensive role, i.e., they neutralize autonomous changes in bank reserves to reduce movements in liquidity and hence in interest rates.

- The instrument mix: to conduct both types of interventions--the dynamic policy actions and the defensive interventions--the central bank needs a mix of instruments to inject and absorb liquidity in a flexible way and to support financial market development. The importance of the latter in the financial reform process cannot be overemphasized. Well-functioning financial markets give central banks the opportunity to absorb liquidity without draining the market altogether. In turn, open market interventions themselves support financial market development as they provide liquidity to the particular market of intervention. Therefore, particularly in the early

stages of financial liberalization, financial market development and the development of indirect instruments are two narrowly intertwined goals of the monetary authorities. Emerging government securities markets often provide the main impetus for financial market development, and hence, government securities are very suitable intervention instruments for the central bank's emerging indirect monetary management. Well-functioning financial markets, in turn, facilitate domestic public debt management. 1/

2. The changing interface between fiscal and monetary operations

In financial systems dominated by direct controls over credit and interest rates, coordination between monetary and fiscal authorities is usually an empty notion because central banks generally function in a subordinated position. Direct controls as well as other instruments of monetary policy in place, such as reserve and/or liquid asset requirements, are often dictated--or at least heavily influenced--by the government. In other words, monetary policy is typically a subset of fiscal policy measures.

In such settings, financial markets and instruments are also generally underdeveloped or nonexistent because, among other reasons, public debt management is guided by nonmarket-based principles, such as low interest-rate financing and the targeting of captive markets. There is, by definition, in the absence of financial markets no need for the central bank to engage in short-term monetary management. Thus, the short-term impact of fiscal operations on domestic liquidity is not important and, as the central bank is not using any financial instrument to intervene in financial markets, there is no interference with debt management. In these circumstances, the need for coordination at the operational level between fiscal and monetary authorities is minimal.

In the new, market-based environment, where direct, administrative controls are replaced by an indirect monetary policy framework, two narrowly related issues in the interaction between fiscal and monetary operations come to the forefront:

First, interactions between fiscal and monetary operations become more important for the day-to-day conduct of monetary policy and market-based public debt management. With indirect monetary policies, daily government

1/ Typically, the goal of financial market development is also shared by the fiscal authorities as they would want to broaden their funding resources to move to less inflationary types of funding and lower their funding costs. While for a central bank the need for market development is immediate and of a technical nature, the fiscal authorities' eagerness to assist the central bank may depend upon the fiscal stance. Often, governments coping with huge fiscal deficits are not willing to pay market-related interest rates on their debt, thereby slowing down the market development process and the transition to indirect monetary policy instruments.

receipts and payments have a direct short-term impact on domestic liquidity and hence on interest rates and on the development and functioning of financial markets. 1/ These interactions require the kind of defensive monetary operations discussed earlier.

Typically, government transactions are a major source of supply of reserves. Tax collections and government payments often go through the government account at the central bank and hence directly influence reserve money movements. Without a mechanism to neutralize these transactions to prevent unforeseen variations in base money and short-term interest rates, the shocks caused by these cash flows could place a heavy burden on financial markets and instruments, particularly fledgling ones. Interest rate movements, in turn directly affect government debt servicing in an environment where public debt management is also conducted according to market based principles.

Second, because open market operations will become the central bank's main instrument of monetary policy, one of the key pillars for a successful transition to indirect monetary policy is the availability to the central bank of a reliable financial instrument to conduct these open market operations. Government securities are often a natural candidate, particularly if they already have an established market presence. This was usually the case in industrialized countries, where financial markets were well developed prior to the introduction of indirect monetary policies. 2/

Well-developed government securities markets allow indirect monetary policy to be conducted from the onset in secondary markets, thereby insulating monetary policy from debt management operations, which take place for the most part in the primary market for government securities. In these circumstances, with distinct intervention markets, or even distinct instruments (e.g., different maturities of securities are used for monetary and debt management operations in the UK), the need for coordination at the operational level between fiscal and monetary authorities is minimized.

However, in other circumstances where financial markets are either nonexistent or underdeveloped, as in most developing countries undergoing financial reforms, the introduction of indirect monetary policy techniques poses more challenges. Government securities are still a natural choice for

1/ As a matter of fact, the macroeconomic effects of government transactions occur under both a direct and indirect control regime, but their short-term impact on monetary variables tends to be blunted when direct credit controls are used.

2/ France, for instance, in the period 1985-87, is a good example. In 1985 when the decision was taken to move towards indirect instruments, marketable treasury bills were introduced. By end-1986 the authorities thought the market had the proper characteristics to allow open market operations and all direct controls were discontinued at that time. See also Quintyn (1993).

intervention instrument, particularly if they already exist. However, given the typical underdeveloped state of markets, it is likely that fiscal and monetary authorities are initially required to operate in the same market-- the primary market--with the same instrument, for both debt and monetary management.

The central bank has to rely on primary issues of government securities (open market type operations), until such time as the markets are deep enough to switch to interventions in the secondary market (genuine open market operations). The use of the same instrument and market for monetary and debt management may lead to conflicts, for instance when the central bank's intentions with primary issues of government securities are at odds with the treasury's goals. In these circumstances, the operational independence of the central bank is in danger. The establishment of coordinating arrangements between fiscal and monetary authorities is needed to preserve the central bank's operational autonomy and, thus the effectiveness of monetary policy.

Alternatively, in an attempt to circumvent the use of the same instrument and market and the related need for coordination, central banks may opt for a separate intervention instrument, such as central bank securities or private paper, to conduct open market (type) operations, thereby largely separating monetary from debt management operations. The use of private paper, however, remains rather the exception. Private paper, while an alternative in theory, is not a real option for most countries in the early stages of financial reform. First, private paper markets are either absent or only poorly developed at the time a decision has to be made regarding the intervention instrument. In addition, the situation of excess liquidity which often occurs at the onset of financial reforms, requires the central bank to have a large portfolio of private paper which it could sell to absorb liquidity, which is usually not the case. Thus, private paper would only be a valid alternative when a country's financial situation is more or less in equilibrium. 1/

Central bank paper, therefore, is a more common alternative intervention instrument. However, it is a misunderstanding to think that the use of central bank paper makes coordination between fiscal and monetary authorities redundant. If not properly coordinated, the co-emergence of central bank and government securities markets could hamper the development of both markets, resulting in poor transmission of monetary policy actions in general.

1/ Indonesia is probably the only developing country where private paper is used in open market operations. The country had a fairly developed private paper market and the central bank has sought a mixed approach whereby both its own debt instruments and private paper are used for open market interventions.

The choice and use of an intervention instrument for monetary policy appears to be one of the major stumbling blocks in the transition to indirect instruments of monetary policy. Loss of monetary control, owing to premature reliance on indirect instruments or lack of workable supporting arrangements, can lead to backtracking or even reverting to direct controls.

3. The nature of coordinating and supporting arrangements

The above interactions between fiscal and monetary instruments call for coordination at the operational level between the fiscal and monetary authorities in the transition process, at a minimum to avoid conflicts, and more particularly to achieve effective monetary and debt management. Such coordinating arrangements typically will consist of:

(a) the establishment of a coordination committee at the operational level between the treasury and the central bank to forecast the effects of fiscal operations on monetary conditions and coordinate policy actions accordingly, and

(b) given the choice of a financial instrument for open market operations, the design of supporting arrangements between monetary and fiscal authorities to reduce or eliminate the potential for conflicts and ensure policy effectiveness. When government debt instruments are selected, these arrangements would stipulate how monetary and debt management are to be coordinated in practice. When the central bank prefers to use its own debt instruments for open market (type) operations, arrangements need to be established to reduce or eliminate interference between central bank debt instruments and government debt instrument to preserve or enhance the effectiveness of monetary and debt management and ensure financial market development.

Among the wide variety of issues in coordination between fiscal and monetary authorities that come to the forefront in the transition to indirect instruments of monetary policy, this paper addresses the selection of the financial instrument to conduct open market operations and, given this choice, the design of supporting arrangements that would ensure the central bank's operational autonomy. Other papers have dealt with other aspects of coordination. For instance, Leite (1992) and Sundararajan et al. (1993) discuss the need for a coordinating committee as well as its composition. Cottarelli (1993) reviews the arguments for and the terms of a complete halt to government borrowing from the central bank in a liberalized financial system as a condition for central bank operational independence.

III. Country Experiences

The following country experiences, though not exhaustive, provide a representative overview of the range of approaches that have been attempted

in selecting the underlying financial instrument for open market (type) operations and designing supporting arrangements. These approaches have met with varying degrees of success and have evolved through periods of changes and adjustments along the way.

The typical approach to introducing open market interventions as part of indirect monetary management has been to use open market-type operations, as defined above, often supported by direct instruments in the early stages. While the eventual aim is to conduct open market operations in secondary government securities markets, the speed of the transition has varied. The type of supporting arrangements between fiscal and monetary authorities for conducting debt management and monetary operations in the same market also varies.

Country experiences have been divided into four main categories, mainly for presentational purposes. The first group of countries are those where the central banks have consistently used government securities in the development of open market operations. The countries discussed are Pakistan, Kenya, the Gambia, Israel and Mexico. A second category consists of those countries that have been experimenting with both central bank and government securities and where the latter are currently the preferred instrument. Here we review the Philippines, Sri Lanka, Poland and Nepal. Group three countries have also experimented with both types, but their central banks are at present mainly relying on central bank securities: Mauritius, Ghana, Chile and New Zealand. Finally, the fourth category groups countries that in practice have only resorted to central bank securities: Costa Rica, Indonesia and Korea.

1. Open market (type) operations with government securities

a. Countries that have used government securities from the onset

Pakistan, Kenya, The Gambia, Israel and Mexico are typical examples of countries that have used primary auctions of government securities as the main instrument of monetary policy in newly introduced indirect monetary policy environments. In all of these countries, some types of government securities were already in circulation prior to the introduction of indirect instruments of monetary policy. The relations between fiscal and monetary authorities, including the central banks' role in public debt management at the time of the introduction of indirect monetary intervention, however, varied in each country, which influenced the initial success of the monetary operations.

The transition to indirect monetary policies in Pakistan was intended to start with central bank intervention in primary government securities markets (1991). ^{1/} Thus far, the government has continued to maintain ultimate responsibility for determining auction volumes and cut-off rates in

^{1/} Based on country survey for Pakistan.

the primary market, often to the detriment of monetary management. No explicit coordinating arrangements have been established to ensure that monetary policy considerations are included in determining the terms of primary market issues.

In the other countries, the introduction of open market-type operations in government paper was supported explicitly by arrangements aimed at operational independence for monetary policy. In Kenya, the central bank had been actively involved in the management of government securities markets since 1985. 1/ The central bank conducted weekly treasury bill auctions and was fully responsible for issuing and redeeming treasury bills. At the onset of the move to indirect monetary policies (1990), the Central Bank of Kenya was also given responsibility for determining the volume and terms of primary issues of government securities, in line with monetary policy requirements, thereby receiving a high degree of monetary policy autonomy.

In The Gambia, the central bank began to rely actively on treasury bill auctions to manage cash reserves in 1990. 2/ As the government budget was close to balance, the central bank was given full autonomy to adjust auction volumes in line with its monetary policy requirements. The proceeds of the sales are credited to the government's account with the central bank and the latter is not required to pay any interest on this account.

Open market interventions in Israel also take place in primary markets for government securities. 3/ The Bank of Israel uses a specifically designed government security, the "Government Short-Term Loan", which is issued at weekly tenders and available in six- and twelve-month maturities. The central bank has full autonomy in deciding on the volumes to be issued within a limit set by law. The proceeds from the sales of this paper are not used to finance the government deficit. Instead, they are deposited in a government account at the central bank. 4/ 5/

The Central Bank of Mexico began open market-type operations through primary issues of government securities (Certificates of the Treasury (CETES)) in 1983-84, at a time when direct controls were still in place. In

1/ Based on country survey for Kenya.

2/ Duesenberry and McPherson (1991). Treasury bill auctions were held since 1986, but before 1990 the volumes at issue were not really targeted for monetary management purposes.

3/ Based on country survey for Israel and D. Klein (1994).

4/ The government can borrow from this account under very specific conditions and the credit has to be repaid before the end of the fiscal year.

5/ Under the present conditions (dominated by liquidity shortages), the dominant monetary policy instrument is the "monetary loans to the banking system" (central bank credit) and not so much the above described liquidity-absorbing tool.

