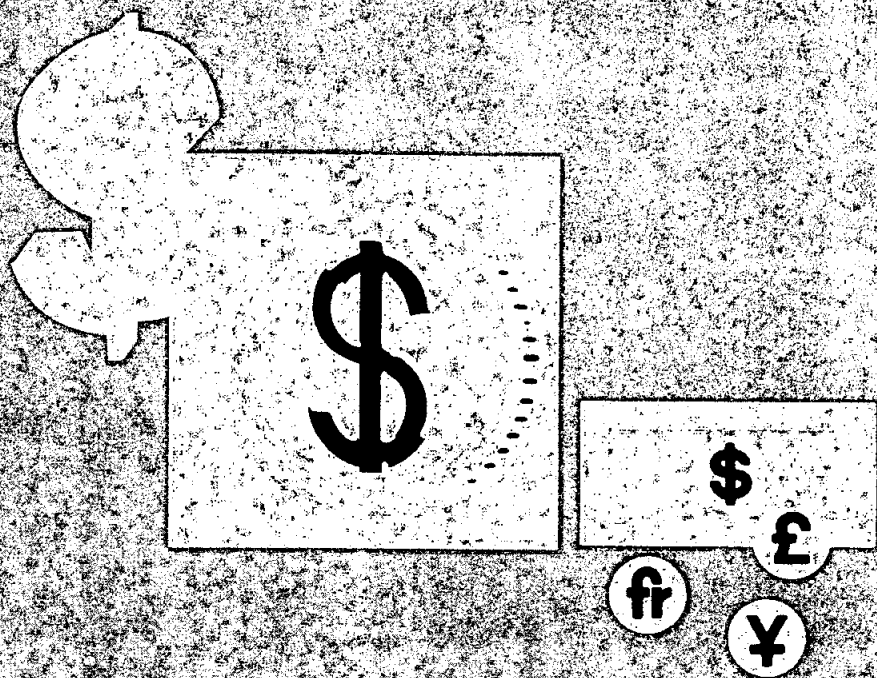


Monetary Policy in the SEACEN Countries: An Update

Azizah Talib



The SEACEN Centre
Kuala Lumpur, Malaysia

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by

Azizah Talib



The South East Asian Central Banks (SEACEN)
Research and Training Centre
Kuala Lumpur, Malaysia

**MONETARY POLICY IN THE
SEACEN COUNTRIES: AN UPDATE**

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FOREWORD

This study is intended to update a previous study of monetary policy in the developing countries which was completed in 1978. The first study was conducted by a team of IMF staff led by Mr. Chandavarkar. To facilitate this second study, The SEACEN Centre invited the IMF to provide technical expertise to assist the SEACEN staff in the present study. Ms. Wanda Tseng, Chief of Division 4, South East Asia and Pacific Department, and Mr. Robert Corker of the same department have both participated in this study.

Since the last study, the world economy went through severe challenges during the 1980s. Following the second round of oil shock in the late 1970s, the industrial countries entered into a prolonged recession. These adverse external environment had severely affected the economy in the developing countries including the SEACEN region. To cope with these adverse effects of the external environment on the domestic economy, the authorities in the SEACEN region adopted a wide-ranging economic structural adjustment program including reforms in the financial sector to support the real sector adjustment process.

This study attempts to provide a broad overview of financial reforms taking place in the SEACEN countries during the 1980s with special focus on the implementation of financial liberalization and the implications for the formulation and implementation of monetary policy. Following the macroeconomic instability taking place in the banking system and the financial markets, especially the rising trend towards globalization and integration in the world financial market, it has necessitated changes in the financial system in the SEACEN countries. Therefore, all the countries in the SEACEN region adopted policies to reform the financial sector. Financial deregulation, changes in monetary and exchange rate policies have played a crucial role with the overall reform program. Among such critical policies are those relating to financial markets, institutions and the regulatory framework. The financial changes or innovations implemented by the SEACEN authorities covered a broad spectrum ranging from introduction of new financial instruments, issues of securities in the money and capital markets and also changes in the market structure and institutions. Both the development of markets for new financial instruments and the expansion and deepening of markets for the pre-existing instruments are relevant in considering changes in the workings of the financial system. The country chapters provide the chronology of financial reforms taking place in the respective SEACEN countries. The description of the finan-

cial changes incorporated in the study is intended to provide a general perspective on those changes that are broadly based across countries and entailed potentially significant consequences for policy formulation.

The process of financial reforms exerts significant influences on the empirical definition of money, the money supply process, the demand for money and the role of interest rates in the transmission of monetary influences to the rest of the economy. More generally, changes in the financial system raise questions about the meaningfulness of monetary and financial aggregates and may lead to shifts or further instability in the relationship of those aggregates to economic activity.

This study examines the short-and long-run demand for money in the SEACEN countries to determine whether it is still stable and predictable following the external shock and the financial liberalization. This study discusses these issues and the problems created by them for monetary policy targeting and monetary control. The effectiveness of monetary policy following the financial liberalization exercise is also explored.

In general, the monetary and financial reforms implemented in the SEACEN countries have been successful especially in achieving greater stability in the general level of prices while at the same time, giving a more sustainable balance between national savings and investment. Following interest rate liberalization, it has fostered effective price signaling mechanism and allowed freer flow of both real and financial resources between alternative competing uses. Hence, reform of the financial sector is essential in order to promote an effective and efficient allocation of financial resources. Macroeconomic management also stands to gain because structural reforms in the financial sector are likely to increase the effectiveness in the implementation of monetary policies.

This collaborative research study was conducted by Mrs. Azizah Talib, Research Economist seconded from Bank Negara Malaysia to The SEACEN Centre. At various stages of the project, Mr. Vincent Lim Choon Seng and Miss Seow Yun Yee took care of data collection and compilation, and estimation work. Mr. Vincent Lim did more of the proofreading work, and the manuscript was typed by Miss Karen How.

The SEACEN Centre wishes to express its sincere gratitude to Ms. Wanda Tseng and Mr. Robert Corker of the IMF for their technical assistance. The IMF portion is included as Part I in this study. The

Centre is also very grateful to participating member central bank's country researchers for their contribution to the country chapters. The SEACEN Centre also wishes to thank them for their useful comments and suggestions at various stages in the preparation of this project. The country chapters are included as Part II in this study.

The views expressed in this volume, however, are those of the author and do not necessarily reflect the views of the member central banks and monetary authorities or that of The SEACEN Centre.

Dr. Vicente B. Valdepeñas, Jr.
Director
The SEACEN Centre

Kuala Lumpur
January 1993

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Part I

SEACEN MONETARY POLICY AND FINANCIAL REFORM: A STUDY BY THE INTERNATIONAL MONETARY FUND

Part I

SEACEN STUDY ON MONETARY POLICY AND FINANCIAL REFORM

by

Wanda Tseng and Robert Corker

I. Introduction and Summary

The economic and financial environment in Asian countries has changed significantly in the 1980s since the completion of the first study of monetary policy in these countries.¹ The previous study covered a period when monetary policy was conducted in an environment of underdeveloped financial markets, limited international capital mobility, and fixed exchange rate regimes. During the 1980s, virtually all Asian countries liberalized their domestic financial systems. In many of these countries, this was accompanied by the relaxation of capital controls and a move toward more flexible exchange rate arrangements. These developments have altered the channels of monetary policy, affected the relationship between money demand and incomes and interest rates, and prompted a reassessment of the appropriate instruments of monetary policy. This paper focuses on these and other issues of monetary policy in the wake of the financial reforms.

Section II reviews the major financial reforms undertaken by Asian countries during the 1980s, emphasizing the common elements from their collective experience. The broad thrust of reforms was to allow market forces to play a greater role in the financial system. While the reforms accorded well with the general shift toward greater reliance on market signals to direct the allocation of resources, they were also necessitated by the growing complexity of these economies and the need to be able to respond more flexibly to external shocks.

The pre-reform financial systems in many of the Asian countries, which were characterized by controls on interest rates and the allocation of credit, proved inadequate in the domestic and international en-

1. South-East Asian Central Banks (SEACEN) Research and Training Centre, (1979). Throughout this paper, the term "Asian countries" refers to the member countries of the SEACEN: Indonesia, Korea, Malaysia, Myanmar, Nepal, the Philippines, Singapore, Sri Lanka, and Thailand.

vironment of the 1980s. The response was to liberalize interest rates and reduce direct controls on financial markets while strengthening the supervisory framework, and to promote a deepening of money and capital markets. The pace of reforms differed markedly among the countries. For some, the reforms were concentrated in major and discrete liberalization programs. For most of the others, reform was a more gradual and continuous process.

An important effect of the liberalization of interest rates was to raise real interest rates, which generally had been negative during the 1970s. This contributed to financial deepening as more resources were mobilized through the financial system. In a few Asian countries, liberalization added to the volatility in financial markets during the 1980s.

Section III investigates the implications of financial reforms for money demand in these countries. Financial liberalization might be expected to have affected the relationship between money demand and incomes and interest rates. In particular, financial liberalization might have caused onetime shifts in money velocity or changes in the responsiveness of money demand to changes in incomes and interest rates. In addition, new influences may have become important determinants of money demand after liberalization and the precision with which monetary developments can be predicted may have been altered.

Empirical analysis confirms that the relationship between monetary aggregates, income and interest rates exhibited some instability during the 1980s for many of the Asian countries. The instability was mainly manifested through the inability of money demand functions to predict short-run developments in the monetary aggregates: over longer periods, many of the aggregates continued to move in line with their historical relationships to incomes and interest rates. The empirical results also uncover a greater role for interest rates in determining money demand than the earlier study had shown (see Aghevli and others (1979)). Furthermore, the experience in those countries that introduced more flexible interest rates suggests that broad money demand is sensitive to relative asset returns rather than the overall level of interest rates.

Section IV examines the effects of financial reforms on the transmission channels of monetary policy and the implications for the formulation and implementation of monetary policy. In particular, as direct controls on financial markets were relaxed, interest rates played a greater role in transmitting monetary effects to all sectors of the economy. Also,

with greater capital mobility and more flexible exchange rate regimes, the exchange rate became an important channel for transmitting the effects of monetary policy. While these developments enhanced potential control over domestic monetary conditions, a greater need arose to coordinate monetary policy with exchange rate policy.

Financial liberalization has led to a reassessment of how monetary policy should be implemented. In general, there has been a greater reliance on interest rate and money supply targets as opposed to credit targets. However, several countries have not relied on a specific target and, instead, have monitored a number of financial and economic indicators.

Greater emphasis was placed on indirect market-based instruments, most notably open market operations, for influencing interest rates and monetary conditions as opposed to direct controls on credit and interest rates. This was both necessary, because direct controls can be increasingly circumvented in more sophisticated financial markets, and desirable, because financial resources can be allocated more efficiently if economic decisions are less distorted.

The effectiveness of open market operations in some Asian countries was constrained by the inadequate development of markets and instruments and by the continued widening of government financing needs. Nevertheless, with improvements in markets and instruments as well as progress in reducing fiscal deficits, open market operations have become the primary instrument of monetary policy in many of these countries.

Conclusions are summarized in Section V. Overall, financial liberalization and monetary policy reforms have contributed to more efficient financial systems and have enhanced the effectiveness and flexibility of monetary policy.

II. Financial Liberalization

During the past decade, nearly all Asian countries liberalized their financial systems. In many countries, this was accompanied by a relaxation of capital controls and a shift toward more flexible exchange rate arrangements. The resulting changes in the financial structures have had widespread implications for money demand and the conduct

of monetary policy. To provide a background for the discussions that follow, this section reviews the financial liberalization and the changes in financial structures in the Asian countries during the 1980s. First, it provides an overview of the financial systems in the countries prior to liberalization. Then it examines the impetus for changes that surfaced during the period and the liberalization measures that were implemented. In this review, the emphasis is on the common elements and the broad thrust of reforms, rather than on providing a complete listing of all the liberalization measures; a summary of the financial liberalization undertaken by each country is presented in Appendix 1.

2.1 Pre-Liberalization Financial Systems

The Asian countries differed widely in their levels of overall economic development, economic structures, and degrees of financial market sophistication. Despite the diversity of circumstances, their financial systems prior to liberalization shared many similar characteristics. These included interest rate restrictions, domestic credit controls, high reserve requirements, segmented financial markets, underdeveloped money and capital markets, and controls on international capital flows.

Interest rate restrictions were pervasive in most of these countries prior to the 1980s. These restrictions typically took the form of ceilings on deposit and loan rates of commercial banks; non-bank financial institutions were usually subjected to fewer restrictions. The imposition of controls on interest rates was motivated by a desire to provide low-cost funds to encourage investment, particularly for priority sectors, and to guard against increases in interest rates that were viewed as socially or politically unacceptable. However, these restrictions led to financial disintermediation as savers and investors sought alternative outlets outside the formal financial system. Over time, the acceleration of financial disintermediation resulted in the growth of unregulated financial markets and non-bank institutions, reducing the effectiveness of monetary controls. Also, banks often attempted to maintain profits by imposing compensating balances and/or various fees and charges that were not subjected to controls, leading to distortions in the provision of financial services. Consequently, financial deepening was hindered and financial resources were not directed into productive activities.

Direct controls to regulate both the aggregate supply and sectoral allocation of credit were used in many Asian countries. These typically involved ceilings on the level or growth of bank credit and directed

credit schemes. Credit ceilings were widely used as an instrument of monetary policy, particularly because of the lack of markets and instruments to support indirect means to influence bank reserves such as open market operations. While credit ceilings proved effective in controlling domestic credit, their use over time often had deleterious effects on financial sector development. In setting credit ceilings, the monetary authorities usually allocated the scope for future lending largely on the basis of banks' past share in total lending. The imposition of the status quo on the market structure inhibited growth and competition, which in turn, contributed to disintermediation. The effectiveness of monetary control was, therefore, weakened because of the growth and expansion of markets outside the controlled (usually the banking) sector.

Sectoral credit allocation schemes included direct central bank lending to priority sectors, preferential central bank refinancing facilities, and lending targets for commercial banks. These schemes often proved costly in terms of allocative efficiency and the effectiveness of monetary policy. Directed credit programs in many countries resulted in investments with low rates of return, which subsequently burdened banks with large non-performing loans. This, in turn, limited the scope for monetary policy because of pressures to continue to provide credit to priority sectors. The effectiveness of directed credit programs in supplying adequate credit to priority sectors was also questionable because it was difficult to ensure that credit was actually used for the intended sectors.

High reserve requirements were a feature of the monetary control procedures in some Asian countries. High reserve requirements, with no interest paid on reserves, served as an implicit tax on commercial banks that often increased the cost of financial intermediation to such an extent that the financial system was bypassed altogether. This eroded the effectiveness of monetary control and required that the monetary authorities further tighten controls on the formal financial sector to achieve policy results, thereby creating a vicious circle of intensifying controls that became increasingly less effective.

The financial systems of many Asian countries were characterized by a high degree of segmentation. Each type of financial institution was restricted to conduct business within its explicitly prescribed sphere. Entry of new institutions into particular segments was extensively regulated or even prohibited. Activities of foreign banks, where allowed, were restricted. These restrictions reflected the desire to protect de-

positors and to maintain confidence in the stability of the financial system; the restrictions were also justified on the basis of market imperfections and the need to provide credit to priority sectors and to promote the development of domestic financial institutions. However, the restrictions limited competition in the financial system, inhibiting improvements in financial intermediation and the development of new services and instruments.

Money and capital markets in these countries were generally underdeveloped prior to the 1980s and played a minor role in intermediating funds between borrowers and savers. While interbank markets existed in some countries to allow banks to manage their short-term liquidity needs, such markets were generally not available to the non-bank sector. Capital markets, where they existed, were of marginal importance. Firms often found that their long-term financing needs were not met either because credit was not available or because they had to turn to informal financial markets where the cost of funds was high. In some countries, the authorities responded to this shortcoming by setting up special development banks. The lack of established financial markets also had major implications for the conduct of monetary policy because it precluded open market operations and indirect controls on interest rates. As a result, the monetary authorities were limited to using direct controls and changes in reserve requirements and refinancing facilities to achieve their policy objectives.

For the most part, international capital flows were strictly controlled. The controls were generally imposed to insulate domestic interest rates and monetary conditions from influences from abroad, as well as to support fixed exchange rate arrangements.

2.2 Financial Liberalization During the 1980s

The move toward financial liberalization reflected, in part, the shift in the philosophical underpinnings of economic policies that occurred in the 1980s. Excessive controls and regulations were increasingly viewed as inappropriate for efficient resource allocation and for the attainment of rapid economic growth. As discussed above, overly regulated financial systems discouraged financial savings, created distortions in investment decisions, and generally failed to intermediate effectively between savers and investors. In many Asian countries, rigidities in the financial systems prevented them from meeting the needs of increasingly complex and sophisticated economies.

The reforms were also motivated by the need for more flexible and effective policy responses to the severe external shocks experienced by these countries during the past decade. The slowing of market growth in industrial countries, worsening terms of trade, rising international interest rates, and proliferating protectionist pressures required comprehensive adjustment policies to sustain noninflationary growth and balance of payments viability. The traditional instruments of monetary policy -- administered interest rates and direct credit controls -- proved to be inadequate to meet this challenge. The effectiveness of traditional instruments had eroded over time reflecting, among other things, the development of new financial instruments and markets to circumvent traditional controls.

In general, the objectives of financial liberalization undertaken by these countries were to enhance efficiency through a greater reliance on market forces as well as to improve the effectiveness of monetary policy. The key reforms were aimed at liberalizing interest rates, reducing controls on credit, enhancing competition and efficiency in the financial system, strengthening the supervisory framework, and promoting the growth and deepening of financial markets. The liberalization of the domestic financial system was accompanied by the relaxation of restrictions on international capital flows and a shift toward more flexible exchange rate arrangements.

The implementation of financial liberalization varied widely across the countries in terms of both the pace and scope of reforms. Singapore largely liberalized its financial sector and abolished capital controls in the mid-1970s. Consequently, Singapore already had a relatively well-developed financial sector that was closely integrated with international financial markets, and financial reforms during the 1980s focused on improving existing institutions and markets.

The other countries had more restrictive financial systems and, therefore, greater scope for reforms. Sri Lanka embarked on financial reforms in the context of its overall economic liberalization program of the late 1970s. Significant reforms were undertaken in Indonesia, Malaysia and the Philippines in the early 1980s. More gradual steps toward liberalization, which were intensified in the latter half of the 1980s, occurred in Korea and Thailand. Nepal began to implement a financial liberalization program in the second half of the 1980s. Myanmar, however, maintained a highly restrictive financial system during most of the 1980s. Overall, financial liberalization in the Asian countries has

been a gradual, phased, and continuing process rather than being concentrated in discrete episodes of comprehensive liberalizations.

2.2.1 Liberalization of Interest Rates

The objectives of interest rate liberalization are to promote savings and efficient investment and to deepen financial markets. Saving is affected by many factors and while the empirical evidence on the effect of interest rates on saving is ambiguous, their effect on the form of saving is clear.² Positive real interest rates favor financial over non-financial savings, leading to the deepening of financial markets. In turn, greater financial intermediation tends to ensure that the more productive investments are financed. Positive real interest rates, therefore, contribute to economic growth by promoting financial deepening and improving the productivity of investment.

The liberalization of interest rates was a prominent feature of the financial reforms implemented by nearly all these countries. Interest rates were fully deregulated in Indonesia, the Philippines and Sri Lanka in the early 1980s; Nepal freed most key interest rates in 1986; and, Korea, Malaysia and Thailand relaxed controls by more frequent adjustments in rates, wider bands for regulated rates, and the removal of some interest rate ceilings. In contrast, interest rates played virtually no role in allocating resources in Myanmar, and remained unchanged from 1977 until late 1989.

The liberalization of interest rates, together with the substantial progress achieved in reducing inflation, resulted in positive real interest rates in most Asian countries during the 1980s (Chart 1).³ By contrast, during the period prior to liberalization (in the 1970s), real interest rates had tended to be negative. The immediate impact of liberalization on interest rates in all these countries was to move rates upward. The increases in nominal rates were sufficiently large to establish positive real interest rates in Indonesia and Malaysia; in other countries (Korea, Nepal, the Philippines, Sri Lanka and Thailand), positive real interest

2. World Bank (1989), pp. 27-32.

3. The real interest rate is measured by the nominal interest rate minus the change in the consumer price index over the past 12 months. This assumes that inflation expectations can be approximated by actual inflation over the past 12 months.

rates were achieved subsequently as inflation subsided. In Singapore, after the interest rate liberalization in the mid-1970s, nominal interest rates have closely followed international interest rates and real interest rates have remained consistently positive. Only Myanmar experienced negative real interest rates throughout the 1980s.

Positive interest rates contributed to financial deepening in most of these countries. Financial depth, as measured by the ratio of M2 to gross domestic product (GDP), rose in most of these countries during the 1980s; growth was particularly rapid in Malaysia, Singapore and Thailand where the ratio reached 60-90 per cent in 1989 (see Chart 2). In Korea, the ratio of M3 (including non-bank financial assets, particularly corporate bonds and commercial paper) to GDP rose sharply after 1981 and faster than the ratio of M2 to GDP. This reflected the more relaxed regulatory environment of the non-bank financial institutions and their ability to offer higher yields on financial instruments than banks. In Indonesia, the ratio of M2 to GDP rose from about 20 per cent in 1983 to about 35 per cent in 1989. In both the Philippines and Sri Lanka, the financial sector expanded in the immediate period following the reforms (1980-1983 for the Philippines and 1979-1980 for Sri Lanka); however, the expansion was not sustained. Financial sector development in Myanmar has been set back by two major demonetizations -- in November 1985 and September 1987 -- in which notes of higher denomination were declared illegal tender.⁴

2.2.2 Reductions in Credit Controls

Nearly all Asian countries reduced or eliminated overall direct credit controls on bank lending (Indonesia, Korea, Malaysia, Nepal, the Philippines, Sri Lanka and Thailand). However, some controls were reintroduced in a few countries to address particularly severe monetary

4. In the first demonetization, on 3 November 1985, K. 50 and K. 100 currency notes, amounting to 46 percent of the currency notes of K. 75 were introduced from 11 November 1985 and K. 15 and K. 35 notes from 1 August 1986. The second demonetization was carried out on 5 September 1987. All higher-denominated notes (K. 25, K. 35, and K. 75), accounting for 57 percent of currency on circulation, ceased to be legal tender. New currency notes of K. 45 and K. 90 were introduced with effect from 22 September 1987. The purpose of the demonetizations was to uncover illegally derived profits. In the case of the demonetization in November 1985, the surrendered demonetized notes were refunded to the holders after an investigation of sources of income and tax compliance. However, no arrangements were made to make refunds to holders of notes demonetized in September 1987.

Chart 1. SEACEN Countries: Interest and Inflation Rates, 1974-89¹

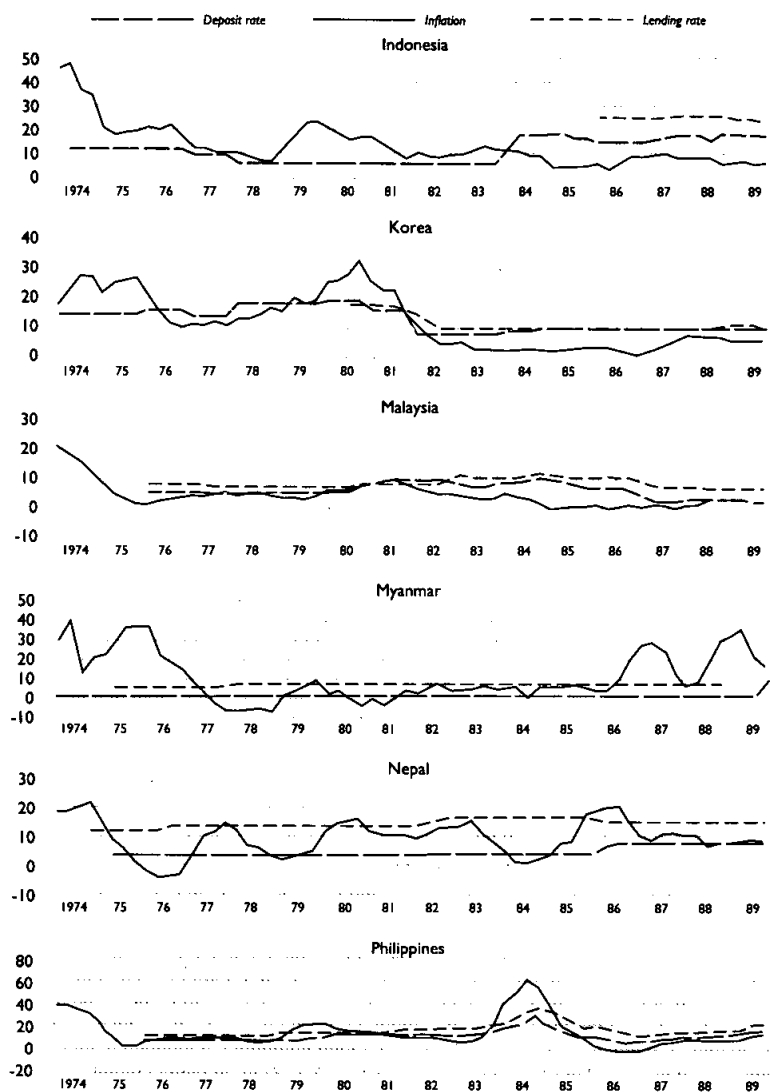
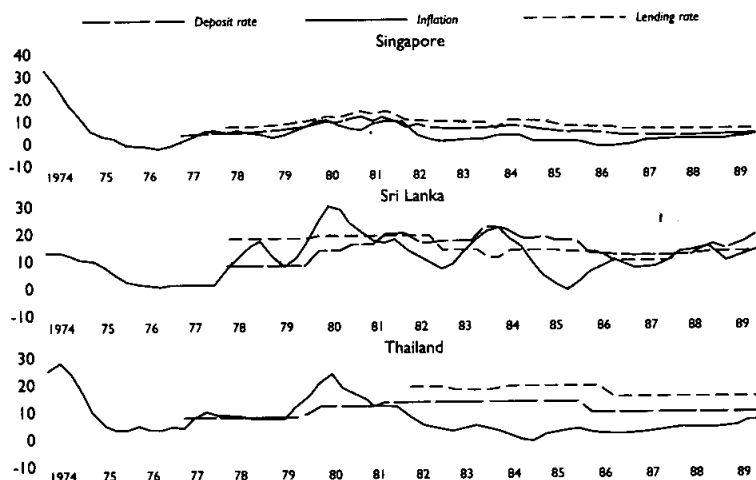


Chart 1. SEACEN Countries: Interest and Inflation Rates, 1974-89 (continued)¹



Source: International Monetary Fund, *International Financial Statistics*.
¹Deposit and lending rates are taken from lines 60i and 60p, respectively, of *International Financial Statistics*. Inflation rates are the quarterly percent changes in consumer prices (line 64) from the corresponding period in the previous year.

Chart 2. SEACEN Countries: Broad and Narrow Monetary Aggregates, 1970-89
(In percent of GDP)

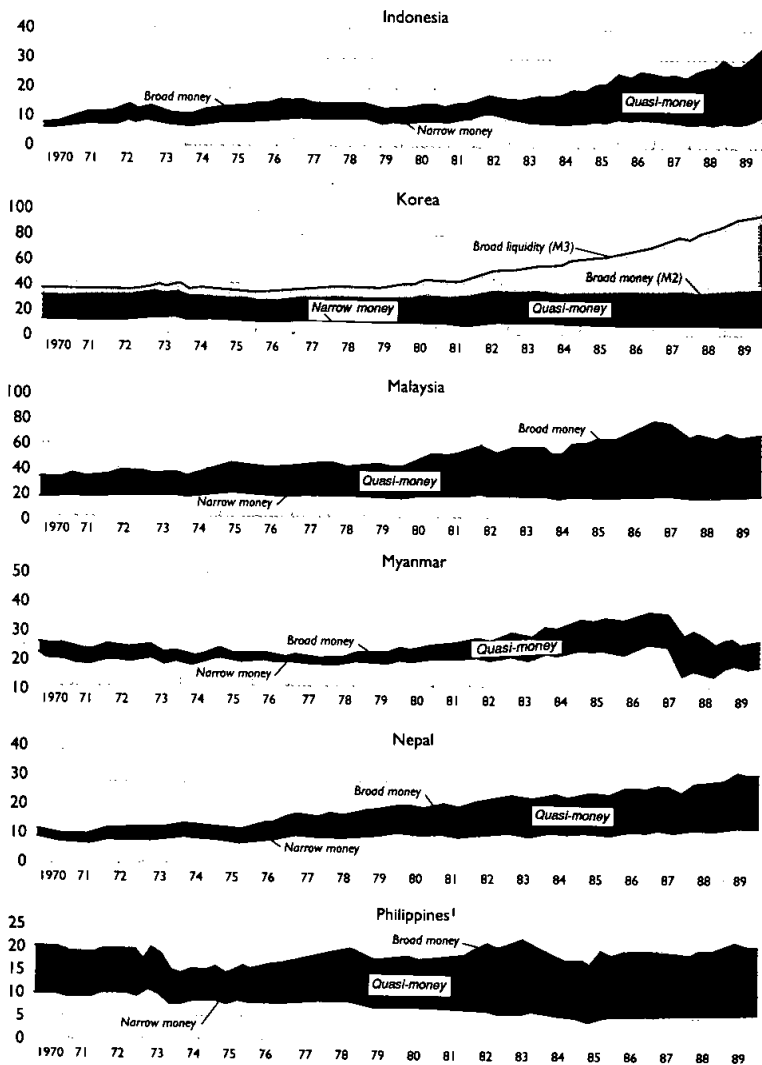
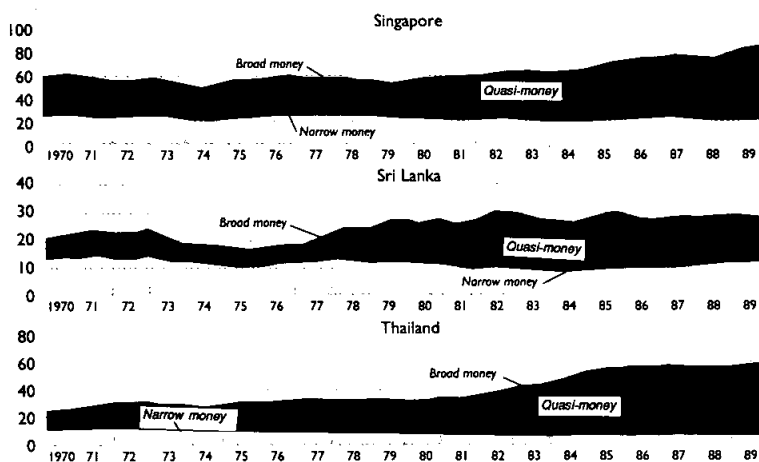


Chart 2. SEACEN Countries: Broad and Narrow Monetary Aggregates, 1970-89 (continued)
(In percent of GDP)



Sources: International Monetary Fund, *International Financial Statistics*; and Fund staff estimates.
 *In percent of GNP.

disturbances and/or adverse macroeconomic developments. Korea, for example, intermittently resorted to informal direct controls toward the end of the 1980s to help offset the monetary impact of the large balance of payments surpluses. Sri Lanka also imposed selective credit controls in 1989 when confronted with a severe deterioration in its balance of payments and a large liquidity overhang.

Sectoral credit allocation requirements were also largely discontinued in Indonesia, Korea and the Philippines. However, in Indonesia, while selective credit ceilings were abandoned in 1983, preferential central bank rediscounting, in the form of liquidity credits to banks that lend to priority sectors, was continued albeit with modifications;⁵ the share of liquidity credits in total bank credit declined during the 1980s.⁶ Sectoral credit allocation requirements remained in Malaysia, Myanmar, Nepal, Sri Lanka and Thailand.

2.2.3 Financial System Reforms

Efforts were made to enhance banks' efficiency by increasing competition and by improving management. Most Asian countries (Indonesia, Korea, Malaysia, Nepal, the Philippines, Sri Lanka and Thailand) undertook measures to reduce obstacles to competition and market segmentation by allowing greater freedom of entry, expanding the scope of permissible business activities for different types of financial institutions, and relaxing restrictions on the activities of foreign banks. Better management often meant that banks needed to be given greater autonomy and more responsibilities for their operational performance; such autonomy was facilitated, in some countries, by the privatization of government-owned banks. Improved management also necessitated new lending policies, better loan recovery procedures, more sophisticated information systems, and better trained staff.

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5. Under the liquidity credit scheme, banks provide loans to selected sectors at relatively low interest rates, with the loans eligible for rediscount credits from the central bank at subsidized interest rates. A large proportion of liquidity credits outstandings at the end of March 1983 was made ineligible for renewal.
 6. Further significant changes to the liquidity credit scheme were announced in January 1990, including reductions in the categories and amounts eligible for liquidity credits, as well as increases in rediscount and lending rates.

Deregulation of the financial system was accompanied by measures to strengthen the supervisory framework. These measures were prompted, in part, by the financial crises of different magnitudes that were experienced by nearly all of these countries during the 1980s. Unfavorable macroeconomic trends, greater competition, the failure to adapt to the liberalized environment, larger interest rate fluctuations, and the absence of adequate prudential regulations and bank supervision all contributed to the failure of financial institutions. Also, excessive regulations of the banking system during the 1970s (both in terms of interest rate and credit controls) had important deleterious effects: banks' lending portfolios had been weakened in some countries, and non-bank financial institutions, that were in some cases not subject to adequate supervision, had grown rapidly. Nearly all of these countries (Indonesia, Korea, Malaysia, Nepal, the Philippines, Singapore, Sri Lanka and Thailand) implemented measures to restructure failing financial institutions and to strengthen the supervision of other financial institutions. These measures included centralizing supervisory responsibilities, developing and unifying the regulatory framework, providing for depositors' insurance, and extending supervision to non-bank financial institutions. In general, the emphasis of supervision shifted from monitoring routine operations to monitoring procedures of credit analysis, bank portfolios, and the enforcement of prudential ratios.

Most Asian countries undertook measures to encourage the creation and development of money and capital markets. The Philippines and Singapore already had active organized money markets prior to the mid-1970s. By the beginning of the 1980s, money markets became increasingly important in Indonesia, Korea, Malaysia and Thailand, and by the late 1980s, money markets were being developed in Sri Lanka and Nepal. The markets in many of these countries, however, remain thin and volatile. In general, the development of money markets was fostered by the development of new financial instruments, including central bank and government securities, certificates of deposit, various commercial papers, and repurchase agreements. Interest rates on these instruments were typically subjected to fewer restrictions than those on more traditional instruments. Developing money markets not only increased competition in the financial system but also provided a flexible means for managing liquidity through open market operations.

Alongside the traditional banking system, institutions providing longer-term finance, particularly development finance institutions, finance

companies, insurance companies and pension funds, also became increasingly important. The rapid growth of non-bank financial institutions reflected both the efforts to circumvent extensive controls in the banking sector as well as policy measures to provide a more relaxed regulatory framework than that applied to the banking sector and to develop new financial instruments. By the late 1980s, non-bank financial institutions accounted for 20-50 per cent of the total assets of the financial sectors in Korea, Malaysia and Thailand. Capital markets, especially stock markets, have also expanded rapidly in a number of these countries, particularly in Indonesia, Korea, Malaysia, Singapore and Thailand.

Singapore advanced most rapidly in terms of financial sector development and became an important international financial center during the 1980s. The potential for the domestic financial sector to become a growth sector, serving the needs not only of the domestic economy but also the regional and international economy, was recognized in the late 1960s. A strategy, encompassing legislative, fiscal and administrative measures, was formulated to develop Singapore into a major off-shore banking center. These efforts contributed to the rapid growth of Singapore's financial sector, which became the second largest contributor to GDP and employment growth in the economy during 1978-1988. In addition, the internationalization of the financial sector provided an environment for evolving new financial activities and reinforcing and improving existing ones.

2.2.4 Reductions in Capital Controls and More Flexible Exchange Arrangements

Together with the liberalization of domestic financial markets, most Asian countries relaxed international capital controls. By the early 1980s, restrictions on capital flows were virtually eliminated in Indonesia and Singapore. Malaysia imposed almost no restrictions on international capital flows that are not financed by local borrowing. Thailand retained controls on outward capital movements but inward movements were largely unregulated. Controls on capital flows remained in Korea, although some liberalization measures, particularly those involving foreign direct investment and overseas investment by residents, were implemented in the latter part of the 1980s.

During the 1980s, there was a movement toward more flexible exchange rate arrangements. In contrast to the late 1970s when a number

of these countries maintained fixed exchange rate arrangements -- usually pegged to the U.S. dollar (Indonesia, Korea, Nepal, Singapore and Thailand) -- by 1989, the exchange rate arrangements were more flexible and included pegs to composite baskets (Malaysia, Myanmar, Nepal and Thailand) or managed floating regimes (Indonesia, Korea, the Philippines, Singapore and Sri Lanka).⁷

III. Money Demand and Financial Liberalization

This section investigates the implications of financial liberalization for money demand in the Asian countries, focusing on the stability and predictability of broad and narrow monetary aggregates during the 1980s. The possible effects of financial liberalization on money demand are discussed, followed by the theoretical and empirical issues that arise in estimating money demand functions. Then the empirical results are presented and analyzed and conclusions are drawn together.

3.1 Effects of Financial Liberalization on Money Demand

The existence of a stable and predictable relationship between monetary aggregates, economic activity, prices and interest rates is a crucial element in the formulation of monetary policy. Financial liberalization that improves the quality of economic signals, alters the institutional environment, and expands the array of financial opportunities creates potential for instability in money demand.

For the purpose of analyzing the possible effects on money demand, it is useful to group financial liberalization into three broad categories. First, interest rates that better reflect the economic return and riskiness of financial assets could prompt portfolio shifts. The nature of such one-time shifts in the demand for money would depend on the monetary aggregate in question and on which interest rates were liberalized: if, for example, interest rates on time deposits increased after

7. These exchange rate arrangements correspond to the International Monetary Fund's categorization of exchange arrangements (see International Financial Statistics). The distinctions between the categories are often difficult to discern in practice. Some countries maintaining pegged arrangements flexibly adjust their pegs, while other countries maintaining flexible arrangements effectively set their exchange rates, albeit adjusting them frequently.

liberalization, the demand for broad money might rise at any given level of income, but the demand for narrow money might decline.

In principle, the portfolio shifts could be predicted by money demand functions containing appropriate interest rate terms. But, in practice, interest rates might not have varied sufficiently prior to liberalization to allow for measurement of their effects on portfolio choices. As interest rates became more flexible, previously latent roles for interest rates in determining money demand could, therefore, become transparent.