1989, the central bank abandoned its direct controls and started open market operations in secondary markets for government securities in 1990. 1/

Of the countries mentioned above, Mexico is the only one that has moved to genuine open market operations in the secondary market. The other central banks are still using primary issue of government securities as their main intervention tool, along with other instruments such as reserve requirements and central bank credit to the banks. 2/

b. Countries that in the process switched to government securities

The Philippines, Sri Lanka, Poland and Nepal are examples of countries where, early in the transition to indirect instruments, the central bank expressed a preference for using government securities in developing its open market operations. The government, however, showed some reluctance in allowing the central bank the use of its debt instruments, which forced the central bank to issue its own securities in an attempt to keep the transition to indirect instruments of monetary policy going. Later in the process, the governments agreed to the use of government securities for monetary management purposes and the issuance of central bank securities was discontinued. Nepal is a special case among these countries because, while treasury bills are the main instrument, the central bank also intervenes with its own securities to fine-tune the interventions.

The Philippines have gone through several arrangements since the early 1970's. 3/ At the time of the move to indirect monetary management (early 1980s), the volume of primary issues of government securities continued to be determined solely on the basis of the government's borrowing requirements, leaving little room for the central bank to use these issues for monetary policy purposes; secondary government securities markets were not developed at the time. In light of these shortcomings, the central bank was forced to issue its own debt instrument to improve monetary control (1983).

Over time, however, there were complaints that competition with central bank securities pushed up interest rates in the government securities market, which was thought to be unnecessarily complicating domestic public debt management. At the same time, high interest costs associated with central bank securities were contributing to central bank losses, which complicated domestic liquidity management.

1/ Based on country survey for Mexico.

2/ In Kenya, some open market operations through the secondary market have lately developed. It was facilitated by the securitization of the government's overdraft with the central bank, which gave the latter a stock of government securities.

3/ Country survey for the Philippines, San Jose and Polvorosa (1984), San Jose (1990) and Lim (1991).

Given the above complications, by the mid-1980s, the Government and the Central Bank agreed to phase out central bank securities and use the issues of government securities for monetary management. To ensure that primary issues of government securities satisfied both fiscal and monetary objectives, a coordinating committee was established which determined the auction volumes of government securities on the basis of both deficit financing requirements and monetary policy considerations. Even then, the central bank was still required on occasion to issue its own securities to fine tune its monetary management.

In 1987, an additional and important arrangement was established between fiscal and monetary authorities allowing for the possibility of overfunding the fiscal deficit on account of monetary policy considerations. Proceeds from any excess sales of treasury bills are now placed in fixed-term deposit with the central bank. Remuneration of the deposits is determined during periodical meetings between the Ministry of Finance and the Central Bank. 1/

The central bank of Sri Lanka had to issue its own securities in its first attempt at indirect monetary operations because the government was not prepared to develop a treasury bill market (1984). 2/ In 1987 the authorities started concentrating on the development of a treasury bill market. Weekly auctions of treasury bills have since replaced central bank bills in the conduct of open market-type operations. Despite the existence of a joint forecasting committee, auction volumes were for a long time largely based on volumes of maturing bills, thereby subordinating monetary policy considerations to debt management requirements. In 1992 the authorities agreed on new operating procedures whereby the rates at auction are left to market forces and the quantities of treasury bills sold at auction are set according to a reserve money program, thereby greatly enhancing the central bank's operational autonomy.

In Poland, at the time of the introduction of indirect instruments of monetary policy (1990), the Ministry of Finance was not prepared to allow the Central Bank to intervene in primary government securities markets for monetary operations, prompting the Central Bank to issue its own debt instruments. 3/ The success of central bank securities, and their direct competition with treasury bills, however, eventually led the Government to agree in 1991 on the Central Bank using the primary treasury bill market for monetary management. Consequently, central bank bills were phased out. However, coordination between Central Bank and Treasury never proved solid enough for the central bank to meet its monetary management needs. The

1/ In recent years, it has normally been agreed that some portion of these deposits would not receive interest in order to limit the losses of the central bank.

2/ Johnston and Brekk (1989), and Tseng and Corker (1991).

3/ Country survey for Poland.

Central Bank therefore started as soon as feasible with repurchase operations as its main indirect intervention tool.

In Nepal, an auction system for treasury bills was introduced in 1988. However, this system did not assist the Central Bank in its transition to indirect monetary policies because the terms of the auctions, both volume and cut-off rates, were based solely on deficit financing requirements and initially, treasury bill auctions were held only infrequently. Therefore, the Central Bank started issuing its own securities to gain control over monetary developments (1991). Eventually, treasury bill auctions became more regular, and central bank bills are now issued, with identical terms and characteristics as treasury bills, in side-by-side auctions, with the Central Bank adjusting the combined volume at issue in line with monetary policy objectives. While both central bank and treasury bills carry identical terms, the Central Bank has shown greater tendency than the government to allow rates on its bills to move upward, and this primary rate differential has hampered market development in general.

2. Open market (type) operations with central bank securities

a. Countries that in the process switched to central bank securities

Changes from government securities as the underlying intervention instrument for open market operations to central bank securities have mainly resulted from growing reluctance on the part of the government to further share its debt instruments with the central bank for monetary management, either because (a) the cost of the arrangement was deemed too high for the government (Mauritius), (b) a favorable fiscal situation reduced the need for issuing government debt instruments (Ghana, Chile), or (c) government and central bank wanted a clear separation between monetary and debt management (New Zealand).

Starting in 1988, the Bank of Mauritius began to remove its direct monetary instruments. At the same time, the banking system started facing significant liquidity injections through the external accounts. The Government began to issue on tap short-term, fixed-price government securities to sterilize this excess liquidity. The growing interest cost of this operation became a major concern and in 1991, the Government announced its intentions to discontinue the issue of treasury bills for liquidity sterilization purposes. Thus, beginning in July 1991, the Bank of Mauritius started issuing its own bills on tap and moved to auctions of these bills in November of the same year. Since then, the Central Bank decides on the amounts to be auctioned in close consultation with the Treasury. When the Treasury needs cash, treasury bills are issued and at other times, Bank of Mauritius bills are issued. Both securities have the same characteristics--so that there is in fact only one market--but they are never issued simultaneously.

In Ghana, the introduction of indirect monetary policies during 1988-89 took place against a background of excess domestic liquidity, forcing the Central Bank to intervene quickly and in vast amounts. 1/ The concern to develop financial markets, combined with the reluctance of the Government to issue treasury bills in sufficient amounts to absorb the excess liquidity, prompted the Central Bank to issue its own debt instruments. Over time, central bank securities became the main instrument of monetary policy, primarily because of rigidities in the weekly treasury bill auction procedures. Furthermore, when fiscal conditions improved, the Government became increasingly reluctant to issue treasury bills, forcing increased reliance on central bank securities for monetary management. To stimulate market development in general, the Central Bank broadened both the maturity range of its own bills and the eligible holders. The concern to stimulate financial markets is further reflected in the fact that central bank bills have exactly the same features as treasury bills.

The experience of Chile bears some resemblance with Ghana. As early as 1975 the Central Bank of Chile moved to indirect monetary policy as part of broader financial reforms. The Central Bank started auctions of central bank promissory notes and treasury bills. Throughout the years the emphasis increasingly shifted to central bank paper. This move was accelerated by the fact that, as part of the financial sector rescue operation in the early 1980s, the Central Bank of Chile bought bad loans from the banks in exchange for central bank bills. By the end of the 1980s when the financial situation returned to normal, the Government lost its interest in issuing government paper because of the favorable fiscal position, so the Central Bank had to rely on its own securities for policy interventions and for market development. To foster markets, the Central Bank broadened the range of maturities of its promissory notes which are now up to 10 years. As in Ghana, these operations have had an unfavorable impact on the central bank's profit and loss account.

Since 1988, Reserve Bank of New Zealand bills (RBNZ bills) have played a major part in the conduct of monetary policy in New Zealand. 2/ The RBNZ targets the quantity of primary liquidity (defined as the sum of settlement cash and discountable RBNZ bills) by limiting the quantity of RBNZ bills available to the banks and targeting settlement cash. 3/ Between 1985 (start of financial reform) and 1988, treasury bills were used instead of RBNZ bills. However, lack of central bank control over the supply of treasury bills in conjunction with the Government's desire to achieve a clear separation between monetary policy and the Government's debt

1/ Based on country survey for Ghana and Kapur et al. (1991).

2/ Country survey for New Zealand, Harrison (1990), and Reserve Bank Bulletin (1987 and 1990).

3/ As the Reserve Bank does not allow settlement accounts to go into overdraft, the quantity of discountable bills is important for settlement banks' cash management.

management and banking operations, led to the introduction of RBNZ bills in 1988.

Under the present system, a change in primary liquidity--reflecting a change in monetary policy stance--is initiated by the RBNZ offering a greater or smaller quantity of its own bills. These bills are issued solely to commercial banks through twice-weekly auctions. Secondary market interventions by the RBNZ take place only when settlement cash injections are required. A variety of techniques, including securitized, short-term loans (or sellbacks), repurchases of government bonds and, occasionally, outright purchases of government bonds or commercial paper are used to achieve this aim.

On the other hand, when the RBNZ intervenes to neutralize the impact of *government cash flows on reserves (as opposed to changing the stance of monetary policy)*, it intervenes with a specific kind of treasury bill, "seasonal treasury bills", solely designed for these purposes. The Central Bank autonomously determines the terms of these securities, taking into account forecast liquidity flows. 1/ 2/ It was thought that the use of a different type of security would improve the transparency of monetary policy actions and thus enable the market to clearly distinguish between neutralization operations and changes in the stance of monetary policy.

The features, terms and purpose of central bank securities differ from those of government securities. Furthermore, in its role as the government's advisor in domestic debt management, the RBNZ makes recommendations on the structure, amount, and timing of issues and the coupon rate of government bonds, thereby ensuring consistency with monetary policy and reducing the potential for interference of debt management with monetary policy purposes to a minimum.

b. Countries that have used central bank securities from the onset

Central banks in Costa Rica, Indonesia and Korea, for various reasons, have always used central bank securities as the intervention instrument for open market (type) operations. Bank Indonesia, in addition, also uses private paper to enhance the flexibility of its interventions.

In Costa Rica, the central bank's main monetary instrument is primary issues of its own securities. 3/ By lack of coordinating arrangements, the Central Bank and the Treasury have been competing to place their

1/ The Government controls the other debt management instruments (government bonds of various maturities and "Regular Maturity Treasury Bills").

2/ If the system is short of cash owing to government cash flows, the RBNZ would offer to inject liquidity via short-dated loans known as sellbacks.

3/ Country survey for Costa Rica.

respective securities and have experienced problems placing the desired amounts.

Government securities are not available in Indonesia, since, according to the "Balanced Budget" rule the Government is effectively prohibited from issuing any domestic debt instrument. 1/ Therefore, since 1983, at the initiation of the transition to indirect instruments, central bank securities or SBI's (Sertificat Bank Indonesia) have been the central bank's main open market instrument. Because SBI's mainly served liquidity draining purposes and could not be effectively used to inject liquidity, the Central Bank also created a market for SBPU's (Surat Berhaga Pasar Uang--money market securities) to inject liquidity. 2/ These SBPU instruments can be rediscounted at the initiative of commercial banks. 3/ Issue procedures of SBI's and maturities of both SBI's and SBPU's have been undergoing frequent adjustments to improve their effectiveness, depending on the prevailing macro monetary conditions.

In Korea, central bank securities (Monetary Stabilization Bonds or MSB's) have been used since 1961 to deal with massive liquidity absorption. 4/ Treasury bills were introduced a few years later and, officially, were also available for monetary policy purposes. For a long time, however, the central bank continued to rely on direct credit controls as its main monetary policy instrument, supplemented with MSB's for absorbing excess liquidity. The dramatic expansion of the market for MSB's, needed to absorb the liquidity overhang, at times hampered expansion of other money markets by draining away funds. More recently, steps are being taken to revise the terms and operating procedures of treasury bills to allow government securities markets to become the principle vehicle for a move to full indirect monetary operations in Korea.

1/ Based on country survey for Indonesia. See also Binhadi (1990), Binhadi and Meek (1988), Sundararajan and Molho (1988), and Tseng and Corker (1991).

2/ SBPU's include promissory notes issued by customers in connection with borrowing from banks or NBFI's; promissory notes issued by banks and NBFI's in connection with interbank borrowing; trade bills drawn by one party and accepted by another in connection with a specific transaction, where either the drawer or the drawee is a customer of a bank or NBFI; and trade bills drawn by a bank or NBFI customer and accepted by the bank or NBFI in connection with a credit extension to finance a specific transaction.

3/ Rediscounting usually takes place through a market maker which works under instructions of the central bank. However, under certain circumstances banks and NBFI's could also directly rediscount with the central bank.

4/ Kang (1990), Emery (1991), and Kim (1992).

IV. Evaluation and Lessons

Table 1 summarizes the survey. The following observations pertain to these experiences:

- With respect to the *type of financial instrument* used for policy intervention--government or central bank securities or a combination of both--there is a greater variety of approaches than in the industrialized countries. In industrialized countries, one has witnessed a certain convergence in both instruments and techniques used for open market interventions during the 1980s. Newly liberalizing countries, on the contrary, have tested a variety of options under specific local and historical conditions, and central bank securities have been tested and are used more frequently than in financially advanced countries. Reasons therefore are (a) the lack of government securities markets at the onset of the transition, when the central bank urgently needed a financial instrument for its open market operations, ^{1/} (b) unwillingness of the government to establish such markets or to continue its support for the central bank's use of government securities in monetary operations, (c) shortcomings in previous supporting arrangements that allowed the central bank to use government securities for its open market type of operations, and (d) a deliberate choice of the authorities to separate monetary from debt management as was the case in New Zealand (and Fiji).
- There is also variety in the *types of supporting arrangements* between monetary and fiscal authorities, ranging from good arrangements to very weak or nonexistent arrangements. It becomes clear from the overview that, more than the type of financial instrument used for open market operations, the quality of the supporting arrangement seems to have a bearing on the success and smoothness of the transition to indirect monetary policy. In several countries in the analyzed sample, full transition to indirect instruments has been delayed owing to the lack of good supporting arrangements. In some of them direct instruments have even not been abolished completely.
- Irrespective of the financial instrument used for open market operations and the supporting arrangement in place, the *development of active secondary markets in the intervention instrument* in general seems to be a slow process. Of the countries surveyed, only the Central Bank of Mexico has moved to genuine open market operations in the secondary market, while Central Bank of Poland uses repos and reverse repos. In a few other countries, secondary market activities have begun to take place sporadically. A host of other factors that

^{1/} Indonesia is a special case in this regard because there is no need for the government to issue its own domestic debt instruments.

Table 1. Selected Country Experiences with the Use of Treasury Bills and Central Bank Bills in Conducting Open Market (Type) Operations (OMO)

Country	Start date of OMO	Financial instrument used for OMO	Intervention Market for OMO	Specifics of coordinating arrangements	If central bank bills are used, do gov. securities markets exist?	Is secondary market in intervention instrument developing?	Date direct instruments were discontinued	Remarks
Kenya	1990	treasury bills	Primary	central bank has large autonomy in the auction as the Government's debt manager		slowly developing	still used	Treasury tries to influence primary market (particularly rates at issue).
Pakistan	1991	treasury bills	Primary	none-Government decides autonomously on auction		some activity	still used	Government interference in auctions influences secondary market activity.
The Gambia	1990	treasury bills	Primary	central bank has full autonomy to adjust auctions in line with monetary requirements; proceeds of auctions go to account at central bank.		still low activity	1990	Government budget close to balance.
Israel	early 1970s	Special type of government security	Primary	central bank has full autonomy over this instrument, which is not used to finance government deficit. Proceeds are deposited in special account at central bank.		slowly developing	1985	-
Mexico	1984 1990	treasury bills treasury bills	Primary Secondary	none none		yes	1989	-

Country	Start date of OMO	Financial instrument used for OMO	Intervention Market for OMO	Specifics of coordinating arrangements	If central bank bills are used, do gov. securities markets exist?	Is secondary market in intervention instrument developing?	Date direct instruments were discontinued	Remarks
Poland	1990	central bank bills	Primary	none	yes		1993	Success of central bank bills instigated government to allow use of treasury bills for monetary management.
	1991	treasury bills	Primary	none		yes		Central Bank switched in 1992 to repos (based on treasury bills) as coordination for open market type operations was never succesfull.
The Philippines	1983	central bank bills	Primary	no	yes		1981	Complaints of authorities that rate on government securities had to be too high to compete with central bank bills.
	1985	treasury bills	Primary	coordinating committee decides on volumes.				Central Bank had to fine-tune with central bank bills.
	1987	treasury bills	Primary	the above, plus proceeds of excess sales of treasury bills on account of monetary policy are to be placed in deposit at central bank.		secondary market activity developing		Central Bank sometimes still intervenes with own securities in small amounts.

Country	Start date of OMO	Financial instrument used for OMO	Intervention Market for OMO	Specifics of coordinating arrangements	If central bank bills are used, do gov. securities markets exist?	Is secondary market in intervention instrument developing?	Date direct instruments were discontinued	Remarks
Sri Lanka	1984	central bank bills	Primary	none	no		1987	Government was not interested in development of treasury bills at that time.
	1987	treasury bills	Primary	joint forecasting committee but volumes mainly based on maturing volumes.		-		
	1992	treasury bills	Primary	volumes based on monetary program.		slowly developing		
Nepal	1988	treasury bills	Primary	none - deficit financing needs prevailed.		-	1989	Rates are not identical which tends to hamper market development.
	1991	central bank bills	Primary	none	yes	-		
	1992	treasury bills and central bank bills	Primary	central bank bills and treasury bills have identical features, issued in side-by-side auctions. Central bank bills are used to adjust volumes at issue for monetary policy purposes.	yes	-		
Mauritius	1988	treasury bills	Primary			-	some direct controls are still used	Massive intervention needed to sterilize capital inflows. Treasury no longer willing to issue treasury bills for monetary management; both securities have same characteristics but are not issued in same auction.
	1991	central bank bills	Primary	first on tap; later auctions; amounts to be issued are decided in consultation between Treasury and Central Bank.	yes	-		

Country	Start date of OMO	Financial instrument used for OMO	Intervention Market for OMO	Specifics of coordinating arrangements	If central bank bills are used, do gov. securities markets exist?	Is secondary market in intervention instrument developing?	Date direct instruments were discontinued	Remarks
Ghana	1988	treasury bills and central bank bills	Primary	central bank bills have identical characteristics as government securities.	yes	-	1989	central bank bills issued in several maturities to facilitate transmission of monetary policy and stimulate financial market development.
Chile	1975	treasury bills and central bank bills	Primary	none	initially yes. In late 1980s disappearing due to favorable fiscal position	-	1976 (reintroduced during banking crisis 1982-87)	central bank bills also massively used to rescue financial sector in early 1980s.
New Zealand	1985 1988	treasury bills central bank bills	Primary Primary (Secondary)	- RBNZ bills are main intervention instrument for monetary policy. RBNZ has an active role as the Government's debt manager. Special treasury bills are used to neutralize impact of government cash flows on reserve money.	- yes	some activity some activity	1985	RBNZ was not satisfied with degree of autonomy for monetary management. Both RBNZ and government wanted clear separation between monetary and debt management.
Costa Rica	since late 1970s	central bank bills	Primary	no coordinating arrangements	yes	-	1992	Both authorities are competing and face problems placing desired amounts.

Country	Start date of OMO	Financial instrument used for OMO	Intervention Market for OMO	Specifics of coordinating arrangements	If central bank bills are used, do gov. securities markets exist?	Is secondary market in intervention instrument developing?	Date direct instruments were discontinued	Remarks
Indonesia	1983	SBI Sertificat Bank Indonesia (central bank bills)	Primary	no coordination necessary	no	slowly	1988	SBI only worked one way (absorption of liquidity). Bank Indonesia therefore introduced SBPU to inject liquidity. SBI market not really integrated in rest of money market which makes transmission of monetary policy difficult.
Korea	1961	MSBs Monetary stabilization bonds (central bank bills)	Primary	none	yes	limited activity	still used	MSB issued mainly at below market rates to captive markets.

fall outside the scope of this paper are also responsible for this lack of development, but the quality of the initial coordinating arrangements definitely plays a part.

- Finally, *government securities market* development is in general the least advanced in those countries where central bank securities play the leading role in the development of open market operations (with the exception of New Zealand). Quite often, the central bank is forced to introduce its own securities, because underlying the government's unwillingness to allow the central bank the use of government securities, there is a reluctance to move to market-based debt management techniques, for fear of higher funding costs.

This section draws some general lessons from the country experiences regarding the above observations. More particularly, two questions will be addressed. First, whether the nature of the underlying financial instrument as such (government or central bank securities) matters in the adoption of indirect instruments. The second concerns the basic requirements for supporting arrangements, to achieve successful coordination of debt and monetary management.

1. Does the financial instrument matter?

In light of the above observations, the question to be addressed is whether the *nature* of the instrument used for open market intervention matters. That is, for a country embarking on financial reform, does it make a difference in the medium or long term whether treasury or central bank securities are used for monetary policy interventions?

a. General observations

In theory, the origin of the financial instrument used for market development and policy intervention seems irrelevant. What matters are the *characteristics* of the instrument. Irrespective of their origin, these instruments should be designed in such a way that they foster the development of a free, well-functioning market in this instrument which, in turn, would facilitate the development of money markets in general and market-based monetary policy operations in particular.

Important ingredients in this respect are: 1/ (a) interest rates should be freely determined by the market; (b) holdership should be defined as broadly as possible to stimulate competition. More competition is likely

1/ Listed are only those characteristics that pertain to the financial instrument. To foster market development, other requirements, whose discussion is beyond the scope of this paper, need also to be fulfilled. These pertain to e.g. the market infrastructure, the legal and regulatory framework, prudential supervision. For a more in depth discussion, see for instance Emery (1991).

to improve the process of interest rate setting. Broad holdership will also facilitate the transmission of monetary policy impulses; (c) the maturities of the paper should be such that they stimulate trading; (d) transfer of ownership of the instrument must be easy; (e) taxation should be simple and transparent to stimulate trading and holding 1/; and (f) proper rules for rediscounting the financial instrument should be established. If access to the central bank's rediscount window is automatic and easy, secondary market development will be hampered.

The above key features can in principle be adopted by both government and central bank paper. So, from this perspective, the choice between both instruments is indifferent. The next question is whether, based on country experience, there are other arguments in favor of or against either of these two instruments.

b. Central bank paper - specific arguments

The main advantage of the central bank using its own debt instruments for open market operations is that monetary management will be largely separated from debt management, thereby giving the central bank operational independence from the early stages of the transition onward.

On the other hand, country practices also reveal two types of problems --or limitations--with respect to the use of central bank paper. The first is the risk of central bank losses when solely relying on the issuance of central bank paper to absorb excess liquidity. The second is the lack of spill over to foster money market development in general.

• **The risk for central bank losses.** In economies in transition, one major danger that has been associated with the use of central bank bills is the risk for central bank losses. Given the adverse features common to many economies in transition, including situations of extreme liquidity overhang of a domestic origin, central banks often have to intervene in massive amounts to absorb the excess liquidity. If this is done by exclusively relying on central bank securities, these interventions may eventually affect the institution's profit and loss account. Cases in point are the Philippines, Ghana, and Chile where the issuance of central bank paper has contributed to such losses, while in Indonesia and Korea central bank bills have a significant, negative impact on the profit and loss account.

Central bank losses lead to two major problems. First, they undermine the central bank's prestige and autonomy and secondly, there is a danger that the huge interest payments due on the outstanding debt and, perhaps, the accompanying losses themselves, will undermine monetary policy

1/ However, taxation should be the same across all types of financial instruments, including private paper, to avoid any discrimination.

effectiveness. In other words they neutralize the very effects sought by the issuance of central bank securities. 1/

Admittedly, the issuance of central bank securities is just one of several factors that have an impact on central bank profits and may lead to losses. 2/ Sales of central bank paper reduce central bank profits as much as the use of any other instrument on the central bank's balance sheet to absorb liquidity from the markets, such as government paper held in the central bank's portfolio (the exception being required reserves when they are non- or lowly remunerated). Also, if the authorities have agreed on an arrangement whereby the government budget deficit is allowed to be overfunded to meet monetary management requirements, and the central bank pays a market-related interest on these government deposits, the impact on the central bank's profit and loss account will be similar to the case wherein the central bank replaces this overfunding with its own debt instruments.

The risk for central bank losses resulting from the use of central bank securities is the greatest in the initial stages of the transition to indirect monetary policies, because of the need to mop up large amounts of excess liquidity that have been building up under the direct monetary control regime.

In light of the risk for central bank losses, it would be recommended that any excess liquidity of a permanent nature be absorbed by not entirely relying on short-term central bank paper, but through a combined intervention of increasing reserve requirements and issuing medium- and long-term government bonds (which would also stimulate market development).