Second, shifts to indirect monetary policy instruments might alter the observed relationship between monetary aggregates, economic activity, prices and interest rates. In particular, the effective rationing of credit under direct credit controls could be alleviated following a shift to indirect monetary policy instruments making money more demand -- as opposed to supply -- determined. Because money demand relationships estimated prior to the policy change might not have properly identified money demand behavior, they could prove to be poor predictors of monetary developments after the policy change.

Third, measures to improve the functioning and depth of financial markets could prompt both portfolio shifts and alter the sensitivity of money demand to changes in incomes and interest rates. For example, measures to promote competition among financial institutions could lower transactions costs in financial markets and cause money demand to respond more rapidly to interest rate changes than before. Alternatively, changes in the regulation of financial institutions could prompt a reassessment of the relative risk of different financial assets, leading to both discrete portfolio adjustments and a change in the interest elasticity of money demand.

More generally, measures that promote financial market development could result in the availability of new, attractive assets leading to gradual portfolio shifts away from monetary assets. These shifts might occur independently of developments in income and interest rates. In addition, the returns on the new assets might become important determinants of money demand. Such assets could include foreign assets, if external capital flows were liberalized, as well as domestic assets such as stocks and bonds. However, to the extent that the policy of financial market development encouraged reintermediation, that is, attracted domestic savings away from unofficial "curb" markets, the

direction of the effects on broad monetary aggregates would be less clear cut: as the size of curb markets diminished, the demand for all financial assets, including money, might increase.

In summary, financial liberalization could lead to onetime, or more gradual shifts in the level of money holdings, as well as to changes in the measured income and interest elasticity of money demand. In some cases, financial liberalization may help to make more transparent the relationship between money and interest rates that may not have been detected previously. As a practical challenge, it is important to distinguish between the various effects of financial liberalization because they have different implications for understanding the evolution of monetary aggregates. For instance, onetime changes in money holdings might be associated with temporary instability in money demand relationships during the period of liberalization. But changes in the income and interest rate elasticity of money demand, as well as new influences on money demand, might take longer to detect, rendering money demand relationships unstable over a longer period.

As discussed in Section II, virtually all Asian countries undertook financial liberalization during the 1980s, although the pace and scope of reforms varied substantially. For most of the countries, financial liberalization proceeded gradually and on many fronts: it may, therefore, be difficult to detect significant, discrete shifts in money demand. Only in a few countries, notably Indonesia, was liberalization concentrated in one or two major reform initiatives around which more clear-cut breaks in behavior might be expected.

Regardless of differences in financial liberalization, monetary developments during the 1980s in these countries shared some similar features. In particular, the ratio of broad money (defined here as currency plus demand and time deposits in the banking system) to income tended to increase, reflecting rapid growth in quasi-money balances: the share of quasi-money in broad money increased in all countries (Chart 2).⁸ By contrast, the ratio of narrow money (currency plus demand deposits in the banking system) to income, although generally more volatile than that of broad money to income, did not show a consistent trend

8. Alternatively, the rapid growth of quasi-money accounted for a downward trend in the income velocity of broad money (income divided by money).

across countries: in some countries it exhibited a downward trend, while in others it showed little trend or even tended to rise. However, it is not clear from Chart 2 whether the monetary trends of the 1980s differed significantly from those of the 1970s. And even if such breaks were apparent, it would be important to separate the effects on monetary developments resulting from financial liberalization from those arising from the changed economic environment of the 1980s. To do this, a more formal analytical framework, described below, is required.

3.2 Specification and Estimation Issues

Following is an outline of an empirical model that will be used to investigate the stability and predictability of money demand. In this regard, there are a number of interrelated issues concerning the specification and estimation of the model that have a direct bearing on how instability might be detected and analyzed.

3.2.1 Specification Issues

Theories of money demand attempt to explain one or more of the characteristics of money, stressing, in particular, the role of money in fulfilling transactions needs and providing a store of value.⁹ However, regardless of their theoretical background, a wide variety of models of money demand converge ultimately to a specification in which money depends on a scale variable (income or wealth), prices and interest rates. This relationship can be written as:

$$M = a_1 * P + a_2 * (Y/P) + a_3 * Ra + a_4 * Ro + a_0 \dots\dots\dots (1)$$

where, M is money; P the general price level; Y aggregate incomes; Ra the interest rate on alternative assets; and, Ro the return on money.¹⁰ Variables other than interest rates are expressed in logarithms. A priori, the coefficients a_1 , a_2 and a_4 are expected to be positive, while the coefficient a_3 is expected to be negative. For a narrow monetary aggregate, the "own" return would be close to zero and the coefficient a_4

9. See Goldfeld and Sichel (1990) for a summary of theoretical models of money demand.

10. A complete description of the data used in the analysis can be found in Appendix 2.

probably irrelevant; this would not be the case for a broader monetary aggregate that included a sizable interest-bearing component. In a purely portfolio model of asset demands, the coefficient a_3 would be equal in size, but opposite in sign, to the coefficient a_4 so that money demand only depended on relative asset returns. The coefficient a_1 in most theoretical models would be expected to be close to one: indeed, this condition is usually imposed as, for example, in the earlier study of monetary policy in Asian countries (see Aghevli and others (1979)).

Whereas equation (1) is a fairly general theoretical specification of a money demand function, it assumes that money holdings adjust instantaneously to desired levels following a change in prices, incomes, or interest rates. In practice, this would not be the case for two main reasons. First, the adjustment of financial portfolios is not costless and individuals and corporations will tend to strike a balance between the cost of deviating from desired holdings and the cost of adjusting the level of their actual money holdings. Second, most theoretical models suggest that money demand depends on expected prices, incomes and interest rates that need not always be related to actual levels of these variables. Allowing for some slow adjustment of expectations in response to new information would again introduce some sluggishness into the adjustment of actual money holdings to desired money holdings. In principle, it would be best to separate out the two sources of adjustment lags, but in practice it is difficult.¹¹

Empirical attempts to capture the sluggish adjustment of money demand toward desired equilibrium holdings have often employed the assumption of partial adjustment in which a fixed proportion of the difference between desired and actual holdings diminishes each period.¹² Recently, however, this approach has been criticized as overly restrictive because it assumes that adjustment costs and expectations can be captured in a very specific, simple fashion. In this analysis, an error-correction dynamic specification is used. The error-correction specification -- to be discussed more fully below -- can be thought of as a more general, intertemporal version of partial adjustment in which expectations are based on available information (see Nickel (1985)). The error-correction money demand function can be written in the form:

11. See Cuthbertson (1988) for one such attempt.

12. This was the assumption in the earlier SEACEN study, see Aghevli and others (1979).

$$\Delta M = \sum_0^n (b_{1i} \Delta M_{-1-i} + b_{2i} \Delta P_{-i} + b_{3i} \Delta Ra_{-i} + b_{4i} \Delta Ro_{-i} + b_{5i} \Delta(Y/P)_{-i}) - b_6 (M - \bar{M})_{-1} + b_0 \dots \dots \dots (2)$$

where, the symbol Δ represents a first difference of a variable and the subscripts attached to the variables represent lagged values. $\bar{M}$ stands for the fitted values from equation (1).

The distributed lags of first-difference terms are a mathematical representation of a general, unrestricted, short-run relationship between the variables. This generality acknowledges a degree of agnosticism about the true structure of adjustment costs and expectations mechanisms. The term with the coefficient b_6 represents deviations from long-run equilibrium and gives the equation its error-correcting properties: if money demand is below that consistent with desired long-run holdings, money demand increases. The static long-run equilibrium properties of the money demand function represented by equation (2) are identical to equation (1).¹³

3.2.2 Estimation Issues

Recent econometric theory and practice have focused more attention on the time series properties of the data typically used in regression analysis. A large number of time series used in economic analysis are nonstationary (i.e., they have a persistent tendency to increase or decrease over time), which implies a number of restrictions on their use in regression analysis. In particular, regression of one non-stationary series on another can give rise to the so-called spurious regression problem and lead to incorrect statistical inferences.¹⁴ The nonstationary problem can be removed by first differencing the data, but in doing so, potentially interesting information about long-run equilibrium relationships between economic variables is lost.

Work by Granger and others has, however, found a way to advantageously exploit the spurious regression problem.¹⁵ The basic result

13. For further discussion about the long-run solutions of error correction models, see Davidson and others (1978) and Salmon (1982).

14. See Granger and Newbold (1974).

15. See Hendry (1986) and Ganger (1986) for further discussion of the main issues involved in this subsection.

of their analysis centers on the notion of cointegration: linear combinations of two or more nonstationary time series can, in some circumstances, turn out to be stationary.¹⁶ If this is the case, the linear combination can be legitimately included in a regression with other stationary variables (such as first-differenced nonstationary variables) with the twist that the combination variable -- or cointegrated series -- contains the useful long-run information that would otherwise have been lost through first differencing of all variables in the equation.

More powerfully still, the existence of cointegrating relationships turns out to be synonymous with the existence of a long-run equilibrium relationship between the economic variables.¹⁷ The proof of this result also establishes a correspondence between cointegration and the error-correction model, which has developed in tandem with the new results on the properties of time series: if a cointegrating relationship exists, then it can be legitimately used in an error-correction model. In the context of the analysis here, if the linear combination of money, prices, income and interest rates in equation (1) formed a cointegrating relationship, then it would also represent the long-run relationship between these variables. Furthermore, the residuals formed by subtracting actual money balances from the fitted values of the long-run relationship described by equation (1) would be stationary and would form a legitimate error-correction term to include in equation (2).

A number of methods have been proposed to estimate error-correction models which, while producing consistent results in the statistical sense, generate quantitatively different estimates for key parameters in finite samples.¹⁸ The method adopted here follows that of Engle and Granger (1987) and, after preliminary analysis to establish the order of integration of the data series, employs a two-stage estimation process. In the first stage, equation (1) is estimated directly by ordinary least squares (OLS) regression and without regard for the short-

16. The term cointegration derives from nomenclature "order of integration" used to describe the number of times a time series must be first-differenced to render it stationary.

17. According to Johansen (1988), there may be as many as $n-1$ linear combinations of n data series that are cointegrated, implying that any particular long-run relationship may not be unique. In practice, theoretical priors, as well as statistical criteria, are used to choose among the possible long-run relationships.

18. Boughton (1990) provides some examples to illustrate this point.

run dynamics of money demand. The residuals of this regression are then tested for stationarity to determine whether the regression equation might represent a cointegrating relationship between money, prices, income and interest rates. Engle and Granger show that, if this is the case, the OLS estimates of the coefficients are consistent and converge rapidly to the true long-run behavioral parameters. If stationarity is rejected, the data do not support the existence of a stable long-run relationship between the variables.

In the second stage, an error-correction model (equation (2) is estimated for those monetary aggregates for which cointegrating relationships can be found. Again, Engle and Granger show that OLS provides consistent estimates of the parameters in this equation, even where all regressors are not strictly exogenous. Equation (2) is specified first as a general distributed lag of first differences in the dependent and independent variables plus the lagged residuals from equation (1) -- the error-correction term. This general specification is reduced to a more compact form by eliminating insignificant variables.¹⁹

3.2.3 Testing for Stability

While economic theory supports the notion that money demand is likely to be a stable function of income, prices and interest rates, this stability is predicated on an unchanging institutional environment.²⁰ Indeed, changes in the institutional environment are widely believed to be responsible for observed long-run cycles in the income velocity of money (see, for example, Bordo and Jonung (1987)). Thus, money velocity is typically found to trend downward -- money growth exceeds income growth because of monetization of the economy -- in countries that are at an early stage of their economic development and that have relatively immature financial markets. As the degree of sophistication of the economy increases, the velocity trend is typically reversed because financial market innovations permit agents to economize on their holdings of money.

19. This procedure is often described as general-to-specific modeling (see Hendry and Mizon (1978)). Only a fairly low order of lag ($n = 2$ in equation (2)) was assumed in the initial specification used here.

20. See Lucas (1988) for a discussion of the theoretical conditions for money demand to be stable.

The likelihood that velocity exhibits long-run cycles suggests that, over typical data sample sizes (say, a couple of decades), one may estimate a money demand function that is dominated by a medium-term phenomenon such as monetization. This possibility places some practical limits on the notion of stability: it may not be possible to identify a money demand function that is stable for all time, but it may be possible to estimate a relationship that can explain monetary developments during the sample period with reasonable predictability. In a specific example, one might estimate the long-run income elasticity of money demand (coefficient a_2 in equation (1)) to have been fairly constant over the sample period, but, perhaps reflecting monetization, greater than one. The implication that the share of monetary assets in income would increase without limit in the long run is, however, implausible. Nevertheless, reasonable stability of the income elasticity and other key parameters in the historical data period would provide some grounds for concluding that monetary developments might remain predictable in the future, at least over the duration of the policy horizon (say, a few years).

Financial liberalization is one of the major vehicles through which the institutional environment is changed and is thus likely to affect the stability of money demand relationships both in the long and short runs. Recalling the discussion in the section on the *"Effects of Financial Liberalization on Money Demand"* above, liberalization might cause a onetime level shift in money demand (instability in the intercept term, a_0 , of equation (1)); alter long-run elasticities (instability in the coefficients a_1 , a_2 , a_3 , and a_4 of equation (1)); or lead to short-run unpredictability of money demand (instability in the "b" coefficient in equation (2)). In addition, new influences may become important after liberalization (one of the "a" coefficients in equation (1) may acquire, or lose, statistical significance) or the precision by which monetary developments may be predicted might change (the "a" and "b" coefficient estimates might be unchanged, but the equations' residual variance might increase).

The two-stage estimation procedure used here provides a systematic framework for investigating the stability of money demand functions. At the first stage, the tests for cointegration between money, income and interest rates provide information about the existence of stability in long-run money demand relationships. A rejection of cointegration, for example, would indicate that money, income and

interest rates have not been related in a particularly stable, predictable fashion over the course of the data sample, perhaps because of significant changes in the institutional environment. The tests do, however, require a large number of observations to produce convincing results: where degrees of freedom are limited, the tests are, at best, indicators of medium-term stability. Furthermore, the specific tests (described in Table 1) have limitations in certain statistical circumstances. In particular, the tests would have a bias toward incorrectly rejecting cointegration if the residuals in equation (1) were stationary but had a strong autoregressive component, suggesting that a degree of judgment is required when test statistic values are close to critical values.²¹

At the second stage, conventional statistical tests can be carried out to gauge whether the coefficients of the full error-correction model are stable across different sub-periods of the data sample. It may be the case, for example, that financial liberalization has not affected the long-run relationship between money, income and interest rates, but has rendered somewhat unpredictable short-run deviations from long-run equilibrium.

Of course, any instability uncovered by the tests at either the first or second stage cannot necessarily be attributed to financial liberalization. It could also be possible that the money demand function was misspecified or that behavioral properties cannot be deduced using available data. Alternatively, instability could reflect inappropriate treatment of expectations: for example, money demand may react quite differently to anticipated, as opposed to unanticipated events. For these reasons, additional judgmental procedures may be required to trace the source of any instability.

3.3 Results

This section presents general results concerning the nature and stability of money demand in the Asian countries; individual country results are reported in more detail in Appendix 3. The results suggest that, in most of the countries (Thailand was the only exception), a stable long-run demand function exists for at least one of the monetary

21. The tests are said to have low statistical power in these circumstances. See Engle and Granger (1987) for more details.

aggregates.²² In about half of the countries, narrow money appears to be most reliably related to income and interest rates, while broad money is favored in the other countries. Short-run money demand functions appear to be less stable, although it is difficult to pin any instability to specific episodes of financial liberalization.

3.3.1 Estimation Results

The estimated long-run income elasticities of narrow money demand vary substantially among the Asian countries: for about half of the countries, the elasticity exceeds unity, while for the remainder the elasticity is less than unity (Table 1).²³ Measured income elasticities in excess of unity in Indonesia, Malaysia, Myanmar and Nepal may indicate monetization, while elasticities less than unity in Korea, the Philippines, Singapore, Sri Lanka and Thailand may reflect agents' economizing on holding cash balances. While Singapore might be expected to be in the second group because of its relatively developed financial system, and, conversely, Nepal and Myanmar might be expected to be in the first group, it is not clear that the estimated elasticities for the remaining countries are related to their respective stages of financial development.

Interest rates (and deposit rates in particular) generally have significant negative coefficients in the narrow money equations. Furthermore, regression analysis favored the inclusion of interest rates rather than price inflation as the opportunity cost variables of narrow money demand.²⁴ This result held regardless of whether actual, lagged, or leading values of inflation were used to proxy expected price movements. The exceptions are Malaysia, Myanmar and Nepal where no opportunity cost effects could be found, possibly (in the latter two cases) because of a lack of variability in interest rates in the sample period.

22. This result contrasts with the findings of Blundell-Wingnall and others (1990), who find little evidence of long-run relationships between money and income in selected industrial countries.

23. Price homogeneity ($a_1 = 1$) was imposed when estimating the long-run money demand functions even though, in some cases, the restriction was not supported by the data.

24. Contrast with Aghevli and others (1979) in which inflation was used to proxy the opportunity cost of money.

Table 1

SEACEN COUNTRIES: LONG-RUN RELATIONSHIPS BETWEEN MONEY, INCOME, AND INTEREST RATES

	Income Elasticity	Interest Rate Semielasticity ^a	Tests for Cointegration ^b			Cointegration Status
			CRDW	Df	ADF	
Indonesia						
Real narrow money (1974:2-1989:4; n=63)	1.16 (28.1)	-0.66 (3.0)	0.56	3.88	3.72	Yes
Real broad money ^c (1974:2-1989:4; n=63)	1.58 (42.9)	-2.05 (12.6)	1.10	5.25	3.47	Yes
Korea						
Real narrow money (1970:1-1989:4; n=80)	0.79 (35.6)	-0.84 (3.6)	0.35	2.75	3.41	No
Real broad money (1970:1-1989:4; n=80)	1.00 (...)	-0.78 (14.0)	0.61	3.74	2.59	Possibly
Malaysia						
Real narrow money (1970:1-1989:4; n=80)	1.11 (74.0)	... (...)	0.62	3.74	4.25	Yes
Real broad money (1970:1-1989:4; n=80)	1.63 (66.9)	-1.65 (5.1)	0.48	3.29	3.38	Possibly
Myanmar^d						
Real narrow money (1970:1-1989:3; n=79)	1.27 (37.9)	... (...)	0.67	4.83	3.39	Yes
Real broad money (1970:1-1989:3; n=79)	1.43 (26.9)	... (...)	0.27	2.69	2.06	No
Nepal						
Real narrow money (1970:1-1989:4; n=80)	1.75 (48.2)	... (...)	0.32	3.02	4.45	Possibly
Real broad money (1970:1-1989:4; n=80)	2.60 (46.5)	... (...)	0.20	2.00	3.39	No
Philippines						
Real narrow money ^e (1973:1-1989:4; n=68)	0.67 (9.0)	-1.16 (4.4)	0.55	3.07	2.94	Possibly
Real broad money (1973:1-1989:4; n=68)	1.47 (25.0)	... (...)	0.78	4.05	3.00	Yes
Singapore						
Real narrow money ^f (1975:1-1989:4; n=60)	0.86 (55.4)	-1.17 (5.65)	0.45	4.74	3.17	Yes
Real broad money (1975:1-1989:4; n=60)	1.37 (81.0)	-2.13 (10.3)	0.46	2.37	3.29	No

Table 1 (cont'd)
SEACEN COUNTRIES: LONG-RUN RELATIONSHIPS BETWEEN MONEY, INCOME, AND INTEREST RATES

	Income Elasticity	Interest Rate Semielasticity ¹	Tests for Cointegration ²			Cointegration Status
			CRDW	DF	ADF	
Sri Lanka						
Real narrow money (1978:1-1989:4; n=48)	0.92 (12.8)	-1.60 (5.6)	0.22	0.55	0.45	No
Real broad money (1978:1-1989:4; n=48)	1.22 (29.6)	0.46 (2.0)	0.40	2.58	4.49	Possibly
Thailand						
Real narrow money (1977:1-1989:4; n=52)	0.85 (40.8)	-1.53 (6.1)	0.32	2.18	2.50	No
Real broad money (1977:1-1989:4; n=52)	1.72 (32.5)	-2.46 (6.1)	0.33	1.95	1.59	No

Source: Fund staff estimates.

Note: The numbers in parentheses under the coefficient estimates are t-statistics.

- 1 Deposit rates for narrow money and opportunity cost variables for broad money. See Appendix 2 for detailed definitions and sources.
- 2 The tests for cointegration are described in Engle and Granger (1987) and Yoo (1987). CRDW (cointegrating regression Durbin-Watson) and DF (Dickey-Fuller) tests assume the error structure of the long-run relationship is first-order autoregressive. For the ADF (augmented Dickey-Fuller) test, the error structure is assumed to be fourth order. Significance levels depend on the number of observations (n) and the number of variables in the cointegrating relationship (including the dependent variable). Approximate significance levels are:

	CRDW			DF			ADF		
	1%	5%	10%	1%	5%	10%	1%	5%	10%
<i>Two Variables</i>									
(a) Sample size									
n=50	1.00	0.78	0.69	4.32	3.67	3.28	4.12	3.29	2.90
n=100	0.51	0.39	0.32	4.07	3.37	3.03	3.73	3.17	2.91
<i>Three Variables</i>									
Sample Size									
n=50	...	...	...	4.84	4.11	3.73	4.45	3.75	3.36
n=100	...	...	...	4.45	3.93	3.59	4.22	3.62	3.32

- 3 The Indonesian broad money relationship includes a positive intercept shift dummy for the period 1988:4 onward.
- 4 The narrow money relationship for Myanmar includes a negative intercept shift dummy for the period 1987:3 onward. For broad money, there is a positive intercept shift dummy for 1985:4 onward and a negative intercept shift dummy 1987:3 onward.
- 5 The Philippine narrow money relationship includes a negative shift dummy for 1983:4 onward.
- 6 The narrow money relationship for Singapore includes a term equal to the one-period-ahead 12-month change in the Singapore dollar against the U.S. dollar.

For Singapore, expected exchange rate changes were found to play a significant role in determining demand for narrow money in addition to interest rates.

The long-run income elasticities of broad money demand exceed unity in all but one case, mirroring the trend decline in the velocity of broad money in Asian countries during the 1970s and 1980s (Table 1). The exception is Korea for which the estimated income elasticity equals one: a declining gap between interest rates in curb markets and the return on broad money explains the observed downward trend in velocity for this country. The large income elasticities for broad money demand in most Asian countries do not necessarily reflect monetization, which is a phenomenon usually associated with narrower monetary aggregates. Instead, the large elasticities may be capturing growth in wealth in excess of that of income, that, in turn, reflects high savings rates in many Asian countries.²⁵ Rapid growth of savings in the form of time deposits would be consistent with the trends in the composition of money described in the section on *"Effects of Financial Liberalization on Money Demand"* above.

For several countries (Indonesia, Korea, Malaysia, the Philippines and Thailand) broad money demand was found to be negatively related to an opportunity cost variable defined as the return on alternative assets minus the average interest rate paid on broad money holdings. A steady decline in the opportunity cost of holding broad money in most of these countries during the 1970s and 1980s contributed to -- but by no means can explain all of -- the rising share of money in incomes. The declining opportunity cost, in turn, partly reflects some of the changes in the structure of broad money in this period: as the share of interest-bearing quasi-money in broad money increased, the average return on broad money also increased for a given level of deposit rates. Indeed, the interest-bearing proportion of broad money is now so large for many of these countries that the opportunity cost variable is approximately an interest rate differential term (i.e., deposit rates minus the return on non-monetary assets) implying that broad money is affected by relative asset returns as opposed to the general level of interest rates.

25. Compare with the explanation for the trend decline in the velocity of broad money in Japan offered in Corker (1990).

A negative interest rate effect (as opposed to a relative asset return effect) was found for Singapore, while for Sri Lanka, only the return on money appeared to matter, entering the long-run money demand function with a positive coefficient. No interest rate effects could be found for Myanmar or Nepal.

3.3.2 *Stability of Money Demand*

The formal tests for cointegration suggest that at least one monetary aggregate in most of the countries investigated appears to have been related in a stable fashion to developments in income and interest rates over the long run. Long-run stability in money demand is also suggested more informally by the similarity between the long-run income elasticities estimated here and those for six of the countries reported in Aghevli and others (1979) (see tabulation below). The latter estimates, which were based on a much earlier sample period stretching back, in some cases, to the 1950s, confirm a remarkable constancy in long-run income elasticities over two very different historical periods.

ESTIMATED LONG-RUN INCOME ELASTICITIES OF MONEY¹

Country	Narrow	Broad Money
Indonesia	1.16 (1.63)	1.58 (1.85)
Korea	0.79 (...)	1.00 (...)
Malaysia	1.11 (1.23)	1.63 (1.65)
Myanmar	1.27 (...)	1.43 (...)
Nepal	1.79 (...)	2.62 (...)
Philippines	0.67 (0.85)	1.47 (1.54)
Singapore	0.86 (1.34) ²	1.37 (1.33)
Sri Lanka	0.92 (1.08)	1.22 (1.48)
Thailand	0.85 (0.68)	1.72 (1.49)

1/ Values in parentheses are taken from Table 3 of Aghevli and others (1979).

2/ In Aghevli and others (1979), the estimated income elasticity is not statistically significant.

In detail, the estimated long-run narrow money demand functions for Indonesia, Malaysia, Myanmar and Singapore are likely to be cointegrating relationships, and, therefore, likely to be stable relationships. The same is possibly true -- although the formal test results are less convincing -- for Nepal and the Philippines. The results for Myanmar and the Philippines require some qualification, however. In the case of Myanmar, an intercept shift dummy variable was needed to take into account the "demonetization" of September 1987 (see Section II). In the case of the Philippines, an intercept shift dummy variable was required to explain developments in narrow money after the fourth quarter of 1983.

It is not clear what the dummy variable in the Philippines' case is capturing.²⁶ Certainly, the early 1980s saw the introduction of significant financial liberalization in this country, and some shift in money demand behavior might have been expected around this time. More generally, however, the Philippines experienced a period of financial turmoil after 1983, including high inflation rates, and it is also likely that the dummy variable reflects a failure to fully account for pessimistic expectations that may have precipitated a flight from narrow money in this period.

While the formal statistical tests are satisfied, the stability of the long-run relationship for narrow money in Indonesia was questionable and a break in behavior after the June 1983 financial liberalization package is possible. In particular, estimates based on the sub-period 1974 to the second quarter of 1983 fail to identify the significant interest rate effect estimated for the full sample. In addition, the income elasticity is a little higher in this sub-period, although there is no evidence of a onetime shift in the level of narrow money holdings in 1983. These results provide tentative evidence that the June 1983 measures, which included interest rate liberalization, increased the transparency of the relationship between narrow money and interest rates.

The estimated relationships for Korea, Sri Lanka and Thailand do not appear to represent stable, long-run narrow money demand functions. Attempts to identify the source of instability, and, in particular, whether financial liberalization played a significant role, proved inconclusive, reflecting, in part, the gradual nature of liberalization in these

26. A similar dummy variable was also used by Goldsborough and Zaidi (1989) in their analysis of money demand in the Philippines.

countries. For Korea, the sharp rise in the velocity of narrow money in the early 1980s is not well explained by the estimated equation. This rise in velocity may have been related to the availability of new, alternative financial assets, but, equally, the rise may be related to the high rate of inflation in the early 1980s.²⁷ For Sri Lanka, developments in financial variables do not explain the abrupt reversal of the upward trend in narrow money velocity after 1984: instead, the measured income elasticity increases sharply in the second half of the 1980s. This reversal may be related to political turmoil in this country which may have encouraged the public to hold a larger proportion of their savings as liquid assets. For Thailand, the main source of instability is the measured interest rate elasticity. Interest rates gain significance as the data sample progresses (in the period 1978-1985 they are not significant at all) possibly reflecting gradual liberalization during the 1980s. It should be noted, however, that since interest rate data were only available from the late 1970s onward for Sri Lanka and Thailand, the tests for long-run stability of money demand are not very powerful.

The estimated long-run broad money functions for Indonesia and the Philippines appear to be cointegrated relationships, and there is also weak support for cointegration in the estimated relationships for Korea, Malaysia and Sri Lanka. For Indonesia, however, an intercept shift dummy is required for the period following the substantial lowering of reserve requirement ratios in the October 1988 financial reform package, which precipitated a surge in bank intermediation. Interestingly, no intercept shift was detected after the major financial reform package of June 1983, and income and interest rate elasticities are almost identical in the sub-period 1974-1983 to those estimated for the full sample.

The estimated relationships for Myanmar, Nepal, Singapore and Thailand do not appear to represent stable long-run broad money demand functions. In the case of Nepal, for example, the long-run income elasticity was substantially different in the 1970s (over three) compared with the 1980s (just under two). The income elasticity for Thailand also declines over the course of the sample period, reflecting a slowdown in the trend decline in broad money velocity that cannot be explained by developments in interest rates. By contrast, the instability in the case

27. For the sample as a whole, inflation rates and velocity movements are not well correlated, although this result may reflect inappropriate treatment of expectations.

of Singapore shows up as a rising interest rate elasticity in recent years. More generally, the instability of money demand in Singapore may reflect an inability to capture the high degree of currency substitution between Singapore dollars and the Asian Dollar Market.

The existence of stable error-correction models of money demand was limited to just four countries: Indonesia and Malaysia (narrow and broad money equations) and Korea and Sri Lanka (broad money equations only). The equations for these four countries had satisfactory statistical properties and passed formal tests for parameter constancy (Tables 2 and 3).²⁸ In Indonesia, the estimated coefficients in the error-correction equations for broad and narrow money did not appear to have been significantly affected by either the 1983 or 1988 financial reform packages.²⁹ In Korea, however, there was evidence of residual autocorrelation in estimates based only on data from the 1980s, possibly indicating an omitted variable in more recent sub-periods when financial liberalization intensified.

The failure to find satisfactory error-correction models for many of these countries implies that the short-run predictability of monetary developments is poor. While this result is consistent with the expected effects of financial liberalization on developments in the monetary aggregates, the result may also reflect, in part, the poor quality of some of the quarterly data used in the estimation.

3.4 Conclusions

Analysis of the stability of money demand in the Asian countries during the 1980s produces mixed results. For most countries, at least one monetary aggregate appears to have been related in a stable long-run fashion to income and interest rates. However, regardless of long-run stability, short-run deviations from long-run equilibrium were, on

28. For some of the equations in Tables 2 and 3, the dependent variable is the change in nominal money balances, while for others it is the change in real money balances. The choice was based largely on econometric criteria. Where nominal money is the dependent variable, the equation implies some degree of "money illusion" in the short run. However, in the long run, the error-correction term ensures that money is homogenous of degree one in prices.

29. Although, as noted above, the effects of the 1988 package were assumed to have had a one-time impact on the level of long-run broad money holdings.

Table 2
SELECTED SEACEN COUNTRIES: ERROR CORRECTION EQUATIONS -- NARROW MONEY¹

Dependent Variable	Lagged Dependent Variable	Deposit Rates Lagged Once	Real Income	Prices	Error Correction Term	Constant	R ²	S.E. (Percent)	DW	AUTO(5) 2/	FORE(16) 3/
Stable, Well-Specified Equations											
Indonesia											
Nominal Money 1974:4-1989:4	0.70 (7.8)	-0.45 (2.5)	...	...	-0.10 (2.7)	0.02 (3.2)	0.57	2.0	2.00	11.38	23.56
Malaysia											
Real Money 1970:3-1989:4	0.24 (2.1)	...	0.15 (1.4)	...	-0.20 (3.2)	0.01 (3.0)	0.10	2.5	1.98	5.31	16.08
Poorly Specified or Unstable Equations											
Myanmar											
Nominal Money 1970:1-1987:3	0.48 (7.0)	...	...	0.52 (4.8)	-0.44 (5.7)	0.01 ⁴ (1.1)	0.67	4.0	2.22	12.94	...
Nepal											
Nominal Money 1970:3-1989:4	0.68 (7.6)	...	...	0.27 (2.1)	-0.11 (3.3)	0.01 (1.1)	0.43	1.8	1.51	20.44	18.96
Philippines											
Real Money 1973:3-1989:4	0.57 (5.6)	-0.34 (2.0)	...	0.20 (2.1)	-0.13 (2.7)	0.01 (1.7)	0.41	2.4	1.97	9.86	34.12

Source: Fund staff estimates.

- 1 Specification as equation (2) in the main text. Variables other than the error correction terms are all first differenced. Variables other than interest rates are in logarithms. Numbers in parentheses are t-statistics.
- 2 Test for (up to) fifth-order autocorrelation; see Godfrey (1978). Distributed as χ^2 with 5 degrees of freedom. A value greater than the critical value 11.07 implies possible autocorrelation at the 5-percent significance level.
- 3 Test for parameter stability in the last 16 periods of the data; see Hendry (1980). Distributed as χ^2 with 16 degrees of freedom. A value greater than the critical value of 26.30 implies parameter instability at the 5-percent significance level.
- 4 Equal to -0.22 in 1987:4.

Table 3
SELECTED SEACEN COUNTRIES: ERROR CORRECTION EQUATIONS -- BROAD MONEY¹

Dependent Variables	Lagged Dependent Variable	Opportunity Cost	Real Income	Real Income Lagged Once	Error Correction Term	Constant	R ²	S.E. (Percent)	DW	AUTO(5) 2/	FORE(16) 3/
Stable, Well-Specified Equations											
Indonesia											
Nominal Money 1974:4-1989:4	0.55 (5.2)	...	0.13 (2.4)	-0.13 (...)	-0.21 (3.9)	0.01 (3.4)	0.36	2.4	2.03	5.53	21.23
Korea											
Real Money 1970:2-1989:4	...	...	0.48 (5.0)	...	-0.10 (2.0)	0.01 (4.2)	0.24	2.4	1.74	7.43	5.12
Malaysia											
Real Money 1970:3-1989:4	0.23 (2.1)	-0.39 (1.8)	...	...	-0.12 (3.0)	0.02 (4.8)	0.16	2.7	1.99	5.37	20.23
Sri Lanka											
Nominal Money 1978:2-1989:4	0.60 (6.2)	0.23 ⁴ (1.6)	...	...	-0.15 (2.4)	0.02 (3.2)	0.48	1.7	1.74	3.48	8.75
Poorly Specified or Unstable Equations											
Philippines											
Real Money 1973:3-1989:4	0.44 (4.7)	-0.55 (3.6)	0.19 (1.9)	...	-0.11 ⁵ (2.2)	0.01 (1.8)	0.49	2.7	2.2	15.70	26.16

Source: Fund staff estimates.

- 1 Specification as equation (2) in the main text. Variables other than the error correction terms are all first differenced. Variables other than interest rates are in logarithms. Numbers in parentheses are t-statistics.
- 2 Test for (up to) fifth-order autocorrelation; see Godfrey (1978). Distributed as χ^2 with 5 degrees of freedom. A value greater than the critical value 11.07 implies possible autocorrelation at the 5-percent significance level.
- 3 Test for parameter stability in the last 16 periods of the data; see Hendry (1980). Distributed as χ^2 with 16 degrees of freedom. A value greater than the critical value of 26.30 implies parameter instability at the 5-percent significance level.
- 4 Deposit rates.
- 5 Equal to -0.46 from 1983:4 onward.

the whole, rather unpredictable. In general, it is difficult to link any instability to specific financial reform measures, partly because reforms have been introduced gradually and on many fronts in most countries.

Instability of the estimated money demand functions manifested itself in different ways, depending on the monetary aggregate and country in question. In a few cases (broad money in Indonesia in 1988, narrow money in the Philippines in 1983) one-time shifts in the money demand appear to have taken place. In other cases, instability is reflected in changing income and interest rate elasticities. For example, income elasticities have declined in recent years for broad money in Nepal and Thailand and risen for narrow money in Sri Lanka, while in Singapore the interest elasticity of broad money has risen significantly. Finally, in some cases (narrow money in Indonesia and Thailand), instability is reflected in the appearance of previously unimportant interest rate variables in the money demand function.

Interest rates are becoming increasingly important determinants of both broad and narrow money demand in the Asian countries. To some extent, this reflects a greater flexibility of interest rates during the 1980s which has permitted interest rate effects to be measured; the previous study of monetary policy in these countries had to make do with inflation rates as the only measure of the opportunity cost of holding money.³⁰ In the case of broad money, the analysis here also suggests that simple interest rate variables are not the most appropriate terms in the money demand function. In particular, as the proportion of interest-bearing quasi-money in broad money has increased, broad money demand now depends in many cases on the relative return between money and other financial assets.

In conclusion, monetary aggregates remain useful policy variables, but this usefulness remains subject to qualification. Financial liberalization has clouded the predictability of monetary developments, at least in the short run. The nature of broad aggregates also appears to have changed significantly with implications for their controllability and relationship to ultimate policy targets.

30. Aghevi and others (1979).

IV. Implementation of Monetary Policy

The financial liberalization undertaken by nearly all Asian countries during the past decade has significantly changed the environment in which monetary policy operates. The resulting structural changes in the financial system have affected the linkages between monetary policy and the domestic economy, the meaning of monetary aggregates, and the relative effectiveness of different monetary policy instruments. This section examines some of the issues that have arisen concerning the implementation of monetary policy in an environment of reforms. It discusses how the reforms have affected both the channels of monetary policy and the choice of targets and instruments of monetary policy. It then reviews the two major changes in the implementation of monetary policy during the 1980s: the liberalization of interest rates and the greater reliance on indirect monetary instruments, particularly open market operations. Conclusions are presented at the end of the section.

4.1 Financial Liberalization and Channels of Monetary Policy

The channels through which monetary policy operate depend on the financial structure of an economy. Specifically, the channels of monetary policy are influenced by the maturity and depth of financial markets, the flexibility of interest and exchange rates, and the degree of external capital mobility.

Underdeveloped financial systems are typically characterized by interest rate regulations, domestic credit controls, the segmentation of financial markets, an absence of money and capital markets, and restrictions on international capital flows. In this environment, monetary policy works mainly by directly affecting the availability of credit. When bank credit is the major source of finance, a tightening of monetary policy usually takes the form of credit rationing, changes in reserve or liquidity requirements, or reducing banks' access to rediscount facilities. The reduced availability of financing lowers aggregate demand, curbs inflation, and improves the balance of payments. Expansionary monetary policy, by easing credit rationing, works conversely. While direct controls, such as credit ceilings, selective credit controls, and directed credit, certainly can transmit impulses from financial markets to the real economy, they tend to be inefficient. Specifically, they create incentives for disintermediation as funds are channeled outside the regulated banking system and they distort savings and investment decisions.

The emergence of new financial institutions and markets, together with the liberalization of interest rates, create a greater role for interest rates to transmit the effects of monetary policy. Restrictive monetary policy, implemented through open market operations, or increases in discount rates or reserve requirements, tends to raise interest rates, increase the demand for financial assets, and reduce aggregate demand, especially for investment.³¹ Higher interest rates may also have adverse supply-side effects because they increase the cost of working capital.³² As financial markets become more integrated, changes in interest rates are transmitted more rapidly and pervasively to all sectors of the economy, enabling interest rates to play a greater role as a channel for monetary policy.