• *Contribution to market development - mixed results.* A second phenomenon is that markets for central bank securities often remain very thin, which may have implications for the flexible use of central bank bills for monetary policy intervention and for financial market development in general. Often, monetary authorities seem to have a tendency to design central bank securities by only focussing on those features that would serve their immediate monetary policy purposes (usually absorbing excess

1/ With respect to the treatment of central bank losses, it can be argued that it suffices that the law relating to the central bank clearly stipulates that the government carry any operating losses the central bank may incur. While this stipulation should in any case be part of the law, the weakness of this argument is that, by the time the government intervenes, part of the damage in terms of loss of central bank integrity and monetary policy effectiveness has already taken place. Thus, because the government has to back the central bank in any event, it is preferable to do this in another way, for instance by agreeing on arrangements regarding the use of government securities for massive liquidity absorption operations.

2/ For a comprehensive overview, see Leone (1993).

liquidity). The instrument often receives too much government support (eligibility for reserve requirements, liquid asset requirements, rediscountable) for a viable market to develop, and in addition, holdings are often restricted to a small group, e.g., banks. As a result, the market never widens and secondary market activity never materializes. Such design features are not conducive to money market development in general.

However, the seriousness of the above implications depends on the particular circumstances under which central bank paper is used. The implications seem most damaging in those cases where no government securities are in circulation. As long as government securities are in circulation (and these securities have the proper market-stimulating features), there is no real problem in a central bank bill market remaining small. The torch of financial market development can be carried by government securities and, in addition, the central bank can fully enjoy the benefits of a separation between debt and monetary management to gain operational independence. 1/

The situation becomes more difficult when no government paper exists. Then, central bank securities also carry the weight of financial market development and should be designed accordingly. The degree of financial market development will ultimately have an influence on the efficiency and effectiveness of the central bank's policy interventions.

A first, though perhaps minor problem in this regard, is that in the absence of a well developed central bank securities market, liquidity injections through this market are difficult because the market would dry up easily. However, central banks can overcome this limitation to one-way interventions (liquidity absorption) by introducing other instruments to inject liquidity, such as credit auctions (operations that most central banks already conduct). Bank Indonesia, for instance, introduced a separate instrument, the SBPU, (based on private paper) for injecting liquidity.

The second implication seems more serious in the long run. If the intervention market remains underdeveloped, it will often remain a nonintegrated part of the money market and therefore fail to stimulate money market development in general. A major drawback associated with segmented money markets is that *transmission of monetary policy* through the intervention market will remain imperfect, which tends to weaken the impact of the central bank's policy actions and could force the authorities to delay abolishing their direct instruments of monetary control.

Two cases where the central bank bill market has (yet) failed to integrate in the rest of the financial market are Indonesia and Korea.

1/ The problems that can emerge in these circumstances, and that, in fact have emerged in some countries, namely market segmentation and competition between both markets, are discussed in the section on supporting arrangements.

These countries have respectively nonexistent and underdeveloped government securities markets. 1/ In both countries, the intervention markets have developed significantly (although secondary market activity is still weak), but they have failed to play a leading role in money market integration because the respective central bank instruments did not bear the desirable features. In both cases, for a long time, interest rates on central bank securities were set by the central banks at lower than market clearing levels. By contrast, both countries have other money market segments that are well developed and function freely (e.g., in Indonesia, the unregulated CP market has grown independently from and in contrast with the SBI and SBPU market, while in Korea, CP and CD markets also developed successfully (Emery (1991))).

In Korea, the administratively set interest rate on MSBs has followed market trends with a lag, and as such there has been no spillover to those market segments where rates are market determined (Chart 1a). Despite the relatively low rates, the MSB market grew dramatically in the late 1980s--it became the largest money market segment in Korea--owing to its largely captive nature (Chart 1b). Its size notwithstanding, secondary market activity is still very low. Both factors constrain the capacity of the central bank to conduct indirect monetary policy.

In Indonesia, financial markets have reached a fairly developed stage but the system is still plagued by several shortcomings. From the beginning, the central bank tried to promote the SBI interest rate as a benchmark rate for the system. However, its rigidity and the lack of stimulus that radiated from the SBI and SBPU markets to the other markets resulted in this objective foundering. Chart 2a compares the SBI rate with the interbank and CD rates. Although the chosen periodicity (quarters) does not always allow to obtain a precise idea of the leading/lagging character of the respective interest rates, there are instances (1985-IV, 1986-IV and 1988-III and IV) where the SBI rates lagged rather than led the money market or where the relationship was weak.

Market development in general, and secondary market activity in particular has been hampered by the (very) short maturities of SBIs (to which Bank Indonesia was forced to increase the flexibility of its interventions in the absence of a secondary market) and the demand-determined nature of the volumes which led to large fluctuations in the outstanding SBI amounts (Chart 2b). The fact that only banks and NBFIs could buy directly from Bank Indonesia and that certain key features such as auction frequency and maturities frequently changed, also constrained the development of the SBI market.

1/ Similar problems have been experienced in Ghana and Chile where government securities markets have virtually disappeared throughout the years. In these countries, central banks have tried to foster financial market development by issuing central bank securities in a wide range of maturities.

Chart 1a

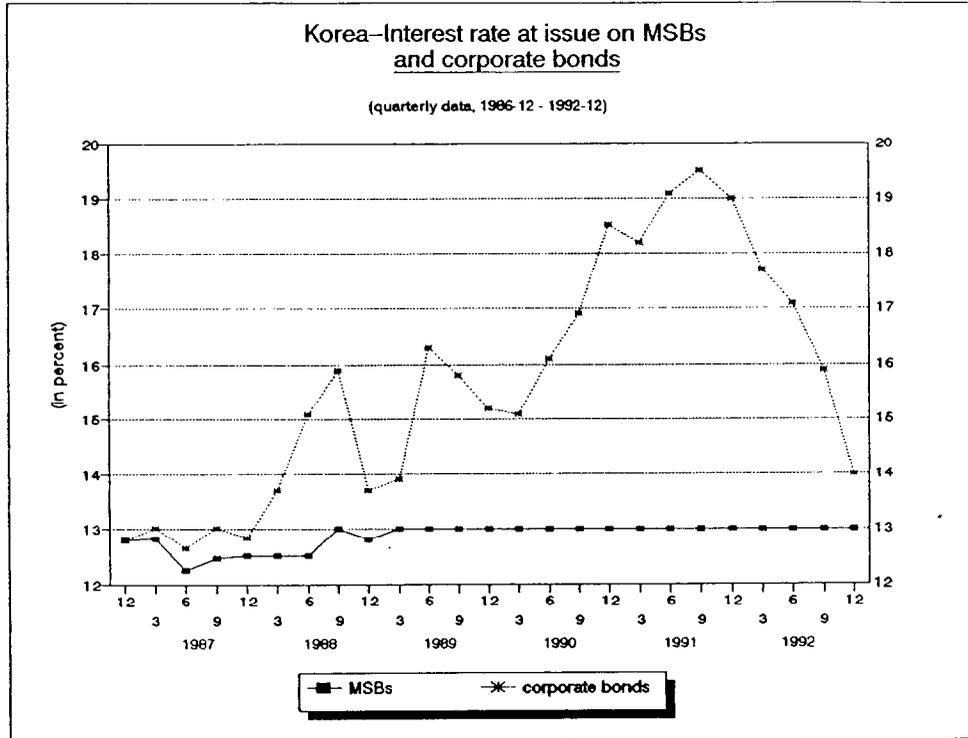


Chart 1b

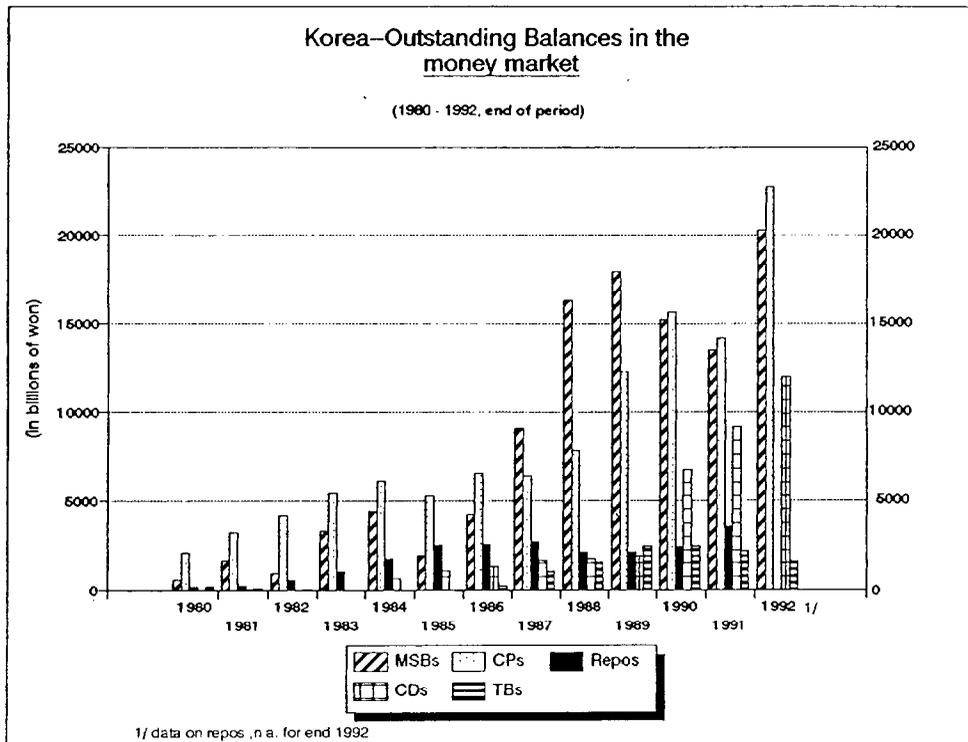


Chart 2a

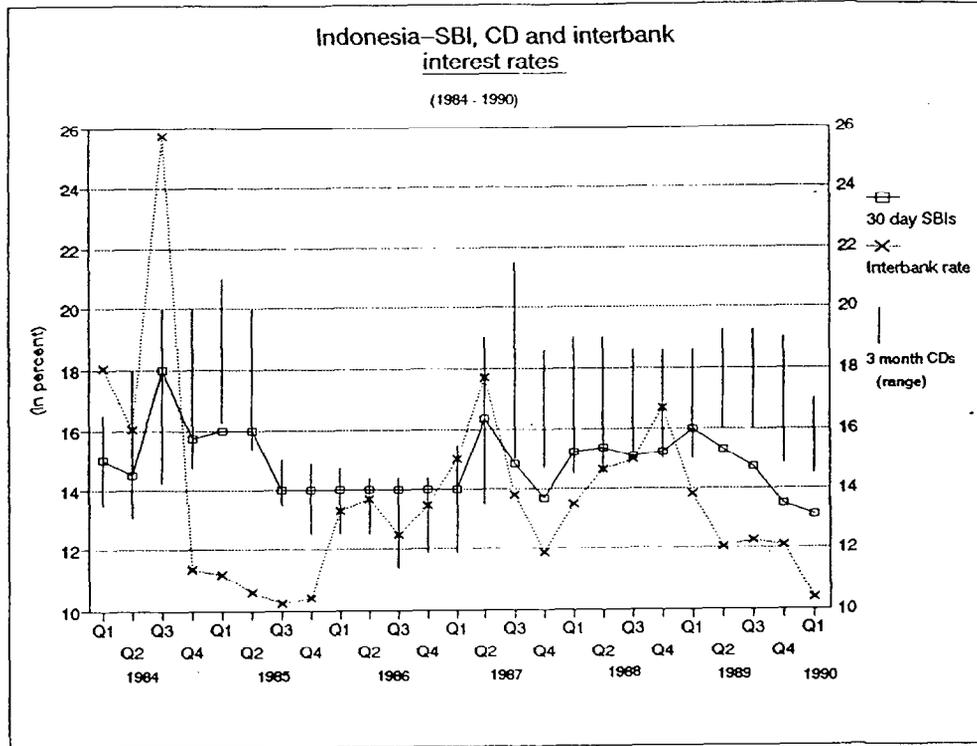
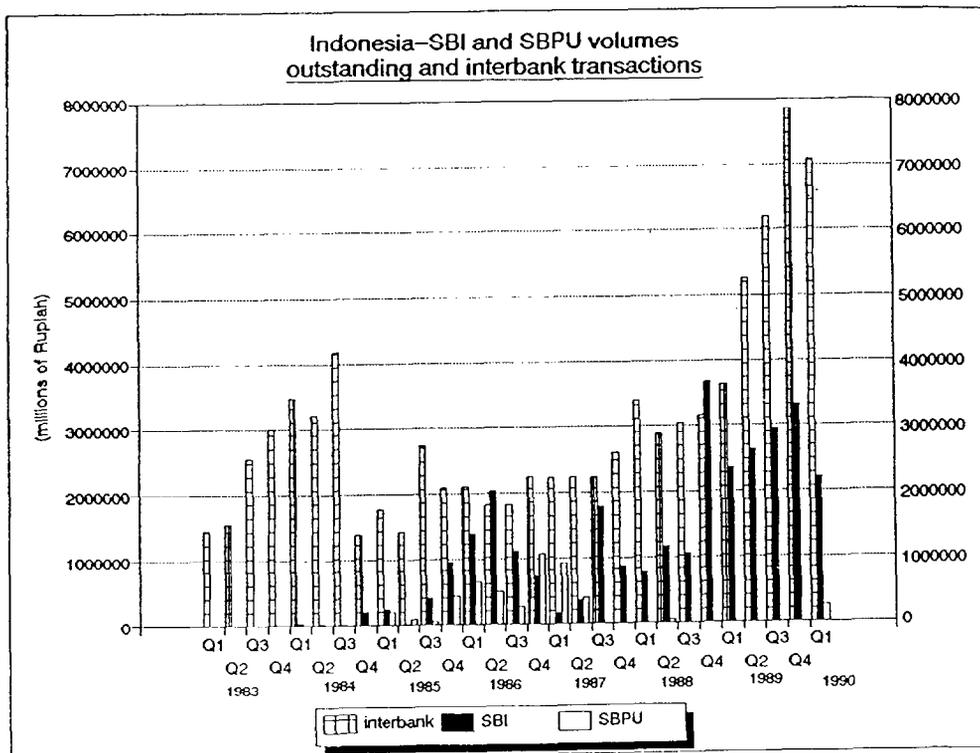


Chart 2b





Some of the above measures also affected the SBPU market. In 1987 Bank Indonesia, in an effort to tighten monetary policy, moved to a system of daily auctions of seven-day SBIs. This, in conjunction with the withdrawal of central bank support for the SBPU market, led to a drying up of the SBPU market (Chart 2b). The chart also demonstrates that the creation of the SBPU market in 1985 had a negative impact on the developing rupiah interbank market. The features of SBPUs (short maturities, rediscount facilities, the proceeds of borrowing via SBPU were exempted from reserve requirements) made these securities very attractive. As a result, transactions in the rupiah interbank market diminished significantly after 1985. In 1988, when the SBPU market dried up, the interbank market revived.

The above problems have lately been recognized by the Indonesian and Korean authorities and in both countries plans have been devised to modify key features of the central bank bills to overcome these problems and improve the effectiveness of indirect monetary policy.

It is worth emphasizing that the above mentioned shortcomings should not be considered as inherent flaws in the use of central bank bills. What they reveal is that, particularly in those circumstances when no government securities markets exist, the proper design of central bank paper is a crucial element for the reform process to be successful.

c. Government securities- specific arguments

The main argument in favor of government securities as the underlying instruments for monetary management is their comparative advantage to act as catalysts for financial market development. Typically, government paper-- when well designed--is generally accepted and is therefore a very reliable vehicle for financial market development. Usually, short-term instruments will be issued first, in an effort to foster money market development and gradually, the maturity spectrum will be extended to encourage capital market development.

The specific advantage of government paper over central bank paper in this regard is the potential of the government to issue large amounts of different maturities, given its typical debt funding problems. These large volumes will help in deepening markets in a minimum of time. In theory, a central bank could also issue paper of varying maturities, but it is not in the nature of its business and most likely would lead to financial problems, as the examples of Ghana and Chile to some extent illustrate.

When using primary issues of treasury bills, the central bank will accelerate a cumulative development process. The central bank contributes to the deepening of the market, allowing itself to move quickly to secondary market interventions. These interventions will enhance the liquidity of the market and thus stimulate its further development. In addition, the switch to secondary market interventions considerably reduces the need for

coordinating arrangements to preserve the central bank's operational independence.

The country survey indicates that in several cases the cost to the government, resulting from massive issues of government paper to absorb excess liquidity--particularly when these issues are not needed for deficit funding operations--reduces the government's enthusiasm for further allowing the central bank to issue government securities for monetary management. In Mauritius, where large capital inflows forced the authorities to conduct massive absorption operations, the Treasury no longer allows the central bank to use government securities in its monetary operations. Excess liquidity is also an issue in Kenya, and the Treasury has shown some reluctance to issue treasury bills in amounts that meet monetary management needs, but has not changed its position. 1/ In contrast, in The Gambia, the Treasury still allows the use of government securities for open market type operations, despite the government's favorable fiscal position. 2/

The cost-for-the-budget-argument as a deterrent for the government to allow the use of government securities in support of open-market type interventions needs to be considered carefully. Absorption of excess liquidity always involves a cost which ultimately needs to be borne by the government (the cost involved is mainly the interest to be paid on it). When government securities are used for the absorption, the cost will be directly visible in the government budget. When central bank securities are used, the operation will affect the central bank's profits, and in the worst case lead to losses. Under the typical institutional arrangement whereby the larger part of the central bank's profits are transferred to the government, the budget will be affected, either through foregone revenue or higher expenditures to bail out the central bank. So, in terms of cost for the government budget, both approaches are equivalent.

The true size of the cost of the absorption operation depends on the origin of the excess liquidity. If the excess liquidity had been building up under direct credit controls, there will inevitably be a cost for the authorities, whether government or central bank securities are used. If on the other hand, the authorities have to sterilize excess liquidity resulting from capital inflows, the interest cost from issuing treasury or central bank securities will largely be offset by the interest earned on the central bank's holdings of foreign assets. The net cost to the government will be approximately the same, whether government or central bank securities are used. With government securities as the intervention instrument, the

1/ This reluctance was reflected in the fact that weekly auction volumes remained unchanged from the introduction of indirect monetary policy intervention in 1990 until mid-1993, when massive liquidity absorption became necessary.

2/ In Ghana and Chile the central banks also had to scale down the use of government securities as part of their monetary management, as a result of diminishing funding needs of the government.

interest cost to the government budget will be partially compensated by higher central bank profits. When central bank paper is used, the higher interest revenue on foreign assets will partially compensate the interest paid on those liabilities.

Thus, the cost to the Government resulting from the use of treasury bills in open market (type) operations is not a valid argument against their use, because ultimately the government will always have to bear the cost of the absorption. On the contrary, reliance on government securities for absorption operations would improve the transparency of the operation. The use of government securities would make overt the cost of the exercise and put pressure on the authorities to address the underlying cost factors, which often are related to excessive fiscal deficits. In addition, the greater potential of government securities to stimulate financial market development is a strong argument in favor of using government securities in large absorption operations. Debt management considerations will dictate the proper maturity mix of these securities at each point in time. Finally, the use of government securities would take away the risk for central bank losses as discussed earlier.

d. Summary

While in principle the origin of the financial instrument used for open market (type) operations does not matter--provided the instrument is endowed with the proper characteristics to stimulate financial market development--this section argued that there is a preference for the use of government securities in monetary management. This preference is primarily motivated by the fact that government securities are better placed to play a catalyst role in financial market development and that their use increases the transparency of the operation.

The use of government securities in monetary management will assist in establishing a liquid and deep market in the intervention instrument. The expansion of the government securities markets (towards the longer end of the maturity spectrum) will also improve the transmission of policy impulses and thus the effectiveness of monetary policy. Also, by not using a separate instrument for monetary policy intervention, market segmentation and confusion will be avoided in the early stages of financial reform.

However, to be successful, the use of government securities does require good coordination, especially in its initial stages. This requirement may make both the central bank and government decide that it is better to introduce a separate instrument for monetary management. However, the introduction of a separate instrument does not relieve the authorities from coordinating their respective operations as will be illustrated and argued in the next section.

On those rare occasions where a government securities market is not established and no plans exist to develop such a market, the central bank

debt instruments should be carefully designed so that they can contribute to financial market development in general.

Finally, siphoning off of large amounts of excess liquidity in the initial stages of financial reform should ideally take place before indirect instruments are introduced, through the issuance of certain medium- to long-term instruments, or a combination of monetary policy instruments. Exclusive reliance on central bank securities is bound to lead to financial problems for the central bank under such circumstances.

2. The search for solid supporting arrangements

Without underrating other causes of delays, the transition towards an effective indirect instrument framework has often been rendered difficult or interrupted, because of the lack of proper arrangements between the monetary and fiscal authorities, supporting the use of the selected financial instrument for open market operations. 1/

The required degree of coordination basically depends upon a combination of two elements: the instrument chosen for monetary intervention and the level of sophistication of the financial markets (i.e., whether the central bank can operate in the secondary market for its open market interventions or has to plan its interventions in the primary markets--open market-type operations).

Focussing on government and central bank paper, five situations can be distinguished, each requiring a different degree of coordination, with case 1 being the arrangement needing the lowest degree of coordination:

1/ Another reason for failures, which is closely related but outside the scope of this paper is the lack of a reserve money programming framework, enabling the central bank to inject or withdraw the proper amount of liquidity. Several central banks, even with good coordinating arrangements are handicapped on this account and therefore cannot make the final leap to indirect policies.

intervention instrument	Government securities	Central bank securities
primary market	high (case 5)	medium (case 4) <u>1/</u> or none (case 1) <u>2/</u>
secondary market	low (case 2)	low (case 3)

notes: 1/ medium in case government securities co-exist
2/ none in the absence of government securities.

a. case 1

There is no need for supporting arrangements in those situations where no government securities exist. Coordination between monetary and fiscal authorities is necessary for the impact of daily government cash flows on reserves, but that is not different from any of the other cases. Here, central bank bills are also the main vehicle for financial market development. Hence, proper design of the instrument is crucial.

b. case 2

Open market policy through secondary markets for government securities is the most common case in industrial countries with developed securities markets. As the danger for debt management interfering with monetary management is minimized under these circumstances--and thus the central bank's operational independence largely guaranteed--the requirements for coordination *at the operational level* are minimal. 1/

This type of arrangement is still exceptional in countries with developing financial markets because it requires the existence of sufficiently deep and wide securities markets, which can take considerable time to develop. The Central Bank of Mexico is the only one that mainly relies on genuine open market operations. Sporadic secondary market interventions have started in a few other countries.

c. case 3

The need for coordination at the operational level is equally low when the central bank conducts open market operations in the secondary market for

1/ As in every other arrangement, there will be a need for coordination *at the policy level*, for instance to avoid the situation where primary market activities (for debt management purposes) interfere with monetary policy actions in the secondary market.

central bank securities. Although this a feasible arrangement in theory, to date, in the countries under review a secondary market in central bank bills has not developed sufficiently to allow the central bank to conduct the larger part of its open market operations in that market.

d. case 4

A higher degree of coordination at the operational level is required when the central bank uses primary issues of its own debt instruments for monetary management, while treasury bill markets exist simultaneously. Coordinating arrangements between fiscal and monetary authorities are required to avoid mutual interference that would hamper the central bank's operational independence and delay financial market development. Therefore, the arrangements should ensure that government securities stimulate financial market development and that a viable market develops in the intervention instrument, as an integrated part of the money market in general.

The country survey indicates that only a few countries have succeeded in elaborating solid arrangements that make the achievement of the above goals possible. This does not come as a surprise because quite often, failure on the part of the authorities to share primary issues of government securities for monetary and debt management is at the origin of the resort to central bank bills. In the aftermath of these events, both parties also fail to elaborate coordinating arrangements in the new environment, or are under the false impression that they do not need such coordination.

Problems that have emerged as a result of a lack of coordination are (i) competition between the two authorities to sell the (separately) planned amounts of securities, and (ii) segmentation of the markets in the early stages of the reform which hampers the growth of both markets.

To achieve a successful co-existence of both types of financial instruments, it is necessary to (a) coordinate the issues of both financial instruments and (b) arrive at an arrangement that avoids market segmentation in the early stages. Depending on the particular situation in each country, these conditions can be met through various arrangements.

For instance, market homogeneity could be preserved if central bank and government securities were endowed with exactly the same features (interest rate determination, maturity, eligible holders). This would be the preferred option when both markets, taken separately, are expected to remain thin for a long time, as it would add some volume to the market. The arrangements in Ghana and Mauritius are along these lines and, thus, meet conditions (a) and (b). In both countries, central bank and treasury instruments have identical characteristics, and the issues are coordinated. In Mauritius, for instance, the Treasury and Central Bank alternate issuance dates, depending on the Treasury's needs for fresh funds.