While the channels of monetary policy are limited to credit availability and, when possible, interest rates in a closed economy, exchange rates and international capital flows provide additional transmission channels in an open economy. It is now generally accepted that, in an open economy with fixed exchange rates, the monetary authorities are not in full control of the money supply because changes in the money supply can occur through monetary movements brought about by changes in international reserves -- that is, by balance of payments surpluses or deficits.³³ Control over the money supply in these circumstances would require the monetary authorities to sterilize balance of payments imbalances. However, sterilization may be difficult to sustain if the monetary authorities do not have enough holdings of securities or foreign exchange reserves, and realistically, the monetary authorities would have control only over that part of the money supply that is

31. McKinnon (1973) and Shaw (1973) have pointed out that restrictive monetary policy effected by raising interest rates may not be contractionary because, in financially repressed markets, higher interest rates induce more savings which, in turn, increase the supply of credit available for the financing of investment and/or working capital. This analysis, however, has been challenged by the "neo-structuralists" associated with Taylor (1981). The neo-structuralists questioned the validity of the savings effect and cited structural impediments to higher investment (e.g., the dominance of public investment, foreign exchange constraints, and inefficient financial intermediation) even if higher savings were forthcoming.

32. Taylor (1981) and Buiter (1986).

33. See Frenkel and Johnson (1976) and International Monetary Fund (1977) for a discussion on the monetary approach to the balance of payments.

created internally through domestic credit. With fixed exchange rates, disparities between the supply of and demand for money created by changes in domestic credit are eliminated through the balance of payments. For example, a tightening of domestic credit reduces the supply of money relative to demand, everything else being constant, this improves the balance of payments as domestic residents replenish their money balances by reducing absorption.

The difficulty of controlling the money supply under fixed exchange rates is exacerbated by international capital mobility which prevents domestic interest rates from deviating substantially from international levels. For example, a decrease in the money supply would increase domestic interest rates and attract capital inflows. These capital inflows would reverse both the reduction in the money supply and the rise in interest rates. In effect, capital flows negate control over the money supply and interest rates and, as a consequence, domestic prices would be largely tied to international levels.

Under a more flexible exchange rate regime, control of the money supply returns, particularly if capital is mobile. In these circumstances, the exchange rate becomes an increasingly important channel for the transmission of monetary policy. Monetary restraint, for example, puts upward pressure on domestic interest rates and induces capital inflows. But, in contrast to the case of fixed exchange rates when these capital inflows would have negated the effects of restrictive monetary policy, under flexible exchange rates the domestic currency would appreciate in response to the excess supply of foreign exchange. This appreciation reinforces the effects of monetary contraction by curbing demand for domestically produced tradable goods and reduces inflationary pressures.

While exchange rate flexibility enhances control over domestic monetary conditions in some respects, it also places other constraints on monetary policy. In particular, monetary conditions abroad become a more important concern to domestic monetary authorities, particularly if the economy is small. For example, a tightening of monetary policy abroad would lead to downward pressure on the exchange rate and upward pressure on domestic prices unless domestic monetary policy is also tightened. Also, the interest rate and exchange rate effects of domestic monetary policies need to be taken more into account. The greater scope to pursue an independent monetary policy is tempered by the need to coordinate monetary with exchange rate policy.

4.2 Targets and Instruments of Monetary Policy

Financial reforms have created a number of problems for the conduct of monetary policy in Asian countries. With greater flexibility in interest rates and liberalization of financial markets, monetary authorities have had to decide whether to target mainly prices, such as interest rates, or quantities, such as monetary or credit aggregates. Within the latter, there is the further question of whether the targeted aggregates should be narrow or broad money. While narrowly defined aggregates are easier to control, their usefulness has diminished with the development of new financial instruments and institutions. Broader aggregates may be more closely related to nominal incomes, but are less susceptible to control.

The choice of targets is further complicated by financial innovations and institutional changes that have altered the characteristics of the assets included in the aggregates and by the development of markets in areas where statistical coverage is weak. Moreover, as discussed in Section III, the relationship between money demand and income and interest rates, a fundamental building block of monetary policy, has been affected.

Financial liberalization has also prompted a reassessment of the instruments of monetary policy. As discussed in Section II, the effectiveness of traditional instruments of monetary control had eroded over time. Consequently new, indirect monetary policy instruments that can be more effective in the liberalized environment had to be developed and strengthened.

4.2.1 Targets of Monetary Policy

The choice of targets of monetary policy, for example, between interest rates and monetary or credit aggregates, is influenced by the exchange rate regime and the degree of capital mobility. As discussed earlier, in an open economy with fixed exchange rates, the money supply is not amenable to control by the monetary authorities. Moreover, with increased capital mobility, there exists little scope for interest rate targeting as small countries with fixed exchange rates must import their interest rates from abroad. In this environment, targets of monetary policy tend to focus on domestic credit, either that extended by the central bank or by the banking system.

The situation is quite different if the exchange rate is flexible because the monetary authorities have more autonomy in the conduct of monetary policy. The choice between interest rate and money supply targets is then guided by the ability of each target to minimize deviations of output and prices from their objective levels. Such deviations could result from a variety of disturbances, including shifts in the public's portfolio preferences and changes in the terms of trade. It has been suggested that interest rates are likely to be the preferred target of monetary policy when the dominant source of instability emanates from the financial sector, whereas the targeting of monetary aggregates would be preferable when real sector disturbances are more important.³⁴

In practice, of course, exchange rates are not fully flexible and international capital flows are seldom completely unregulated. In general, therefore, the monetary authorities will have some control over domestic monetary developments. The practical question is then to select the target that has the best empirical relationship to the ultimate policy objectives of securing sustainable growth and stable prices.

If money were selected as the target of monetary policy, for instance, it would remain to determine which monetary aggregate should be targeted. The choice would depend on which monetary aggregate was the best leading indicator of economic activity and price pressures. For countries undertaking financial reforms, there tends to be increased substitutability between different forms of financial assets -- for example, the distinction between narrow and broad money becomes blurred as new financial instruments can have both liquidity and investment features -- resulting in greater volatility in the narrower aggregates. Under these circumstances, a broader definition of money may be more appropriate. However, monetary authorities may find it difficult to achieve targets for broad money given available instruments. This could be further exacerbated by the presence of unorganized money markets and non-bank financial institutions outside of central bank control.

The general relaxation of capital controls and the shift from fixed toward more flexible exchange rate arrangements, together with finan-

34. This view was proposed by Poole (1970) in the context of a closed economy model, but has been extended, with qualifications, to open economy models by, for example, Bryant (1980) and Benavie (1983).

cial reforms undertaken by many Asian countries, have all affected the choice of targets of monetary policy. While some countries continue to focus on credit aggregates (Myanmar, Nepal and Sri Lanka), there has been a shift to interest rate or monetary targets owing to the greater scope for monetary autonomy and access to alternative sources of credit (including credit from abroad).

Indonesia adopted interest rate targeting following the financial reforms in 1983 because of concerns that targeting monetary aggregates in the wake of major financial sector changes and large portfolio shifts would result in undue increases or instability in the level of interest rates, with possible adverse effects on output.³⁵ In mid-1987 when the rupiah came under speculative pressures, policy shifted to protecting international reserves, and interest rates became more flexible.

Several countries have adopted the targeting of monetary aggregates. In Korea, M2 has been used as the target of monetary policy. The choice of M2 reflected, on the one hand, the lack of a relationship between narrower aggregates, such as M1, and economic activity (discussed in Section III), and, on the other hand, the difficulty of controlling a broader aggregate, such as M3, owing to the rapid growth of non-bank financial institutions. Sri Lanka also used M2 as the target of monetary policy. In the Philippines, the monetary target was changed from net domestic assets of the monetary authorities to base money in 1984 after the adoption of a floating exchange rate system. This reflected the high priority attached to arresting inflation as well as the need to contain the effects of possible substantial, unanticipated capital inflows.³⁶ Other countries (Malaysia and Thailand) have monitored a number of monetary targets and economic variables.

In contrast, Singapore does not rely on credit or monetary targets. Because of the high degree of capital mobility, monetary aggregates are essentially demand determined -- any disequilibrium being resolved quickly through external capital flows -- and domestic and foreign interest

35. Sundararajan and Molho (1988).

36. Goldsborough and Zaidi (1989). If such inflows occurred and did not reflect an unanticipated increase in the demand for money and if the central bank intervened in the exchange market to offset part of the upward pressures on the exchange rate, then the impact in the money supply and prices could be substantial unless the intervention was sterilized.

rates tend to move in line. Instead, Singapore relies on the exchange rate to influence domestic wages and prices through its effect on tradable goods prices.

4.2.2 Instruments of Monetary Policy

During the 1980s, a number of Asian countries moved toward a greater reliance on market-based instruments of monetary policy and away from direct controls. These changes complemented financial reforms because they enlarged the scope of monetary policy instruments while at the same time facilitating the dismantling of regulations and controls in the financial system. One advantage of using indirect instruments is that economic decisions are left to the markets, resulting in a more efficient allocation of resources. This advantage is particularly important given the difficulties of directing credit in the increasingly complex economic and financial environment of many of these countries. The shift toward indirect monetary controls has generally entailed a greater reliance on open market operations, less dependence on reserve requirements, and a change from selective to generalized rediscounting.

Nearly all Asian countries (Indonesia, Korea, Malaysia, Nepal, the Philippines, Sri Lanka and Thailand) have introduced or intensified the use of open market operations. However, open market operations were often limited by the absence of government debt instruments and the thinness of private money markets. Thus, the shift toward open market operations has been accompanied by the issuance of central banks' own debt instruments, the use of private money market securities for open market operations, and measures to encourage the development of interbank markets and private secondary markets in government securities. These developments have often necessitated bringing the yields on government securities in line with market levels and/or discontinuing the practice of forcing the central bank and commercial banks to absorb government securities. Also, more restrictive access to discount facilities and increases in discount rates were implemented to preclude financial institutions from circumventing the effects of open market operations through the discount window.

The shift toward open market operations was accompanied by changes in other instruments of monetary policy, particularly those that affect bank reserves. As the absorption and injection of bank reserves could now be influenced by open market operations, the reliance on

reserve requirements was reduced. This reflected the recognition that changes in reserve requirements are too blunt as instruments -- small changes in the required reserve ratio call for relatively large and potentially disruptive shifts among commercial bank assets. Also, there were concerns that high non-interest-bearing reserve requirements, which are effectively a tax on the banking system, may encourage disintermediation. Indonesia, Korea and Malaysia substantially lowered reserve requirements. In Nepal and Sri Lanka, reserve requirements were made more flexible by adopting averaging procedures for meeting reserve ratios and by unifying reserve ratios for different deposit liabilities to encourage more flexible portfolio management by banks. In the Philippines, interest began to be paid on reserves held at the central bank.

To strengthen monetary control, the use of central bank discount facilities was reduced or phased out in some countries (Indonesia, Korea and the Philippines). Discount policies in the Asian countries, as in many developing countries, typically involve subsidy elements or credit allocation requirements to ensure low-cost credit to priority sectors. Consequently, central banks often found it difficult to reduce discount financing, even when warranted for macroeconomic reasons, because the reduction imposed unsustainable losses on commercial banks and had disruptive effects on priority sectors. Some of the countries reduced the range of special discount facilities in favor of generalized, last-resort lending by the central bank. Discount rates were also adjusted in line with market conditions.

4.3 Experience with Interest Rate Liberalization and Indirect Monetary Policy Instruments

The liberalization of interest rates and the move toward indirect monetary policy instruments were, perhaps, the two most important changes in the implementation of monetary policy in the Asian countries during the 1980s. As discussed in Section II, the liberalization of interest rates contributed to increases in nominal and real interest rates in most of these countries. While the repressive effects of low real interest rates had been the concern during the 1970s, the experience with interest rate liberalization in developing countries during the 1980s focused attention on the destabilizing effects of high real interest rates: this is the subject of the first part of this subsection.

The second part of this subsection assesses the experience with the use of indirect monetary policy instruments in six Asian

countries.³⁷ This assessment is constrained, among other things, by the difficulty of distinguishing the effects of monetary policy from the many other influences affecting the broader economy during the relatively short period of time when indirect instruments were actively used. The assessment, therefore, is limited to a somewhat narrower perspective, that is, to an examination of the effectiveness of indirect instruments in controlling domestic monetary conditions, given the macroeconomic context.

4.3.1 Interest Rate Liberalization

While interest rate liberalization can improve allocative efficiency, the experience of several Southern Cone countries (Argentina, Chile and Uruguay) illustrates the potential problems with interest rate liberalization. These countries deregulated interest rates during a period of pronounced macroeconomic instability in the 1980s. In the deregulated environment with imperfect and oligopolistic financial markets, real interest rates rose to very high levels.³⁸ This not only discouraged investment and slowed economic growth but also led to widespread insolvency of firms which, in turn, precipitated a crisis in the financial system, exacerbating macroeconomic instability. At the same time, the removal of capital controls amid severe macroeconomic instability put further upward pressure on interest rates because of expectations of further devaluations of the domestic currency. The sharp increase in domestic interest rates and a rate of domestic currency depreciation that fell short of the differential between domestic and foreign interest rates induced large capital inflows, which, in turn, added to inflationary pressures and undermined monetary control. The capital flows also contributed to appreciation of the domestic currency, adversely affecting output and the balance of payments.

37. Myanmar, Nepal and Singapore are not covered. Myanmar does not use indirect instruments but implements an annual credit plan in the context of central planning. Nepal did not rely on indirect instruments during most of the 1980s; financial reforms, including the introduction of indirect monetary instruments, were introduced in 1988/1989, but the time period is too short to permit analysis of the effects of these instruments. Singapore does not implement an independent monetary policy because the exchange rate has the primary role in stabilization.

38. For a summary of the reasons for high real interest rates in the Southern Cone countries, see Cho and Khatkhate (1989).

The experience of the Southern Cone countries was, however, not shared by most of the Asian countries. During the 1980s, real interest rates were high in several of these countries, including Korea, Malaysia and Thailand, but only Indonesia and the Philippines had to face unusually high real interest rates -- real lending rates reached nearly 20 per cent annually in 1986 in both countries. In Indonesia, the apparent downward rigidity in real interest rates may have been due to persistent expectations of rupiah depreciation that raised inflationary expectations even during a period of relative price stability; domestic interest rates were particularly sensitive to exchange rate expectations because of the openness of the capital account. In the Philippines, high and volatile inflation, a balance of payments crisis, and political turmoil all contributed to upward pressures on domestic interest rates; the capital account was also largely unrestricted.

In both of these countries, the high level of real interest rates contributed to a weakening of the profitability of firms and enlarged the size of non-performing loans in banks' portfolios. Central banks, therefore, intervened to maintain confidence in the financial system. In the Philippines, the infusion of central bank credit to bail out failing financial institutions greatly complicated stabilization policies. In Indonesia, liquidity credit programs with subsidized credit were retained, contrary to the objectives of financial liberalization, in order to lessen the impact of high interest rates.

4.3.2 Shift to Indirect Monetary Policy Instruments

The timing, scope, and effects of the shift to indirect instruments varied widely among the Asian countries, but recent experience suggests that these instruments enhanced the effectiveness of monetary policy. The effectiveness of indirect monetary policy instruments is analyzed in terms of their impact on monetary aggregates following the change in the operating procedures for implementing monetary policy.

The growth of the money supply can be decomposed into the growth of reserve money and the money multiplier. During the 1980s, reserve money growth was the primary determinant of the growth of the money supply in these countries, although a rise in the multiplier also had a marked impact in Indonesia and Thailand (Table 4). The reforms in the instruments of monetary policy discussed above, namely the liberalization of interest rates and reductions in reserve require-

Table 4

**SEACEN COUNTRIES: GROWTH RATES OF
MONETARY VARIABLES, 1980-1989**

(Average Annual Percent Change)

	Broad Money	Reserve Money	Broad Money Multiplier¹
Indonesia	25.3	13.8	10.1
Korea	18.7	16.5	1.9
Malaysia	10.8	9.6	1.2
Myanmar	13.3	10.6	2.5
Nepal	19.8	18.4	1.2
Philippines	20.6	21.2	-0.5
Singapore	13.8	10.1	3.4
Sri Lanka	15.7	17.1	-1.2
Thailand	19.0	11.8	6.5

Source: International Monetary Fund, *International Financial Statistics*.

1 Ratio of broad money to reserve money.

ments, tended to increase the money multiplier in most countries,³⁹ while greater reliance was placed on open market operations to manage reserve money growth.

The main factors affecting reserve money can be grouped into "autonomous" factors, that is, those that are not deliberately used as tools of monetary policy, and "policy" factors. The policy factors can be broadly grouped into instruments of directed credit and instruments to influence banks' liquidity. While these distinctions are somewhat artificial because the purpose of each type of central bank operation cannot be unequivocally established and the available data do not always permit the clear identification of autonomous or policy factors,⁴⁰ they are useful in providing indications of the broad effects of the shift toward indirect policy instruments. In this discussion, the autonomous factors include changes in the central banks' net holdings of foreign assets and net claims on government. The policy factors include central banks' lending related to preferential, rediscount, and special liquidity support measures and the use of indirect monetary policy instruments to influence bank liquidity such as sales or purchases of Treasury bills, central bank bills, repurchases, and foreign exchange swaps. The effects of indirect monetary policy instruments are, therefore, represented by the impact of policy factors on reserve money growth.

In Indonesia, capital flows responding to interest rate differentials and exchange rate expectations were a major source of monetary disturbances. The new indirect monetary policy instruments that were developed after the financial reforms initially played a minor role in offsetting the monetary effects of the autonomous factors in 1983 (Table 5).⁴¹ Consequently, there was a high degree of monetary variability.

39. The money multiplier can be expressed as $m = (c+1)/(c+r)$, where C denotes the currency (outside banks) -to-deposits ratio and r denotes the banks' reserves-to-deposits ratio. Increases in interest rates tend to reduce the public's currency-to-deposits ratio and reductions in reserve requirements lower banks' reserve-to-deposits ratio; both increase the money multiplier.

40. For example, in Malaysia, the Philippines and Sri Lanka, data on "net claims on government" include government deposits with the central bank associated with the sales of Treasury bills for monetary control purposes.

41. The new indirect instruments were open market operations (with central bank debt certificates – the Certificate Bank Indonesia or SBI) complemented by a system of new general rediscount facilities.

Table 5
INDONESIA: FACTORS AFFECTING RESERVE MONEY, 1984-1989¹
(Change as a Percent of Reserve Money at Beginning of Period)

	1984	1985	1986	1987	1988	1989
Autonomous Factors						
Net foreign assets	19.7	-19.0	12.9	-18.6	17.3	-17.6
Net claims on Government	55.0	30.5	5.0	14.7	39.7	-26.7
Net claims on private sector ²	-38.5	-50.7	17.9	-26.2	22.3	8.5
Net other items	-10.8	-3.0	2.1	2.9	2.2	1.8
	14.0	4.2	-12.1	-10.1	-46.9	-1.1
Policy Factors						
Liquidity credit to banks	10.2	31.7	16.8	33.3	-23.1	-3.2
New indirect policy instruments	12.4	25.0	16.4	15.6	16.5	31.8
New Bank Indonesia facilities ³	-1.1	3.4	0.2	8.9	-19.8	-17.5
Open market operations ⁴	-	7.1	19.9	-7.4	-12.2	0.2
	-1.1	-3.7	-19.7	16.3	-7.6	-17.8
Reserve Money	31.0	9.3	29.5	5.8	14.0	-3.3

Source: Data provided by the Indonesian authorities.

- 1 Year ending March. Positive sign indicates an increase in assets or a decline in liabilities, that is, an expansionary factor; negative sign indicates a decrease in assets or an increase in liabilities, that is, a contractionary factor.
- 2 Until 1985, data include claims on non-financial and financial public enterprises and the private sector. From 1986, data include claims on financial public enterprises and the private sector.
- 3 New central bank facilities for discounting of money market papers.
- 4 Central bank debt certificates - Sertificat Bank Indonesia (SBI).

The central bank's ability to control bank liquidity was hampered by the continuation of the liquidity credit scheme (even in a modified scale) and the desire to stabilize interest rates to support the economic recovery. Moreover, during the speculative attack against the rupiah in December 1986, the central bank injected liquidity through open market operations to offset upward pressures on interest rates, contributing to a substantial loss of international reserves. However, when the rupiah came under renewed pressures in mid-1987, the central bank moved to protect international reserves by allowing interest rates to rise. This was followed by modifications to money market procedures designed to strengthen the central bank's ability to control bank liquidity.⁴² These policies contributed to the increase in net foreign assets in 1987/1988, the monetary impact of which was partly offset by open market operations. In 1988/1989, the continued active use of open market operations, strengthened by additional reform measures,⁴³ contributed to containing monetary growth despite the rapid expansion of liquidity credits and the rise in the money multiplier owing to the reduction in liquidity requirements.⁴⁴

In Korea, during the first half of the 1980s, indirect monetary policy instruments proved to be effective in containing the rate of monetary expansion, even while the money multiplier was increasing owing to the decline in reserve requirements and increases in interest rates associated with the financial reforms (Table 6).⁴⁵ In 1983-1985, despite the extension of credit to banks to forestall a financial crisis in the banking system because of potential bankruptcies in certain industries, the rate of monetary expansion did not accelerate owing to offsetting operations by the central bank. During the second half of the 1980s, the full range of indirect instruments was brought to bear on the task of absorbing the monetary impact of Korea's external payments surpluses.

42. The automatic rediscounting of money market paper by the central bank was replaced by daily auctions of central bank debt instruments to inject or withdraw liquidity.

43. The October 1988 policy package included measures to promote secondary trading in money market securities.

44. In October 1988, the minimum liquidity requirement for banks was reduced from 15 percent to 2 percent of deposit liabilities and the latter rate was also made applicable to non-bank financial institutions.

45. The reserve requirements were gradually reduced from 20-27 per cent in the late 1970s to 4.5 per cent in 1984.

Table 6

KOREA: FACTORS AFFECTING RESERVE MONEY, 1980-1989¹
(Change as a Percent of Reserve Money at Beginning of Period)

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Autonomous Factors	-23.3	4.6	40.6	-13.0	-28.4	16.0	51.4	89.9	146.7	5.3
Net foreign assets ²	4.0	-25.3	14.4	-31.4	-5.3	-15.9	50.1	137.7	105.1	16.4
Net claims on Government	3.8	26.6	7.7	6.4	-9.9	-1.6	-6.3	-37.1	-38.2	-4.7
Net other items ³	-31.1	3.4	18.4	12.0	-13.3	33.5	7.6	13.2	42.4	-6.4
Policy Factors	16.8	-18.3	-4.1	20.1	32.3	-14.4	-36.9	-39.5	-84.4	26.5
Claims on banks ⁴	18.2	23.5	17.5	28.8	45.4	48.5	10.0	67.7	7.5	17.1
Open market operations ⁵	0.1	-34.9	26.2	-41.0	-	14.0	-55.2	-123.7	-91.0	-21.8
Monetary Stabilization Account	-1.4	-6.9	-47.7	32.3	-13.3	-76.9	8.3	16.4	-1.0	31.2
Reserve Money	-6.5	-13.6	36.5	7.1	3.7	1.7	16.2	48.9	30.2	31.8

Source: Data provided by The Bank of Korea.

- 1 Positive sign indicates an increase in assets or a decline in liabilities, that is, an expansionary factor; negative sign indicates a decrease in assets or an increase in liabilities, that is, a contractionary factor.
- 2 Including swaps from non-deposit money banks and The Bank of Korea's foreign currency deposit with deposit money banks.
- 3 Including interest payments on monetary stabilization bonds.
- 4 Including claims on the private sector.
- 5 Monetary stabilization bonds.

The main burden of monetary control during this period fell on open market operations, mainly the sales of monetary stabilization bonds (MSBs). The scope of preferential discounting, especially for export industries, was also reduced; rediscount rates on most bank loans were raised; reserve requirements were increased; and in 1989, marginal reserve requirements were introduced on most bank deposits. In addition, owing to the difficulties of absorbing large inflows of liquidity from abroad, intermittent use was made of informal direct controls on credit toward the end of the 1980s.

In Malaysia, the central bank was able to maintain a fairly stable growth rate of reserve money (Table 7). Whereas the net foreign assets of the central bank were subject to large year- to-year fluctuations as a result of the volatile nature of exports and capital flows, the impact on reserve money was largely neutralized by opposing movements in net domestic assets. For monetary management, the central bank continued to resort actively to adjustments in statutory reserve requirements; however, other indirect instruments were increasingly utilized. Prior to 1987, these involved mainly foreign exchange swaps and the recycling of government deposits (i.e., the movement of government deposits between the central bank and commercial banks); after 1987, these instruments were increasingly replaced by open market operations in government as well as central bank securities. The central bank also operates a rediscount facility, but its use has remained infrequent. The issuance of central bank certificates in 1987 helped to offset the injection of liquidity to support ailing financial institutions. Again in 1989, the liquidity operations of the central bank through money market intervention vis-a-vis the banking sector helped to offset the expansionary effects related to the rehabilitation of financial institutions and the purchases of shares of public enterprises from the Government.

In the Philippines, since the financial reforms in 1984, open market operations have been the principal instrument used to influence monetary aggregates.⁴⁶ In 1984-1985, large net sales of open market instru-

46. From 1984 until late 1986, these operations have been largely conducted through the purchase and sale of the Central Bank's own securities. Toward the end of 1986, the sale of new central bank bills was suspended and replaced by additional sales of treasury securities with proceeds deposited at the Central Bank. By the end of 1987, all central bank bills had been withdrawn, except for a very small amount; some longer-term central bank securities, including central bank certificates of indebtedness also remain. These central bank operations were supplemented by open market operations involving short-term purchases or sale of the Central Bank's own stock of treasury securities (repurchase arrangements, respectively).

Table 7

MALAYSIA: FACTORS AFFECTING RESERVE MONEY, 1984-1989¹
(Change as a Percent of Reserve Money at Beginning of Period)

	1984	1985	1986	1987	1988	1989
Autonomous Factors						
Net foreign assets	6.1	0.6	4.0	5.0	7.3	47.2
Net claims on Government ²	3.6	33.0	42.6	30.3	-10.3	27.5
Net claims on private sector	9.3	-8.6	-2.9	-4.0	0.6	-4.9
Net other items ³	1.3	-1.1	0.4	-0.1	8.1	1.7
	-8.2	-22.7	-36.2	-21.2	9.0	23.0
Policy Factors						
Claims on banks ⁴	-1.5	0.9	1.2	-0.2	4.5	-19.5
Bank Negara certificates	-1.5	0.9	1.2	7.4	4.5	-26.2
	-	-	-	-7.6	-	6.7
Reserve Money	4.5	1.5	5.2	4.8	11.8	27.8

Source: Data provided by the Malaysian authorities.

1 Positive sign indicates an increase in assets or a decline in liabilities, that is, an expansionary factor; negative sign indicates a decrease in assets or an increase in liabilities, that is, a contractionary factor.

2 Including recycled government deposits and government securities used for monetary control purposes.

3 The changes in other items net in 1988 and 1989 include the acquisition of government shares of M\$1050 million in the Malaysian Airlines System and the Malaysian International Shipping Corporation.

4 Including commercial banks, finance companies, merchant banks, and discount houses.

ments (primarily central bank bills) offset a large part of the expansionary effects of increases in the Central Bank's other unclassified assets⁴⁷ and the assistance provided to financial institutions. These operations contributed to a substantial deceleration in reserve money growth (Table 8). Open market operations were not actively pursued in 1986, however, and reserve money grew sharply. Toward the end of 1986, open market operations in central bank securities were replaced by weekly auctions of Treasury bills, with the proceeds deposited at the Central Bank in special sterilized accounts. In 1987-1988, government deposits at the Central Bank in support of open market operations constrained the expansionary effects of continued increases in the Central Bank's unclassified assets, of emergency financial assistance to two faltering banks, and of increases in net foreign assets. In 1989, however, shortfalls in the planned sales of Treasury bills contributed to a sharp increase in reserve money growth.

In Sri Lanka, the Central Bank has relied more on open market operations in the conduct of monetary policy from 1986 onward. A regular Treasury bill auction was introduced;⁴⁸ a number of direct credit controls were eliminated; and the remaining quantitative restrictions were not strictly enforced. At the same time, the Central Bank sought to reduce intermediation costs by lowering bank rates, rediscount rates, and the required reserve ratio.⁴⁹ During 1986-1987, open market operations in central bank securities and Treasury bills contributed to a substantial deceleration in reserve money growth, despite the continued widening of the Treasury's domestic financing needs (Table 9). However, the doubling of the Treasury's domestic financing needs in 1988 swamped the Central Bank's offsetting operations and reserve money growth accelerated sharply. In 1989, faced with a precipitous drop in

47. The increases in net other items were associated with losses on the Central Bank's forward cover and foreign exchange swap operations and net interest payments on the Central Bank's domestic and foreign liabilities.

48. The treasury bill auctions replaced the monthly auctions of central bank securities, which had been in effect during 1984-1986, as the primary vehicle for open market operations. The use of central bank securities has been largely discontinued, although there have been small issues from time to time.

49. Until July 1987, the Central Bank applied varying reserve requirements on different types of deposits; the average (weighted) reserve requirement was 12 per cent of total bank deposits. The required reserve ratios were unified and reduced to 10 per cent in August 1987.

Table 8

PHILIPPINES: FACTORS AFFECTING RESERVE MONEY, 1984-1989¹
(Change as a Percent of Reserve Money at Beginning of Period)

	1984	1985	1986	1987	1988	1989
Autonomous Factors	47.3	61.7	31.0	-30.4	16.3	32.5
Net foreign assets	-8.3	-194.0	-13.5	4.9	20.6	23.3
Net claims on private sector ²	-8.3	66.2	-21.4	-70.2	-32.6	-19.6
Net other items	63.9	189.5	65.9	34.9	28.2	28.8
Policy Factors	-26.7	-46.7	1.8	43.5	0.3	5.5
Assistance to financial institutions	21.3	8.4	-	5.3	-1.4	-0.4
Regular rediscounting	-13.7	-0.3	-3.6	0.6	-	1.0
Indirect policy instruments ³	-34.3	-54.8	5.5	37.6	1.7	4.9
Reserve Money	20.6	15.0	32.8	13.1	16.6	38.0

Source: Central Bank of the Philippines.

1 Positive sign indicates an increase in assets or a decline in liabilities, that is, an expansionary factor; negative sign indicates a decrease in assets or an increase in liabilities, that is, a contractionary factor.

2 Including government fixed deposits with the Central Bank associated with sales of Treasury bills for monetary control purposes.

3 Repurchase or reverse repurchases, operations in central bank certificates and bills, and special reverse repurchases.

Table 9

SRI LANKA: FACTORS AFFECTING RESERVE MONEY, 1984-1989¹
(Change as a Percent of Reserve Money at Beginning of Period)

	1984	1985	1986	1987	1988	1989
Autonomous Factors	23.5	24.5	0.7	5.0	30.8	2.0
Net foreign assets	62.4	-11.3	-7.5	-11.5	-9.3	9.8
Net claims on Government ²	-32.0	48.8	14.8	4.4	43.2	-8.0
Net other items	-6.8	-13.0	-6.5	12.1	-3.1	0.1
Policy Factors						
Net claims on financial institutions	-5.4	-1.3	6.0	1.9	1.9	-2.5
Reserve Money (outstanding)	17.7	23.3	6.7	6.9	32.6	4.8
Memorandum Item						
Central bank securities	4.8	4.5	8.5	-14.3	-	-0.1

Source: Data provided by the Sri Lanka authorities.

1 Positive sign indicates an increase in assets or a decline in liabilities, that is, an expansionary factor; negative sign indicates a decrease in assets or an increase in liabilities, that is, a contractionary factor.

2 Including operations in Treasury bills for monetary control purposes.

external reserves and accelerating inflation, the Central Bank intensified sales of Treasury bills to the non-bank sector to absorb liquidity, resulting in substantial increases in Treasury bill and other interest rates.⁵⁰ These measures, together with a tightening of fiscal policy, led to a contraction of the Central Bank's net claims on Government, which more than offset a strong improvement in external reserves.

In Thailand, indirect monetary policy instruments have not been a major factor affecting liquidity growth, despite their availability.⁵¹ Until 1986, the central bank's operations in the government bond repurchase market largely involved matching the demand and supply of repurchases with limited intervention on its own account. Following the substantial improvement in the external position in 1986 and the emergence of a high level of liquidity in the banking system, the Central Bank actively drained liquidity through government bond repurchases and issues of central bank bonds (Table 10). These operations, however, were not sufficient to prevent a sharp increase in the growth of reserve money in 1987. In 1988-1989, despite the continued expansionary impulses from the external sector, the growth in reserve money decelerated, owing largely to the substantial decline in the central bank's net claims on the Government, reflecting the large fiscal surplus and, to a lesser extent, a reduction in commercial banks' access to refinancing facilities at the Central Bank at the beginning of 1989.⁵²

4.4 Conclusions

Financial liberalization in the Asian countries has had important implications for both the transmission mechanism and the operating procedures of monetary policy. Regarding the transmission mechanism, non-price credit rationing was weakened while the role of market forces, notably interest rates, has become increasingly important in determining financial and credit flows. In addition, the relaxation of controls on

50. A number of supporting measures were also implemented, including increases in the Central Bank's discount rates and the reimposition of selective credit controls.

51. Open-market-type operations in the repurchase market for government bonds were established in April 1979. In May 1987, these were supplemented by the issuance of central bank bonds.

52. The amount of refinancing by the central bank was reduced from 100 percent to 50 percent of the face value of the qualifying notes.

Table 10

THAILAND: FACTORS AFFECTING RESERVE MONEY, 1985-1989¹
(Change as a Percent of Reserve Money at Beginning of Period)

	1985	1986	1987	1988	1989
Autonomous Factors					
Net foreign assets	0.6	1.5	13.7	-1.2	27.8
Net claims on Government	2.1	23.8	36.7	48.3	74.7
Net other items	10.7	-10.6	-6.4	-43.9	-40.8
	-12.1	-11.7	-16.6	-5.6	-6.1
Policy Factors					
Net claims on financial institutions	7.7	10.0	7.4	16.1	...
Development credits	7.7	12.2	7.3	14.6	-11.3
Liquidity credits	6.1	13.4	7.5	14.2	-11.9
Central bank net repurchase position	1.6	-1.2	-0.2	0.4	0.6
	-	-2.2	0.2	1.5	...
Reserve Money	8.4	11.3	21.2	14.8	16.6

Source: Bank of Thailand, *Monthly Economic Bulletin*, and data provided by the Bank of Thailand.

1 Positive sign indicates an increase in assets or a decline in liabilities, that is, an expansionary factor; negative sign indicates a decrease in assets or an increase in liabilities, that is, a contractionary factor.

international capital flows and the move toward more flexible exchange rate arrangements has increased the importance of the exchange rate as a channel for transmitting the effects of monetary policy. As a result, the monetary authorities' potential control over domestic monetary conditions has increased, but so has the need to coordinate monetary policy with exchange rate policy.

The liberalization of interest rates has contributed to improving resource allocation, the mobilization of savings, and the efficiency of investment. On the whole, these countries were not as affected by the destabilizing effects of excessively high real interest rates as were the three Southern Cone countries. In Indonesia and the Philippines, where high real interest rates persisted, countermeasures were implemented, but they complicated stabilization policies and slowed the financial liberalization process.

Regarding the operating procedures of monetary policy, financial liberalization has affected both the setting of policy targets and the choice of instruments. In some of the countries, domestic credit targets were replaced by interest rates or monetary targets, while in others, several financial and economic indicators, including the exchange rate, are now employed.

Many of these countries placed a greater emphasis on market-based monetary instruments rather than on direct controls on interest rates and credit. The reforms in the instruments of monetary policy have both permitted the deregulation of the financial system and have been supported by the development of markets and institutions in the liberalized environment.

Most notable in the shift toward indirect monetary policy instruments has been the greater use of open market operations. At the same time, excessively high reserve requirements were lowered, and selective (usually preferential) rediscounting was gradually replaced with generalized rediscounting. However, open market operations proved inadequate to stabilize monetary growth during periods of particularly severe disturbances. This reflected a variety of factors, including the inadequate development of markets and instruments for open market operations and the government's large domestic financing needs. Nevertheless, buttressed by measures to strengthen open market operations and by progress made in reducing fiscal deficits, open market

operations are evolving as an effective instrument of monetary policy in many Asian countries.

V. Concluding Observations

The past decade posed particularly difficult challenges for macroeconomic management in the Asian countries. The marked deterioration in the global economic environment in the early part of the decade required a reorientation of policies to sustain non-inflationary growth and balance of payments viability. Reforms in the financial system and in the conduct of monetary policy were part of the overall adjustment process. While pressures on the external sector eased for many countries during the second half of the decade, the growing sophistication of many economies and the desire to sustain high growth rates induced a continuation of reforms.

Financial liberalization brought many new challenges for the monetary authorities of these countries, many of which remain as reforms continue to be implemented. These challenges relate to the way in which monetary policy is formulated and implemented. In particular, financial liberalization has altered the relationship between money, income, and interest rates, complicating the interpretation of developments in the monetary aggregates. At the same time, the use of indirect instruments of monetary control has been hampered by the thinness of money and capital markets and by the large domestic financing needs of governments.

In a few cases, liberalization contributed to sharp increases in real interest rates that complicated the task of macroeconomic stabilization. However, the Asian countries avoided the more extreme problems encountered by some Southern Cone countries. In general, financial markets in the Asian countries enjoyed comparative stability and were able to cope well with the changes in the global and domestic economic environment of the 1980s.

It is difficult to distinguish the effects of financial liberalization and monetary policy from the myriad factors affecting economic performance in the Asian countries during the 1980s. The experience with the implementation of monetary policy and financial reforms in these countries varied widely, but the overall experience was positive. The develop-

ment and improvement of indirect instruments of monetary policy has enabled the authorities to respond more flexibly and effectively to macroeconomic imbalances. This has proved particularly useful in a number of countries that confronted monetary disturbances from widening fiscal deficits, financial crises, and large inflows of funds from abroad. The liberalization of interest rates and other financial reforms have promoted financial deepening and have contributed to improving resource allocation, the mobilization of financing savings, and the efficiency of investment.

Because of the reforms implemented during the 1980s, financial markets are now considerably deeper, interest rates are performing more flexible allocative roles, and the apparatus for implementing effective indirect monetary policy is evolving. As a result, the financial systems of the Asian countries are now better placed to meet the challenges of the new decade.