However, success of the above type of arrangements depends to a large extent on the market's perception of both instruments. In some countries, it turns out that the government has to pay a higher risk premium than the central bank on otherwise similar securities, which has led to segmented markets and caused confusion in the market. Such was the case in the Philippines in the early 1980s and Poland in 1990, and it still is the case in Costa Rica. In Nepal, the Central Bank has a tendency to pay higher interest rates on its bills than the Treasury (in side-by-side auctions). As a result of this practice, the markets remain also segmented. 1/

Should the establishment of a homogeneous market prove to be impossible, both authorities should seek to clearly differentiate their instruments from one another. 2/ In such a situation, the central bank securities should have shorter maturities at issue than the treasury bills with all the other features of the instruments being identical. Central banks always operate at the short end of the market to achieve the strongest feed-through to interest rates. Therefore, this option would increase the central bank's intervention flexibility. In terms of remaining maturity, both types of instruments will eventually merge into one market.

The New Zealand arrangements stand out as a unique example. In New Zealand, the RBNZ bill market is limited to a key market of financial institutions but this market is well integrated in the rest of the money market so that the transmission of monetary impulses is ensured. The clear separation between government and RBNZ securities and the clear definition of their purposes ensures that there is no confusion in the market place that could possibly hamper financial market development. The main difference between New Zealand and most of the other countries discussed here is that the latter often do not have established government securities markets which will ensure financial market development. In the absence of such well-established markets, market segmentation should be avoided.

e. case 5

The most elaborate type of coordinating arrangement to ensure the central bank's operational independence is needed when the same instrument and market is used for monetary and debt management. The country survey contains a number of typical examples, demonstrating good (or potentially good) arrangements as well as the kind of problems that may arise when arrangements are missing.

1/ The Central Bank of the Gambia has recently begun to issue central bank bills to fine-tune its monetary management. Although these securities are identical to treasury bills, they are trading at a higher premium than the treasury bills, leading to a segmented market.

2/ In response to the above problems, the authorities of the Philippines and Poland agreed to discontinue the use of central bank paper and concentrate on treasury securities. As argued before, this would be the preferred alternative.

To safeguard (or achieve) the central bank's operational autonomy, the coordinating arrangement supporting the use of primary issues of government paper for both debt and monetary management should contain the following ingredients: (a) the instrument should have the proper characteristics, as discussed earlier; more particularly, the government should allow the interest rate at auction to clear the market; (b) a mechanism should be established whereby the volume at issue incorporates the monetary management needs; and (c) an arrangement should also be established to "sterilize" the proceeds from securities sold over and above the debt management needs, and to determine the interest payments on these proceeds.

Developments in Pakistan (since 1991), Nepal (before 1992), and Sri Lanka (before 1992) point to problems in terms of monetary policy effectiveness and delays in the transition to indirect policies, when these requirements are not met. A common characteristic of these countries' procedures was (or is) that the volumes at issue are determined by the government without due regard of monetary management objectives and the interest rates at auction were (are) not at market clearing levels, due to government interference.

Recent experience in Pakistan highlights the problems associated with a move to an indirect monetary control framework in the absence of clear coordinating arrangements between fiscal and monetary authorities regarding the use of government paper. From the introduction of the auction system, the volumes offered at issue did not reflect monetary management considerations but in general remained unchanged at each auction. Initially, interest rates at the auctions moved steadily higher, closer to market-clearing levels (although the government used post-action cut-off rates). In the wake of these developments, limited secondary market activity began (Charts 3a and 3b). Later on, however, there was some hesitation on the part of the Treasury to allow interest rates to move higher, which has been reflected in a slowing down of market expansion. In addition, there have been cases where all bids were rejected and the Government consistently forced the State Bank of Pakistan to buy the amounts rejected at auction.

The latter practices have rendered monetary management more complicated than before the introduction of the auction system for two reasons. First, the forced purchases by the State Bank significantly add to money creation and introduce additional variability in reserve money. Secondly, the central bank has to counteract the above mentioned liquidity fluctuations but has no developed secondary market to execute such transactions.

These distortions have also affected the development of other money market segments. 1/ In particular, the uncertainty introduced by

1/ Other reasons hampering secondary market development are related to the taxation of government securities and the lack of infrastructure for a secondary market.

Chart 3a

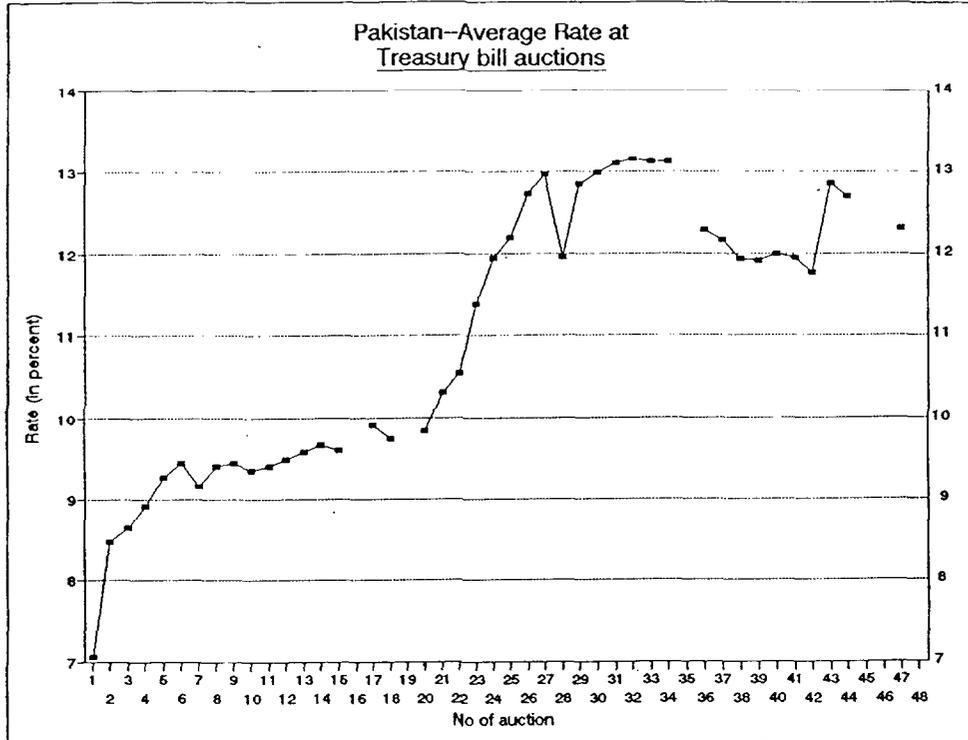
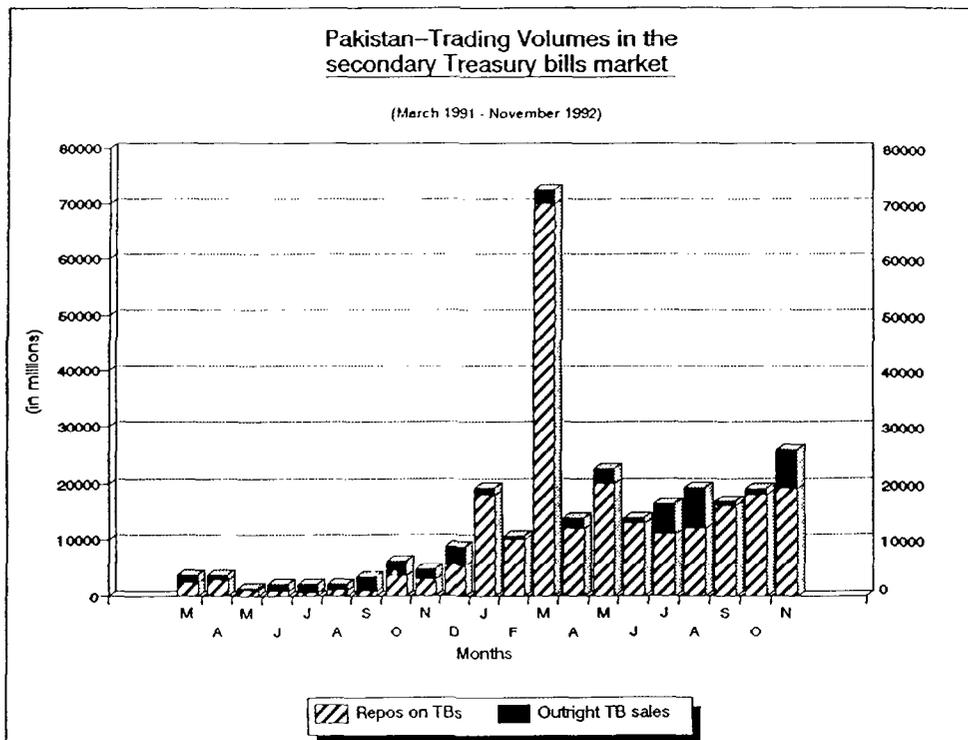


Chart 3b



rejecting bids, not only has affected the bidding pattern at the auction and the trading activity in the secondary market (Charts 3a and 3b), but has also introduced a high degree of volatility in the interbank market as a consequence of the large and sudden fluctuations in domestic liquidity (Chart 4).

In contrast, the arrangements currently used in the Philippines, the Gambia and Israel seem to meet the above requirements. Kenya has also elaborated a potentially good arrangement, but other factors have lately been intervening.

The current arrangements in the Philippines--allowing for overfunding of the deficit--require a high degree of coordination between fiscal and monetary authorities. As part of the arrangement, the government has to commit itself to not using these funds, which in times of emergency financing needs has led to tensions or conflicts. 1/ Under the current arrangements in the Philippines, the cost for the central bank is slightly smaller than the cost it would incur if it had to issue its own securities to supplement the issues of treasury bills, because the central bank does not pay interest on the entire deposit. In the Gambia, unlike in the Philippines, the Treasury bears the entire interest rate cost.

The arrangement in Kenya is different in the sense that the central bank was granted large autonomy as the Government's debt manager. In principle, such an arrangement leads to a large degree of central bank autonomy in monetary management and requires less day-to-day coordination than a Philippine-type arrangement. While most central banks are fiscal agents of the government, the role of debt manager is only rarely given to central banks. 2/ Yet, the fact that in general central banks are closer to the financial markets than ministries of finance is a valid argument for giving the central bank broad debt management responsibilities.

Against the assignment of the debt management function to the central bank stands the argument that this type of function is not really at the core of central banking, and therefore may distract the latter from its main tasks. 3/ The validity of this argument is a practical matter because, in

1/ Recently, the central bank has resorted to issues of its own securities to fine-tune the interventions via treasury bills, because the government had expressed reluctance to bring the volume of treasury bills at issue fully in line with monetary management requirements.

2/ In several industrial countries, central banks act as advisors in debt management, but only in exceptional cases are central banks fully in charge of debt management. Central banks have far reaching debt management responsibilities in Australia, Canada, New Zealand, and the United Kingdom. Only the Bank of Italy has received full responsibilities in government debt management.

3/ This argument has recently been raised in the debate on greater independence for the Bank of England (The Economist (1993a and b)).

the circumstances of countries in transition, making the central bank the government's debt manager may exactly give the central bank the operational autonomy it needs to pursue its main objective. Therefore, as part of reform programs, this type of arrangement deserves more attention. Such an arrangement may still require an additional mechanism to deal with overfunding of the budget.

Finally, an alternative that relies on government securities and yet has the added advantage of largely separating monetary from debt management, has been adopted in Israel. The Bank of Israel uses a specific government debt instrument that is not used by the government for debt funding purposes. This arrangement in fact bears a lot of resemblance with the use of central bank paper, but the cost is directly borne by the government. Such an arrangement also deserves more attention for reform programs because it is fairly easy to implement, gives monetary management its operational autonomy, only marginally interferes with debt management and requires no day-to-day coordination between both authorities.

When comparing the above arrangements, distribution of the cost of the arrangement comes out as a the distinguishing factor. Under the Gambian, Israeli, and Kenyan arrangements (and Mauritius before 1992), the government bears the interest cost of the operation. In the Philippines, the cost is shared, with the central bank bearing the larger part of it. However, as discussed earlier, on a consolidated basis, all solutions approximately yield the same results, provided all central bank profits are transferred to the government, and the central bank does not artificially depress profits to dampen the transfer.

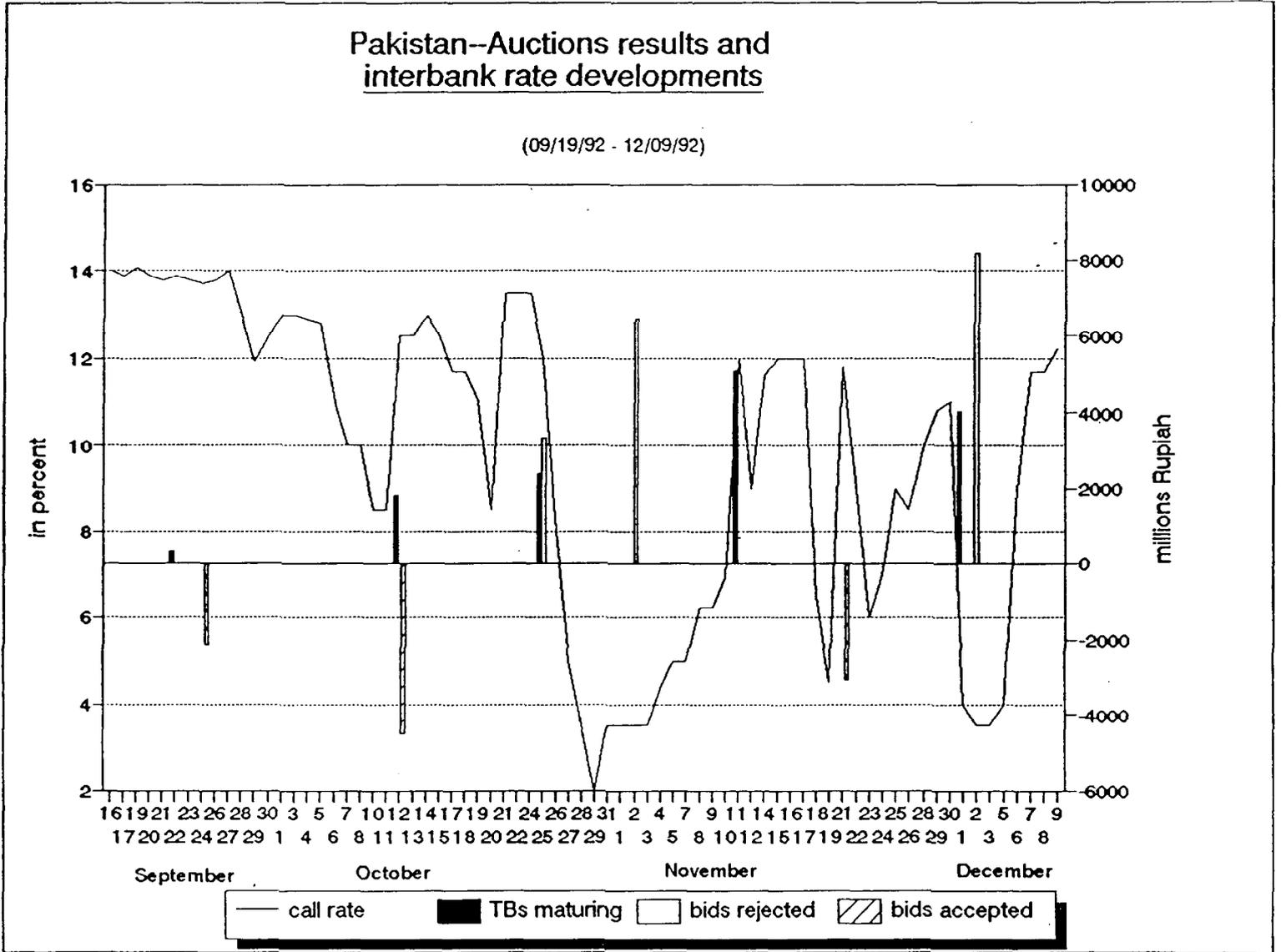
V. Conclusions

The transition to indirect monetary policies, as part of broader financial reforms, engenders drastic changes between the monetary and fiscal authorities at the operational level. The interactions between the operations of both agents become more intertwined than under direct controls. For the central bank, to achieve operational independence in the execution of its monetary policy, coordination of fiscal activities with its actions becomes highly necessary.

One particular area where coordination at the operational level is needed--and which is at the heart of the transition to an indirect instrument framework--is the selection of a financial instrument for the conduct of the central bank's emerging open market (type) operations.

Based on a survey of selected countries, this paper has extracted some general lessons on the use of government securities versus central bank securities in the development of open market operations and on the design of coordinating arrangements between fiscal and monetary authorities to support the use of these instruments in the context of countries that initiate a

Chart 4





financial liberalization process. For the central banks of those countries, it is important to avail itself of monetary policy instruments that ensure the central bank's operational autonomy from the early stages of the reform process onward.

In countries with developed financial markets, government securities are the most common financial instrument in the conduct of the central bank's open market interventions. These interventions usually take place in secondary markets for these instruments, which reduces the need for coordination between fiscal and monetary authorities at the operational level to a minimum. In newly liberalizing countries, the choice for government securities is not as evident as in financially developed systems. Often, central banks start issuing their own securities as the intervention instrument for open market operations. The country survey also indicates that this part of the reform agenda often appears to be a major stumbling block on the road to genuine indirect policies.

The paper has addressed two questions: first, does the origin of the financial instrument used for open market operations matter (more particularly government securities versus central bank securities)? 1/ Second, given the financial instrument, what are the necessary features of the coordinating arrangements between fiscal and monetary authorities to support the use of this instrument in open market operations, i.e., to preserve the central bank's operational autonomy?

With respect to the first question, it was argued that, while in principle, the origin of the intervention instrument (government securities or central bank securities) does not matter (as long as these securities are endowed with the proper characteristics that allow establishing a viable market in that particular instrument and foster financial market development in general), two considerations tip the balance in favor of government securities: (a) government securities have greater potential to foster financial market development than central bank securities. Smooth and steady financial development, in turn, will facilitate the central bank's monetary operations and the transmission of its monetary policy activities; and (b) the risk for central bank losses when central bank securities need to be issued in large amounts to absorb excess liquidity. Central bank losses will undermine the institution's autonomy.

On the second issue, country experience indicates that the establishment of solid supporting arrangements is after all even more critical to a successful transition to indirect instruments than the choice of the appropriate financial instrument *per se*. The paper identified, as the essential ingredients, that:

1/ The case for private paper has not been considered closely because markets in these instruments are usually underdeveloped in countries engaging in financial sector reforms.

- (a) when central bank securities circulate alongside government securities, the characteristics of both types of securities should be such that confusion in the marketplace is avoided and ideally, one single market emerges. The issue procedures (timing, volume) should be coordinated to avoid unnecessary competition between both agencies; and
- (b) when treasury securities are used for monetary management, the arrangement should provide for coordination of the tender volume, so as to allow the central bank to issue more securities than is strictly necessary for debt management purposes, and to decide on mechanisms to bear the (interest) cost of the overfunding of the government's budget.

Taken together, the theoretical and practical arguments developed in this paper argue in favor of the early development of government securities markets during financial reforms, and the establishment of coordinating arrangements between the central bank and the treasury, enabling the central bank to use government securities in developing its open market (type) operations. Even though the use of the same instruments and markets in the initial period requires a higher degree of coordination than any other arrangement, the efforts will pay off in terms of faster and smoother financial market development and transition to genuine open market operations.

Government Deposits as a Monetary Policy Instrument

1. The issue

As part of their historical function as banker to the government, central banks in several countries carry a large share of government deposits on their books, while almost all central banks are involved in daily transactions for the account of the government. These daily cash flows have consequences for the central bank's liquidity management.

Two issues arise in this regard. First, in the transition to indirect monetary policy instruments, central banks, searching for effective instruments, could consider transfers of these deposits between their accounts and those of commercial banks as an instrument of monetary policy. The instrument would have the same effect as open market operations (absorbing or injecting liquidity), and it could serve the central bank's needs during the transition when financial markets are not yet developed enough to use genuine open market operations.

On the other hand, because of the direct impact of government cash flows on reserve money, the question can be raised why central banks should not eliminate their role of banker to the government and leave the job in the hands of the commercial banking sector. Would such an action simplify the central bank's liquidity management and the coordination between central bank and treasury?

This appendix briefly addresses these questions. Even though the use of government deposits by the central bank as an instrument of monetary policy is not totally equivalent to the issues discussed in the main body of this paper, they involve another aspect of coordination at the operational level between central bank and treasury. After a brief overview of practices in a number of countries, the advantages and disadvantages associated with the use of government deposits as monetary policy instruments are discussed as well as the ingredients of coordinating arrangements between the central bank and the government if and when government deposits are included in the range of monetary policy instruments. Finally, the related question as to whether government deposits should be in the central bank books at all, will be addressed. The general conclusion of this appendix is that, under normal circumstances, the merits of using government deposits as monetary policy instruments are limited and central banks should therefore concentrate on developing financial markets and coordinating arrangements as discussed in the paper, which would enable them to move quickly towards genuine open market operations.

2. Selected country arrangements

The central banks of Canada, Germany, Switzerland and Malaysia use government deposits as a major instrument of monetary policy, either for

historical or for technical reasons. In the US, some use is made of the treasury accounts at the Federal Reserve Bank to stabilize bank reserves, but government deposits are not a monetary policy instrument. As this sample indicates, the use of government deposits as a monetary control instrument is more common in industrialized countries than elsewhere.

In Canada, transfers of federal government deposits ("drawdowns" or "redeposits") between the Bank of Canada and the commercial (chartered) banks is the central bank's major monetary policy instrument. 1/ The more common types of open market operations (transactions of government securities) are used only on occasions when a specific effect on the structure of the interest rates is pursued.

Drawdowns and redeposits of government deposits are distributed among the chartered banks on a pro rata basis. 2/ The Bank of Canada's heavy reliance on government deposits as a monetary control instrument mainly stems from historical reasons. The Bank of Canada has always played a more active role as the Government's fiscal agent than its counterparts in many other countries. In addition, for a long time the authorities were of the view that the domestic money markets were not deep enough to carry the whole burden of monetary policy adjustment. 3/ While this argument against the use of open market operations is no longer valid, the authorities are of the view that open market operations are too "heavy handed" a means for tactical changes in reserve management.

In Germany, the Federal and Lander Governments are required by law to deposit their liquid funds with the Bundesbank. 4/ Depositing elsewhere is subject to approval of the central bank, which is based on monetary policy considerations. The Bundesbank has been granted the possibility to use these deposits for fine-tuning operations in the money market (often overnight) by shifting deposits to the banking system to offset any liquidity shortages. For each individual operation, the central bank needs prior approval from the owners of the deposits. Transfers of government deposits are just one instrument out of the Deutsche Bundesbank's array of monetary policy instruments; its use will depend on the particular circumstances prevailing and the monetary effects the central bank tries to achieve. 5/

1/ This section draws on K. Clinton (1991).

2/ As fiscal agent of the government, the Bank of Canada also distributes government term deposits among chartered banks. This distribution takes place on an auction basis. These transactions, however, are not designed to achieve any monetary policy goal, but to improve the returns on financial assets of the government (Clinton, 1991, page 11).

3/ See Kneeshaw and Van den Berghe (1989, page 71).

4/ See Deutsche Bundesbank (1990).

5/ The same principles and philosophy govern the use of government deposits by the Central Bank of Switzerland.

Like in Canada, recycling of government deposits has been a key monetary policy instrument in Malaysia since the early 1980s. 1/ The Money Market Operation Account (MMO)--an interest-bearing account at Bank Negara--acts as the turntable in using this instrument. All the Accountant General's funds are centralized in this account. Automatic transfers between this account and the current account at Bank Negara Malaysia ensure the presence of minimum working balances. The Central Bank has been given the authority to recycle the funds in the MMO account by placing them directly with the market or through principal dealers, consistent with monetary policy objectives.

The Malaysian authorities have identified other advantages in the recycling of government deposits that go beyond the immediate monetary policy concerns (Hussin and Yaakop (1990)). Centralization of government deposits is said to have removed an unfair advantage of certain financial institutions that were relying heavily on this (safe) source of funds. As a result, banks are now competing on a more level playing field for private sector deposits. In addition, the system has led to a better distribution of government funds, as they go to the institutions that need them most.

In the United States the authorities make some use of treasury accounts to stabilize the effect of treasury deposits on the supply of bank reserves. However, government deposits as such are not shifted and are therefore not seen as a monetary policy instrument. 2/ Treasury balances are held in tax and loan note option accounts (TT&L) at more than 10,000 depository institutions. To stabilize the effect of these deposits on the supply of bank reserves, the Treasury and the Federal Reserve jointly set a target on treasury working balances at the Federal Reserve. Daily management is in the hands of the Treasury. To keep its balance at the Federal Reserve close to the targeted value, the Treasury transfers funds from its TT&L accounts to its Federal Reserve balance, or vice versa, on a daily basis. The existence of TT&L accounts greatly helps to minimize the effect on reserve money of sudden inflows of funds, for instance at tax dates. 3/

3. Evaluation and the need or coordinating arrangements

a. Government deposits as monetary policy instruments: evaluation

Shifting government funds between the central bank and commercial banks derives its attractiveness mainly from the fact that it is a convenient,

1/ See A. Hussin & R. Yaakop (1990).