FINANCIAL LIBERALIZATION IN SEACEN COUNTRIES DURING THE 1980S - SUMMARY

I. Financial System Reforms

Deregulation and Competition	Financial Market Development	Management and Supervision
Indonesia Deregulations in June 1983 and October 1988. Since 1986, there has been some easing of restrictions on the scope of allowed business activities. In 1988, licensing and branching requirements were relaxed and public enterprises were allowed to place deposits with non-state banks. Gross assets of the organized financial sector grew by more than fourfold during 1983-89. At end-1989, Bank Indonesia (BI) and deposit money banks (DMBs) held over 95 percent of the total assets of the financial sector. Korea The formal sector (comprising DMBs and NBFIs) is highly regulated and segmented; DMBs are much more restricted compared with NBFIs. The entry of new institutions and the types of services provided are extensively regulated. In 1981-83, commercial banks were privatized nationwide; the use of directed credit was reduced; banks were granted greater managerial autonomy; the scope of business activities allowed for DMBs and NBFIs was expanded, and the entry of new institutions was permitted. Restrictions on foreign banks were eased. At end-1989, commercial banks held 29 percent of the total assets of the financial sector, specialized banks held 23 percent, and NBFIs held 48 percent. Malaysia Deregulations since 1985 have allowed finance companies to participate in the interbank market and mer-	Indonesia Money and capital markets expanded, particularly with issuance of central bank and private papers, but remained small relative to financial institutions. In 1988, there was progress toward more uniform tax treatment of various financial assets. A new private stock exchange was licensed in 1988. Korea The unorganized money market (curb market), which provides credit to small enterprises that are unable to get funds in the formal sector, gradually declined in importance. The money market has expanded rapidly. Various financial instruments, e.g., monetary stabilization bonds, certificates of deposits (CDs), and various commercial papers of cash management and bond management accounts, have been introduced. Since the revision of capital market laws in 1987, the outstanding capital value of stocks and bonds has increased substantially.	Indonesia In 1988, prudential regulations (lending limits for single borrowers) were strengthened, the components of capital and foreign exchange activities were defined, and capital adequacy requirements were extended to all banks. In 1989, the Bank Supervision Department of BI was expanded and reorganized. The supervision of non-bank financial institutions (NBFIs) was centralized in BI. A Bank Indonesia Supervisory Monitoring System (BISMS) was established to recommend corrective measures and sound banking practices -- e.g., improving the asset evaluation processes, strengthening capital adequacy requirements, and training supervisory personnel. Korea With the reform of supervisory procedures, the focus has shifted from monitoring routine operations to credit analysis, examining bank portfolios, and the enforcement of prudential ratios. Malaysia Supervisory functions were strengthened and ailing institutions were restructured. The Banking and Financial Institutions Act of 1989 provided a unified regulatory system to supervise all financial institutions. A uniform risk-based capital adequacy framework was also adopted in 1989. New guidelines were issued on reserve requirements and on

Deregulation and Competition	Financial Market Development	Management and Supervision
chant banks to issue non-negotiable CDs. At end-1987, the banking system held 69 percent of the total assets of the financial sector, while NBFIs held 31 percent. Myanmar The formal banking system consists of the Central Bank of Myanmar, and four specialized banks, the Myanmar Economic Bank, the Myanmar Foreign Trade Bank, the Myanmar Investment and Commercial Bank, and the Myanmar Agriculture Bank. All are government owned. Nepal The banking system consists of the Central Bank, two partly or wholly government-owned banks, and three joint-venture banks. Two government banks - Nepal Bank Limited (NBL) and Rastriya Baniya Bank (RBB) - account for more than 90 percent of bank deposits. Philippines Financial liberalizations in 1980-84. Segmentation and entry barriers were reduced, functional distinctions between different types of financial institutions were removed, and the scope of allowed activities was expanded. Additional reforms were implemented in 1989, when restrictions on the establishment of new banks and the opening of new branches were lifted. In 1985, 30 commercial banks held about three fifths of total financial system assets, of these the government-owned Philippine National Bank was the largest, with about 30 percent of commercial bank assets; 4 foreign-owned banks held 15 percent, thrifts about 3 percent, and rural banks 2 percent. Singapore The well-developed financial sector is closely integrated with international financial markets. Competition is encouraged by attracting foreign banks. At end-1988,	markets in government securities. Capital market development was encouraged by means of guidelines for the issuance of securities, codes on stock trading, and by improving stock market regulations and the monitoring of stock markets. Myanmar The informal credit market is extensive. Nepal The range of government securities was broadened in 1988/89. Philippines Investment houses and finance companies participate in the relatively sophisticated and extensive money market. Deposit substitutes, commercial paper, and Treasury bills are traded. In contrast, the securities market is underdeveloped and speculative. Singapore Well-developed markets in government securities, equities, foreign exchange, and financial and currency futures. The Stock Exchange of Singapore is being actively developed after formal separation from the Kuala Lumpur Stock Exchange in 1989. Sri Lanka The interbank market is thin; the capital market under-developed; and intermediation costs are high.	debt-equity swaps to create uniform competitive conditions. Myanmar Nepal Beginning in 1987/88, measures were implemented to strengthen NBL and RBB (e.g., loan recovery program, external evaluation of loan portfolio, and credit evaluation procedures). Philippines Restructuring programs for two major commercial banks have been under way since 1986. A reform program was initiated in 1989 to strengthen the regulatory and supervisory framework for commercial banks and improve institutional arrangements for depositor protection. Legislations were submitted to amend the Central Bank Act and the Philippine Deposit Insurance Corporation Act. Singapore The Monetary Authority of Singapore has extensive regulatory and supervisory responsibilities. Sri Lanka In 1988, supervisory responsibilities of the Central Bank were extended to cover finance companies. Additional measures to strengthen bank supervision are under consideration, including more vigorous loan classification and provisioning guidelines.

Deregulation and Competition	Financial Market Development	Management and Supervision
locally incorporated banks held 12 percent of total bank assets, foreign banks 27 percent, and offshore banks 62 percent. Sri Lanka Financial deregulations since 1977. Entry restrictions have been eased and foreign banks have been allowed since 1979. The financial sector comprises the Central Bank of Sri Lanka, 25 commercial banks, and 3 development banks and other financial institutions, including Foreign Currency Banking Units. Competition is constrained by the dominance of two state-owned banks, which account for about 70 percent of commercial bank assets. Of the others, two are medium-sized domestically owned banks and the rest are small foreign-owned banks.	Thailand The interbank market is well developed; a securities repurchase market was established in 1979. With the introduction of new financial instruments, the capital market (the Securities Exchange of Thailand) expanded rapidly. Sizeable unorganized markets exist.	Thailand The restructuring of finance companies has been under way since 1983. Supervisory arrangements of the Bank of Thailand were strengthened in 1983 and 1985.
Thailand Some measures have been implemented to reduce concentration and increase competition among commercial banks. In 1979, the Banking Act was amended to impose restrictions on ownership and asset concentration. Foreign banks were allowed in the mid-1980s. At end-1989, commercial banks accounted for about 70 percent of the total assets of financial institutions, and finance companies largely accounted for the remainder. There were 30 commercial banks, of which 16 were domestic and 14 were branches of foreign banks. Domestic (but not foreign) banks have extensive branch networks. Assets of local banks accounted for about 95 percent of total commercial bank assets and deposits. The 3 largest banks held almost 60 percent of total bank assets.		

II. Exchange Controls, International Capital Flows, and Exchange Rate Arrangements

Capital and Exchange		Exchange Rate Arrangement
Indonesia Virtually no restrictions on capital flows. Residents are free to engage in short-term external lending and borrowing and can maintain deposit accounts denominated in foreign currency. No exchange restrictions on current account transactions.		Indonesia Managed float. System modified in October 1989 to permit greater market determination of exchange rate.
Korea Capital flows restricted; some liberalization in the second half of the 1980s, mainly in the areas of indirect portfolio investment by foreigners and overseas investment by Korean residents. No exchange restriction on current account transactions.		Korea Formal peg of the Korean won to the U.S. dollar changed to a managed float in January 1980. The won/U.S. dollar rate was set taking into account movements in a currency basket and developments in Korea's external position. *
Malaysia Virtually no restrictions on capital flows. No restrictions on current account transactions.		Malaysia Exchange rate pegged to an undisclosed basket of currencies of Malaysia's major trading partners.
Myanmar Capital flows are restricted. A highly restrictive exchange control system administered by the Exchange Control Board, through the Myanmar Foreign Trade Bank, with instructions from the Ministry of Planning and Finance.		Myanmar The kyat has been pegged to the SDR at K. 8.50847 per SDR 1 since May 1977.
Nepal Capital flows are restricted. Some exchange restrictions on current account transactions.		Nepal The Nepalese rupee has been pegged to a basket of currencies since May 1986. The exchange rate with the Indian rupee has been kept unchanged since 1 June 1986, and convertibility is allowed.
Philippines Capital flows are largely unrestricted. Some restrictions on current account transactions.		Philippines Since 15 October 1984, the value of the peso has been determined freely in the foreign exchange market. The Central Bank, however, has been a major participant.
Singapore Capital account transactions liberalized completely in 1978. No exchange restrictions on current account transactions.		Singapore Managed float. Value of Singapore dollar is determined with reference to an undisclosed basket of currencies.
Sri Lanka Capital flows are restricted. Some restrictions on current account transactions.		Sri Lanka Managed float. The exchange rate of the rupee is adjusted periodically by the Central Bank, taking into account domestic price developments relative to those of Sri Lanka's major trading partners and competitor countries. **
Thailand Relatively free capital movements, although certain private capital outflows are restricted. No restrictions on current account transactions.		Thailand Since November 1984, the baht has been pegged to a basket of currencies under which the exchange rate floats subject to limits on daily movements.

* In March 1990, this system was replaced by a market-average exchange rate system under which the exchange rate floats subject to limits on daily movements.

** In August 1990, a new exchange rate system was introduced under which the exchange rate floats subject to limits on daily movements.

III. Monetary Policy Reforms

Open Market Operation	Reserve Requirements	Credit Control	Central Bank Refinancing	Liberalization of Interest Rates
Indonesia Auctions of central bank bills (SBIs) introduced in 1984. Issuance of repurchase agreements (SBPUs) began in 1985. Investment (PICORINVEST) created in 1985 to intermediate in money market. Korea Increased use of open market operations mainly through sales of monetary stabilization bonds. Malaysia Until 1987, the main instruments were foreign exchange swaps and "recycling" of government deposits. Since 1987, sales and purchases of government and central bank securities have become increasingly important. Myanmar No independent monetary policy. Central Bank carries out treasury functions and the credit plan.	Indonesia Reduced from 15 percent to 2 percent of deposit liabilities in 1988. Korea Reserve requirements were lowered from 20-27 percent in the late 1970s to 10-20 percent in 1980, 5.5 percent in 1981, and 4.5 percent in 1984 and were subsequently raised to 10 percent in 1988. Marginal reserve requirements were introduced in 1989. Malaysia Reserve requirement was lowered from 10 percent in 1974 to 5 percent in 1979. Subsequently, there were active changes in statutory reserve ratios: lowered to 4 percent in April 1985 and to 3.5 percent in October 1986, raised to 4.5 percent in May 1989, and to 6.5 percent in 1990. Adopted averaging of reserves for liquidity ratios in 1987 and bands for statutory ratios in 1989. Primary liquidity ratios were abolished in 1989-90.	Indonesia Largely lifted as part of the 1983 reforms. Korea Reduced reliance on directed credit for industrial policy objectives. Occasional resort to informal direct controls. Malaysia Greatly reduced in importance. Moral suasion by the Central Bank exercised from time to time; guidelines are applied to lending ratios to promote some economic sectors and to achieve social goals. Myanmar Annual credit plan determines the allocation and growth of credits by sector and a subcelling for each state economic enterprise.	Indonesia Liquidity credit facility, subsidizing priority sectors, reformed in 1983. General rediscount facilities introduced in 1984 to complement open market operations. Korea Preferential rates on export financing abolished in 1982. Scope of preferential rediscounting, especially for export industries, reduced in 1988 and 1989; rediscount rates increased. Malaysia A general discount window is available to financial institutions. The export refinance facility is available only to commercial banks. Myanmar -	Indonesia Direct controls lifted in 1983. Korea Some liberalization in early 1980 - reduced differential between general bank loan rates and preferential loan rates; banks allowed to vary lending rates within margins; and ceilings on certain rates eliminated. Significant reform in December 1988, when lending rates, rates on some bank and non-bank deposits, and money market instruments were liberalized. Malaysia Liberalized in 1978; financial institutions set lending rates with reference to base lending rates (BLR), based on cost of funds. In 1987, the pegging of deposit rates to those of two lead banks was discontinued. Ceilings exist on rates for loans to priority sectors. Myanmar Interest rates remained unchanged from 1977 to late 1989 when they were increased.

Open Market Operation	Reserve Requirements	Credit Control	Central Bank Refinancing	Liberalization of Interest Rates
Nepal Regular auctions of Treasury bills introduced in 1988/89 (July-July). Philippines During 1984-86, open market operations mainly through sales of central bank securities. Since 1987, replaced by auctions of Treasury securities, with proceeds deposited at the Central Bank. Purchase and reverse repurchase of the bills by the Central Bank. Foreign exchange swaps. Singapore Foreign exchange swap transactions; short-term borrowing and lending in the interbank market; and overnight repurchase agreements in government securities. Sri Lanka During 1984-86, auctions of central bank securities were introduced. Since 1987, these have been largely replaced by auctions of Treasury bills. Repurchase/reverse repurchases; foreign exchange swaps; secondary window for sale and purchase of Treasury bills.	Myanmar Four state-owned banks and an extensive informal credit market. No role for reserve requirements. Nepal Liquidity ratio lifted in 1986. Statutory reserve ratio in place. Reserve requirement system modified in 1988/89 to allow banks greater flexibility in maintaining reserves. Philippines Reserve requirement ratios for different deposit liabilities were equalized across banks and NBFI's in early 1980s. Actively varied. Interest paid on bank reserves deposited with the Central Bank in early 1980s. Singapore At end-1988, the minimum cash balance and liquid assets ratio were 6 percent and 18 percent, respectively, of a bank's liability base. Sri Lanka Simplification and unification in 1987. Actively varied.	Nepal Until 1988/89, moral suasion and the imposition of bank-specific credit ceilings were the primary tool of monetary policy. With financial reforms in 1988/89, indirect instruments were introduced. Philippines Selective allocation of credit to priority activities continued. Singapore None. Sri Lanka A number of controls were removed in 1986, and remaining quantitative controls were not strictly enforced. Selective credit controls were reimposed in 1989.	Nepal Rediscount facilities were redesigned in 1988/89 to offer three windows: basic refinancing, priority sector, and lender-of-last-resort. Rediscount rate and refinancing limits are adjusted in accordance with market conditions. Philippines Since late 1985, the Central Bank operates a single rediscounting facility for various purposes. Rediscount rate is linked to market interest rates. Singapore Rediscounting facilities for various securities, Treasury bills, bills of exchange, and government securities, as well as for export and pre-export bills under a rediscounting scheme. Sri Lanka Several available, including subsidized facilities.	Nepal Most interest rates have been freed since the reform of May 1986; remaining controls on bank lending and deposit rates were lifted in 1988/89. Philippines Interest rates liberalized in early 1980s. Singapore Nominal domestic interest rates are virtually identical to Eurodollar rates adjusted for the foreign exchange premium. Sri Lanka Interest rates were liberalized in 1977. Treasury bill rates increasingly important in influencing structure of interest rates.

Open Market Operation	Reserve Requirements	Credit Control	Central Bank Refinancing	Liberalization of Interest Rates
Thailand Repurchase market for government bonds was established in 1979, but not actively used. Since 1986, the Central Bank became active in the government bond repurchase market and began to issue central bank bonds.	Thailand Not actively varied.	Thailand Overall ceiling on domestic credit expansion abandoned in 1984. Selective credit policy in effect.	Thailand Several facilities, including preferential refinancing of credits to priority sectors (exports and agriculture).	Thailand Gradual liberalization -- in 1980, lending rates of financial institutions were raised by 3 percentage points from the statutory limit imposed since 1924 and the ceiling on deposit rates was increased correspondingly. Since then ceilings have been adjusted frequently. Ceilings on deposit rates (on more than 1-year deposits) were lifted in 1989-90.

DATA SOURCES AND DEFINITIONS

While theoretical considerations suggest those variables most likely to influence money demand, available data do not conform to "ideal" economic concepts. In particular, most monetary aggregates incorporate banking sector liabilities of varying degrees of liquidity, holdings of which may be influenced by a variety of motives. Some of these liabilities may not perform the role of "money" in the economy very well, while other non-bank liquid liabilities, which are excluded from the aggregate, may be more appropriate components. The definitions of income, prices, and interest rates are similarly subject to measurement problems.

Prior to analysis, money and income data were seasonally adjusted using the X11 filter. While some econometricians (e.g., Wallis (1974)) have argued that such pre-filtering can induce spurious short-run dynamic relationships between the data, seasonal adjustment was carried out for two reasons. First, a lack of data for some series (notably interest rates) limited the degrees of freedom available for the econometric analysis in many cases: the use of seasonal dummies in the regressions would have exacerbated this problem. Second, for many countries, quarterly income data were interpolated from annual observations implying pre-filtering of some of the variables anyway.

An analysis of the time series properties of the data showed that most series were integrated of order one. That is, most of the data fluctuate randomly around a persistent trend. No series was found to be integrated of order two -- that is, to fluctuate around an accelerating trend -- although a few series were integrated of order zero and are therefore stationary. Most interest rate series were integrated of order one, although this latter result may reflect the size of the data sample: over longer periods, interest rates are probably mean reverting. Similarly, the income velocities of both broad and narrow money were generally integrated of order one (narrow money in Malaysia and Indonesia were exceptions) indicating the presence of significant long-run trends in the 1970s and 1980s. The following describes the specific data definitions used in the empirical analysis.

Monetary Aggregates

Both narrow money -- currency plus demand deposits -- and broad money -- narrow money plus time and savings deposits (quasi-money) -- were analyzed separately. The definitions of money correspond closely, in most cases, to the aggregates M1 and M2. An average of beginning and end-period money stocks was used in the regression analysis.

Data for narrow and quasi-money were taken from lines 34 and 35, respectively, of the International Monetary Fund's *International Financial Statistics (IFS)*. For Indonesia, narrow and broad aggregates were adjusted down by Rp. 400 billion from the second quarter of 1989 onward to adjust for step increases owing to the classification of a new financial institution in the banking survey. Data for Malaysia were taken from the *Monthly Statistical Bulletin* (Bank Negara Malaysia) and incorporate revised estimates of M1 and M2 that include repurchase agreements.

Income and Prices

Income was proxied by GDP or GNP, as available, and prices were proxied by the GDP (GNP) deflator. Data for real and nominal GDP (GNP) were taken from *IFS*, lines 99b.p (99a.p) and 99b (99a), respectively, except for data for Korea and Singapore, which were taken from the national accounts yearbooks of these countries. For Malaysia and Indonesia, quarterly data for real GDP were interpolated from annual observations according to the pattern of quarterly movements in industrial production (Malaysia) and a weighted average of industrial and oil output (Indonesia). Quarterly data for real GNP for the Philippines were interpolated from semiannual data for the period 1973-79 using the pattern of quarterly movements in industrial production. Quarterly data for real GDP in Myanmar, Nepal, Sri Lanka, and Thailand were interpolated from annual data using a cubic spline function. In the case of Nepal, the data were first converted to a calendar year basis from the reported fiscal year basis. Quarterly data for the GDP (GNP) deflators in Indonesia, Myanmar, Nepal, the Philippines, Sri Lanka and Thailand were interpolated from annual data according to quarterly movements in the consumer price index; for Malaysia, the patterning series was a weighted average of the consumer price index and export unit values.

Interest Rates

For broad money, market interest rates on alternative assets were generally proxied by either money market, Treasury bill, or international interest rates (such as the London interbank offered rate -- LIBOR).⁵³ The rate of return on broad money was approximated by a representative deposit rate multiplied by the share of quasi-money in broad money. This definition assumes that all components of narrow money are non-interest bearing. For narrow money, the return on alternative assets was proxied by deposit, money market, or price inflation rates. In principle, a vector of alternative returns should enter the money demand functions. In practice, multicollinearity between interest rates implies that only one rate can feasibly be used to measure opportunity cost. Some degree of judgment was used to determine the "best" proxy in specific cases.

Data for money market, Treasury bill, and deposit rates were taken from (where available) *IFS* lines 60b, 60c, and 60l, respectively. Data for the three-month (LIBOR) were taken from line 11160ldd of *IFS*. In Tables 1 and 2, the interest rate variables for narrow money are all deposit rates. For broad money, the interest rate variables are the following: Indonesia and Malaysia, three-month LIBOR minus deposit rates weighted by the share of quasi-money in broad money; Korea, the interest rate in curb markets (provided by the Korean authorities) minus deposit rates weighted by the share of quasi-money in broad money; the Philippines, 91-day Treasury bill rate minus deposit rates weighted by the share of quasi-money in broad money; Singapore, the money market rate; Sri Lanka, deposit rates weighted by the share of quasi-money in broad money; and Thailand, money market rates minus deposit rates weighted by the share of quasi-money in broad money.

53. The return of foreign assets should also include the expected depreciation of the exchange rate and/or a risk premium. In practice, the analysis here assumed that exchange rates follow a random walk - that is, the expected depreciation is zero - and risk premiums have been constant in history. Tests of these assumptions were carried out in certain cases.

INDIVIDUAL COUNTRY RESULTS

Indonesia

Satisfactory equations can be estimated for both narrow and broad monetary aggregates, and these equations appear to have been stable in the 1980s. However, the broad money equation is only stable after taking into account certain aspects of structural change in the 1980s. Specifically, the opportunity cost variable in this equation needs to be adjusted to reflect the rising share of quasi-money in broad money in the 1980s, which raised the average interest paid on monetary assets. And a onetime adjustment to the level of broad money holdings appears to have followed the October 1988 package of financial liberalization measures.

The velocity of narrow money is approximately a stationary time series over the complete sample period, 1970-89, but not over the sub-period 1974-89 for which interest rate data were available. In this latter sub-period, narrow money is, according to the formal statistical tests, cointegrated with income and interest rates, but less formal analysis casts doubt on the stability of the long-run money demand function (Table 1). In particular, the interest rate elasticity is not significant in the sub-period 1974 to the second quarter of 1983 (when substantial financial reforms were introduced). Nevertheless, an error correction model with satisfactory statistical properties was estimated in which the long-run income elasticity was just greater than one (1.16) and deposit rates -- rather than expected inflation rates -- have a significant negative effect on real money balances.⁵⁴ Long-run price homogeneity was imposed on the demand function, but the error correction equation allowed for short-run money illusion (Table 2). The error correction equation passed tests for parameter stability, particularly in the periods after the 1983 and 1988 financial liberalization packages.

54. Because the power of the tests for cointegration are biased toward rejecting cointegration in marginal cases, error-correction models were estimated for the borderline cases in which non-cointegration could be rejected at around the 10-per cent significance level as opposed to the usual 5-per cent significance level.

Real broad money balances appear to be cointegrated with income and a measure of the opportunity cost of holding broad money pointing to the existence of a stable long-run money demand function.⁵⁵ The long-run income elasticity of real money balances is significantly greater than one (1.58), reflecting the downward trend in velocity over the sample period. An opportunity cost variable consisting of a foreign interest rate (three-month LIBOR) minus a deposit rate weighted by the share of quasi-money in broad money also has a significant effect on broad money demand.⁵⁶ A decline in the opportunity cost of holding money accounts for some of the acceleration in velocity decline that occurred in the mid-1980s and captures some of the change in the structure of broad money in the 1980s (Chart 2). An intercept shift dummy to take account of the effects of the October 1988 financial liberalization package was also found to have a significant positive effect on the long-run level of money demand; no similar effect could be found for the June 1983 liberalization package. A statistically satisfactory error correction model was estimated that passed parameter stability tests over a wide range of sub-periods (Table 3). Short-run price homogeneity was imposed on money demand in the error correction model; long-run price homogeneity of broad money demand is supported by the data.

Korea

Only a stable relationship explaining demand for broad money could be found as the demand for narrow money does not appear to be cointegrated with income or interest rates. The stability of the demand-for-broad-money relationship rests with the inclusion of a variable that measures the steady decline in the opportunity cost of holding money in the 1970s and 1980s. This variable captures some elements of structural changes in the Korean financial system during these decades, in particular the declining importance of curb markets.

Narrow money is not cointegrated with income and interest rates (or expected inflation rates) implying that no stable long-run money

55. Strictly speaking, the tests reject non-cointegration.

56. Domestic interest rate variables appear to have played a less important role in money demand, perhaps because the thinness of domestic money market in much of the sample period contributed to erratic movements in market-determined interest rates. No role could be found for separate exchange rate expectations variables, particularly around the large rupiah devaluations in 1978, 1983 and 1986.

demand function exists for narrow money (Table 1). In particular, the sharp, temporary, increase in the income velocity of narrow money during the early 1980s cannot be satisfactorily explained.

Broad money (M2) appears to be cointegrated with income and a measure of the opportunity cost of holding money, although the evidence is not strong (Table 1).⁵⁷ The unrestricted estimates of the long-run elasticities support homogeneity between broad money, income, and prices: in the long run, income velocity is a constant determined by the level of interest rates. The opportunity cost term consists of the interest rate in the curb market minus deposit rates weighted by the share of quasi-money in broad money. The large positive gap between curb market and deposit rates declined steadily during the last two decades, partly because financial deregulation encouraged the development of the official financial sector. The opportunity cost variable, therefore, explains the downtrend in income velocity in that period.⁵⁸

A satisfactory error correction model can be estimated for broad money over the period 1970-89 with changes in real income helping to predict deviations from long-run equilibrium (Table 3). The equation passes tests for parameter stability over diverse sub-samples; however, in the 1980s sub-period, the coefficient on the error correction term is somewhat smaller and less significant and there is evidence of residual autocorrelation.⁵⁹ This result may indicate some degree of structural change in the 1980s -- for example, the development of the formal non-bank financial sector -- that cannot be explained by the opportunity cost variable alone. Indeed, as the curb market continues to decline in importance, the interest rates in that market may not reflect the return on alternative investments in Korea suggesting that a reappraisal of the money demand function using alternative measures of the opportunity cost of holding money will be warranted in the future.

57. The long-run relationship just fails the ADF test, but passes the DF test, at the 5-per cent level.

58. Without this term, the income elasticity of broad money exceeds one, agreeing with other published estimates (see, for example, Park (1989)).

59. Goodfriend (1985) notes that measurement error may bias the estimation of the coefficient on the error-correction term toward zero.

Malaysia

Despite its greater volatility, narrow money has been at least as stable and predictable a variable as broad money. Indeed, the evidence for the existence of a stable money demand equation is much more compelling for narrow money than for broad money. The income elasticity of broad money is substantially greater than one.

The income velocity of narrow money is a stationary series (it is integrated of order zero), although the freely estimated long-run income elasticity is a little greater than unity (Table 1). This appears to be a cointegrated relationship and, therefore, a valid long-run demand function. No long-run effects on money demand could be found for interest rates (several interest rate variables, including foreign rates, were tested) or expected inflation.⁶⁰ A satisfactory error correction model can be estimated that has reasonably stable parameters in the 1980s (Table 2).

The evidence that broad money is cointegrated with income and interest rates is somewhat weak, casting doubt on the existence of a long-run money demand function. The estimated long-run income elasticity substantially exceeds one (1.63) and the long-run semielasticity of interest rates is also quite large (Table 1). The interest rate variable - an opportunity cost term equal to the three-month LIBOR minus deposit rates weighted by the share of quasi-money in broad money -- can only account for part of the trend decline in the income velocity of broad money. A satisfactory and stable error correction model was estimated (Table 3).

Myanmar

Narrow and broad monetary aggregates did not behave very predictably in the 1970s and 1980s. If allowance is made for the demonetization of September 1987, narrow money appears to be cointegrated with income, but medium-term income velocity trends have fluctuated substantially, and short-run movements in money demand are not very predictable.⁶¹ Broad money does not appear to be related in a stable

60. The failure to find significant foreign interest rate effects may reflect an inability to account for a possibly changing foreign exchange rate premium.

61. Some of the unpredictability may be due to the poor quality of the data. In particular, quarterly GDP data are interpolated from annual data using time series methods.

fashion to income or inflation rates, even after making allowance for the demonetization episodes of the late 1980s. The effects on money demand of the reforms introduced at the end of the decade are too recent to be analyzed in detail.

Real narrow money balances appear to be cointegrated with real income, after allowing for a onetime decrease in money holdings following the September 1987 demonetization, indicating the existence of a stable long-run relationship (Table 1).⁶² However, the long-run income elasticity of narrow money demand was estimated at close to two in the 1980s compared with less than one in the 1970s indicating that the medium-term behavior of narrow money has fluctuated quite widely. No role for interest rates (which changed only once in the sample period) or inflation rates could be found. An estimated error correction model of narrow money demand exhibited residual serial correlation and did not have stable coefficients (Table 2).

No stable long-run broad money relationship appears to exist as broad money is not cointegrated with income and inflation rates, even after allowing for the effects of the 1985 and 1987 demonetizations. The result reflects the changing trends in velocity over the 1970s and 1980s: in the first half of the 1970s, velocity tended to rise before trending down between the mid-1970s and the period of financial turbulence in the last half of the 1980s (Chart 2).

Nepal

Narrow money and income may be related in a stable fashion in the long run but, partly because of data limitations, short-run money demand is not very predictable. The long-run broad money/income relationship was not stable, reflecting a slowdown in the trend decline in velocity during the 1980s from the extremely rapid rate of the 1970s. It is too early to judge the impact on money demand of the deregulation of interest rates in August 1989.

Real narrow money balances are possibly cointegrated -- not all the statistical tests are satisfied -- with real income (Table 1). No long-run role could be found for interest rates, which changed infrequently over the course of the data sample, or for inflation rates. The income elas-

62. A significant one-time increase in money holding following the November 1985 demonetization was disregarded.

ticity was estimated at 1.8 using the entire sample, although there is evidence that the elasticity declined somewhat in the 1980s, suggesting a deceleration of the rapid process of monetization. No satisfactory error correction model was estimated, although this may reflect the time series interpolation of the quarterly income series from annual observations. The best error correction equation exhibited significant residual autocorrelation (Table 2).

Real broad money balances were not cointegrated with income and interest or inflation rates over the period 1970-89 (Table 1). This result reflects a substantial deceleration in the decline of velocity in this period: in the 1970s, the freely estimated income elasticity exceeds three, while in the 1980s, the elasticity is just below two.

Philippines

It is possible that both narrow and broad monetary aggregates bear stable long-run relationships to income and interest rates, although the stability of the narrow money relationship relies on an ad hoc adjustment for financial turbulence in the mid-1980s. No satisfactory error correction equation could be estimated for either aggregate.

Narrow money is not cointegrated with income and interest or inflation rates unless allowance is made for a structural break in the mid-1980s. Specifically, an intercept shift dummy variable is required from end-1983 onward to produce a long-run money demand function that is close to satisfying the cointegration tests (Table 1).⁶³ The income elasticity is 0.67 and a significant negative role is found for deposit rates.⁶⁴ A reasonable error correction model can be estimated for narrow money if money illusion is permitted in the short run: long-run price homogeneity is imposed. The equation's parameters are not stable, however, suggesting that it is not possible to explain the high degree of velocity volatility in the 1980s and, in particular, the "spike" in velocity in the mid-1980s.

By contrast, real broad money balances appear to be cointegrated with income without need for an intercept shift variable in the 1980s

63. The dummy variable was suggested by the work of Goldsbrough and Zaidi (1989).

64. The result is a little lower than the long-run income elasticity of 0.8 estimated by Goldsbrough and Zaidi (1989).

(Table 1). However, no long-run role could be found for various interest rate and opportunity cost variables. The estimated long-run income elasticity is 1.47, considerably larger than Goldsborough and Zaidi's (1989) estimate of 0.8. The estimated error correction equation -- which includes short-run interest rate effects -- exhibited signs of residual autocorrelation, and the size of the coefficient on the error correction term increased significantly in the 1980s. Even allowing for this via a dummy variable to capture a different pace of adjustment in the period of financial instability, the equation failed formal parameter stability tests.

Singapore

Although Singapore did not undertake major financial liberalization measures in the 1980s -- its financial markets were already well developed and external capital flows liberalized before the beginning of that decade -- it proved difficult to find stable, predictable money demand relationships. Neither narrow nor broad money was cointegrated with income and interest rates, alone. The narrow aggregate may be cointegrated with income, interest rates, and the expected appreciation of the Singapore dollar. However, no satisfactory error correction model could be found.

Narrow money appears to be cointegrated with income, interest (deposit), and exchange rates, suggesting the existence of a stable long-run money demand function (Table 1). The exchange rate term is the one-period-ahead change in the value of the Singapore dollar in terms of U.S. dollars and has a positive coefficient: expected appreciations imply a rise in the demand for narrow money. The income elasticity is just less than one (0.86), implying some economizing on money holdings by agents commensurate with the relatively sophisticated state of Singapore's financial markets. Without the exchange rate term, narrow money does not appear to be cointegrated with income and interest rates, or income and inflation rates. It was not possible to estimate a satisfactory error correction model of narrow money -- in all specifications tried, the error correction term was not statistically significant -- possibly because short-run expectations about exchange rate movements are not systematically related to the observable macroeconomic indicators.

Broad money does not appear to be cointegrated with income and interest rates. A number of variants were tried, including different interest rates (foreign and domestic), inflation rate proxies for the opportunity

cost of money, and expected changes in the exchange rate. None was successful, nor were attempts to allow for a structural break between the 1970s and 1980s using dummy variable techniques. The freely estimated income elasticities greatly exceeded one, possibly reflecting strong wealth effects on the demand for money.

Sri Lanka

Broad money appears to be the most reliable monetary aggregate and there is evidence that it behaved reasonably predictably in the 1980s despite major disruptions to the economy. Narrow money does not appear to be related in a stable way to income and interest rates.

Reflecting the wide fluctuations in velocity over the last two decades, narrow money was not cointegrated with income and interest or inflation rates, although tests of the effects of interest rates on money demand were confined to a relatively short period (1978-89) because of the constraints on data availability. In particular, developments in income, interest rates, and inflation cannot explain the reversal of the upward trend in velocity in 1984. Instead, the income elasticity increases significantly in the second half of the 1980s. The change in the velocity trend possibly reflects a portfolio shift to more liquid assets following the onset of political turbulence in Sri Lanka.

Broad money may be cointegrated with income and interest rates, but the evidence is not strong (Table 1). The income elasticity is about 1.2 and the interest rate -- deposit rates weighted by the share of quasi-money in broad money -- elasticity is positive. Other interest rate variables, including the secondary market treasury bill rate and money market rates, had negative, but statistically insignificant effects on money demand. This may reflect either insufficient observations, or problems in measuring market returns on alternative assets. A satisfactory error correction model was estimated and had stable coefficients in the last half of the 1980s.

Thailand

Stable long-run relationships could not be found for either narrow or broad money. There is some evidence that relative asset returns - - as opposed to the general level of interest rates -- affect broad money.

Narrow money does not appear to bear a stable long-run relationship to income and interest or inflation rates (Table 1). While the income

elasticity is close to one (0.85) and deposit interest rates have a significant negative long-run effect on narrow money, this relationship does not pass the tests for cointegration. No short-run dynamic model of narrow money demand was estimated.⁶⁵

The estimated income elasticity of broad money greatly exceeded one (1.72), money market rates were found to have a negative effect on broad money demand and an estimate of the average return on broad money had the expected positive effect. The interest rate terms can be combined in an opportunity cost variable with a semielasticity of 2.5, suggesting that differences in rates of returns on assets -- as opposed to the general level of interest rates in the economy -- affect money demand. However, broad money, income, and the opportunity cost variable do not appear to be cointegrated, implying the absence of a stable long-run relationship. This result may reflect the comparatively short sample period (1977-89) during which interest rates were not fully flexible.

65. Because GDP data were interpolated from annual data by time series methods, a high degree of confidence would not be attached to any short-run model of money demand.

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Part II

MONETARY POLICY IN THE SEACEN COUNTRIES: AN OVERVIEW

Part II

AN OVERVIEW OF MONETARY POLICY IN THE SEACEN COUNTRIES IN THE 1980s

by
Azizah Talib

I. Introduction

The objective of the study is to provide an update of the original study which gave an overall assessment of monetary policy responses in the SEACEN countries since the establishment of their central banks. According to the previous study, monetary policy operated in an environment of a fixed exchange rate regime, limited international capital mobility and underdeveloped financial markets. Hence, the main task of the central banks in the SEACEN countries during that period was to promote and assist in the development of new financial institutions, while strengthening the existing ones. Briefly, the main focus of the previous study was more on theoretical aspects of the implementation of monetary policy in a developing economy, their financial structure and systems, the way monetary policy was formulated and implemented, and the channels through which the effects of those policies are transmitted to real economic variables.

II. Significance

The oil shocks which occurred twice in the 1970s had posed many problems and challenges in the macroeconomic management in many of the developing countries and in the SEACEN countries in particular. During the 1980s, the economy in the SEACEN countries suffered badly arising from the unfavorable external environment associated with a global recession, sluggish economic growth in the industrial countries, international debt crises, mounting inflation, high interest rates in the industrial countries, volatile exchange rates, protectionism, and the worsening of terms of trade following a sharp decline of commodity prices across the board. On the domestic side, the public sector has to exercise fiscal restraint to sustain the budget deficit to a sustainable level.

Following the recessionary period experienced in most of the SEACEN countries, the authorities in the SEACEN region initiated a wide-ranging structural adjustment program including reforms in the financial sector, with the aim of establishing a stable environment that is conducive for the existence of efficient and competitive financial markets. Financial deregulation and changes in monetary and exchange rate policies have played a crucial role within the overall reform program. Perhaps it would be very useful at this stage of the present study to examine and analyze the kind of monetary policy responses to external shocks adopted by the SEACEN member central banks and monetary authorities to cushion off the adverse impact on their economy.

III. Scope of the Study

This study covers the period from 1979 to 1989. It focuses on the conduct of monetary policy in an environment of financial reforms and its implications on the demand for money in the SEACEN countries. The study examines the role and conduct of monetary policy in the adjustment process, domestic financial reforms and its impact. A comparative and regional analysis of financial reforms are also studied. This study hopes to provide a useful insight to central bankers in the SEACEN region in the formulation and implementation of monetary policy in an environment of financial reforms.

The study covers nine participating SEACEN member countries, namely, Indonesia, South Korea, Malaysia, Myanmar, Nepal, Philippines, Singapore, Sri Lanka and Thailand.