2/ See A.M. Meulendyke (1989).

3/ The insulation of reserve money however, is not complete as most depository institutions have placed caps on the amount of funds they are prepared to accept in the TT&L accounts. On major tax dates, there will be an overflow of these accounts to be absorbed by the Treasury's balance at the Federal Reserve, which will temporarily breach its working target.

quick, and accurate way to achieve planned monetary policy goals. This can be very useful when secondary securities markets are not yet well developed. In addition, the direct linkage between government daily transactions and its deposits at the central bank increases the attractiveness of using government deposits as a liquidity management tool to neutralize the effects of those government cash flows on reserve money.

Despite these characteristics, government deposits are not widely used as instruments of monetary policy. The above mentioned countries are almost the only ones that actively and permanently use transfers of government deposits as an instrument of monetary policy. It is therefore useful to take a closer look at the disadvantages associated with their use as a monetary policy instrument.

The main argument against shifting government deposits between the central bank and commercial banks is that this is not a really market-based technique. Therefore, introducing it during a transition to market-based monetary policies sounds like a contradiction. Transfers of government to and from central banks may actually open the door to other, more interventionist strategies, close to directed credit practices, which are undesirable in a market-oriented environment. In addition, the use of government deposits as a monetary policy instrument will most likely delay the development of money and securities markets and thus the adoption of genuine open market operations. Also, since it is not a market-based instrument, the central bank may undertake actions that put individual banks at risk. A central bank's decision to withdraw deposits on a large scale in an attempt to absorb liquidity, could create liquidity problems for individual banks, especially when banks cannot enter voluntarily into these transactions. In general, the central bank could be interfering in individual banks' liquidity management. Auction systems, like in Malaysia tend to reduce the risk of such misallocations.

These arguments are strong enough to discourage central banks from resorting to transfers of government deposits as an instrument of monetary policy. When moving to indirect policies, energy should be put into developing financial markets which would allow the central bank to embark on open market operations. In addition, other instruments such as central bank lending should be streamlined so that the injection of liquidity need not take place through government deposits.

The advantages associated with the use of government deposits must also be weighed against the efforts needed to establish operational arrangements with the treasury on the use of its deposits. The next section takes a look at those arrangements.

b. The need for coordinating arrangements

Notwithstanding the above conclusions, when the authorities prefer to use government deposits as a policy instrument, the next hurdle is the

establishing of coordinating arrangements between the central bank, the government and the banking sector regarding the use of these deposits. Without clear arrangements, the central bank's autonomy over the use of these deposits could be threatened. The following issues need to be addressed: 1/

- first, a decision has to be made as to who will control the shifts in funds between the central bank and the commercial banks. In Canada and Malaysia, the central bank has been granted such authority; in Germany the Bundesbank needs the government's approval when shifting deposits from the central bank to the commercial banks. In the US, a joint decision is required. To ensure the effectiveness of the instrument for monetary policy, the Government will have to give up its autonomy on the allocation of its surplus funds;
- second, there is the question as to how the funds will be allocated to the commercial banks to minimize some of the drawbacks mentioned earlier. Auctions, like in Malaysia, would ensure that the deposits go to those banks that can employ them most usefully, thereby avoiding that others hold them as excess reserves, which would not stabilize the system's liquidity;
- third, from a prudential point of view, the authorities have to ensure that banks which are government depositories do not face a liquidity crisis when funds are suddenly withdrawn. Mechanisms will have to be provided in case of emergencies;
- a fourth issue is the remuneration of these government deposits--which may have repercussions on the central bank's profit and loss position. Particularly when the government enjoys interest payments on its deposits with commercial banks, it will require a "fair" remuneration or compensation under another form when large amounts are kept at the central bank;
- a final question concerns the scope of the instrument: would it have a limited scope, like in the US, where the mechanism is only used for neutralizing the impact of government cash flows on reserves or would it be the central bank's main policy instrument, as in Canada and Malaysia?

c. Government deposits in or out of the central bank?

Although this issue slightly sidetracks from the main theme of this section, it has definitely some relation to it. The question can indeed be asked whether, given the impact on domestic liquidity management of government cash flows, it would not be better for the central bank to stop

1/ See also Baliño (1984).

its banker to the government activities, move all government deposits to the commercial banks and let them execute this banking function. 1/

At first glance, a transfer of the banker to the government function to the commercial banks seems to have some attractiveness for a central bank. When government cash flows go through the central bank accounts, they have a one-for-one effect on reserves, which the central bank has to neutralize through its open market interventions. If all deposits were kept at commercial banks, the effect of government transactions will be a change in the money supply--defined as M1 or M2--due to the change in ownership of the deposits (government deposits are usually excluded from the monetary aggregates). So the effect on reserves will be much smaller.

However, this does not mean that reserve management will be shielded or facilitated. Any unprogrammed government transaction is likely to induce macroeconomic effects, depending on its size and duration. The result of such transactions in the books of the commercial banks will be a change in the money multiplier, such that ultimately the central bank has to intervene. In other words, the central bank needs exactly the same kind of information on the government's daily cash flows as when it performs the banking functions for the government (because it has to take them into account in its reserve money program) and in addition, in the case of unprogrammed cash flows, it has to neutralize the resulting movement in the multiplier. Therefore, the gains for the central bank seem to be nil.

It can also be shown that imposing reserve requirements on government deposits held by the commercial banks would not dampen the effect on the multiplier of transfers to private deposits, unless government deposits would be included in the monetary aggregates.

4. Conclusion

The conclusion of the above brief discussion on the use of government deposits as monetary policy instruments is that (a) the advantages of using government deposits as monetary instruments do not outweigh the considerable

1/ One of the few places in the world where the monetary authority does not function as banker to the government is Hong Kong. The Hong Kong Monetary Authority (a type of currency board) has only become operational in early 1993. Because commercial banks have traditionally been bankers to the government, the Monetary Authority has no plans to integrate this job into its activities. In some other countries, notably in Latin America commercial banks receive the major share of government deposits but the central bank usually still manages the treasury's account. In New Zealand, the transactions banking business of the Government is awarded by competitive bidding to a commercial bank. However, the core treasury account is maintained at the Reserve Bank and all government accounts are transferred to this core account at the end of every day (Reserve Bank of New Zealand, 1992).

drawbacks, including the strict coordinating arrangements that would be needed, and (b) there are no real gains for monetary policy effectiveness in transferring the function of banker to the government to the commercial banks.

References

- Baliño, T., (1984), Government Deposits and Monetary Control, Memorandum for files, unpublished, IMF.
- Bank Indonesia, Report for the Financial Year (1983/84 through 1990/91).
- Binhadi, (1990), Monetary Policy in Indonesia, Paper presented at the 18th SEANZA Central Banking Course, Bombay.
- Binhadi and P. Meek, (1988), Implementing Monetary Policy in Indonesia, 17th SEANZA Central Banking Course, Sydney, Australia (October/November).
- Clinton, K., (1991), Bank of Canada cash management: The main technique for implementing monetary policy, Bank of Canada Review (January) pp. 3-25.
- Cottarelli, C., (1993), Limiting Central Bank Credit to the Government-- Theory and Practice, IMF Occasional Paper, No. 110, December.
- Deutsche Bundesbank: The Deutsche Bundesbank, Its Monetary Policy Instruments and Functions, Deutsche Bundesbank Special Series No. 7, Third Edition.
- Duesenberry, J., and McPherson, M., (1991), Monetary Management in Sub-Saharan Africa: A Comparative Analysis, CAER Discussion Paper, No. 7 (June), pp. 149.
- Emery, R., (1991), The Money Markets of Developing East Asia, New York.
- Freedman, C., (1990), Implementation of Monetary Policy, in: Reserve Bank of Australia, Monetary Policy and Market Operations, Sidney, pp. 27-49.
- Goldsbrough, D., and I. Zaidi, (1989), Monetary Policy in the Philippines during Periods of Financial Crisis and Changes in Exchange Rate Regimes: Targets, Instruments and the Stability of Money Demand, IMF Working Paper.
- Harper, I. and J. Pearce, (1990), Implementing Monetary Policy in an Era of Budget Surpluses, The Australian Economic Review, 2nd Quarter.
- Harrison, I., (1888), Central Bank Bills, Reserve Bank Bulletin, Reserve Bank of New Zealand, 51, (September).
- Hussin, A. A. and R. Yaakop, (1990), Recycling of Government Deposits as an Instrument of Monetary Policy in Malaysia, in: Reserve Bank of Australia, Pacific Region Central Bank Conference on Domestic Monetary Policy, Country Papers.

- Kang, Moon-soo, (1990), Money Markets and Monetary Policy in Korea, Korea Development Institute (December), pp. 88.
- Kapur, I. et. al (1991), Ghana: Adjustment and Growth, 1983-91, IMF Occasional Paper 86, pp. 69.
- Kim, Se-Jin, (1992), A Study of Indirect Monetary Policy Control in Korea, Korea Institute of Finance, preliminary drafts (October), pp. 22.
- Klein, D., (1994), Financial Deregulation in Israel: Policy and Results, paper presented at the Sixth Seminar on Central Banking organized by the Monetary and Exchange Affairs Department, IMF (March).
- Kneeshaw, J.T. and Van den Bergh, P. (1989): Changes in Central Bank Money Market Operating Procedures in the 1980s, BIS Economic Papers, No. 23, January, pp. 166.
- Leite, S. P., (1989), Implications of Financial Reform for Public Debt Management, mimeo, IMF.
- Leite, S. P., (1992), Coordination of Public Debt and Monetary Management during Financial Reforms, IMF Working Paper (October), pp. 13.
- Leone, A., (1993), Institutional and Operational Aspects of Central Bank Losses, IMF Paper on Policy Analysis and Assessment (September), pp. 24.
- Lim, J.Y., (1991), The Philippine Financial Sector in the 1980s, UNCTAD Discussion Paper No. 37, March.
- MacArthur, A., (1990), Monetary Operations, Financial Market Development and Central Bank Independence, background paper prepared for CBD Central Banking Seminar (November).
- Meek, P., (1987), Government Financing: The Role of the Central Bank, paper presented at the SEANZA Central Banking Seminar, Sydney, Australia (November).
- Meek, P., (1989), Monetary Policy and Debt Management, Mimeo, World Bank, pp. 18.
- Meulendyke, Ann-Marie, (1989), U.S. Monetary Policy and Financial Markets, New York: Federal Reserve Bank of New York (December).
- Nascimento, J.C., (1990), The Crisis in the Financial Sector and the Authorities' Reaction Function: The Case of the Philippines, IMF Working Paper.

- Quintyn, M., (1993), Managing Monetary Policy Reforms. Lessons from the French Experience, Banca Nazionale del Lavoro, Quarterly Review, (September), pp. 275-298.
- Reserve Bank of New Zealand, (1992), Monetary Policy and the New Zealand Financial System.
- Reserve Bank of Fiji, Research Department, (1990), Reserve Bank of Fiji Notes: a New Monetary Policy Instrument, Pacific Economic Bulletin, (December).
- San Jose, A., (1990), Monetary Instruments and the Control of Liquidity in the Philippines: Focus on Open Market Operations, Journal of Philippine Developments, 17, First Semester.
- San Jose, A. and C. Polvorosa, (1984), CB Bills as Instrument of Open Market Operations, CB Review, Central Bank of the Philippines, 36, 6, (June).
- Sundararajan, V. and L. Molho, (1988), Financial Reform and Monetary Control in Indonesia, IMF Working Paper.
- Sundararajan, V., C. McAuliffe, and M. Quintyn, (1991), Institutional Issues in Coordination of Debt Management and Monetary Policy--A Survey, Appendix to the Advisory Report on China.
- Sundararajan, V., P. Dattels, I. McCarthy, and M. Castello Branco, (1993), Coordination of Debt and Monetary Management in Economies in Transition--Issues and Lessons of Experience, (draft) Paper prepared for OECD Workshop on coordination of debt and monetary management, Paris (July), pp. 36.
- s.n., (1990), Singapore, Use of Foreign Exchange Swaps as an Instrument of Monetary Policy, in Reserve Bank of Australia, Pacific Region Central Bank Conference on Domestic Monetary Policy, Country Papers.
- The Economist (1993a), Narrow Money, pp. 16, (August 28).
- The Economist (1993b), Too Many Pieces for the Old Lady, pp. 67-68, (August 28).
- Tseng, W., and R. Corker, (1991), Financial Liberalization, Money Demand and Monetary Policy in Asian Countries, IMF Occasional Papers, No. 84 (July).