IV. Objectives

As approved in the Board of Governors' Conference in Singapore in January 1988, the following are the basic objectives of this study:

- (i) To update the previous study on monetary policy in the SEACEN countries which was completed in 1979; and,
- (ii) To examine the kind of monetary policy responses adopted by SEACEN member countries to cushion off both domestic and external shocks arising from high interest rates and a sharp appreciation in key currencies as well as the international debt crisis.

However, the original objectives of the study was slightly amended following the suggestions and comments put forward by the International Monetary Fund's (IMF) research staff who participated in this research project. The IMF staff recommended that the following objectives should be the main focus of this study:

- (i) To examine the role and conduct of monetary policy in the structural adjustment program;
- (ii) To examine the nature of domestic financial reforms undertaken by SEACEN member countries and its effect on monetary policy; and,
- (iii) To examine the demand for money and the implication in terms of the effectiveness of monetary policy.

V. Research Design

This study was approved as a collaborative research project between The SEACEN Centre and the member central banks and monetary authorities. The IMF provides the technical assistance in the workshop discussions.

The study is divided into three parts. Part I of the study will address on financial liberalization money demand and financial liberalization and the implementation of monetary policy. Part I of the study is carried out by the IMF staff led by Dr. Wanda Tseng, Advisor, and Mr. Robert Corker, Economist, Asian Department. Part I of the study would be more conceptual, quantitative and analytical in approach in tackling the aspects of money demand in an environment of financial reforms in the SEACEN countries.

Part II of the study provides an overview chapter based on regional analysis from the country chapters prepared by country researchers from respective member central banks and monetary authorities. Part II of the study is carried out by Mrs. Azizah Talib, Research Economist responsible for this study.

Part III of the study is carried out by country researchers appointed by their respective central banks and monetary authorities.

VI. Research Methodology

The method of study will make use of both qualitative and quantitative technique of analysis. The methodology proposed for the empirical investigation on the demand for money will make use of two statistical techniques. The IMF and the SEACEN staff will make use of the cointegration technique to estimate the demand for money while the country researchers will estimate the money demand equation using the ordinary least square in log linear form. The country researchers have to rely on the latter techniques because of software package was not readily available in most of the member countries. Some parts of the study relied heavily on qualitative analysis supported by appropriate statistical data series.

Chapter 1

AN OVERVIEW OF FINANCIAL REFORMS IMPLEMENTED IN THE SEACEN COUNTRIES IN THE 1980s

I. Introduction

This chapter gives an overview of monetary policy in the SEACEN countries during the 1980s based on the information gathered from the country chapters prepared by country researchers from nine member central banks and monetary authorities, namely, Bank Indonesia, The Bank of Korea, Bank Negara Malaysia, Central Bank of Myanmar, Nepal Rastra Bank, Central Bank of the Philippines, Monetary Authority of Singapore, Central Bank of Sri Lanka and Bank of Thailand. During the early 1980s, the world economy went into a recession and the SEACEN economies have not been spared of the adverse impact of the external shocks. This period represents the most challenging and difficult period for economic and financial management in the SEACEN countries. The authorities in all the SEACEN countries have to introduce various economic adjustment policies following the exposure of structural weaknesses and problems accumulated over the years. The most notable adjustment program witnessed in the 1980s among the SEACEN member countries was the waves of financial liberalization. It is interesting to note that the sequencing of the financial reforms and the implementations were carried out by the SEACEN member countries during the period of macroeconomic stability. The process and the timing of financial liberalization undertaken by the SEACEN member countries brought a far-reaching implications on the formulation, implementation and conduct of monetary policy as well as its impact to the rest of the economy. This chapter will focus on a comparative country analysis on the economic and financial conditions in the 1980s and its implication for monetary policy.

II. Economic and Financial Development

The second round of oil shock in 1979 posed severe problems especially in those non-oil producing SEACEN countries. Their economic problems were further compounded by the prolonged recession in the industrialized countries in the early 1980s which had adversely

affected the exports from the SEACEN countries. The problem was further magnified by a sharp decline in commodity prices across the board resulting in a sharp deterioration in the international terms of trade. The current account in most of the SEACEN countries experienced the largest deficits due to the sharp drop in oil and non-oil commodity prices coupled with the deterioration in the competitiveness of domestic products in the international market. The sharp downfall in commodity prices led to a substantial decline in export proceeds and subsequently adversely affecting government revenues. Following the deficit in the government budget, the Government in most of the SEACEN countries pursued a policy stance of restraint which produced a widespread deflationary effects. The decline in economic activity between 1980-1985 was experienced in all the SEACEN member countries as shown in Table 1.1. Consequently, there was a sharp downturn in aggregate demand, creating a trail of excess capacities, a plunge in corporate profits and a rising number of corporate failures. In the real sector, the collapse in the construction industry and the decline in agricultural and manufacturing output contributed to the widespread unemployment problems experienced in most of the SEACEN countries.

Although the economic problems facing the SEACEN countries during the 1980s were largely induced by external shocks, the most serious difficulty to overcome in some of the SEACEN countries was the overhang of external debt burden that had grown to uncomfortably high levels in the early 1980s. Most of the SEACEN countries borrowed heavily from abroad in the early 1980s to fund their development programs and foreign funds were relatively cheap and easily available. However, most SEACEN countries that took foreign borrowing were caught when international interest rates increased and many countries in the SEACEN region found difficulty in servicing their external debt. The large accumulation of external debt was of concern because it caused adverse implications in the external and domestic sectors of the economy. Contributing to these problems was a range of government economic policies that distorted relative prices in the respective SEACEN economies.

In response to the external shock facing the SEACEN countries and the adverse impact on the domestic economy, most of the countries in the SEACEN region adopted macroeconomic structural adjustment programs with the assistance of multilateral institutions or on a voluntary

basis. The structural adjustment program implemented by most of the SEACEN countries showed remarkable achievement in restoring economic and financial stability. The success was partly boosted by favorable world economic environment. On the domestic side, the rate of inflation as reflected in the Consumer Price Index of the SEACEN member countries in Table 1.2, which recorded a double-digit gain in the 1970s, was stabilized somewhat to a reasonable level after the mid-1980s. The success of controlling inflation was due mainly to a series of monetary and fiscal policy measures introduced to combat the inflationary trend. Another notable achievement made by most of the SEACEN countries was the restoration of the current account, which was long saddled with a chronic deficit, moved into surplus or narrower deficits from 1986 onwards as shown in Table 1.3. At the same time, the government budgetary deficit experienced by most countries in the early 1980s improved substantially after the mid-1980s as shown in Table 1.4. These positive developments taking place in most of the SEACEN countries, coupled with strong output growth ranging between -1.1 to 12 per cent during 1986-1989, not only enable the SEACEN economy to emerge stronger but the most significant is that it laid a firm foundation for introducing economic and financial reforms.

The most important factor which contributed to the success of the structural adjustment program implemented by most of the SEACEN member countries in the 1980s hinges on political stability. Indonesia, Korea, Singapore, Malaysia and Thailand were the most fortunate countries that were free of political disturbance during the reform period of the 1980s. Various economic measures were undertaken in these countries so as to restore their economies into the growth path pattern. Another interesting feature to note among these SEACEN countries was the government policy -- placing increasing reliance and emphasis on private sector initiatives and greater involvement in the economic development of their country. The Government realized that direct intervention by the Government in business sector was no longer feasible nor desirable, and increasing emphasis should be left to market forces. The role of the Government should be restricted to formulation and administering sound economic and financial policies. The outcome of this strategy has been beneficial and fruitful as being witnessed today -- the proliferation of private investment from domestic as well as foreign sources playing a significant role in generating the engine of growth in these SEACEN economies.

Table 1.1
GROWTH RATE OF REAL GDP
(Per cent per annum)

Country	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Indonesia	9.9	7.9	2.2	4.2	6.9	2.5	5.9	4.9	5.7	7.4
Korea	-2.2	6.7	7.3	11.8	9.4	6.9	12.4	12.0	11.5	6.2
Malaysia	7.4	6.9	6.0	6.2	7.8	-1.1	1.2	5.4	8.9	8.8
Myanmar	7.9	6.4	5.6	4.4	4.9	2.8	-1.1	-4.0	-11.4	7.4
Nepal	-2.3	8.3	3.8	-3.0	9.7	6.1	4.3	3.9	7.8	2.3
Philippines	5.2	3.9	2.9	0.9	-6.0	-4.3	1.4	4.7	6.3	5.6
Singapore	9.7	9.6	6.9	8.2	8.3	-1.6	1.8	9.4	11.1	9.2
Sri Lanka	5.7	5.5	5.2	4.8	5.1	5.0	4.3	1.6	2.6	2.1
Thailand	4.8	6.3	4.1	7.3	7.1	3.5	4.9	9.5	13.2	12.0

Source: ADB, Key Indicators of Developing Asian and Pacific Countries, July 1991.

Table 1.2**CHANGES IN CONSUMER PRICES**
(Per cent per annum)

Country	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Indonesia	18.0	12.2	9.5	11.8	10.5	4.7	5.9	9.2	8.0	6.4
Korea	28.7	21.3	7.2	3.4	2.3	2.5	2.8	3.0	7.1	5.7
Malaysia	6.7	9.7	5.8	3.7	3.9	0.3	0.7	0.9	2.0	2.8
Myanmar	0.6	0.3	5.3	5.7	4.8	6.8	9.3	24.8	16.0	27.2
Nepal	14.7	11.1	11.7	12.4	2.8	8.1	19.0	10.8	9.0	8.8
Philippines	18.2	13.1	10.2	10.0	50.3	23.1	0.8	3.8	8.8	10.6
Singapore	8.5	8.2	3.9	1.2	2.6	0.5	-1.4	0.5	1.5	2.4
Sri Lanka	26.1	18.0	10.8	14.0	16.6	1.5	8.0	7.7	14.0	11.6
Thailand	19.7	12.7	5.3	3.7	0.9	2.4	1.8	2.5	3.9	5.4

Source: IMF, International Financial Statistics Year Book, 1991.

Table 1.3

CURRENT ACCOUNT (SURPLUS / DEFICIT (-))
(Million U.S. dollar)

Country	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Indonesia	3011.0	-566.0	-5324.0	-6338.0	-1856.0	-1923.0	-3911.0	-2098.0	-1397.0	-1108.0
Korea	-5321.0	-4645.0	-2650.0	-1606.0	-1372.0	-887.0	4618.0	9853.0	14160.0	5055.0
Malaysia	-284.0	-2444.0	-3601.0	-3497.0	-1672.0	-613.0	-122.0	2635.0	1816.0	-175.0
Myanmar ¹	-135.0	-312.0	-470.0	-163.0	-168.0	-205.0	-294.0	-349.0	-194.0	-229.0
Nepal	-39.0	-19.0	-85.0	-146.0	-95.0	-122.0	-119.0	-123.0	-280.0	-243.0
Philippines	-1904.0	-2061.0	-3200.0	-2750.0	-1116.0	-103.0	954.0	-444.0	-390.0	-1465.0
Singapore	-1563.0	-1469.0	-1296.0	-610.0	-385.0	-3.0	318.0	224.0	1254.0	2547.0
Sri Lanka	-660.0	-442.0	-569.0	-473.0	-55.0	-420.0	-425.0	-343.0	-389.0	-277.0
Thailand	-2069.0	-2569.0	-1006.0	-2882.0	-2111.0	-1491.0	300.0	-290.0	-1552.0	-2413.0

Source: ADB, Key Indicators of Developing Asian and Pacific Countries, July 1991.

1 From 1985 onwards, figures are from Asian Development Outlook, 1991.

Table 1.4

GOVERNMENT BUDGET (OVERALL SURPLUS / DEFICIT (-))

Country	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Indonesia (Billion rupiah)	-1489.0	-1705.0	-1938.0	-3878.0	-3476.0	-3571.0	-5750.0	-6156.0	-9986.0	-9425.0
Korea (Billion won)	-848.8	-1585.0	-1656.0	-662.6	-841.3	-945.0	-86.3	477.8	1427.8	-1390.8
Malaysia (Million ringgit)	-7104.0	-11015.0	-11171.0	-9183.0	-7075.0	-5707.0	-7506.0	-6153.0	-3890.0	-5260.0
Myanmar (Million kyat)	639.0	1076.0	422.0	357.0	239.0	-358.0	-632.0	-482.0	-1283.0	-7297.0
Nepal (Million rupee)	-1495.8	-1586.8	-2578.0	-4044.0	-3861.5	-4303.6	-4809.7	-5187.5	-6357.2	-9694.0
Philippines (Million peso)	-3387.0	-12146.0	-14405.0	-7431.0	-10065.0	-11141.0	-30593.0	-21437.0	-30695.0	-15354.0
Singapore (Million Singapore dollar)	333.6	-303.2	922.0	891.0	1833.2	-1721.6	1040.4	-605.1	3317.5	1650.6
Sri Lanka (Million rupee)	-15366.0	-13239.0	-17302.0	-16320.0	-13776.0	-18985.0	-21955.0	-21749.0	-34783.0	-25090.0
Thailand (Million baht)	-23649.0	-21229.0	-43785.0	-26723.0	-35535.0	-45085.0	-42119.0	-5501.0	36572.0	60730.0

Source: ADB, Key Indicators of Developing Asian and Pacific Countries, July 1991.

On the other hand, some countries in the SEACEN region, like Myanmar, Nepal, the Philippines and Sri Lanka which have also put serious efforts in introducing structural adjustment programs but were unfortunate somewhat as their efforts were hampered by internal political instability and uncertainty. Most resources, time and efforts were directed to restoring political stability at the expense of sacrificing economic growth and stability.

An interesting lesson which could be drawn from the success of the structural adjustment program in the SEACEN countries was the willingness of the Government to take the painful macroeconomic adjustment measures especially for those SEACEN countries experiencing serious economic and political instability.

2.1 Financial Development

In response to the adverse external environment facing the SEACEN countries in the early 1980s, most countries in the SEACEN region adopted structural adjustment program to reform the real and financial sectors. The financial system in some of the SEACEN countries during the early 1980s was experiencing a widening of savings-investment gap due to insufficient savings mobilization, inefficient allocation of resources and high intermediation costs. Apparently, the financial system lacks vigorous competition, confine to highly restricted activities, interest rate controls and short of long-term capital funds to develop private security market. Contributing to these problems was a range of government economic policies that distorted relative prices in particular by artificially discouraging net savings by encouraging investment in some activities at the expense of others. Following the success of structural adjustment program and the existence of macroeconomic stability, financial sector reform was gradually implemented aimed at a two-pronged strategy to raise the efficiency of the financial system in resource mobilization for productive uses and to increase the effectiveness of monetary policy in the transmission mechanisms to the real sectors.

Financial reforms in some of the SEACEN countries were implemented since the early 1970s, especially in Singapore and Sri Lanka. Indonesia, Malaysia, the Philippines, Thailand, Nepal and Korea implemented substantial financial reforms in the 1980s. In the case of Myanmar, highly restrictive financial reforms were undertaken in the 1980s. Nevertheless, the most notable aspect of the financial liberali-

zation undertaken by most of the SEACEN member countries was that the implementation was carried out in a gradual manner and the sequencing of the reform programs was in order.

Among the critical policies in the financial sector which need financial reforms are those relating to regulatory and legislative framework, institutional development and the development of the financial markets. Financial deregulation, changes in monetary policy and exchange rate policy during the 1980s have occurred within a broad package of economic reform policies. Indonesia, Korea, Malaysia, Singapore and Thailand are among the SEACEN countries which have instituted substantial financial reforms in the 1980s, with the aim of establishing a sound development of the financial sector in an environment of efficient and competitive market. Some countries in the SEACEN region like the Philippines, Sri Lanka, Myanmar and Nepal have also initiated financial reforms but the progress is delayed due to unfavorable internal political developments.

2.2 Overview of Financial and Monetary Reforms in the SEACEN Countries

The financial sector reforms have involved abolishing legal restrictions, streamlining and consolidating outdated legislation. The financial laws in some SEACEN countries are outdated and there is a need to update the legal structure and regulatory procedure as the financial system changes following the liberalization in the international financial market. For example, in the Philippines, the country's banking laws were amended to permit the adoption of a universal banking system patterned on the German model. The objective of the amendments is to reduce the fragmentation of financial intermediation and to encourage broader access to financial resources. In Malaysia, a single legislation known as the Banking and Financial Institutions Act 1989, covering all banking and financial institutions, was enacted in 1989. Under the Act, the Central Bank is empowered to supervise and regulate all institutions involved not only in deposit taking but also in the provisions of finance and credit. The illegal deposit taking by the cooperative societies and the cooperative fiasco prompted the authority to review the existing legislation on deposit taking by financial institutions.

Similarly, in Sri Lanka, the Banking Act was enacted in 1988 by centralizing all these legal guidelines with regard to commercial banking sector. The objective of the Act is to ensure that the prudential

standards are high and banking activities should progress in a systematic manner. A comprehensive new legislation for the finance companies was enacted in 1988. In Korea, the General Banking Act was revised in 1983 to give banks a freer hand in dealing with their own management affairs. At the same time, various regulations on the internal management and operations of banks were simplified and reduced in number. In Myanmar, following the adoption of market-oriented economy in September 1988, it was discovered that the present financial system need to be restructured in order to cater the needs of liberalization measures, particularly for the growing private sector and foreign enterprises which have invested in the domestic economy. Accordingly, the new banking laws, namely, the Central Bank of Myanmar Law, the Financial Institutions Law and the Agricultural and Rural Development Bank Law, were promulgated in July 1990.

With the changing trend in financial environment, there are also some real changes taking place within the institutional development itself. During the 1960s and 1970s, the central banks in the respective SEACEN countries were actively involved in institutions building. In the 1980s, following the adverse development in the world economy and the severe impact especially on the financial institutions, there was already a growing awareness among the SEACEN member countries to introduce more reforms in the financial sector aimed at achieving greater efficiency in the financial intermediation, through increased competition, greater availability and use of long-term funds, availability of variety in financial instruments and rationalization of financial market regulations. Barriers to entry of new institutions were removed and expansion of existing institutions were encouraged. This will create a competitive environment in the financial system and introduce innovative techniques and practices in banking business.

In the effort to encourage keen competition and achieve greater efficiency in resource mobilization, the following financial liberalization measures were implemented by the following SEACEN member countries.

In *Indonesia*, the monetary and financial reforms were implemented in several stages. The first major reform was taken in 1983, while the second was taken in October and December 1988. Prior to 1983, the monetary authority in Indonesia implemented monetary control through the imposition of ceilings in bank credits, the determination of interest

rates of state banks and the provision of liquidity credits (subsidized interest rates) to particular economic sectors. By and large, the policy succeeded in controlling domestic inflation but it inhibited efficient funds mobilization. In June 1983, the Government took major steps to de-regulate the banking system through reforms intended primarily to lay the foundation for a sound banking system. In the area of credit, Bank Indonesia's system of liquidity credits was streamlined by limiting extensive credits to high priority sectors. Ceilings on the domestic assets were removed, and state banks were given independence in the formulation of their own lending policy. In the area of funds mobilization, interest rates on deposit at state banks, which were formerly fixed by Bank Indonesia, were left to each bank's discretion so as to allow greater competition among banks in mobilizing funds. As part of the June 1983 reforms, the Government discontinued or limited the use of credit ceilings, liquidity credits, and interest rate controls; instead the authorities adopted indirect monetary instruments, namely, reserve requirements, open market operations, discount facilities and moral suasion. In order to implement open market operations, Bank Indonesia began to sell Bank Indonesia certificates (SBI) and to buy money market securities (SBPU).

The second wave of financial reforms implemented by Bank Indonesia took place in October 1988. This reform was aimed to enlarge the base of the banking institutions by facilitating the expansion of the banks and the opening of new banks. Following the reform, opportunities are open to establish new private national banks and joint-venture banks after more than 20 years. The October 1988 package of monetary measures was aimed at promoting non-oil exports by granting various facilities, including upgraded status from non-foreign exchange to foreign exchange banks, the opening of sub-branch offices of foreign banks and money changers, and the establishment of joint-venture banks. The package also included efforts to create a climate conducive to encouraging banks and other financial institutions in mobilizing funds and extending services to meet various needs of the community. In this respect, state enterprises and regional state enterprises were allowed to deposit their funds at private banks and non-bank financial institutions (NBFIs). In the effort to enhance efficiency and soundness of banks, a limitation was imposed on the maximum amount of credit extended by banks to individual borrowers, group borrowers, shareholders, directors and employees of individual banks. With the objective of enhancing the implementation of monetary policy,

liquidity reserve requirements was lowered from 12 per cent to 2 per cent. With a view to developing the capital market, a 15-per cent withholding tax was imposed on interest earned from deposits so as to equalize the tax treatment on income earned from holding securities. With regard to the capital market, the Government took steps to promote it by simplifying the requirements for companies issuing their stocks on the stock market and parallel bourse. Efforts to encourage transactions on the parallel bourse were also carried out by allowing foreign investors to trade in securities.

Through the December 1988 monetary package, the Government sought to increase the availability of long-term funds and to encourage the community to directly participate in productive investment. These efforts include allowance for the establishment of stock exchanges by the private sector and the establishment of stock exchange in cities outside Jakarta.

In *Korea*, following the exposure of structural problems accumulated in pursuit of rapid economic growth, the Government carried out extensive structural financial reforms aimed at bolstering reliance on the market mechanism in lieu of government intervention and at consolidating economic stabilization. It undertook a series of measures to promote competition in the financial sector and at the same time, spur financial liberalization and internationalization. Measures were taken to allow a greater degree of managerial autonomy to and competition among financial institutions through the privatization of commercial banks and the lowering of entry barriers for banks and NBFIs. In 1981-1983, the Korean Government handed over its controlling stake of all five existing commercial banks and addition of three nationwide commercial banks. A long-term blueprint for the internationalization of the capital market was also drawn up by the Government in 1981. Under the plan, several international trust funds, the Korean Fund and the Korean Europe Fund were established to give foreign investors access to the domestic capital market. While domestic companies were allowed to issue convertible bonds in overseas capital markets.

The progress towards financial liberalization in Korea was rather slow in the initial stage and rapid changes were seen towards the mid-1980s. The domestic commercial banks were granted managerial autonomy and they were encouraged to extend their business boundaries. They have been diversifying their overseas networks and extending the

scope of their international activities into loan syndication, underwriting of bonds, securities investment, etc. Foreign banks have been placed on equal footing with domestic banks in their business operations. Privileges given to them to induce foreign capital in period of current account deficit were reduced and certain restrictions lifted, giving them access to central bank's restriction lifted, the issuance of certificates of deposit (CDs) and trust business. The foreign exchange controls have also been eased to a considerable degree since 1987. An important milestone of financial liberalization was attained with far-reaching deregulation of interest rates. Most of the lending rates of banks and NBFIs as well as the interest rates on money market instruments, such as CDs, repurchase agreements, commercial paper and those on financial debenture and corporate bonds were liberalized. A far-reaching schedule for the opening of the securities market was announced. According to the schedule, non-resident foreigners will be able to purchase shares listed on the Seoul Stock Exchange directly from 1992, although on a limited basis. The opening of the domestic life insurance market has already made substantial progress with the establishment of three foreign life insurance company branches in Seoul since 1987. Several additional joint-venture life insurance are also in the process of being established.

In *Malaysia*, interest rates were liberalized since 1978, allowing the banking institutions to set their deposit and lending rates. However, lending rates charged to priority sector were still regulated by the Central Bank. Nevertheless, all borrowing rates charged to priority sector were anchored to each bank's declared base lending rate (BLR) which was based on the bank's cost of funds. In February 1991, the BLR was freed from the administrative control of the Central Bank. Except for interest rates on certain priority sector lending which are still subject to central bank guidelines, all other interest rates are now to be freely determined by market forces. Other measures to improve the efficiency of the financial system in Malaysia include the Automated Cheque Processing Operation (introduced in 1984), the Day-One Settlement System (introduced in 1986), the Interbank Funds Transfer System (introduced in 1989), and the Scripless Securities Trading System (introduced in 1990). The Central Bank continued to improve and diversify the financial intermediaries. The Islamic Bank, to provide non-interest-based banking services, was established in 1983. To promote an active secondary mortgage market, the National Mortgage Corporation (CAGAMAS) was set up. To provide low cost funds to key sectors in

the economy, the new investment fund was launched in 1985. To strengthen the stockbroking industry, stockbroking licenses were issued to three largest local banks. In order to improve the financing provided to exporters, the Central Bank revamped its export credit refinancing scheme. In March 1989, the Central Bank issued guidelines on the setting-up and operations of the property trust companies aimed at protecting investors' interest as well as to provide direction for the industry's development. To allow freedom of capital movement, the exchange control regulations have been progressively dismantled. Apart from introducing financial reforms to enhance competition and efficiency, the Central Bank upgraded prudential regulations to safeguard the stability of the financial system. The Central Bank undertook to rectify the weak links in the financial system through the rehabilitation of problem institutions and by legislative reforms such as bringing the merchant banks within the ambit of the Banking Act. In 1988, the Central Bank assumed the role of supervising the insurance industry. In 1989, the Banking and Financial Institutions Act came into force.

In *Myanmar*, some initial measures have been taken toward banking sector reform. The Myanmar Investment and Commercial Bank was established which accepts both kyat and foreign currency accounts and which provides banking services covering both areas, particularly to foreign investors and joint-ventures in Myanmar. The activity of the Agricultural Bank was widened to include financing of industrial crops. To promote mobilization of savings by the commercial banks, the interest rates were raised and new deposit accounts, the call deposits and fixed deposits were introduced. To facilitate the development of capital market in government securities, the Central Bank of Myanmar undertook to issue Treasury bills and bonds.

In *Nepal*, the low level of savings and investment and the existence of a rising resource gap have remained a matter of concern. Gross domestic savings as percentage of GDP has hovered within the range of 7.2 per cent and 14.1 per cent. The gap between gross domestic savings and total investment is mainly met by foreign savings either in the form of loans and grants. In order to generate additional savings, monetary policy measures have accorded top priority in mobilizing additional resources from the banking system through expanding bank branches and interest rate reforms. To rationalize the interest rate structure of banks and financial institutions and to make it more market related, the deposit and loan rates of commercial banks were partially

liberalized in 1986, wherein only minimum interest rate on deposits was fixed by the monetary authorities without any ceiling on the maximum rate. Similarly, maximum lending rate on priority sector lending was fixed by the Central Bank. In August 1989, the Central Bank has completely liberalized the interest rate structure of banks and financial institutions. This measure aimed to provide more option to commercial banks in the mobilization of savings and portfolio management through market-determined interest and lending rates.

In June 1986, the Nepalese rupee was pegged to a basket of currencies of its major trading partners. This measure enable the authority to monitor the real effective exchange rate movement based on this currency basket system and also provided a built-in flexibility in the exchange rate system. To promote competition among various financial institutions, the authority allowed the entry of commercial banks with foreign bank collaboration in 1984. Another measure towards monetary sector reform was implemented in July 1984, when the Agricultural Development Bank branches were permitted to collect deposits from the public and therefore reduced its excessive dependence on central bank resources for its lending operations and at the same time, curbed unnecessary monetary expansion.

In order to introduce greater flexibility in the interest structure and strengthen monetary and government domestic debt management, the Central Bank of Nepal initiated regular auctions of Treasury bills and development bonds. With the introduction of these measures, interest rates on Treasury bills and development bonds have been market-determined and could be efficiently used as a tool of monetary management.

In order to strengthen monetary and government domestic debt management, Nepal Rastra Bank (NRB) redesigned its rediscounting facilities in the form of three windows in August 1989. These windows are the basic window, selective window and lender-of-last-resort window. This system of refinance has discouraged automatic refinance on government securities and has forced the commercial banks to follow a prudent cash management policy. In order to reduce the dependence of commercial banks and other financial institutions with NRB for the use of short-term funds, a call money market was established in 1988/1989.

NRB has directed the commercial banks to increase their capital base (paid-up capital, general reserve fund and undistributed profit) to 2.5 per cent of their total deposits by mid-July 1989, 3.5 per cent by mid-July 1990 and 5.5 per cent by mid-July 1991. This measure has been initiated to enable the commercial banks to undertake more risk in view of the expansion of areas of operation. In order to restrict the over exposure of bank credit to a single borrower/firm/company or some group of companies, the Central Bank issued to commercial banks in March 1989, to limit loans and advances to a maximum of 50 per cent of capital base. Similarly, single borrower's limit for credit under letters of credit, guarantee acceptances and commitments have been fixed at 100 per cent of capital base. This measure has been initiated with a view to lower the concentration of bank lending in a particular group of companies and thereby lower the risk element.

Other financial reforms introduced by NRB in the 1980s include the establishment of the Credit Information Bureau in May 1989, and the classification of outstanding credit on the basis of maturity into four categories: good, substandard, doubtful and bad. To meet the credit gap in the agricultural and industrial sectors, NRB prescribed lending guidelines to priority sectors. In August 1989, NRB implemented comprehensive short-term monetary programming framework by regularly monitoring the level of reserve money and using open market operations to regulate the liquidity position in the banking system. Under the financial sector reform program, it was decided that NRB will not only give interest to government deposits with the Central Bank but also simultaneously charge interest to the Government on the use of overdraft facilities. In order to enhance the effectiveness of government securities as a potent tool for monetary management and mop up the excess liquidity in the economy, NRB issued in October 1988 a new series of national savings certificates. In 1989, NRB removed the tax exemption for all new issues of government securities exceeding 182-day maturity. Effective 10 July 1989, after the trade and transit stalemate with India, the Central Bank ended the free convertibility of Indian rupee vis-a-vis the Nepalese rupee, and introduced limited convertibility system.

In the 1980s, a comprehensive financial reform program was implemented in the *Philippines* which aimed at rationalizing and strengthening the financial sector. This was initiated with the objectives of promoting greater efficiency by fostering competitive conditions and to

increase the availability of an access to longer-term funds. To achieve these objectives, the following financial reforms were introduced: the interest rate was floated, the financial system was restructured and the central bank policy instruments were strengthened.

The Central Bank of the Philippines (CBP) progressively lifted the interest rate ceilings and introduced the variable rate instruments. The Manila Reference Rate (MRR) was established to serve as the base for variable interest rate loans. Institutional functions were enlarged and licenses were issued for universal banking which removed the functional distinctions between commercial banks and specialized financial institutions. These reforms increased competition among the different types of financial institutions and allowed these institutions to extend long-term credits, underwrite securities and invest in equity as well as carry out normal credit operations. As part of these financial reforms, the minimum capital requirement for each type of financial entity was increased. Bigness was thus emphasized since it was believed that it provides banks with larger and more stable source of funds for long-term lending and enables them to exploit economies of scale.

The role of the CBP in the reform process was more of stabilization orientation. The Central Bank initiated in 1981, a rationalization program for government securities. In that year, it started phasing out Central Bank Certificates of Indebtedness (CBCIs) to give way to the treasury bill which eventually became the primary government paper in the securities market. The 1980 financial reform package in the Philippines included specific measures to improve efficiency in the provision of financial services by increasing the scope for more competition and allowing banks to engage in other activities. These measures included authorizing savings and private development banks to open demand deposit accounts; allowing commercial banks to engage in the securities business, rationalization of regulations governing agriculture and private sector development banks; and, approval for investment houses to conduct trust and foreign exchange operations.

To induce financial institutions to go into long-term financing, the CBP also opened the medium-and long-term rediscounting window. This facility allowed banks to rediscount papers evidencing medium-and long-term loans extended by them for the acquisition of fixed assets, working capital in connection with a proposed or ongoing expansion development program, investment in affiliates and other institutions or for investment in high grade securities.

Singapore established as a financial center much earlier than the rest of the SEACEN member countries, continued to reform the financial sector in the 1980s. Singapore introduced most of the financial reforms in the 1970s. To maintain its status as leading financial center, there has been a significant increase in the availability and efficiency of ancillary services for the financial sector, especially in telecommunications, transportation, legal, publishing and accounting services. To promote the development of a more efficient banking system, a broader range of financial services was introduced such as automated financial transactions, automated cheque clearing system, interbank giro system and Singapore Government Securities Market (SGSM). With the introduction of SGSM, the liquidity requirements of banks and finance companies were revised in May 1987 and the banks' liquid asset requirements were simplified with the removal of the distinction between primary and secondary liquid assets.

In *Sri Lanka*, the new economic policies, which place more emphasis on market forces for economic decisions and active private sector involvement in development activities, necessitated compatible changes in the financial system. The application of new technology in financial sector activities, especially with the introduction of new instruments and services, increased the necessity of monetary and financial reforms in the late 1970s in Sri Lanka. The main features of the financial sector reforms undertaken in Sri Lanka were deregulation of financial sector activities and placement of greater reliance on market-oriented measures in the implementation of monetary policies. Various financial reform measures were implemented in Sri Lanka and these include institutional reform, interest rate determination, credit allocation, reduction in the financial intermediation cost, and strengthening of the legal, accounting and regulatory frameworks of financial institutions and improving their management. Under the institutional developments, barriers to entry and expansion were removed, allowing existing institutions to extend and new institutions to enter creating a competitive environment in the financial system. Accordingly, foreign banks of good repute were allowed to open branches in Sri Lanka so as to improve competition in the financial system by introducing new developments in financial services and to have efficient and reputable foreign banks to attract foreign private investments. The presence of these foreign banks helped in creating a competitive environment in the banking sector and introducing innovative techniques and practices in the banking business.

Recognizing the inadequate facilities of long-term credit availability, the Central Bank of Sri Lanka initiated the development of long-term financial institutional structure for the country. Steps were also taken to reorganize existing long-term lending institutions. In the mobilization of financial savings, the major reform measure was the demonopolization of the insurance business and encouraging healthy competition through the establishment of parallel services. The Employees' Provident Fund (EPF), the largest contractual savings fund in Sri Lanka, enhanced its activities as a multi-faced and multi-purpose scheme. In addition to its services as a social security scheme and long-term savings mobilizer, it has served as a source of non-expansionary deficit financing in government deficit financing. The EPF introduced a scheme to provide guarantee facilities for housing loans to its members. The Employees' Trust Fund was created to provide retirement benefits to employees in the private sector including public corporations, and to promote employees' participation in the private sector ownership in the form of Unit Trust.

The financial system in Sri Lanka expanded and became more sophisticated with the establishment of modern types of financial institutions such as merchant banks and leasing companies. To support the development of international money market in the country and to facilitate the inflow of capital into the country, the commercial banks were permitted to establish foreign currency banking units to provide offshore banking facilities in Sri Lanka in 1979.

To improve and expand money market activities, money brokers were given permission to establish such business. Following the economic reforms in 1977, the money market in Sri Lanka underwent rapid changes. Several improvements were introduced in the money market by introducing new instruments and permitting the establishment of new institutions as well as allowing the reform of existing instruments and institutions. Accordingly, new sub-markets were allowed to evolve in the money market while the existing sub-markets were encouraged to expand their activities. The major sub-markets in the money market are the interbank call money market, the primary and secondary treasury bill markets, internal foreign exchange market and offshore foreign exchange market. The commencement of operation by money brokers in early 1980s not only expanded the money market activities but also improved the efficiency of its transactions. The interbank call money market provides the liquidity requirements of commercial banks by way

of call and term loans, very often through money brokers. The interest rate in this market is decided by market forces. As a result, more market-oriented monetary policy measures were implemented. The primary treasury bill market, which is the main mechanism to raise short-term funds for the government budgetary requirements, developed continuously. A regular weekly auction system was introduced in 1986 while interest rates in the market were allowed to be determined according to market forces. The attractiveness of the Treasury bills were enhanced in 1989 by the introduction of bills with different maturities. Investment facilities in Treasury bills were extended to outstations through the "tap system" introduced in 1986.

The introduction of a secondary market for Treasury bills in 1981 was an important step towards the development of a money market in Sri Lanka. It provided investment opportunities to short-term investors and also enhanced the attractiveness of the Treasury bills by improving the degree of liquidity. The treasury bill market has served a number of useful purposes. Firstly, it helped to contain the expansion of the monetary aggregates. Secondly, it provided a convenient short-term investment outlet for commercial banks with excess liquidity, inducing them to continue their deposit mobilization efforts unabated. Thirdly, it developed a market-oriented borrowing source for the Government.

In Sri Lanka, the Central Bank Security Market (CBSM) operated as a part of the money market during 1984 to 1988. The Central Bank issued its own securities in 1984 to absorb excess liquidity. These issues were offered under an auction system, allowing market forces to influence the interest rate applicable to them. However, as the treasury bill market expanded, the activities in the CBSM were gradually reduced and were removed completely by the end of 1988.

Another innovative instrument introduced in Sri Lanka during the period under review was the introduction of the Certificates of Deposits (CDs) by commercial banks, finance companies and the Treasury with a view to bringing "black money" into the institutional system. As a CD is a negotiable instrument with anonymity, it provided an important market-oriented instrument to the money market. Moreover, CDs enhanced the deposit base of commercial banks and finance companies.

To mobilize savings in the rural areas of Sri Lanka, the scheme of Rural Banks (RBs) introduced in 1964 expanded its activities in the

1980s. Supply of banking facilities to rural areas were further extended in 1985 with the establishment of Regional Rural Development Banks based on the barefoot banking concept to satisfy the shortage of rural credit largely for agriculture and small industries. The national savings banks also played important role in mobilizing national savings in Sri Lanka and in 1984, they issued new savings instruments. In managing its loan portfolio, it has entered into small credit schemes such as rural lending and participated as a credit distribution institution under the small and medium industrial scheme.

Other financial reforms being introduced in Sri Lanka in the 1980s include the establishment of training facilities for the financial sector by the Central Bank known as Rural Banking and Staff Training College in 1981. To speed up the cheque clearing system, the Automated Clearing House was established in 1988. To improve information on credit-worthiness of borrowers and the resulting high default rates, the Credit Information Bureau was set up in 1990 with a view to centralize and exchange information on borrowing activities. Following technological developments taking place in the world, the financial institutions in Sri Lanka were allowed to reform existing instruments and introduce new instruments to meet the new requirements in the economy. The financial institutions reformed their deposit instruments, improving their attractiveness to depositors and introduced new deposit instruments resulting in different types of fixed deposits, checkable savings accounts, certificates of deposits (CDs), money market deposits, credit cards and teller card facilities were introduced. The insurance corporation expanded its insurance policy package. The Government also introduced different maturity periods into Treasury bills and new borrowing instruments such as "defence bonds", treasury certificates of deposits and medium-term government securities.

The financial system in *Thailand* has witnessed many developments after the second oil shock as the consequent of widened savings-investment gap. The purposes of the reforms were aiming at reducing the imbalances between domestic savings and investments, and reducing the vulnerability of the economy to external shock. The interest rate was first liberalized in 1980. Lending rates of financial institutions were freed from 15.0-per cent limit imposed since 1924, and ceiling rates on both deposits and loans were raised by a record margin of 3.0 percentage points. Subsequently, adjustments in ceiling rates were frequent and direct intervention through ceiling adjustment is kept to minimum

and financial institutions have been encouraged to change interest rates by themselves. In June 1989, the ceiling of deposit rate for deposits of more than one year was lifted to encourage more long-term deposit mobilization and to enable commercial banks to gradually adjust themselves to a more flexible interest rate system. The change in interest rate policy stance proved beneficial for financial savings mobilization, as evidenced by the high growth of commercial bank deposits of around 24 per cent per annum on average since 1980. Financial disintermediation which was apparent in the period of high inflation was therefore checked. Tight liquidity conditions created by unfavorable differentials between foreign rates and rigid domestic interest rates were also prevented to a certain degree. Flexibility in interest rate movements thus served to reduce both imbalances and the impact of external shocks.

Financial reform was also introduced in the Thai money market in 1979, with the introduction of repurchase market in which government securities are traded with repurchase agreement. Before the repurchase market was set up, the interbank lendings and borrowings were done in a oligopolistic manner. Owing to this oligopolistic character, the rates at which borrowing and lending took place failed to respond to market conditions and the Central Bank's policy. The repurchase will provide an additional instrument for the Central Bank to execute various measures as well as assisting the financial institutions to manage their assets and liabilities more efficiently. The repurchase market would serve as a vehicle for the implementation of monetary policy. The repurchase market would serve as a channel through which the Central Bank could attempt to inject or absorb money by buying or selling government securities which would affect the rates in this market. As for the reform in the foreign exchange market, the flexible exchange rate regime was reintroduced in 1984 when the baht was devalued by 14.8 per cent. The exchange rate is now more flexible by being aligned with a basket of currencies of Thailand's major trading partners.

The Bank of *Thailand* (BOT) also introduced reform on the refinancing schemes. This was designed to provide credit at a low interest rate to commercial banks against their promissory notes for approved purposes. The interest rates for these refinancing schemes were kept constant until October 1984 when changes were made so as to offer commercial banks a larger spread on small exporters' bills as an incentive to provide them with more credit. Subsequently, the BOT introduced several changes regarding the refinancing schemes to meet the changing credit needs.

To strengthen the BOT's power to regulate and supervise the commercial banks, finance and securities companies, the Acts that govern their operations and supervisions were amended in 1983 and 1985. The amendments involved three major changes. Firstly, all commercial banks were required to increase their capital and bad debt provisions. Secondly, stringent regulations were imposed on finance and securities companies regarding their classification of substandard loans and the required margins on securities transactions. Thirdly, reorganizing the management and ownership of problem financial institutions by arranging bank mergers. Other important changes in the BOT regulatory policies in the 1980s was the restriction placed on the value of overdrafts. The regulation on agriculture credit was replaced with a minimum rural credit target of 20 per cent of commercial bank deposit. To encourage lending to priority sectors, including agriculture, in 1986 the BOT exempted 20 per cent of commercial bank lending to these sectors from inclusion among risk assets in meeting the required capital to risk asset ratio.

The reform on the Thai capital market was also undertaken in the 1980s. For the long-term development of the securities market, the authorities decided to amend the Securities Exchange of Thailand (SET) Act in 1984. The amendment provided the authorities with sufficient and effective mechanism to ensure fair and orderly trading of the securities in the stock exchange. The new legislation also paved the way for the public offering and debenture issuing by companies other than those registered under the Public Company Act. To boost the securities market, different tax rates were applied for those business firms listed in the SET. Firms registered in the SET are required to pay 30-per cent income tax, while firms not registered in the SET pay a rate of 35 per cent. This was intended to promote the supply of securities in the stock exchange. To encourage portfolio investment from abroad, two foreign funds were set up in 1986. To encourage institutional investors to participate in the securities markets, tax incentives have been granted to corporations and their employees to set up their provident funds. With the revised regulations, insurance companies are also allowed to invest more in the securities listed with the SET. Various measures have been implemented by the authorities in order to develop the Thai securities market to a higher stage of development such as the relaxation of regulations and the enhancement of investor protection. The amendment of the SET Act 1984 represented a major leap in the attempt to reform the market and protect investors against

manipulation. With these major amendments, the supply side of the securities market has been greatly strengthened by the opportunity opened to listed and authorized companies to launch a public offering for debentures. Other instruments recently introduced in the Thai capital market are warrants and convertible debentures issued by companies and financial institutions listed in the SET.

The BOT permitted the commercial banks and finance companies to enlarge the scope of their businesses to cope with changing market environments. They were permitted to engage in services such as feasibility studies, loan syndications, financial advisory service in requisitions, mergers and consolidation of businesses as well as custodian services. Finance companies were allowed to carry out guaranteeing business. In addition to the types of investment banking services mentioned above, commercial banks have also been permitted to allow insurance companies to offer insurance products through the banks' Automatic Teller Machines (ATMs) network, telephone banking system, or home (office) banking system. The purpose of the relaxation in rules was to facilitate insurance activities as well as to increase commercial banks' utilization of the existing resources.

In the 1980s, the introduction of new international financial instruments became important in the Thai financial system. New financial products with risk-diverse features include, inter alia, hedging instruments like currency and interest rate swaps, options and forward rate agreements. In addition to these, new financing techniques were gradually introduced into the domestic financial markets, such as note issuance facilities (NIFs), revolving underwriting facilities and securitization of loans. These types of transactions are off-balance sheet (OBS) with numerous types of risks such as credit risk, liquidity risk, interest rate risk, currency risk and settlement risk. The transactions of these new banking activities are considered OBS as they are not recorded in the commercial banks' formal balance sheet and are not subject to the formal capital adequacy requirements. Over the years, the banks tended to have increased their OBS activities such as interest rate and currency swaps. Statistical evidence showed that total value of OBS transactions accounted for more than 50 per cent of banks' total assets. Since the expanding OBS activities could not be monitored directly, the increasing use of these new financial products could pose a risk to the stability of banking industry. On the benefit side, the introduction of these new financial products has provided a greater flexibility for market participants to manage potential risks which are likely to increase over time.

In Thailand, the growing use of these new products as a device to reduce risks was probably spurred by the two main factors. One is a gradual degree of deregulation by the authorities to allow for more price flexibility and competition. For example, the change in the foreign exchange system from a fixed rate to a more flexible exchange rate. The second factor is the mounting fluctuations of interest rates both at home and abroad. Such developments have forced many market participants to give more attention to financial risk management and thus, to learn how to prevent themselves from the losses arising from higher fluctuations in interest rates of exchange and interest.

Changes were also introduced with the techniques used by Thai commercial banks for extending credit. The traditional practice of bank lending was found to be deficient somewhat. They have introduced a two-tier prime rate system. Under this system, the interest rates charged for borrowings in the form of overdraft facilities are normally set above the rates charged for term lending. Efforts were also made to curb the uncontrolled growth of unused overdraft facilities to reduce its "overhang" on bank liquidity.

2.3 Role, Implementation and Conduct of Monetary Policy

In the 1960s and 1970s, the financial system in the SEACEN countries was generally heavily regulated and monetary policy operated mainly 'through direct controls'. The major monetary instruments used through direct controls were ceilings on the growth of bank lending, restriction on deposit and lending rates, the use of statutory reserve deposit requirement and liquidity requirement. In addition, the exchange rates set by the authorities and international capital movements were subject to a number of controls. Under the statutory reserve requirement, the commercial banks were required to hold a certain percentage of their total eligible liabilities as deposit base with the central bank. The liquidity requirement was maintained by the commercial banks to meet liquidity purposes.

The period of the 1980s witnessed some interesting changes in the conduct of monetary policy in most of the SEACEN countries following the implementation of macroeconomic adjustment program in most of the SEACEN economies and the wave of financial liberalization that swept through the financial markets in the developed countries. There has been a major shift away from regulation and direct control in the

conduct of monetary policy to a more market-oriented monetary policy. The changes that took place included the gradual removal of virtually all direct controls on financial institution operations including ratios and lending guidelines, the implementation of a new liquidity package, the removal of all controls on domestic interest rates, the changes in the exchange rate arrangements from pegging to a single currency toward either pegging to a basket of currencies or a more flexible arrangement.

2.4 Identification of Objectives, Targets and Instruments

Monetary policy is an important tool which can be utilized by economic policy-makers for macroeconomic management. It is implemented to achieve the ultimate goals of the monetary authorities, which tend to focus on output, inflation and balance of payments objectives. Generally, the SEACEN member central banks and monetary authorities faced a number of objectives and targets but at the same time, facing constraints in the implementation of monetary policy which could be due to lack of efficient financial instruments and underdeveloped financial market. Obviously, the three objectives of macroeconomic policies must go together even though the trade-offs between growth and price stability or growth and balance of payments viability are often debated. However, these variables are not directly controllable by the central banks. Monetary authorities generally use intermediate target variables that are closely related to output and prices, and are more controllable by the central bank.

Despite the superficial attractiveness of adopting a strict target for monetary policy, in practice it is rare to find a central bank adopting such a strict target. In general, even when the final objective of monetary policy is clear, most central banks and monetary authorities in the SEACEN region adopt a pragmatic approach to monetary policy implementation. The monetary policy settings respond to movements in a number of indicators, rather than responding solely to keep a single indicator on some pre-specified target path. In an economy which is subject to some shocks, the optimal choice of intermediate targets for monetary policy could vary among the SEACEN member countries. In the face of external shocks, an exchange rate target will be preferable to a money base target, while the money base target will be preferred in response to other kind of shocks. Take the case of Singapore, being a small and open economy, the external environment exerts considerable influence on the formulation and implementation of monetary and

exchange rate policies. The prime objective of monetary policy is to maintain a low and stable rate of inflation. In 1981, there was shift in monetary policy strategy from interest rate and/or money supply targets to exchange rate target. The Authority felt that managing the exchange rate is thus the easiest and surest way of maintaining domestic price stability.

On the aspects of intermediate targets of monetary policy, most of the central banks focused on three possible intermediate targets for monetary policy: a monetary aggregate either M1, M2 or M3 depending on the relationship between GNP and money supply, the nominal exchange rate and the nominal interest rate in an economy which is subject to shocks to money demand. As mentioned earlier on, the maintenance of any single target is inadequate if the economy suffers from a range of shocks. In such cases, it may be preferable to monitor developments in each of the nominal exchange rates, interest rates and the monetary aggregates rather than focusing on just one of these variables.

In general, an intermediate target is taken to refer to a variable which the central banks or monetary authorities may wish to control over time but not necessarily on a daily basis. For instance, the authorities may wish to achieve 2 per cent growth in the money base over a year but do not aim strictly to maintain a certain per cent daily growth rate in this aggregate. The choice of a particular outcome will best contribute to the achievement of some ultimate target, which is taken here to be price stability.

It is interesting to note that most SEACEN member central banks chose either monetary aggregates, base money or credit as their target variables. However, there appears to be an increasing trend of central banks utilizing monetary aggregates rather than credit or interest rates in their monetary targeting. For instance, in Indonesia, it has shifted the focus from targeting domestic credit using credit ceiling as a direct monetary instrument to targeting reserve money which is basically chosen as intermediate target with interest rates as a short-run target. The monetary aggregate target is important only if there is a need to contain inflation. In this regard, the choice of reserve money as a target is based on the reason that the money multiplier in Indonesia is quite stable and predictable. In addition, the demand for reserve money has shown a reasonably close relationship with GDP while after 1 June

1983, the relationship between M2 and economic activity is not so close as to prior 1983.

In the case of *Korea*, M2 has served as the principle target of monetary control (since 1979). The rationale for the selection of M2 is based on its predictability and controllability compared with other monetary indicators. In the case of Malaysia, prior to 1984, M1 was used by the Central Bank as an intermediate target for the conduct of monetary policy since in the past, it has shown a stable and predictable relationship with economic growth. However, due to persistently high interest rates during the early 1980s, it has led to a structural change in the demand for money. Savers became increasingly sensitive to interest rate changes. In 1983-1984, there was a clear shift in private funds out of non-interest bearing into interest sensitive fixed deposits with the banking system. As a result, the Central Bank of Malaysia chooses M3 which was the broadest monetary aggregate available as its target.

In the case of *Myanmar*, domestic credit remained the target of monetary policy even though interest rates came to play a dominant role in the economy for the first time in several years. In Nepal, quantitative credit ceiling was the target of monetary policy aimed at maintaining external and internal balance in the economy without losing requirement on the credit need of priority and production sectors of the economy.

In the *Philippines*, the adoption of base money as an immediate policy target took place with the shift to a floating exchange rate system in 1984. Prior to October 1984, the immediate monetary target was the net domestic assets of the monetary authorities or the domestic portion of base money. When the inflation peaked at 50 per cent during the 1983 crisis, the shift of operating procedures of monetary control to base money targeting gave the Central Bank of the Philippines more flexibility in containing inflationary pressures.

In *Sri Lanka*, the narrow money supply, M1 was the monetary aggregate used for target settings in the implementation of monetary policy until 1980. However, with a number of innovations and improvements that took place in the banking system in the 1960s and 1970s, the narrow money aggregate was not a useful target to explain the variation in the liquidity situation and consequent price changes in

the economy. Accordingly, the identification of implementation targets was improved by defining new monetary policy indicators such as the monetary base and the money multiplier over which the monetary authority has more control and which can be monitored very closely. After the reliance on open market operation as the main monetary policy measure in 1986, the monetary base especially central bank credit to the Government, has become the primary target.

In *Thailand*, to achieve the objective of economic growth with price stability, the Central Bank seeks to control the growth of both money and credit as intermediate objectives of monetary policy. In this connection, the Central Bank sets target for the growth of M1, M2 and domestic credits consistent with annual targets for economic expansion, domestic prices and external account position in Thailand which include changes in the techniques used by commercial banks for extending credit. The traditional practice of bank lending was found to be deficient somewhat. They have introduced a two-tier prime rate system. Under this system, the interest rates charged for borrowings in the form of overdraft facilities are normally set above the rate charged for term lending. Efforts were also made to curb uncontrolled growth of unused overdraft facilities to reduce its "overhang" on bank liquidity.

2.5 Problems of Monetary Targeting

The SEACEN countries being small and open economy, the external environment exerts considerable influence on the formulation and implementation of monetary policy. Several problems have been identified that a country might have encountered in the process of pursuing the monetary targets. Firstly, the event of the external shocks could disrupt the conduct and target of monetary policy, as exemplified by the external shocks of the late 1970s and 1980s, has exerted a negative impact particularly on the external front of countries worldwide, including the SEACEN region. The worldwide recession in the 1980s experience the slump in commodity and oil prices which affected severely all the countries in the SEACEN region.

The second problem is associated with government behavior while in most cases, created a certain amount of difficulties for central banks to pursue the objective of monetary policy. The impact of external shocks would be it a decline in exports leading to a fall in government revenue. In reality, even if exports declines, imports remained strong

and would eventually lead to adverse impact on the balance of payments. In spite of the decline in government revenue, it has not been flexible enough to accommodate the necessary change in the expenditure and this gives rise to increase in government deficit. In most cases, the central banks have to step in to finance the deficit. As a consequent, external shocks would generally fuel inflation and exacerbate the balance of payments position which gave rise to adjustment issues.

The third problem is associated with the conduct of monetary policy which originated to some extent from the policy itself. For example, the role of central banks in the SEACEN region was implementing a system of extending credit to priority sectors with preferential interest rates. Therefore, central banks are facing conflict of interest in trying to control monetary aggregates on one hand and to extend credit to priority sectors on the other.

The fourth problem is the conduct of monetary policy associated with the difficulty in implementing financial reform. This is because financial reform might occur too rapidly and this might create confusion and failures in the system. It is also observed that the action of the Government also tends to create difficulty for central banks to pursue monetary policy objectives to a certain extent. For example, the central banks might aim to contain monetary growth at certain levels but a substantial amount of monetary growth is directed to financing the Government's deficit. Apparently, such tendency is decreasing in importance in some of the SEACEN countries like Singapore, Malaysia, Thailand and Indonesia.

2.6 Conduct of Monetary Policy on Financial Reforms

The changes in the banking system and financial markets in the 1980s triggered major implications for the conduct of monetary policy in the SEACEN countries. In trying to judge whether the reforms of the financial sector in the 1980s have increased the efficiency of monetary policy, one also runs up against the problem of comparing two situations in which the underlying influences and circumstances differ. The SEACEN economy and its financial system have been subjected to some fairly large shocks during the 1980s. Some of them have been external such as large swings in the country's terms of trade, and some of them have been internal such as large swings in fiscal policy.

The following observations were noted with respect to the conduct of monetary policy in an environment of financial reforms in the SEACEN countries:

- (i) It has been observed that the targets and instruments of monetary policy are changing rapidly in an environment of financial reform. Evidence seems to show that in Malaysia, the interest rate is now becoming a target rather than an instrument of monetary policy. On the issue of monetary target, it has been observed that many of the SEACEN countries utilized the monetary aggregates. In the case of intermediate target, the SEACEN member banks usually use the overall monetary aggregates like M2, M3 and reserve money. As the type of financial instruments used, it has been observed that the central banks and monetary authorities in the region are utilizing a wider range of financial instruments like open market operations, foreign exchange swaps, central bank certificates, bankers' acceptances, negotiable certificates of deposits, government securities, export credit refinancing, etc. The general practice is that central banks in the SEACEN region are currently more inclined to use indirect controls through the use of instruments in conducting monetary policy. However, it has been observed that in spite of a general movement towards financial reforms, lending to priority sectors and special interest rates are still being maintained. Therefore, this raises the question of overall coherence and consistency in financial reforms.
- (ii) The money and capital markets in the SEACEN region are not fully developed. The volume of transactions for government bonds and private papers is very limited. In the case of Korea, the Central Bank finds it more convenient to issue central bank bonds since there is no limit set by the Korean parliament. Since the end of 1988, there was a clear shift from direct control to indirect control and the central bank bonds are paid market rates of interest. Therefore, The Bank of Korea found it relatively easy to control money supply. In general, most of the SEACEN countries, in their conduct of controlling money supply, utilize a combination of policy instruments such as direct and indirect controls.

- (iii) It has been observed that in the Philippines, the cost of issuing monetary instruments is borne by the Central Bank. The Charter allows the Central Bank of the Philippines to book such cost under a special account called the monetary adjustment account which does not affect the profit and loss statement. On the subject of conducting open market operation, it has been observed that in the Philippines, the amount of Treasury bills sold each day is preset and determined by the open market committee. Hence, the open market operation is the main instrument to manage reserve money in a given period.
- (iv) On the issue of policy instruments to achieve policy target, it has been observed that usually central banks desire to control many aspects of the economy at the same time. This will encourage central banks to combine various instruments to maximize control. It is observed that in the SEACEN countries, there exist a mix of objectives and a mix of instruments. In this connection, none of the instruments is 100 per cent effective based on the following evident. It was argued that to control interest rates means to let go monetary aggregates and vice-versa. However, a number of SEACEN member central banks in their conduct of monetary policy control both the monetary aggregates and the interest rates. Nevertheless, the control of monetary aggregates differ in the SEACEN region. There are many variables involved that are intricately linked with development factors and the central banks have limited freedom in policy-making. In addition, the central banks in the SEACEN region tend to have many objectives to fulfil and as such, the policy instruments are not very effective.

2.7 Financial Liberalization and Money Demand

Empirically, traditional money demand equations are frequently characterized by periods of "missing money", unstable parameters and autocorrelated errors. To solve the estimation problems, it is common to find the inclusion of dummy variables, lagged variables, proxies for expectations, etc. Often, these amendments improve the fit of the models but provide no guarantee that the estimated equation is the true long-run relationship.

Financial liberalization taking place in the SEACEN countries in the 1980s has once again raised the question of the relationships between financial variables and the real economy. The substantive issue is whether financial reforms contributed to any stable and predictable relationship of broad and narrow money incomes and interest rates during the 1980s. This question has been central to changes in the implementation of monetary policy in the SEACEN countries in the 1980s.

III. Specification and Estimation Results

To investigate the stability and predictability of money demand in the SEACEN countries, this study used the unit root test and the cointegration technique. Recent development in econometric theory and practice paid special attention on the time series properties of the data typically used in regression analysis. One way of investigating whether the time series data used in econometric analysis is non-stationary is to conduct a unit root test. The unit root test involves testing individual variable in the specified equation to determine whether the series are non-stationary. In case of all the data series tested using unit root test are stationary, one need not conduct the cointegration technique. According to Granger and Newbold (1974), the regression of one non-stationary series on another can give rise to the so-called spurious regression problem and lead to incorrect statistical inferences. To exploit the spurious regression problem, Granger and others applied cointegration technique which is a linear combinations of two or more non-stationary time series.

3.1 Model Specification

In its simplest form, the model specifies the demand for money in the following way:

$$M_1 = f(y, r) \quad (1)$$

$$M_2 = f(y, r) \quad (2)$$

$$M_3 = f(y, r) \quad (3)$$

where M is money and is classified into three categories as follows:

M1 = Demand deposits + currency in circulation.

M2 = M1 + fixed and savings deposits of commercial banks.

- M3 = M2 + fixed and savings deposits of deposit-taking financial institutions being supervised by the central bank or monetary authority.
In other words, M1, M2 and M3 are real 'alternative' measures of money supply.
- y = Aggregate income as measured by GDP = real gross domestic product and GNP = real gross national product.
- r = The rate of interest.

The database for this study comprises of quarterly time series from 1979 through 1989 for nine SEACEN countries: Indonesia, Korea, Malaysia, Myanmar, Nepal, the Philippines, Singapore and Thailand. All the data series are tested for stationary using the unit root test. It is useful to highlight that the interest rate variable used in the estimation varies among the SEACEN countries. The strategy is to use the interest rate factor that is widely used in the respective SEACEN countries.

3.2 Estimation Results

This section compares the cointegration results conducted by the SEACEN researcher and the IMF staff who were responsible for providing the technical assistance for this research study. The comparative results produced by both institutions are shown in Table 1.5. Apparently, there were some minor differences between the SEACEN and the IMF estimated results on the long-run money demand functions for narrow and broad money in some of the SEACEN countries. It would be useful to identify the reasons for the differences between the two results. According to the IMF staff, the differences in the results are derived entirely from the specification of the variables in the estimation equation and not due to data differences. Indeed, the IMF staff claimed that they could replicate the SEACEN results with their data set, and it is possible to eliminate data inconsistencies as a source of discrepancy. The specification of the interest rate terms in SEACEN in-house estimates of the money demand equations differ somewhat from the IMF for some of the SEACEN countries. The IMF specification of interest rate terms have been adjusted for some of the countries like Indonesia, Malaysia, Korea, Singapore and Thailand. On the other hand, the SEACEN in-house estimates took the nominal interest rate data that are frequently quoted or referred to by the authority of the respective countries.

Table 1.5

**MONEY, INCOME AND INTEREST RATE IN
THE SEACEN COUNTRIES**

	Income Elasticity	Interest Rate Semi- Elasticity	DF	ADF	SEACEN Cointegration Status	IMF Results
INDONESIA						
m1, gdp, r (1983:1-1989:4)	1.45 (9.25)	-2.31 (-2.66)	3.19	2.10	NO	YES (Narrow money)
m2, gdp, r (1983:1-1989:4)	2.69 (14.79)	-1.61 (-1.26)	4.52	2.05	YES	YES (Broad money)
KOREA						
m1, gnp, r1 (1979:1-1989:4)	0.82 (18.33)	-0.73 (-2.72)	2.53	3.14	NO	NO (Narrow money)
m2, gnp, r1 (1979:1-1989:4)	1.13 (6.74)	-0.93 (-9.29)	6.38	4.42	YES	} POSSIBLE (Broad money)
m3, gnp, r1 (1979:1-1989:4)	1.92 (50.62)	-0.64 (-2.82)	5.53	3.62	YES	
MALAYSIA						
m1, gdp, r2 (1979:1-1989:3)	1.07 (19.06)	-1.06 (-3.55)	3.36	3.40	NO	YES (Narrow money)
m2, gdp, r2 (1979:1-1989:3)	1.65 (23.33)	0.02 (0.05)	3.14	3.16	NO	POSSIBLE (Broad money)
m3, gdp, r4 (1983:1-1989:3)	0.59 (4.21)	4.50 (5.58)	4.09	2.71	YES	
MYANMAR						
m1, gdp (1978-1988)	1.25 (3.13)		5.58	3.10	YES	YES (Narrow money)
m2, gdp (1978-1988)	2.09 (8.43)		10.25	2.27	YES	NO (Broad money)
NEPAL						
m1, gdp (1978:1-1989:4)	1.10 (14.17)		5.49	2.46	YES	POSSIBLE (Narrow money)
m2, gdp (1978:1-1989:4)	1.63 (24.82)		4.18	3.27	YES	NO (Broad money)

Table 1.5 (cont'd)

MONEY, INCOME AND INTEREST RATE

	Income Elasticity	Interest Rate Semi- Elasticity	DF	ADF	SEACEN Cointegra- tion Status	IMF Results
PHILIPPINES						
m1, gnp, r4 (1983:1-1989:4)	1.78 (6.59)	-0.63 (-1.94)	4.68	2.44	YES	POSSIBLE (Narrow money)
m2, gnp, r4 (1983:1-1989:4)	1.79 (1.77)	-4.91 (-4.00)	6.06	2.03	YES	YES (Broad money)
SINGAPORE						
m1, gdp, r5 (1981:1-1989:4)	0.96 (13.70)	-0.57 (-1.66)	3.23	1.90	NO	
m1, gdp, r6 (1981:1-1989:4)	0.76 (8.39)	-2.11 (-3.55)	3.54	1.28	NO	YES (Narrow money)
m2, gdp, r5 (1981:1-1989:4)	1.55 (21.63)	-0.73 (-2.10)	2.88	2.44	NO	NO
m2, gdp, r6 (1981:1-1989:4)	1.34 (14.49)	-2.30 (-3.81)	2.86	1.72	NO	(Broad money)
SRI LANKA						
m1, gnp, r7 (1978:1-1989:4)	0.67 (11.21)	-2.25 (-4.65)	2.55	0.60	NO	
m1, gnp, r8 (1978:1-1989:4)	0.59 (10.55)	-2.13 (-5.43)	3.28	0.82	NO	YES (Narrow money)
m2, gnp, r7 (1978:1-1989:4)	0.99 (42.23)	0.38 (2.03)	4.87	3.65	YES	POSSIBLE (Broad money)
m2, gnp, r8 (1978:1-1989:4)	1.01 (44.20)	0.38 (-2.38)	4.82	3.59	YES	
THAILAND						
m1, gnp, r9 (1981:1-1989:4)	0.955 (13.73)	-1.730 (-2.22)	-4.337	-1.494	YES	NO
m1, gnp, r10 (1981:1-1989:4)	0.935 (12.24)	-1.569 (-2.012)	-4.203	-1.516	YES	NO
m1, gnp, r11 (1981:1-1989:2)	0.934 (8.809)	-0.685 (-1.216)	-3.802	-1.469	YES	NO
m2, gnp, r9 (1981:1-1989:4)	1.823 (18.77)	-0.032 (-0.029)	-1.358	-2.303	NO	NO
m2, gnp, r10 (1981:1-1989:4)	1.795 (17.07)	-0.534 (-0.498)	-1.479	-2.278	NO	NO
m2, gnp, r11 (1981:1-1989:2)	1.751 (13.98)	-1.314 (-1.976)	-1.911	-1.444	NO	NO

Table 1.5 (cont'd)

MONEY, INCOME AND INTEREST RATE

GDP	=	Real GDP
GNP	=	Real GNP
m1, m2	=	Real 'alternative' measures of money supply
r	=	Time deposit rate (3 months)
r1	=	Time deposit interest rate
r2	=	Base lending rate
r3	=	Interbank 3-month rate
r4	=	Average time deposit rate (< 1 year)
r5	=	Average 3-month interbank offered rate
r6	=	Weighted average domestic rate
r7	=	Commercial banks' average interest rate on fixed deposit (3 months)
r8	=	Commercial banks' average interest rate on fixed deposit (6 months)
r9	=	Deposit rate between 3 and 6 months
r10	=	Deposit rate between 6 and 12 months
r11	=	Treasury bill between 3 and 30 days

The numbers in parentheses under the coefficient estimates are t-statistics.

DF	=	Dickey-Fuller test assumes error is first order autoregressive
ADF	=	Augmented Dickey-Fuller test assumes error is of fourth order (for SEACEN cointegration status)
YES	=	Either the DF or ADF is significant at a 10-percent level
NO	=	Neither the DF or ADF is significant at a 10-percent level

Sources:

DEF	=	DGP Deflator
CPI	=	Consumer Price Index
INDONESIA	:	GDP, DEF from International Monetary Fund (IMF) r from SEACEN Financial Statistics (SFS)
KOREA	:	All data are seasonally adjusted All data from country paper, including CPI
MALAYSIA	:	All data from country paper, including CPI
MYANMAR	:	m1, m2 from country paper DEF from International Financial Statistics (IFS)
NEPAL	:	All data from country paper
PHILIPPINES	:	GNP, DEF from IMF m1, m2, r3 from SFS
SINGAPORE	:	All data from country paper, including CPI
SRI LANKA	:	All data from country paper, including CPI
THAILAND	:	GNP, DEF from IMF m1, m2, r9, r10, r11 from SFS.

For the narrow money or M1 equation, differences in cointegration results between the IMF and SEACEN were observed for countries like Indonesia, Malaysia, Singapore and Thailand. In the case of Thailand, the SEACEN estimates showed that the long-term demand for narrow money was stable at 10-per cent level compared with the IMF which showed no cointegration. On the other hand, similar results were observed for narrow money found in countries like Korea, Myanmar, Nepal, the Philippines and Sri Lanka. The differences in the results between the IMF and SEACEN could be due to the choice of interest rate variable included in the estimation. The interest rate term selected in the SEACEN estimates for Indonesia was the 3-month time deposit rate, for Malaysia was the interbank 3-month rate; for Singapore, the average domestic rate; and for Thailand, the deposit rates between 3 and 6 months. On the other hand, the interest rates selected by the IMF for narrow money were all types of deposit rates.¹

The SEACEN results seem to suggest that the demand for narrow money in the long run was unstable for Indonesia, Korea, Malaysia, Singapore and Sri Lanka. Narrow money does not appear to bear long-run relationship to income and interest rate. Reflecting the wide fluctuations in velocity during the 1980s, narrow money was not cointegrated with income and interest rates, although tests of the effects of interest rate on money demand were confined to a relatively short period (1979-1989). The developments in income and interest rates influence changes in velocity trend and this possibly reflects a portfolio shift to interest bearing deposits following the onset of the liberalization of interest rates in the 1980s.

The overall results regarding the stability of money demand functions in the SEACEN countries are mixed. Based on the results produced by the SEACEN in-house estimates showed at least one monetary aggregate appears to have been related to income and interest rates over the long run, the demand for narrow money in most of the SEACEN countries is on the whole rather poor. This could be due to the external shock and the introduction of financial deregulation and liberalization in most of these countries. Consequently, the demand for broad money appeared to be the most stable for almost all the SEACEN countries, except Singapore. These findings suggest that financial reforms taking

1. *Financial Liberalization, Money Demand and Monetary Policy in Asian Countries*, occasional Paper No. 84, IMF study, July 1991, p. 43.

place in the 1980s, the period in which many countries substantially deregulated their financial system, especially on the interest rate liberalization, highlight the significance of broad money, M2 or M3, as intermediate target of monetary policy in most of the SEACEN countries, with the exception of Singapore. The demand for broad money bears stable relationship with income and interest rates in the long run.

The SEACEN in-house estimates further investigated the estimates for narrow money for Singapore and Malaysia using various types of interest rates. However, the results were still negative for these two countries. The possible reasons for Malaysia were there could be a portfolio shift in the demand for narrow money from non-interest bearing to interest bearing deposits following the liberalization of interest rates in 1978. In the case of Singapore, being a stable financial center and highly open economy, the interest rates and the exchange rates do not seem to show there is a stable long-run demand for narrow money.

Some minor differences were also observed between the SEACEN and the IMF estimation results for broad money for countries like Malaysia, Myanmar, Nepal and Singapore. The SEACEN results showed the demand for broad money in the long run for these countries were unstable and unpredictable with income and interest rates. The differences in the results between these two studies were again due to the choice of interest rate variables. In the IMF study for broad money, the market interest rates on alternative assets were generally proxied by either money market, treasury bill or international interest rates such as LIBOR (London Interbank Offered Rate). The rate of return on broad money was approximated by a representative deposit rate multiplied by the share of quasi-money in broad money. This definition assumes that all components of narrow money, the return on alternative assets were proxied by deposit money market or price inflation rates.² For broad money, the IMF used the following interest rate variables for the following countries: Indonesia and Malaysia, the IMF used the 3-month LIBOR minus deposit rates weighted by the share of quasi-money in broad money; Korea, the interest rate in curb markets minus deposit rates weighted by the share of quasi-money in broad money; the Philippines, 91-day treasury bill rate minus deposit rates weighted by the share of quasi-money in broad money; Singapore, the money market rate; Sri Lanka, deposit rates weighted by the share of quasi-money in

2. Ibid, p. 43.

broad money; and Thailand, money market rate minus deposit rates weighted by the share of quasi-money. In the case of the SEACEN in-house estimates, the choices of interest rate variable were as follows: Malaysia took the 3-month interbank deposit rate; Myanmar and Nepal only used gross domestic product in its estimation; and Singapore took the average 3-month interbank offered rate and the weighted average domestic rate. The choices of these deposit rates were based on popularity and representativeness. For some of these countries which showed no cointegration with income and interest rates in the long run, the SEACEN researcher conducted further investigation by exploring various types of interest rates in the estimation and the following results were obtained.

The SEACEN estimation results showed that there were no long-run stable demand for broad money functions for countries like Malaysia and Singapore compared with the IMF results which showed the reverse position. For Malaysia, the SEACEN estimates were extended further to M3 and the results showed positive cointegration as shown in Table 1.6. The interest rate variable used in this case was the base lending rate. This result suggests that the broad money, M3, which includes the other deposit-taking institutions such as finance companies, merchant banks and discount houses offered attractive interest rates than the commercial banks. The portfolio shift by depositors were largely influenced by the competitive interest rate offered by these institutions following the liberalization exercise.

Further estimation exercise was also conducted by SEACEN on Singapore by trying other variables such as the exchange rate. However, the results suggested that there was a long-run stable demand money function for broad money in the case of Singapore.

Table 1.6**MONEY, INCOME AND INTEREST RATE: MALAYSIA**

	Income Elasticity	Interest Rate Semi-Elasticity	DF DF	ADF ADF	Cointegration Status	
					SEACEN	IMF
M3 GDP BLR	0.59	4.5	4.09	2.71	Yes	-

Source: SEACEN Estimation.

In most of the SEACEN countries, the process of financial liberalization appears to be having significant effects on the demand for both narrow and broad monetary aggregates. The demand for transaction balances (M1) for most of the SEACEN countries tend to move downward and the shifts vary in size and tend to be unstable and unpredictable in the long run, reflecting interest sensitivity and shift to high yielding assets. On the other hand, the demand for broader monetary aggregates is under two opposing influences. On the one hand, the shifts out of some lower yielding financial assets into higher yielding financial instruments are putting upward pressures on the demand for those broader aggregates in which the higher yielding instruments are included. On the other hand, there is a proliferation of new financial instruments with market-related interest rates outside the conventionally defined broad aggregates which closely substitute for financial assets included in those aggregates; the demand for these new instruments is putting downward pressures on the demand for broad aggregates. These influences operate unevenly over time and entail a higher degree of instability of demand, at least over the short run.

In conclusion, the results regarding the stability of money demand functions in the SEACEN countries are mixed, however. For most countries, at least one monetary aggregate appears to have been related, in a stable fashion, to income and interest rates over the long run. However, even where this is the case, the short-run predictability of monetary developments is, on the whole, rather poor. Financial liberalization has undoubtedly been a major contributor to this poor predictability, although the precise effects of financial liberalization of money demand cannot be clearly identified in many cases.

IV. Relative Effectiveness of Monetary Policy Following Financial Liberalization

The empirical results identify several general features of money demand in the SEACEN countries. In particular, interest rates appear to play a significant role in determining demand for both broad and narrow monetary aggregates; broad money is sensitive to relative asset returns as opposed to the general level of interest rates; and, a broad-money income elasticity greater than one is a structural feature in most countries.

The financial liberalization taking place in the SEACEN countries have greatly enhanced the role of interest rates in transmitting monetary policy effects to the economy. Historically, monetary policy influences have worked partly through interest rates and partly through "credit rationing" or non-price elements. Over the years, the credit-rationing elements have been gradually weakening and recently, the wave of financial reforms has substantially reduced the significance of that transmission channel for monetary policy in most of the SEACEN countries. At this stage, non-price constraints on credit availability appear to be an important channel for transmitting monetary policy effects in most of the SEACEN countries.

A great many of the financial reforms have contributed to the weakening of non-price credit-rationing mechanisms while simultaneously, strengthening the role of interest rates. In particular, these include interest sensitivity of bank deposits and other non-marketable financial instruments, the growth and development of financial markets and of marketable financial instruments, changes in financial regulations, and the development and integration of international financial markets. Together, all these factors have greatly increased competition within the financial industry and the role of market forces in determining financial and credit flows. As a result, changes in interest rates, regardless of their origin, tend to spread very quickly over the whole range of financial assets and liabilities.

This shift in the transmission channels of monetary policy has important implications for the behavior of economic agents in the non-financial sectors. It is likely to alter their savings and spending behavior. In the new environment, the effects of monetary policy or interest rate changes on the economy may turn out to be quite different from that in the past.

To the extent that the financial system is becoming more competitive than before, borrowing and lending rates may adjust very quickly. Several arguments tend to favor the proposition that with the liberalization of interest rates, it would generate increase competition in the financial system. This would mean that the interest rate spread between the average lending rate and the average deposit rate would narrow down over time. Table 1.7 to Table 1.12 showed the interest rate spread between the average lending rate and the average deposit rate of commercial banks in selected SEACEN countries like Korea,

Table 1.7**INTEREST RATE SPREAD: INDONESIA**

	Average Lending Rate (1)	Average Deposit Rate (2)	Spread (1) - (2)
1980			
1981			
1982			
1983	21.5	15.99	5.51
1984	23.4	19.43	3.97
1985	22.1	15.39	6.71
1986	21.1	14.58	6.52
1987	22.1	17.54	4.56
1988	22.3	17.75	4.55
1989	21.0	17.06	3.94
1990			

Note: Lending rate is weighted capital lending rate.
Deposit rate is 3-month deposit rate.

Table 1.8**INTEREST RATE SPREAD: KOREA**

	Average Lending Rate (1)	Average Deposit Rate (2)	Spread (1) - (2)
1980	18.83	12.04	6.79
1981	16.92	12.18	4.74
1982	11.84	9.79	2.05
1983	9.78	6.39	3.39
1984	9.93	5.45	4.48
1985	10.00	5.61	4.39
1986	9.14	6.47	2.67
1987	8.69	6.38	2.31
1988	9.14	5.65	3.49
1989	10.28	5.76	4.52
1990	10.37	6.10	4.27

Table 1.9**INTEREST RATE SPREAD: MALAYSIA**

	Average Lending Rate (1)	Average Deposit Rate (2)	Spread (1) - (2)
1980	10.22	6.20	4.02
1981	12.07	7.77	4.30
1982	12.34	7.17	5.17
1983	11.64	6.61	5.03
1984	12.80	7.98	4.82
1985	12.10	6.81	5.29
1986	12.02	6.45	5.57
1987	9.73	3.63	6.10
1988	8.95	3.27	5.68
1989	8.70	3.79	4.91
1990	8.99	4.50	4.49

Table 1.10**INTEREST RATE SPREAD: PHILIPPINES**

	Average Lending Rate (1)	Average Deposit Rate (2)	Spread (1) - (2)
1980			
1981	17.119	16.743	0.376
1982	18.219	15.808	2.411
1983	19.331	15.295	4.036
1984	26.743	24.157	2.586
1985	28.234	21.828	6.406
1986	17.348	14.770	2.578
1987	13.295	9.767	3.528
1988	15.998	13.395	2.603
1989	19.457	16.982	2.475
1990	24.317	20.208	4.109

Note: Lending rate is of secured loans of all maturities.
 Deposit rate is of time deposits of all maturities.

Table 1.11
INTEREST RATE SPREAD: SRI LANKA

	Average Lending Rate (1)	Average Deposit Rate (2)	Spread (1) - (2)
1980	17.2		
1981	18.4		
1982	20.0		
1983	20.6	16.475	4.125
1984	20.5	14.650	5.850
1985	20.1	12.975	7.125
1986	19.0	10.700	8.300
1987	18.2	10.075	8.125
1988	18.2	11.900	6.300
1989	18.5	12.800	5.700
1990	18.7	16.000	2.700

Note: (2) = Weighted deposit rates of time deposits.

Table 1.12
INTEREST RATE SPREAD: THAILAND

	Average Lending Rate (1)	Average Deposit Rate (2)	Spread (1) - (2)
1980	14.12	9.91	4.21
1981	14.26	10.86	3.40
1982	13.96	10.73	3.23
1983	13.33	9.99	3.34
1984	13.56	10.74	2.82
1985	13.39	10.82	2.57
1986	11.55	9.36	2.19
1987	9.56	6.56	3.00
1988	9.47	6.44	3.03
1989	10.59	7.77	2.82
1990	12.47	9.34	3.13

Sources: Data are provided by member central banks.

Malaysia, the Philippines, Sri Lanka and Thailand. For these countries, the interest spread seemed to exhibit irregular movements during the 1980s, probably due to direct or indirect controls by the authority. However, the spread tend to narrow down toward the end of the 1980s, and this possibly reflects the effectiveness of monetary policy in promoting competition and thus improving the efficiency in financial resource allocation among the financial institutions.

The increased competition in the financial market-place implies a higher degree of interest rate variability or risk and this, together with deregulation or relaxation of interest rate controls, has contributed to raising the average level of interest rates. A higher average level of interest rate means that interest costs as a proportion of total costs would entail large effects for any given change in interest rates.

Another effect of changes in the financial system has led to a higher degree of substitutability of various types of financial assets so that changes in interest rates immediately alter the rate of return on the whole range of financial assets relative to physical assets. This would tend to increase the total extent of interest rate influence, because financial assets have become more substitutable with each other but not with physical assets, i.e., the investment choice is between money and financial assets on one side and physical assets on the other side, rather than, for instance, among money, bonds, other financial assets and physical assets. In other words, the composition of financial assets has changed in such a way that they act much more like a single category relative to physical assets.

With interest rate liberalization, indirect effects were also evident. Some indirect effects of interest rates on the domestic economy would now seem to be larger than before. For example, the greater integration of domestic and international financial markets means that even a small change in domestic interest rates would induce, *ceteris paribus*, changes in exchange rates which would tend to reinforce the direct effects of interest rates on aggregate demand.

Following interest rate liberalization, there appears to be extensive use of variable rate of lending or borrowing. If all loans and market borrowings were to be on a floating rate basis and if all prices were to become fully flexible, the interest elasticity of demand would tend to be lower than under a fixed rate system. In this case, incomes of

all borrowers and lenders would adjust upwards immediately in response to any change in interest rates, i.e. 'real' rates facing both borrowers and lenders would remain constant at all times.

4.1 Monetary Control Problems and Monetary Targeting

The recent financial liberalization are making it more difficult to measure or define a given monetary aggregate and also to draw the demarcation line between various aggregates. The problems of the degree of "moneyness" and of liquidity of various financial instruments which are used as bases for measurement cannot be identified precisely. Nevertheless, most of the countries in SEACEN have distinguished financial instruments in terms of either moneyness or liquidity in constructing statistical measures of money. The moneyness or liquidity content of various instruments no doubt changes over time, but such changes were generally gradual and were dealt with by periodic redefinitions of monetary aggregates. The recent wave of financial innovation may turn out the conventional procedure of redefining monetary aggregate may not be adequate to deal with the problem. An important reasons for this is that financial instruments with both investment features, bearing market-related interest rates, and transaction features are becoming increasingly common. In some cases, both features are more or less equally powerful. Examples of such instruments include bank deposits which combine features of both savings and checking accounts either directly or through automatic transfers. There are other similar instruments which no longer allow a meaningful distinction between narrow and broad monetary aggregates.

The problems of defining broader aggregates are virtually as serious as those for narrow aggregates. The spectrum of liquid financial instruments has become very wide and cannot be distinguished in terms of their liquidity content. They include a broad array of non-marketable instruments issued by banks and other financial intermediaries, and numerous marketable financial instruments issued by financial institutions, non-financial firms and government. Many marketable instruments are now considerably more liquid than before, reflecting more developed secondary markets and a shortening of maturities at the time of issue. Not surprisingly, the definitions of M1, M2 and M3 and the distinction between them have become less meaningful as certain financial instruments with roughly comparable liquidity content are not included in either M2 or M3. Another source of complications for defining

money is that the proliferation of various types of financial instruments has been associated with declining transaction costs of shifting from one instrument to another. The decline in transaction costs, in turn, has contributed to widening the spectrum of financial instruments that can be used for making payments and/or for providing different grades of liquidity at any given period. This process is continuing and makes it difficult to determine, on an *ex ante* basis, the degree of moneyness and/or liquidity of various instruments. The problem is further complicated by the fact that the extent of moneyness and liquidity is also influenced by the thrust of policy; for example, a tight monetary policy which pushed up interest rates may tend to encourage the use of certain investment instruments for transaction purposes.

The difficulties of defining money reflect the increased ability of financial institutions to create and sell or make a large number of liquid financial instruments. In other words, the process through which the supply of various monetary aggregates becomes available is undergoing changes with a general tendency towards more elastic money or liquidity. Broadly, there are two influences on the supply of money or liquidity: that stemming from changes in various currency and reserve ratios at a given level of interest rates, and that linked directly to interest rate movements.

The financial changes that took place in the SEACEN countries have influenced the size of the money and reserve multipliers -- relations of various monetary or liquidity aggregates to monetary base and/or bank reserves. Cash management and other innovations are tending to reduce the public's currency holdings and lower yielding transaction balances relative to total deposits or financial assets. In any case, the declining currency holdings and transaction balances with lower reserve requirements entail, *ceteris paribus*, higher money and reserve multipliers. Upward pressures on the money and reserve multipliers are also caused by the fact that the effective reserve ratio against any given category of deposits tend to fall as the public shifts funds into substitute instruments with no reserve requirements or lower reserve requirements; some examples of such instruments are money market funds and treasury bills. One way to look at the significance of this influence is to compare changes in the money and reserve multipliers underlying the broadest aggregate, example M3.

With regard to interest rate influences, the money supply appears to be becoming more responsive to interest differentials between bor-

rowing and lending rates. As observed in most of the SEACEN countries, the proportion of deposits at banks and other financial intermediaries which bear market-related rates has risen substantially in recent years. Therefore, the financial intermediaries willingness to issue credit is now more directly linked to spreads on interest rates charged on loans and paid on deposits.

Another important aspect of financial liberalization taking place in the SEACEN countries in the 1980s was the overhauling of financial regulatory requirement that financial intermediaries need to comply with, such as ratio requirements and lending to priority sectors. Such controls had been imposed over the years with the intention of directing resources to favored activities such as housing, agriculture and manufacturing. Credit growth guidelines were also imposed on the financial institutions over a long period with the aim of controlling money and credit growth in the absence of market-determined interest rates. Although the ratio controls on all financial institutions were used actively for monetary policy purposes in the 1970s, this form of monetary control instrument is gradually phased out in most of the SEACEN countries in the 1980s. While the ratios in general were effective in easing or tightening of liquidity conditions, they did not have the capacity to exert sustained independent influence on monetary conditions: first, institutions could manage their level of reserve asset holdings simply by trading in government securities in the secondary market; second, any pressure applied through ratios tended to promote a redirection of financial intermediation services away from the specified institutions. This process of disintermediation effectively undermined the impact of a policy tightening on the broader money and credit aggregates. The main lesson observed from the SEACEN countries' experience on the impact to be applied through ratios would be felt through interest rate pressures. Thus, if the interest rate consequences of a tight monetary policy could be tolerated, there was no additional monetary policy gain to be had through ratio controls.

In view of the weaknesses of ratios as an instrument of monetary control, their costs would be in terms of economic efficiency and their adverse effects would be on the prudential soundness of the financial system. The uses of ratios were minimized or abolished in some of the SEACEN countries in the 1980s. The only cost to the authority of abolition was the loss of a source of cheap funding. However, an implicit tax of this sort was not regarded as efficient or equitable means

of financing government activities. This attitude to ratios was reflected in the government's willingness to pay market-determined interest rates on its debt issues which effectively rendered most ratio controls redundant in the 1980s.

Like ratio controls, the credit growth guideline taking place in the 1970s was not regarded as an effective tool of monetary management. This guideline, generally contained no effective means of penalizing non-compliance. As with ratios, the lending guidelines would have been designed to have a monetary policy impact, but at the expense of having severe efficiency costs within the finance sector. Moreover, had the guideline been used to tighten monetary policy effectively, higher interest rates would still have been called for to ration the scarce supply of credit. If the monetary authorities and central banks are able to gain control over the supply of liquidity and short-term interest rates by other means, then the use of a lending guideline as a tool of monetary management offers no benefits and many costs. Due to its efficiency costs and ineffectiveness, the lending guideline was abolished or phased out in some of the SEACEN countries.

The scrapping or minimizing of ratio controls and the lending growth guideline was part of a move towards a more efficient framework for monetary management. The new approach to monetary policy relies on influencing the excess demand for liquidity in the financial system and hence, in the first instance, short-term interest rates. All financial institutions' funding costs are liable to be affected by sustained pressure on short-term interest rates. Funding costs are, in turn, likely to affect the interest rates at which loans can be made and hence, the ability of institutions to expand credit. This approach of monetary control is likely to be effective because it cannot be undermined by disintermediation. Moreover, there is nothing within the monetary policy framework that gives an unfair advantage to a particular group of financial intermediaries.

4.2 Constraints on Monetary Policy

The central bank and monetary authorities in conducting monetary policy face several constraints. The first area is concerned with the central bank operations in providing development financing. A question also arises as to whether how one should deal with the wide range of lending that the central bank is conducting which does not include

lending to government or lender-of-last-resort facilities to financial institutions in distress. The central bank in most of the SEACEN countries are active in providing financing in those areas where the financial institutions have neglected. However, there is a limit to central bank financing as the impact is highly expansionary on money supply.

The central banks in the SEACEN countries have difficulty in building a sound financial market due to a number of factors, such as poor financial infrastructure facilities, lack of well-trained personnel and loose regulatory framework governing the operation of the financial market. The program made so far in the SEACEN countries to build a sound financial market is mixed. Singapore, Malaysia, Korea and Thailand have stepped ahead of the other SEACEN countries in establishing a sound financial market while in the other SEACEN countries, the central banks need to play very active role. There are problems associated with not having a sound financial market with the implementation of monetary policy. For example, in Nepal, the liberalization of interest rate did not produce positive responses from the financial institutions. This would probably be due to the lack of preparatory works being done in educating the financial institutions before mounting any new monetary measures.

Problem may also arise if only part of the financial system is liberalize, while a large part of the system is still heavily controlled. In this situation, the banks are still under special directives to lend to specific or priority sectors. It is also a problem if the central bank is to remain in the system as a strong competitor. Some central banks in the SEACEN region tend to lend a large amount of loans in terms of primary credit with concessionary interest rates.

The implementation of monetary policy in a country with strong public sector involvement will also pose a major constraint. For instance, in Indonesia, the strong state banks impede the growth of smaller banks before the deregulation exercise in 1981. After the deregulation in 1981, the number of private and small banks increased substantially.

V. Concluding Observations

The 1980s has posed several difficult challenges for macroeconomic management in the SEACEN countries. The global recession and the

slowing down of economic growth in the industrial and SEACEN countries, worsening terms of trade, rising interest rates and the proliferation of protectionist policies have called for reorientation of policies to sustain non-inflation growth and stable balance of payments. Reforms in monetary policy and the financial systems have become part of the overall adjustment strategy. However, it should be stressed that the liberalization of the financial system has to be handled cautiously so as to minimize possible disruption and shocks which could threaten the stability of the existing financial market and the economy itself.

This study has attempted to pursue certain common themes and issues across countries without losing sight of the substantial differences in their experience. Given that the ground covered is wide ranging and complex, it has not been possible to do full justice to many aspects of financial changes and their implications. For the same reason, it is difficult to set forth only one or two definite conclusions. In what follows, some tentative conclusions or observations on the SEACEN countries' experience with financial reforms in the 1980s, following the implementation of macroeconomic adjustment to external shocks, some of which are explicit and others implicit analysis.

The most obvious observation is that while there are substantial difference in the overall pace of financial liberalization between the SEACEN countries, all of them have been experiencing a noticeable degree of change in their financial systems. Some SEACEN countries like Singapore and Korea already had matured, sophisticated and market-based financial sectors, while others are gradually moving in the same direction liberalizing their financial system. The crucial differences between countries seem to concern the direction and timing of particular changes. Nevertheless, the financial reform initiated in the SEACEN countries has been gradual, orderly and less comprehensive, and has been successful compared to the Latin American countries which ended in disarray.

Singapore was the first among the SEACEN countries to deregulate its financial sector. Sri Lanka also embarked on financial reforms in the context of its overall economic liberalization program in the late 1970s. In the early 1980s, Indonesia, Malaysia and the Philippines implemented significant financial reforms. Korea and Thailand, which took gradual steps toward liberalization, in the early 1980s, intensified in the latter half of the 1980s. Nepal began to implement a financial liberalization

program in mid-1988. In Myanmar, where the financial system has remained highly regulated, some initial steps were taken in 1989.

Structural changes in the financial system have affected both the transmission channels for monetary policy as well as the conduct and effectiveness of monetary policy. The development of financial markets and new sources of credit have weakened the effectiveness of the traditional reliance on direct controls. The move towards more flexible exchange rate arrangements and the relaxation of restrictions on international capital flows have made the balance of payments and exchange rates increasingly important channels for the transmission of monetary policy.

It has been observed that financial liberalization has led to poor predictability in the demand for money. Based on the overall estimation results, it was observed that the stability of the demand for narrow and broad money was rather mixed in the SEACEN countries. However, at least one of the monetary aggregates appears to be related, in a stable manner, to income and interest rates over the long run. The shifts out of some low yielding financial assets into higher yielding financial assets are probably causing the poor predictability in the demand for money in the short run.

The next observation concerns the definition of money. The problems of identifying and measuring various monetary aggregates, e.g., M1, M2 and M3 have been the concern of the monetary authority. With the proliferation of financial instruments in recent years, it creates some problems in defining the degree of liquidity and moneyiness. The introduction of credit cards is just as good as checking account. However, for the broader aggregates, these problems are quite widespread and have become more serious in all countries because of recent financial changes. In fact, it is not longer clear that M2 or M3 are significantly more meaningful.

The following observation relates to using one-single monetary variable as the sole or even the primary guide for monetary policy. The problems stemming from financial changes clearly highlight the fallacy of using any single variable as the sole or main target for monetary policy. In a world of changing financial arrangements, the meaning and significance of monetary variables like M1, M2, M3, bank credit, short-term interest rates, etc. change over time. In these circumstances,

monetary policy must be guided by a more complex set of information based on a single monetary variable. Once the process of financial changes slows down sufficiently and new relations between monetary and non-monetary variables become established, it may be possible to reduce the set of information on which policy decisions are based. Even at that time, however, the desirability of using any one variable as the sole target would continue to be questionable, as it has been in the past. Moreover, in the new, more diversified and developed financial arrangements, the substitutability among various financial assets is likely to be higher than before, making it more difficult for a single variable to represent the thrust of monetary conditions.

The financial changes taking place in the 1980s have also highlighted the problems of pursuing short-term targets for monetary aggregates. As discussed earlier on, those changes have weakened the already loose and uncertain short-term relations between monetary aggregates and economic activity, and also increase difficulties of controlling aggregates over a short-time horizon. It would appear that the pursuit of short-term targets for monetary aggregates may continue to be unfeasible even after the current wave of financial innovations has passed.

The next observation relates to the ability of monetary policy to influence economic activity and prices. Some argued that financial innovations and deregulation in the 1980s have weakened the ability of monetary policy to influence the economy because they have reduced the effectiveness of non-price credit rationing mechanisms in transmitting monetary changes. In the absence of non-price elements, interest rates have become important element to move much more than before to yield a given change in aggregate demand. This view is based on the notion that interest elasticities of various expenditure components have been low in the past and assume that they will continue to be that way in the future. It is also of immense importance to ensure that the deregulation of interest rates does not result in a rapid increase in the newly freed rates as any abrupt rise in interest rates during the initial stage of deregulation would hamper the future progress of liberalization.

The implementation of monetary policy has also went through some changes as central banks shifted away from direct controls toward interest rates and other indirect market-based instruments. Even though reserve requirements continued to be used actively in a number of SEACEN

countries, its use in many other has diminished because of concerns that changes in reserve requirements may be too disruptive and that high reserve requirements may adversely affect the development of the financial system. The central bank's discount facilities often involved subsidy. The central banks found it impractical to rely on the discount mechanism for monetary control purposes. Consequently, open market operations increasingly have become the main instrument of monetary policy in most SEACEN countries.

A more sophisticated and indirect system for monetary control also needs to be developed in the newly deregulated financial environment. The use of reserve requirements and rediscount policies should be more flexible. To enhance the role of rediscount as a means of liquidity control, the present rediscount system should be refined into an effective instrument capable of achieving adjustments in individual banks' reserves. In addition, the role of open market operations will be increased by diversifying the market instruments used and by fostering close relationship between the dealers and brokers.

Financial liberalization implemented by most of the SEACEN countries was aimed at improving the efficiency of resource allocation. Specifically, it has been targeted at removing distortions from the financial system that discouraged savings, encouraged a misallocation of investment resources and/or inhibited the development of an efficient financial sector. Removal of these price distortions was expected to increase domestic savings relative to domestic investment and hence, *ceteris paribus*, improve the current account of the balance of payments. By examining movements in the current account deficit in relation to national income, we can determine whether or not the domestic supply of savings has improved in relation to investment demand. It has been observed that following financial liberalization, savings in the form of gross national saving with financial institutions have increased substantially for most countries in the SEACEN region as reflected in Table 1.13.

The objective of financial deregulation has been to improve the efficiency of the financial sector; to minimize the costs involved in financial intermediation between savers and investors; and, in the management of economic risk. The evidence of efficiency gains is largely circumstantial but nevertheless, persuasive. First, there has been a boom in the financial services industry in the 1980s in most of the

Table 1.13

GROSS NATIONAL SAVING OF THE SEACEN COUNTRIES

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Indonesia (Billion rupiah)	11243.9 <i>-4.3552</i>	10754.2 <i>-14.702</i>	9173.1 <i>109.912</i>	19255.5 <i>16.9245</i>	22514.4 <i>10.8685</i>	24961.4 <i>-4.6283</i>	23806.1 <i>47.1996</i>	35042.5 <i>17.8497</i>	41297.5 <i>30.0826</i>	53720.9
Korea (Billion won)	7778.4 <i>20.5967</i>	9380.5 <i>21.2472</i>	11373.6 <i>41.9277</i>	16142.3 <i>21.5464</i>	19620.4 <i>12.5236</i>	22077.6 <i>30.9567</i>	28912.1 <i>29.1064</i>	37327.4 <i>26.6514</i>	47275.7 <i>5.15444</i>	49712.5
Malaysia (Million ringgit)	15633 <i>-6.7165</i>	14583 <i>2.96235</i>	15015 <i>23.6097</i>	18560 <i>23.0980</i>	22847 <i>-13.183</i>	19835 <i>-8.3035</i>	18188 <i>36.1062</i>	24755 <i>12.8782</i>	27943 <i>4.98872</i>	29337
Myanmar (Million kyat)	6674 <i>12.2715</i>	7493 <i>-10.356</i>	6717 <i>0</i>	6717 <i>-13.756</i>	5793 <i>-12.566</i>	5065 <i>13.0898</i>	5728 <i>-3.9280</i>	5503 <i>39.2149</i>	7661 <i>63.3598</i>	12515
Nepal (Million rupee)	3085 <i>15.4294</i>	3561 <i>3.98764</i>	3703 <i>-3.2136</i>	3584 <i>25.8649</i>	4511 <i>52.9594</i>	6900 <i>-7.0724</i>	6412 <i>8.07860</i>	6930 <i>19.0764</i>	8252 <i>5.08967</i>	8672
Philippines (Billion peso)	65.2 <i>10.2760</i>	71.9 <i>-0.2781</i>	71.7 <i>13.1101</i>	81.1 <i>9.00123</i>	88.4 <i>-4.2986</i>	84.6 <i>7.91962</i>	91.3 <i>30.1204</i>	118.8 <i>23.3164</i>	146.5 <i>16.5870</i>	170.8
Singapore (Million S'pore \$)	8829.8 <i>25.4082</i>	11073.3 <i>16.7023</i>	12922.8 <i>26.6265</i>	16363.7 <i>15.5765</i>	18912.6 <i>-8.9020</i>	17229.0 <i>-6.3213</i>	16139.9 <i>9.47031</i>	17668.4 <i>19.7890</i>	21164.8 <i>17.5971</i>	24889.2
Sri Lanka (Million rupee)	7782 <i>36.4944</i>	10622 <i>-7.6350</i>	9811 <i>38.1408</i>	13553 <i>100.509</i>	27175 <i>-41.589</i>	15873 <i>-14.962</i>	13498 <i>45.8067</i>	19681 <i>-5.0048</i>	18696 <i>11.9972</i>	20939
Thailand (Million baht)	137796 <i>13.4960</i>	156393 <i>3.31472</i>	161577 <i>19.3406</i>	192827 <i>4.17472</i>	200877 <i>-1.8678</i>	197125 <i>16.1471</i>	228955 <i>29.7062</i>	296969 <i>45.1989</i>	431196 <i>25.8984</i>	542869

Source: Key Indicators of Developing Asian and Pacific Countries.

Note: Figures in italic are percentage of growth.

SEACEN countries with a major reorganization of ownership and management structures and rapid expansion in the array of available financial services and products. In large part, this growth has mirrored other factors apart from domestic financial deregulation: a rapid rate of innovation and growth in global financial markets, combined with the major changes occurring throughout the domestic economy, have caused an overall increase in demand for financial intermediation and risk management services. There, nevertheless, seems little doubt that financial deregulation to-date has compelled banks and other financial institutions to improve the quality, range and relative cost of services on offer.

The success of financial liberalization in the SEACEN countries depends to a large extent on the sequencing of the economic reform program. It has been observed that during the recessionary period in the early 1980s, most of the SEACEN countries implemented macroeconomic adjustment measures to support the financial liberalization program and in particular, inflation and fiscal deficit was brought under control at an early stage in the reform process. In liberalizing links with the external economy, the capital account was freed only after substantial progress has been made in liberalizing trade flows and removing distortion in domestic goods, capital and labor markets.

While the overall financial reform program in the SEACEN region has impacted significantly on all sectors of the economy, the long-term effects on national savings and productivity are not yet discernible. Major rationalizations have occurred in many sectors and particular industries were seen to expand rapidly in the wave of financial deregulation, in particular, financial and business services and commercial construction.

Financial deregulation, monetary policy and exchange rate policy have played a crucial role within the overall financial reform program. It has been observed that in the SEACEN countries, in managing and insulating their economy from the external shock, the monetary and exchange rate policy was properly coordinated. For example, in Indonesia and Thailand, both countries took the painful adjustment measures to devalue their currencies during the 1980s in order to maintain economic and price stability. From the macro perspective, the financial reforms have aimed at achieving greater stability in the general level of prices while at the same time, giving a more substantial balance between national savings and investment. From the micro perspective,

the aim has been to foster effective price signaling mechanism and to allow a freer flow of both real and financial resources between alternative competing uses.

The structural adjustment program including the financial liberalization exercise implemented by the SEACEN countries has played a major role in alleviating the impact of adverse external developments on the SEACEN economy in the 1980s. The financial reforms, in particular, have provided more leverage to the financial sector to increase their participation in the economic development of their country. The steady growth of the financial sector has contributed to the increased role of private sectors. Hence, there will be doubtless be numerous unexpected obstacles to be overcome in the process of liberalization and internationalization of the financial sector and in the implementation of appropriate monetary policy in the coming years.

Exchange rate stability will also be one of the important concern of the central banks and monetary authorities in the SEACEN region especially when the interest rates are now liberalized and determined by the market mechanism in a liberalized domestic foreign exchange market. The increasing role of market mechanisms in determining exchange rates, along with the overall liberalization of financial and capital markets, increases the interaction between interest rate and exchange rates. The fluctuation of interest rates caused by that of exchange rates may come to act as an obstacle to the effective implementation of monetary policy. We should be working towards an effective monetary control system in which the interest rates of the money market and the exchange rates of the domestic foreign exchange market must track each other closely.

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Part III

COUNTRY CHAPTERS:

INDONESIA

KOREA

MALAYSIA

MYANMAR

NEPAL

PHILIPPINES

SINGAPORE

SRI LANKA

THAILAND

Chapter 2

MONETARY POLICY IN INDONESIA IN THE 1980s

by

J. B. Sudibyo and Syamsul Arifin

I. Introduction

This section discusses Indonesia's experience in implementing structural adjustments in the financial sector during the 1980s. First, it discusses the economic environment -- prevailing both domestic and foreign -- and financial developments before the reforms. Secondly, it presents the role and implementation of monetary policy which includes identifications of objectives, targets, and instruments with special emphasis on changes during and after the financial reforms, in addition to analyzing the implementation and conduct of monetary policy. Third, it discusses the effectiveness of monetary policy and impact of financial reforms which includes: demand for money and stability; calculation of multiplier; impact of money on prices; impact of monetary on overall economic objectives; interaction between monetary and exchange rate policies; and, relative effectiveness of direct and indirect methods of monetary control. Then, it will be followed by a discussion on the constraints on monetary policy which includes internal and external constraints and problems of monetary control arising from financial reforms.

II. Economic and Financial Development

2.1 Economic Environment Prevailing Both Domestic and Foreign

In most of the 1970s and the early 1980s, Indonesia's economy was characterized by predominant oil sector which contributed substantially to export earnings and government revenues. During this period of oil boom, with the availability of a large amount of funds originating from oil revenues, the Government was able to direct spending toward stimulating effective demand in the domestic economy by providing infrastructure, constructing major industrial projects, improving social welfare, and inducing the economic development in the regions as well as the development of the private sector.

With a view to speeding up economic development while simultaneously providing equitable income distribution, the Government created various financing schemes, e.g., agriculture credit and medium-term investment credit, as well as other schemes specially intended for the economically-weak group, i.e., small-scale investment credit (KIK), permanent working capital credit (KMKP), and credit for petty traders. These schemes were financed mostly by liquidity credits from the Central Bank and partly financed through the government budget which charged lower-than-market interest rate. While this development strategy succeeded in accelerating economic growth at an annual average of 7.8 per cent during the 1970s, it brought about undesirable impacts, most notably spurring the inflation rate, reaching 47.4 per cent in 1973/1974 which was induced mainly by the expansion of money supply.

In order to cope with the high inflation rate, in April 1974 the Government introduced various stabilization measures in the monetary, fiscal, trade, and related sectors. In the monetary sector, the measures were aimed at reducing money supply by imposing a ceiling on the expansion of bank lendings, raising interest rates on lendings by and savings deposits with state banks, and increasing the minimum level of reserves required against deposits. These measures succeeded in bringing the inflation rate down to 20.1 per cent in 1974/1975 and at an annual average of 15.0 per cent between 1975 and 1980 with respectable economic growth of 7.5 per cent annually during the corresponding period.

Toward the beginning of 1982/1983, Indonesia's economy started to encounter severe pressures as reflected in the slowdown in domestic economic activities and massive burden on the balance of payments. In 1982, the economy grew by only 2.3 per cent and, on the external sector, the current account experienced the highest deficit ever recorded due mainly to a sharp drop in oil price coupled with world economic recession prevailing since the beginning of 1980s, in addition to the deterioration in the competitiveness of domestic products in the international market. Furthermore, the drop in oil price substantially cut government revenues, thereby reducing its capacity to continue to act as the engine of growth.

To compensate for the declining capacity of the Government in inducing economic growth, there was a need to reverse the development strategy from the so called "top down" to "bottom up" strategy

whereby greater participation from the public should be involved. For this purpose, domestic funds mobilization through the banking sector has become more important. At that time, however, the banking sector was not prepared to assume this role mainly because of the regulations enforced during that period which inhibited banks, especially state banks, to mobilize private savings. State bank operations were governed by controls on deposit and loan rates, whereas private banks -- both national and foreign -- were free to set their own interest rates. As a result, state banks' deposit rates were maintained significantly below those of private banks, with differentials ranging from 6 to 12 per cent depending upon maturity. Finally, banks were induced to provide loans to selected priority sectors at below-market interest rates set by Bank Indonesia which were eligible for liquidity credits. Between 1977 and 1982, liquidity credits rose by an average rate of 40 per cent a year, becoming a major source of funds for deposit money banks, particularly state banks. By the end of 1982, loans supported by liquidity credits accounted for nearly 80 per cent of total credit by deposit money banks, while liquidity credits made up nearly one-third of the total liabilities of state banks.

The deposits rate ceilings that applied only to state banks reduced their ability to compete for private sector deposits and made the state banks increasingly dependent on particular customers, namely public enterprises. As a result, between 1979 and 1982, the growth of time deposits averaged only 8 per cent for state banks, compared with 75 per cent for private banks. Concurrently, the assets of non-bank financial institutions (NBFIs), which were not subject to credit or interest rate ceilings, grew by an annual average of 42.5 per cent.

2.2 Financial Development

Indonesia's financial system consists of banks, finance companies known as non-bank financial institutions ("NBFIs") as well as leasing and insurance companies. As of end December 1989, banks included 116 commercial banks, 29 development banks, 3 savings banks and a large number of small rural non-deposit money banks (7,748). NBFIs included three development finance companies, nine investment finance companies and a housing finance institution. Other financial institutions included 118 insurance companies, 83 leasing companies and a number of other institutions of lesser significance, such as pawn shops. At the end of 1979 the number of banks were only 93 commercial

banks, 28 development banks, 3 savings banks and 7,775 rural banks. In the same period, the number of bank offices increased from 1,160 at the end of 1979 to 2,578 offices at the end of 1989.

Commercial banking is dominated by five state-owned banks, each originally established to provide banking services to a specific sector of the economy. The principal sources of funds for State banks are demand, time and savings deposits and credit from Bank Indonesia through refinancing facilities. All five state banks are authorized to deal in foreign exchange. There are private commercial banks owned and operated by Indonesian nationals. Of these banks, 17 are licensed to deal in foreign exchange. Expansion of private commercial banks has been relatively rapid in recent years. Private national commercial banks have also benefited from the liberalization policies, increasing their share of the total rupiah deposit base from 18.0 per cent in May 1983 to 31.4 per cent in March 1989. There are 12 branches of foreign commercial banks in Indonesia. The deregulatory measures introduced in October 1988 provided incentives for foreign banks as well as domestic banks in Indonesia as reflected in the establishment of 13 new domestic private banks and the approvals granted to eight joint-venture banks. Foreign banks are now permitted to set up sub-branches in cities other than Jakarta. The 29 development banks include one major bank owned by the state, 27 regional banks wholly or partially-owned by the provincial Governments and one privately-owned bank. In Indonesia, most long-term loans have final maturities of less than ten years.

Development finance companies and investment finance companies have been established since 1972 with the purpose of promoting the development of money and capital markets in Indonesia. They are permitted to issue and deal in commercial paper and long-term securities, issue certificates of deposit and to make equity investments and loans.

The past few years have seen the rapid growth of leasing in Indonesia with 83 leasing companies having been established, of which about 41.0 per cent represent joint ventures with foreign entities.

In 1980, the Government approved the establishment of a new financial institution, specifically for financing house ownership. This institution, PT Papan Sejahtera, is designated to undertake funds mobilization through the issuance of medium- or long-term bonds and to extend medium- and long-term loans for house purchases.

The strong growth of the banking system in recent years is illustrated in Table 2.1 which sets forth the consolidated balance sheets of deposit-money banks from 31 December 1983 to 31 March 1989. Total deposits (including demand, time and savings deposits) grew at an average rate of 25.9 per cent per annum from 1983 to 1988, while loans increased by an annual average of 27.7 per cent.

III. Role and Implementation of Monetary Policy

Monetary policy is formulated and implemented by Bank Indonesia under the direction and coordination of the Monetary Council. The present central bank law establishes in Chapter VI the legal basis of the Monetary Council to assist the Government in "planning and establishing monetary policy". Members of the Council include the Minister of Finance, the Governor of Bank Indonesia, and the Minister of Trade. The formal task of the Council is to manage and coordinate the implementation of the monetary policy established by the Government. Bank Indonesia is responsible for the implementation of monetary policy. In order to maintain the stability of the rupiah and to promote equitable development, Bank Indonesia is empowered under the Central Bank Act of 1968 to control the money supply and to regulate domestic credit and interest rates, as well as the allocation of credit to the various sectors of the economy.

3.1 Identification of Objectives and Targets

As is the case with most of developing countries, Indonesia's main economic concern is development. It is therefore clear that the sustainable economic growth is a major objective. To this end, monetary policy is directed toward supporting the growth objective of the development program. In the context of Indonesia, this objective must be viewed with her recent history as the background, especially in the late 1950s and early 1960s, when Indonesia experienced a period of high inflation and low growth. This undesired experience had led to a sense of urgency to control inflation both through monetary and fiscal policies. Therefore, in its contribution to support development objectives, monetary policy in Indonesia is directed to ensuring that the growth of liquidity corresponds to the projected growth rate, equitable income distribution, and a tolerable level of inflation rate taking into account stability of the balance of payments.

Table 2.1

CONSOLIDATED BALANCE SHEET OF DEPOSIT-MONEY BANKS
(Billions of Rupiah)

	3 1 D e c e m b e r						
	1983	1984	1985	1986 1/	1987	1988	1989
Assets							
Reserve Assets	1569	2046	2691	2259	2820	1830	2594
Foreign Assets	4520	5107	6239	8193	7806	8397	10731
Claims on							
Central Govt.	266	440	530	683	1093	1069	956
Claims on	2883	4543	5273	5092	5711	6372	7780
Official Entities							
& Public Entp.							
Claims on Pri-							
vate Sector	10288	14096	16926	21767	28032	38899	60878
Other Assets	546	1536	1999	2808	2739	6717	10085
(net)							
Total Assets:	20072	27768	33658	40802	48201	63284	93024
Liabilities							
Demand Deposits	4177	4817	5560	6128	6676	8032	12513
Time & Savings							
Deposits	6982	9331	12985	15942	20894	27463	38579
Foreign Liabilities	968	762	588	541	752	1159	3193
Government							
Deposits	779	1397	1884	1687	1779	2227	3967
Import Deposits	241	218	268	402	424	684	632
Creditors from BI	4264	7045	7039	7747	8100	10812	13918
Capital Account	1630	2211	2541	3049	3949	4464	7935
Other Liabilities	1031	1987	2793	5306	5629	8443	12287
Total Liabilities:	20072	27768	33658	40802	48203	63284	93024

1 Includes changes resulting from the exchange rate adjustment on
12 September 1986 from Rp. 1.134 to Rp. 1.644 per U.S. dollar.

In order to achieve these macroeconomic policy goals, following the financial reform enacted on 1 June 1983, Indonesia has shifted the focus from targeting domestic credits using credit ceiling as a direct monetary instrument to targeting reserve money which is basically chosen as an intermediate target with interest rates as a short-run target. The monetary aggregate targets are important to contain inflation and to overcome disturbances in the real sector, such as the lower growth of the economy due to the oil price developments. In this regard, the choice of reserve money as a target is based on the reason that the money multiplier in Indonesia is quite stable and predictable. In addition, the demand for reserve money has a reasonably close relationship with GDP, while after 1 June 1983 the relationship between M2 and economic activity is not so close as that prior to 1983 due to the sluggishness of economic performance as a result of the deterioration in oil price and changes in public preferences on financial assets brought about by the deregulation of time deposits rates. Under an open economy with a flexible exchange rate regime such as that of Indonesia, the short-run interest rate target should also be taken into account so as to prevent capital outflow.

3.2 Identification of Instruments - Credit Policy

3.2.1. Before the Financial Reform

Before the financial reform of 1 June 1983, the major instruments of monetary policy were credit ceilings for individual banks as primary defense against excessive domestic money growth, interest rate controls for state banks, and rediscount credits to priority sectors (called liquidity credits). During each fiscal year, the monetary authority (Bank Indonesia) targeted the aggregate credit expansion consistent with the projected money demand, and with the balance of payments target. Then, the aggregate credit target was allocated among banks on the basis of past performance with adjustment made during the fiscal year. State bank operations were also governed by controls on deposit and loan rates, but private banks were free to set their own interest rates. As a result, state bank deposit rates were maintained below those of private banks. Finally, banks were induced to provide loans to selected priority sectors at below-market interest rate set by Bank Indonesia. These loans were eligible for liquidity credits from Bank Indonesia at highly subsidized rates and at varying rediscount proportion, depending upon the type of loan. The system of liquidity credits already in

place expanded with the oil boom. Between 1979 and 1982, liquidity credits rose by an average rate of 40 per cent a year. By the end of 1982, loans supported by liquidity credits accounted for nearly 80 per cent of deposit money banks (DMBs) credit.

The pre-financial reform of 1 June 1983 system of monetary control proved effective in limiting the expansion of bank credit. The growth in liquidity credits, which successfully induced the development of priority sectors including agriculture and small enterprises, was offset by the build-up of government deposits at the Central Bank. Despite its success in channeling funds derived mostly from oil revenues to selected borrowers and priority government programs, the use of credit ceiling as a major monetary instrument before 1 June 1983, accompanied by interest rate controls on state banks and the extension of liquidity credit, produced some undesirable side effects. The extension of central bank liquidity credits creates reserve money which has a potential inflationary impact -- inflation rose sharply in the period between 1979 and 1982 -- became a major source of funds to the deposit money banks. On the other hand, the credit ceiling which was used as a means of limiting the destabilizing effect of liquidity credits through most of the 1974 (the introduction of credit ceiling) to 1982 period was considered to be binding; during 1974-1977 the realized amounts of credits fell short of the special ceiling; and, during 1978-1982 was slightly above the ceiling. As a result, banks accumulated a large surplus of funds held then in the forms of both rupiah excess reserves and foreign exchange assets; thus, raising their shares in total net foreign assets at the expense of Bank Indonesia.

3.2.2 The Financial Reform

Against this background, and in view of the deteriorating macroeconomic environment, the authority initiated the financial reform on 1 June 1983. As part of the financial reform, the Indonesian authority shifted the system of monetary control from direct restrictions on the development of broad money to an indirect system based on reserve money management. The reform is aimed at encouraging banks to maximize the mobilization of funds from the public and reducing their dependence on the liquidity credit from the Central Bank. Through this financial reform, interest rate controls on state banks were eliminated; the liquidity credit mechanism was simplified by phasing out a wide range of loan categories from access to liquidity credits. Only

credits with high priority could enjoy such facility. Credit ceilings on individual banks were also abolished. Following the financial reform, the authorities introduced a new mechanism of monetary control through indirect monetary instruments that rely on the open market operations, the new discount windows, and the reserve requirements.

The financial instruments used in the open market operation are as follows :

Certificates of Bank Indonesia (SBIs), introduced on 1 February 1984. This certificate can be used by banks as a temporary outlet of their excess funds and through the secondary market the SBIs can be used effectively to influence monetary development.

Money Market Securities (SBPUs), introduced on 1 February 1985, is intended to strengthen the liquidity and enhance the activities of the money market. SBPUs consist of the following:

- promissory notes issued by bank's customers in connection with borrowings from banks or non-bank financial institutions (NBFIs) and those issued by banks and NBFIs in connection with interbank borrowings; and,
- trade bills drawn by one party and accepted by another in connection with a specific transaction, whereby 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 another bank or NBFI in connection with credit extension.

Banks and NBFIs can trade SBPUs among themselves or with Bank Indonesia. A NBFI (PT Ficorinvest) is appointed as a market maker (a discount house), standing ready to purchase and sell SBPUs and funding its holdings of this paper in the market.

The discount windows consist of two windows. First, a standard lender of last resort window with basic access for a two-week period to assist banks in the day-to-day management of funds. Second, a longer-term window to encourage banks to make term loans by providing credit for two up to four months in case a bank encounters a substantial slowdown in its deposit growth which significantly hinder its ability to fund its long-term loan commitments.

Between 1978 to 1988, *reserve requirements* were basically fixed at 15 per cent of bank's deposits, with different percentage for time deposits depending on the type of bank -- a 15-per cent reserve requirement is applied to demand deposits, interbank call money, and other liabilities, and two-thirds of time and savings deposits are subject to 15-per cent requirement. For other types of banks the reserve requirement is also 15 per cent except that only one-third of time and savings deposits are subject to 15-per cent requirement. There is also a requirement that at least 5 per cent of the 15-per cent reserve requirement can be met with deposits at Bank Indonesia and the rest can be met with cash in vault. Since 1 June 1983, interest is no longer paid on either required or excess reserves.

In addition to the financial reform taken on 1 June 1983, a wide-ranging series of deregulatory measures in the financial sector was put into effect in October 1988 and March 1989. The new measures were designed to increase more competition and efficiency in the banking and other financial sectors, and to promote the capital market. The deregulatory measures included permitting the opening of new private domestic banks; allowing existing domestic banks to open branches throughout the country; relaxing the requirement on deposits of state-owned enterprises thereby permitting up to 50 per cent of state enterprises funds to be deposited at private commercial banks; allowing non-bank financial institutions (NBFIs) to issue certificates of deposits (CDs), permitting existing foreign bank branches to open sub-branch offices; allowing foreign banks to enter into joint-ventures with domestic banks; and, removing the exemption from withholding tax of 15 per cent on time deposits and CDs in order to encourage further the development of the capital market in monetary policy, the minimum reserve requirement for banks was lowered from 15 per cent to 2 per cent. The liquidity requirement of 2 per cent was also applied to NBFIs in view of their new freedom to issue CDs. The maximum maturity on foreign exchange swaps facilities was extended from six months to three years. The rate is now provided by the authorities at forward premia reflecting the differential between domestic and international interest rates. The measures announced in March 1989 constituted further clarification of the deregulatory measures of October 1988 and provided detailed information on the measures. In addition, the ceiling on foreign borrowing by foreign exchange banks and NBFIs was abolished, and at the

same time, Bank Indonesia introduced a maximum limit for banks' net foreign exchange position, which was to be 25 per cent of a bank's share capital.

One critical issue not addressed in the 1988 and 1989 reforms was the role and extent of the remaining liquidity credits within the banking system. As it has been noted above, Bank Indonesia had been refinancing loans to various activities -- small-scale industries, exporters, tree crops, and housing -- at interest rates varying from 3 per cent to 14.5 per cent. The system had a number of drawbacks, such as complicating the control of monetary policy because of a lack of overall refinancing limits.

On 29 January 1990, a significant reform of the liquidity credit scheme was announced. The number of sectors eligible for liquidity credit were reduced to: farmers, for working capital; cooperatives, for financing food purchases or productive activities; BULOG, for financing stockpiling of food; and, development banks, NBFIs and estates for investment credit. Interest rates were moved much closer to market rates. All insurance is now voluntary, with market-based premia. A regulation was also introduced requiring all but foreign or joint-venture banks to lend 20 per cent of their portfolio to small-scale firms and cooperatives. Banks are given one year to comply with this regulation. No formal sanction was specified for not meeting the target, beyond noting that Bank Indonesia would consider compliance in determining the overall rating of a bank. The reduction in the scope of liquidity credits and the increase in interest rates will greatly enhance Bank Indonesia's management of reserve money.

IV. Effectiveness of Monetary Policy and Impact of Financial Reforms

4.1 Estimates of the Demand for Money

The model estimated for demand for money for Indonesia is expressed in the following equation:

$$\log m_t = a + b_0 \log y_t + b_1 \pi_t + b_2 \log m_{t-1} + u_t$$

The estimation was done on a quarterly basis over the period 1979-1989. Regarding the data, in each case two definitions of money are

considered, namely narrow money (M1) and broad money (M2). The price variable is defined as the consumer price index (CPI) and thus the inflation is the rate of growth in the index.

The results for the two definitions of money are reported in Tables 2.2 and 2.3. In each of the tables, the regression coefficients with their respective t-values are presented. Also shown are the coefficients of determination (R^2), the Durbin-Watson test statistics (DW) and the sum of squared errors (SE).

Table 2.2 shows that the coefficients are fairly high with the signs as expected. Besides, all coefficients are significantly different from zero at the 5-per cent level. The fits of the narrow money are good and there is no serial correlation.

On Table 2.3, the coefficients have the expected signs and their level of significance is sufficient, except for the inflation rate which is slightly less significant.

4.2 Calculations of Multipliers

In controlling money supply through indirect control of reserve money, the behavior of the money multiplier and the development of reserve money is important to be observed because these two factors determine the amount of money supply and in turn contribute to inflation.

The money multiplier could be simply obtained from the following equation:

$$M1 = m1 \text{ RM} \quad \dots\dots\dots (1)$$

where: M1 = Narrow money
m1 = Money multiplier for M1
RM = Reserve money

$$\text{since: } RM = C + R \quad \dots\dots\dots (2)$$

$$\text{and } M1 = C + D \quad \dots\dots\dots (3)$$

where: C = Currency
R = Banks' reserves
D = Demand deposits

Table 2.2
DEMAND FOR NARROW MONEY

Variables	Coefficient	T-Stat.	SE
Constant	-2.5744	-8.12	0.317
GDP	1.0303	48.31	0.021
Inflation	-0.7789	-2.32	0.336
Interest	-0.0156	-3.38	0.004
Lagged Money	0.5073	2.69	0.188
R-Squared	0.996		
Adj. R-Squared	0.996		
DW Stat.	2.250		

Table 2.3
DEMAND FOR BROAD MONEY

Variables	Coefficient	T-Stat.	SE
Constant	-3.9501	-3.43	1.151
GDP	1.0265	50.42	1.027
Inflation	-0.8577	-1.68	-0.858
Interest	-0.0114	-2.77	0.004
Lagged Money	0.7225	4.06	0.723
R-Squared	0.999		
Adj. R-Squared	0.998		
DW Stat.	2.353		

$$\text{such that: } C = \frac{C}{C+D} \quad M1 = \frac{C/D}{C/D+1} \quad M1$$

$$R = \frac{R}{C+D} \quad M1 = \frac{R/D}{C/D+1} \quad M1$$

From these three equations, reserve money equation can be obtained :

$$RM = \frac{C/D + R/D}{C/D + 1} \quad M1 \dots\dots\dots (4)$$

$$M1 = \frac{C/D+1}{C/D+R/D} \quad RM$$

where: R = Reserve requirement and excess reserves

Hence, the money multiplier of M1 (=m1) is:

$$m1 = \frac{C/D+1}{C/D+R/D}$$

By the same approach, the money multiplier of M2 (= m2) can be obtained:

$$m2 = \frac{C/D+1+T/D}{C/D+R/D}$$

where: T = Quasi-money

From these equations, the development of money multipliers is determined by banks behavior, namely, the ratio of banks reserves to its current liabilities (R/D) and the ratio of currency held by the public to deposits with banks (C/D). Public preference in holding currency is affected by the interest rate. The increase in deposits interest rate as well as the increase in monetization driven by the impact of deregulation would discourage the public to hold currency, hence the ratio C/D declined. The ratio of R/D is affected by the change in reserve requirement (= RR). The decline in RR would reduce R/D.

The observation on the money multiplier development could be classified into three periods, namely the period before the 1 June 1983

deregulation, the period between 1 June 1983 up to the October 1988 package of deregulation, and the period thereafter.

Before the 1 June 1983 deregulation, the money multipliers for M1 (i.e., m1) and for M2 (i.e., m2) were relatively stable with slow developments, namely from 1.4 at the end of 1979 to 1.53 at the end of 1980 for m1; while that of m2, from 2.16 to 2.35 (Table 2.4). The effect of the November 1978 devaluation accompanied by the double increase in oil/gas prices have together brought about favorable impact towards the Indonesia's economy during 1979/1980 and 1980/ 1981. The huge increase in oil/gas revenues enabled the Government to speed up the economic activities through the expansion of liquidity credits. This favorable condition has enhanced the use of demand deposits for transaction purposes, causing the ratio C/D to decline at the end of 1981 and m1 to increase to 1.70. The favorable economic development also increased the quasi money; causing m2 to increase slightly to 2.54 at the end of 1981. Since the growth of demand deposits is faster than that of quasi-money, the increase in m1 was higher than that of m2.

During 1982, there was a shift from demand deposits to time deposits as reflected in the rapid increase in T/D ratio as compared to that of C/D. This was mainly due to the fact that time deposits were relatively more attractive than other types of deposits as taxes were not imposed on interest earned from rupiah time deposits. As a consequence, m1 rose only from 1.70 at the end of 1981 to 1.79 by the end of 1982, whereas m2 rose from 2.54 to 2.97.

In June 1983 until before the October 1988 package was introduced, m1 showed relatively stable development. Money multiplier for M1 declined from 1.79 in 1982 to 1.57 at the end of 1983. The declining m1 was brought about by the increase in C/D ratio since preference to hold currency as medium of payment was still high at that time. The shift from demand deposits to quasi money driven by the high interest rate after the June deregulation also contributed to the declining m1. The increase in quasi money caused the increase in T/D ratio such that m2 rose from 2.97 to 3.5 at the end of 1983. Furthermore, developments in m1 and m2 were relatively stable, i.e., the average m1 was 1.5 and that of m2 was 3.70. This relatively stable development in the money multiplier has enabled the Central Bank to control money supply through indirect reserve money management. It should be added that during that period the reserve requirement ratio was fixed at 15 per cent from the current liabilities.

Table 2.4

FACTORS AFFECTING MONEY MULTIPLIERS 1/

	RM	R	C	D	M1	T	M2	R/D	C/D	T/D	m1	m2
1979												
Mar.	2038	611	1369	1431	2800	1355	4155	0.43	0.96	0.95	1.37	2.04
Jun.	2160	583	1493	1512	3005	1472	4477	0.39	0.99	0.97	1.39	2.07
Sep.	2288	677	1480	1680	3160	1706	4866	0.40	0.88	1.02	1.38	2.13
Dec.	2422	780	1552	1833	3385	1837	5222	0.43	0.85	1.00	1.40	2.16
1980												
Mar.	2672	894	1774	2023	3797	2006	5803	0.44	0.88	0.99	1.42	2.17
Jun.	2778	787	1955	2224	4179	2309	6488	0.35	0.88	1.04	1.50	2.34
Sep.	3288	1113	2130	2552	4682	2612	7294	0.44	0.83	1.02	1.42	2.22
Dec.	3274	1058	2153	2842	4995	2696	7691	0.37	0.76	0.95	1.53	2.35
1981												
Mar.	3451	1182	2229	2985	5214	2692	7906	0.40	0.75	0.90	1.51	2.29
Jun.	3381	372	2384	3234	5618	2763	8381	0.30	0.74	0.85	1.66	2.48
Sep.	3580	1091	2451	3546	5997	3119	9116	0.31	0.69	0.88	1.68	2.55
Dec.	3826	1199	2557	3929	6486	3230	9716	0.31	0.65	0.82	1.70	2.54
1982												
Mar.	4908	1388	2541	4234	6775	3377	10152	0.33	0.60	0.80	1.69	2.53
Jun.	3912	1214	2643	4528	7171	3536	10707	0.27	0.58	0.78	1.83	2.74
Sep.	4082	1194	2826	4766	7592	3668	11260	0.25	0.59	0.77	1.86	2.76
Dec.	3997	1010	2984	4187	7171	4704	11875	0.24	0.71	1.12	1.79	2.97
1983												
Mar.	4072	994	3000	4379	7379	4858	12247	0.23	0.69	1.11	1.81	3.01
Jun.	4269	912	3283	4222	7505	5465	12970	0.22	0.78	1.23	1.76	3.04
Sep.	4714	1346	3307	4409	7716	6120	13836	0.31	0.75	1.39	1.64	2.94
Dec.	4808	1496	3333	4236	7569	7094	14663	0.35	0.79	1.67	1.57	3.05
1984												
Mar.	5335	1711	3554	4501	8055	7703	15758	0.38	0.79	1.71	1.51	2.95
Jun.	5507	1419	4047	4136	8183	8267	16450	0.34	0.98	2.00	1.49	2.99
Sep.	5539	1852	3640	4321	7961	8781	16742	0.43	0.84	2.03	1.44	3.02
Dec.	5473	1499	3712	4869	8581	9356	17337	0.31	0.76	1.92	1.57	3.28
1985												
Mar.	5832	1868	3785	5203	8988	10459	19447	0.36	0.73	2.01	1.54	3.33
Jun.	6141	1821	4277	5151	9428	10998	20426	0.35	0.83	2.14	1.54	3.33
Sep.	6144	1842	4268	5146	9414	12236	21650	0.36	0.83	2.38	1.53	3.52
Dec.	6435	1891	4441	5663	10104	13049	23153	0.33	0.78	2.30	1.57	3.60
1986												
Mar.	7553	2446	5044	5431	10475	13593	24168	0.45	0.93	2.52	1.39	3.20
Jun.	7090	2142	4834	5521	10355	13995	24350	0.39	0.88	2.53	1.46	3.43
Sep.	7258	2023	6046	5146	11192	16188	27380	0.39	1.17	3.15	1.54	3.77
Dec.	7808	2259	5339	6338	11677	15984	27661	0.36	0.84	2.52	1.50	3.54

Table 2.4 (cont'd)

FACTORS AFFECTING MONEY MULTIPLIERS 1/

	RM	R	C	D	M1	T	M2	R/D	C/D	T/D	m1	m2
1987												
Mar.	7992	2250	5673	5827	11500	16991	28491	0.39	0.97	2.92	1.44	3.56
Jun.	7786	2103	5624	5964	11588	17666	29254	0.35	0.94	2.96	1.49	3.76
Sep.	7892	2182	5605	6367	11972	19672	31644	0.34	0.88	3.09	1.52	4.01
Dec.	8666	2737	5782	6903	12685	21200	33885	0.40	0.84	3.07	1.46	3.91
1988												
Mar.	9107	3157	5873	6753	12626	23034	35660	0.47	0.87	3.41	1.39	3.92
Jun.	8766	2685	6022	7029	13051	24851	37902	0.38	0.86	3.54	1.49	4.32
Sep.	8983	2898	6029	7112	13141	26925	40066	0.41	0.85	3.79	1.46	4.46
Dec.	8176	1817	6246	8146	14392	27606	41998	0.22	0.77	3.39	1.76	5.14
1989												
Mar.	8805	2101	6559	8450	15009	29158	44167	0.25	0.78	3.45	1.70	5.02
Jun.	8387	1549	6632	9306	15938	31539	47477	0.17	0.71	3.39	1.90	5.66
Sep.	8644	1651	6900	10293	17193	34753	51946	0.16	0.67	3.38	1.99	6.01
Dec.	10085	2483	7537	12688	20114	38591	58705	0.20	0.59	3.04	1.99	5.82
1990												
Mar.	10442	2372	7780	14375	22155	42212	64367	0.17	0.54	2.94	2.12	6.16
Jun.	10357	2126	8300	14926	23206	46920	70126	0.14	0.55	3.14	2.24	6.77
Sep.	10951	2119	8930	14052	22982	53925	76307	0.15	0.64	3.84	2.10	7.02
Dec.	12006	2791	9094	14725	23819	60811	84630	0.19	0.62	4.13	2.98	7.05

1 All monetary aggregate figures are in billions of rupiah.

Chart 2.1a
RM, M1 AND M2

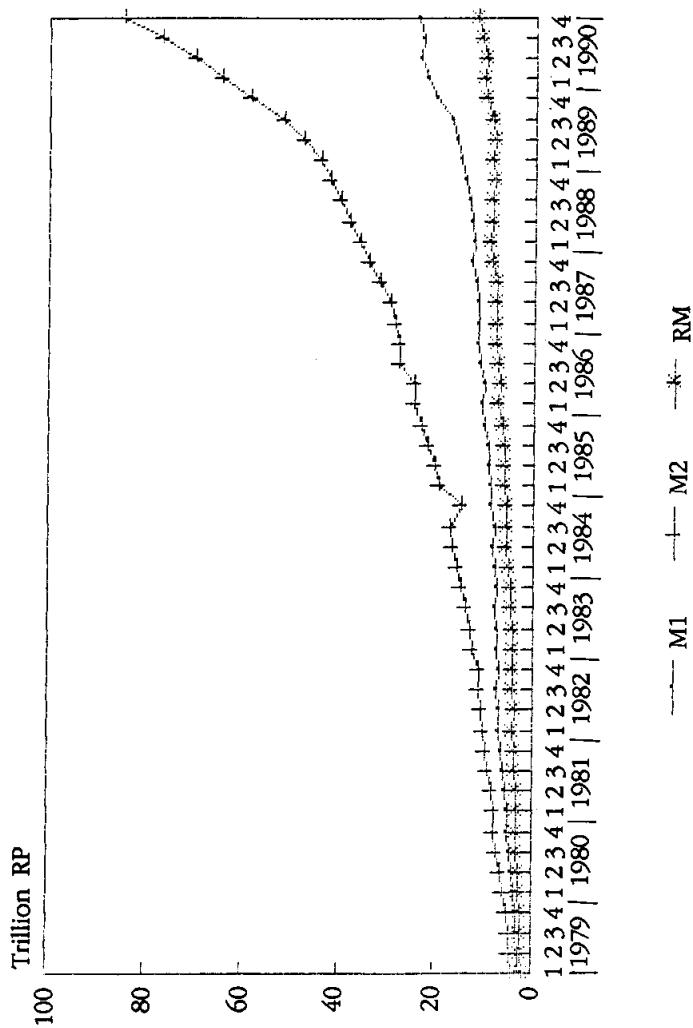


Chart 2.1b

MONEY MULTIPLIER

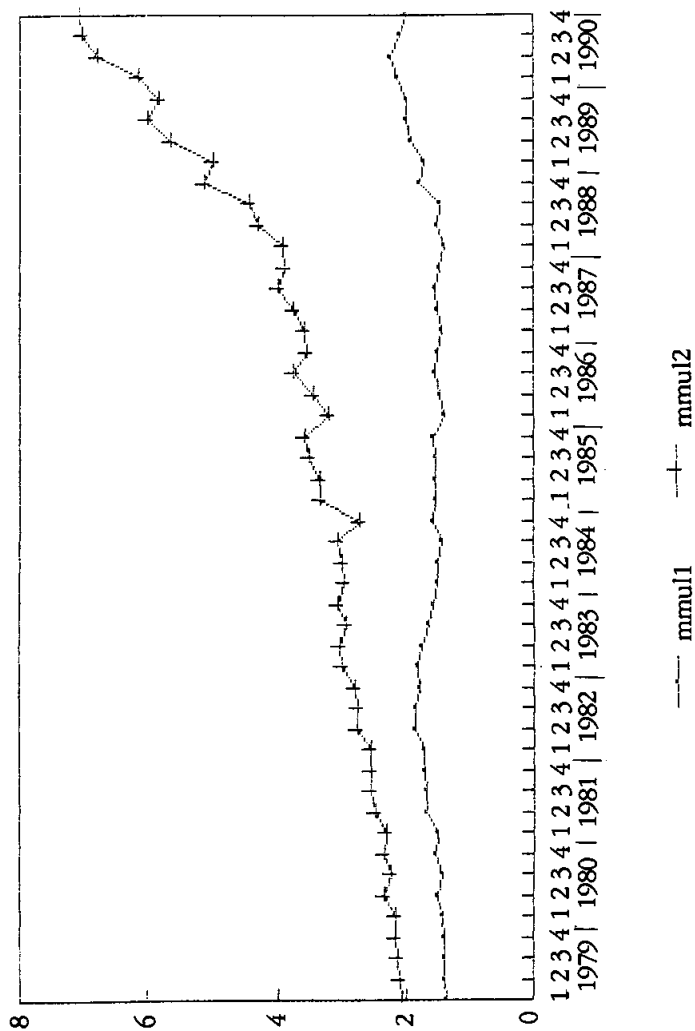
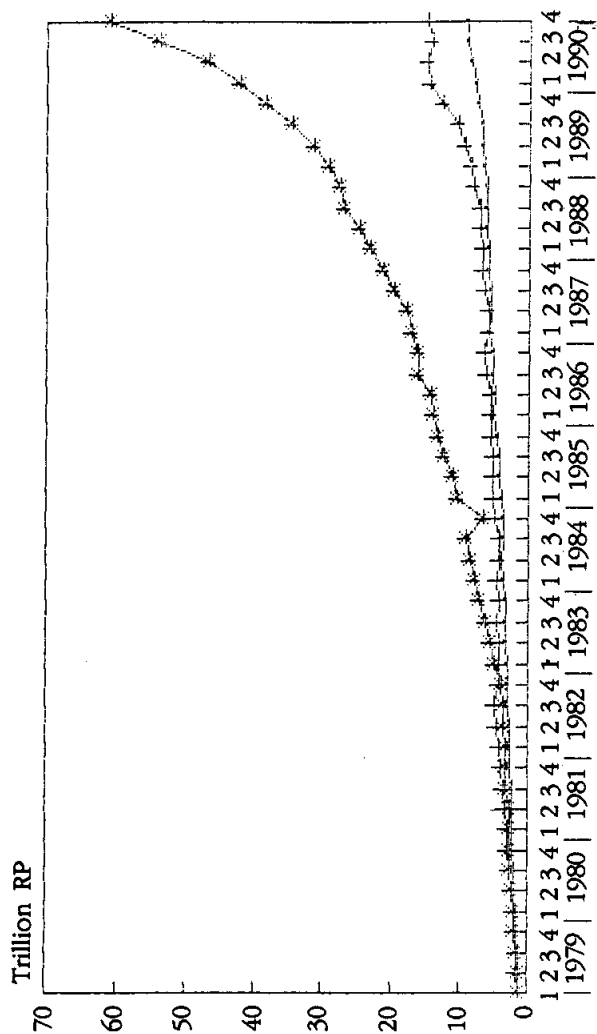


Chart 2.1c

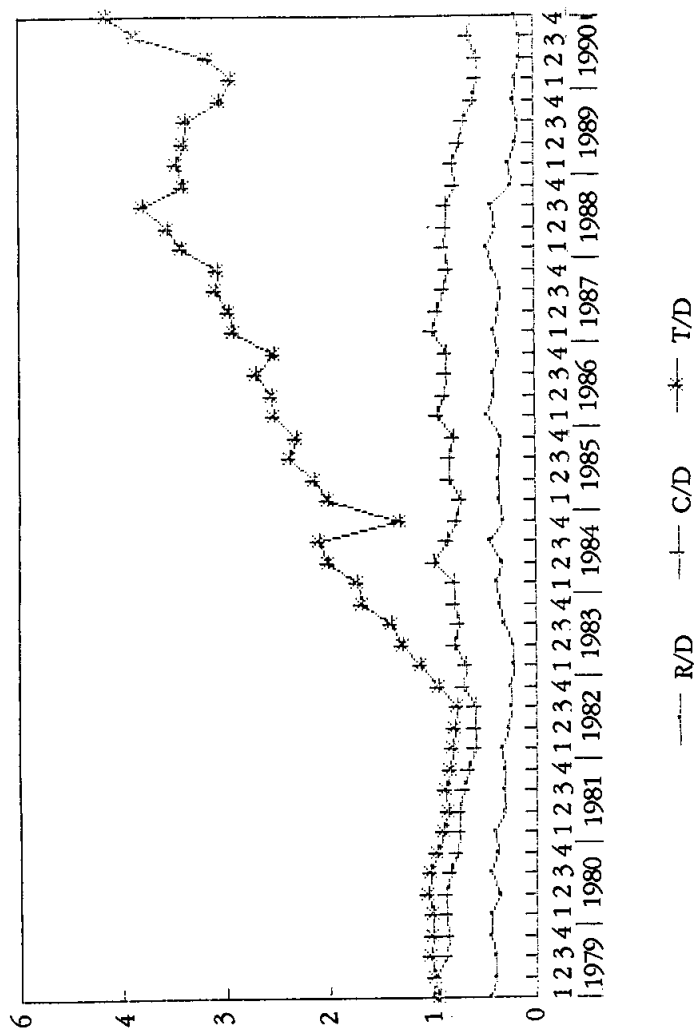
C, D AND T



— C - - - D * - - T

Chart 2.1d

R/D, C/D, T/D RATIOS



The further development of money multiplier was mainly influenced by the monetary, banking and financial policy package taken in October 1988. Through this policy package reserve requirement was lowered to 2 per cent and the banking system was liberalized, inter-alia, by allowing the establishment of new banks and opening of bank offices throughout the country. As a result, monetization increased, hence C/D ratio declined sharply from 0.85 at the end of September 1988 to 0.59 at end of 1989. The reduction of reserve requirement to 2 per cent increased m1 from 1.46 to 1.99 as well. In the meantime, the rapid growth in banking operations which allowed the rapid increase in resource mobilization had increased m2 from 4.46 at the end of September 1988 to 5.82 at the end of December 1989. The m1 and m2 kept increasing to 1.98 and 7.05, respectively, at end of December 1990.

Among the factors determining the change of the money multipliers, fluctuations in both R/D ratio and T/D ratio played an important role. The C/D ratio which first dropped considerably had flattened out in 1990. Changes in the money multipliers evidence the changes in the structure of the financial sector. The unstable magnitude of the money multipliers during this transition period would create difficulties in the conduct of money control through reserve money management.

4.3 The Impact of Monetary Policy on Real Sector in Indonesia

4.3.1 The Period of 1978/1979 to 1981/1982

The higher domestic inflation rate during 1971-1978 relative to those in the trading partners,¹ had contributed to overvalued rupiah which was determined on the basis of fixed rate at Rp.415/US\$ since 1971. Accordingly, the competitiveness of domestic products deteriorated.

To improve the competitiveness of domestic products, in 15 November 1978 the Government devalued the rupiah by 34 per cent against the U.S. dollar and has ever since adopted a floating exchange rate which was tied to a basket of foreign currencies. This measure caused

1. In the 1971-1978 period, Indonesia's cost of living index rose 230 per cent compared with 65 percent in the United States, 105 per cent in Japan, and 41 per cent in Germany.

prices to rise significantly, averaging 1.8 per cent per month from November 1978 through March 1979, compared with an average of 0.3 per cent per month during the period between April and October 1978. In all of 1978/1979, however, price increases were still within an acceptable rate of 11.8 per cent compared to 10.1 per cent in 1977/1978. The exchange rate adjustment was followed by other measures in the fields of customs and taxation including a reduction or elimination of import duties and import sales tax on raw materials and spare parts for domestic production and exports. To alleviate the inflationary impact of devaluation, Bank Indonesia undertook a tight monetary policy stance. Inflation in 1979/1980 could be controlled at only 19.1 per cent, while non-oil exports recorded a significant increase of 55 per cent. In addition, as a consequence of the doubling of the oil/gas price, during 1979/1980 and 1980/1981 Indonesia's balance of payments experienced a significant surplus for the first time. As a result, the fiscal revenues increased by 85 per cent and 65 per cent, respectively. In the credit sector, Bank Indonesia provided a package of export credit financing with preferential rate for primary and non-primary commodities.

Money supply rose by Rp. 3,975 billion (142.0 per cent) for the period 1978/1979-1981/1982 or an average of 34.3 per cent per annum, while average inflation rate stood at 14.9 per cent (Tables 2.5a and 2.5b). This relatively high inflation rate was mainly associated with the impact of the November 1978 devaluation, the domestic increase in the prices of fuel oils and in the floor price of rice, and world inflation. However, it was noted that inflation rates were subsequently reduced from 19.1 per cent in 1979/1980 to only 9.8 per cent in 1981/1982.

As presented in Tables 2.5a and 2.5b, the expansionary influences on money supply during the period 1978/1979-1981/1982 were mainly attributable to increases in net foreign assets and claims on public enterprises and private sector. The substantially large expansionary impact of net foreign assets amounting to Rp. 4,883 billion reflected the very strong performance of the balance of payments in 1979/1980 and 1980/1981 which was mainly attributable to the high international prices registered for Indonesia's major export commodities, particularly oil, as well as to the effects of the 15 November 1978 measures. It can be noted that net foreign assets in 1981/1982 gave a contractionary impact amounting to Rp. 80 billion due to the world economic recession and the weakening of international oil prices. Other expansionary impact was given by claims on public enterprises and private sector which

Table 2.5a

MONETARY SURVEY
(In Billions of Rupiah; End of Period)

	1977/78	1978/79	1979/80	1980/81	1981/82	1982/83	1983/84	1984/85	1985/86	1986/87	1987/88	1988/89	1989/90
	1/					2/				3/			
Net Foreign Assets	993	1950	4492	6913	6833	7016	9848	12792	14097	16463	18826	18627	17891
Domestic Credit	3106	4267	3891	3778	6326	9892	10659	11158	15877	19929	29945	41775	71382
Claims on public sector	933	1461	528	(883)	(258)	654	(935)	(3763)	(2701)	(3578)	(1229)	(118)	932
Claims on government (net ^{4/})	(944)	(1390)	(2573)	(4523)	(4381)	(4050)	(5917)	(8921)	(8012)	(7697)	5/ (7799)	(7858)	
Claims on public enterprises	1877	2851	3101	3640	4323	4704	4982	5158	5311	5935	6468	7681	8790
Claims on private sector	2173	2806	3363	4661	6584	9238	11594	14921	18578	23507	31174	41893	70450
Other Items (net)	(824)	(2062)	(2580)	2785	(3008)	(4661)	(4748)	(4503)	(5806)	(7901)	(13111)	5/ (16235)	(24906)
Total Liquidity	3275	4155	5803	7906	10151	12247	15759	19447	24168	28491	35660	44167	64367
Money	2111	2800	3797	5214	6775	7379	8055	8988	10475	11500	12626	15009	22155
Currency	1036	1369	1774	2229	2541	3000	3554	3785	5044	5673	5873	6559	7780
Demand deposits	1075	1431	2023	2985	4234	4379	4501	5203	5431	5827	6753	8450	14375
Quasi money	1164	1355	2006	2692	3376	4868	7704	10459	13693	16991	23034	29158	42212
Foreign currency deposits	152	280	796	1029	1192	2096	2495	3401	3726	4671	5429	6858	9203
Rp. time & savings deposits	1012	1075	1210	1663	2184	2972	5209	7058	9967	12320	17605	22300	33009

Source: Bank Indonesia.

1/ Includes changes caused by the revaluation of foreign assets and liabilities following the 15 November 1978 devaluation.

2/ Includes changes caused by the revaluation of foreign assets and liabilities following the 30 March 1983 devaluation.

3/ Includes changes caused by the revaluation of foreign assets and liabilities following the 12 September 1986 devaluation.

4/ Includes blocked deposit account.

5/ The significant changes were due to the reconciliation of the foreign loan used by the Government amounting to Rp.1725 billion which, initially recorded under the government sector, since 1987 was transferred to net other items account.

Table 2.5b

CHANGES OF FACTORS AFFECTING MONEY SUPPLY

(In Billions of Rupiah; End of Period)

	1977/78	1978/79	1979/80	1980/81	1981/82	1982/83	1983/84	1984/85	1985/86	1986/87	1987/88	1988/89	1989/90
	1/				2/				3/				
Net Foreign Assets	441	957	2542	2421	(80)	183	2832	2944	1305	2366	2363	(199)	(736)
Domestic Credit	177	1161	(376)	(113)	2548	3566	767	499	4719	4052	10016	11830	29607
Claims on public sector	(256)	528	(933)	(1411)	625	912	(1589)	(2828)	1062	(877)	2349	1111	1050
Claims on government (net) 4/	(204)	(446)	(1183)	(1950)	(58)	531	(1867)	(3004)	909	(1501)	1816 5/	(102)	(59)
Claims on public enterprises	(52)	974	250	539	683	381	278	176	153	624	533	1213	1109
Claims on private sector	433	633	557	1298	1923	2654	2356	3327	3657	4929	7667	10719	28557
Other Items (net)	(187)	(1238)	(518)	(205)	(223)	(1653)	(87)	245	(1303)	(2095)	(5210)	5/(3124)	(8671)
Total Liquidity	431	880	1648	2103	2245	2096	3512	3688	4721	4323	7169	8507	20200
Money	296	689	997	1417	1561	604	676	933	1487	1025	1126	2383	7146
Currency	183	333	405	455	312	459	554	231	1259	629	200	686	1221
Demand deposits	113	356	592	962	1249	145	122	702	228	396	926	1697	5925
Quasi money	135	191	651	686	684	1492	2836	2755	3234	3298	6043	6124	13054
Foreign currency deposits	(2)	128	516	233	163	904	399	906	325	945	758	1429	2345
Rp. time & savings deposits	137	63	135	453	521	788	2237	1849	2909	2353	5285	4695	10709
Memorandum Items:													
Inflation rate	10.08	11.79	19.13	15.85	9.80	8.40	12.63	3.64	5.66	8.83	8.29	6.55	5.48
GDP growth 6/	8.8	7.8	6.3	9.9	7.9	2.3	4.2	7.0	2.5	5.9	4.9	5.7	7.4

Source: Bank Indonesia.

1/ Includes changes caused by the revaluation of foreign assets and liabilities following the 15 November 1978 devaluation.

2/ Includes changes caused by the revaluation of foreign assets and liabilities following the 30 March 1983 devaluation.

3/ Includes changes caused by the revaluation of foreign assets and liabilities following the 12 September 1986 devaluation.

4/ Includes blocked deposit account.

5/ The significant changes were due to the reconciliation of the foreign loan used by the Government amounting to Rp.1725 billion which, initially recorded under the government sector, since 1987 was transferred to net other items account.

6/ GDP growth is in calendar year starting 1977 to 1989.

increased by Rp. 5,250 billion. The rapid expansion of bank credit to the private sector reflected the increased demand for credit as a result of the relaxation in lending terms starting from 1978. Government budgetary operations provided a major offset to the above expansionary factors, by generating a monetary surplus amounting to Rp. 3,191 billion. The large surplus, mainly in 1979/1980 and 1980/1981, was attributable to the sharp rise in government oil corporation tax receipts resulting from oil export price increases. Moreover, the huge increase in oil revenues due to the oil price increase in the world market had enabled the Government to provide larger liquidity credits in that period. To contain the inflationary impact of the increase in the external and credit sectors, the Government did not use the increase revenue of oil. Instead, it accumulated this revenue into government deposits with Bank Indonesia. Due mainly to the huge oil revenue, gross domestic product (GDP) grew at 6.3 per cent in 1979, 9.9 per cent in 1980, and 7.9 per cent in 1981.

4.3.2 The Period of June 1983 to June 1988

In the early period of 1982/1983, the Indonesian economy experienced severe challenges as reflected mainly in domestic economic recession and balance of payment pressures. This was mainly due to the sharp drop in oil prices, the persistent world economic recession since the early 1980s, increased protectionist measures imposed by several developed countries and the weakened prices of non-oil commodities in the international market. All these have aggravated the structural weaknesses of Indonesia's economy. As a result, GDP in 1982 grew only by 2.3 per cent. To cope with these unfavorable developments, the Government undertook a series of structural adjustment policies in various areas. In brief, two types of policy adjustment have been made. First, the Government has adopted more austere macroeconomic policy to restore financial stability. Second, to sustain the development momentum, the Government has embarked on a major program to restructure the economy aimed at reducing Indonesia's heavy dependence on oil revenues, and at improving economic efficiency. The specific policy responses can be classified into four categories:

- (i) To restore balance of payments stability and sustain growth over the medium term, the Government adopted an active exchange rate policy. Major devaluations were implemented in March 1983 (38 per cent) and September 1986 (44 per

cent). This played a key role in boosting non-oil export and reducing the current account deficit;

- (ii) To implement more austere macroeconomic policies, strong fiscal measures have been adopted which aimed at restraining public expenditure, mobilizing public revenues and reducing the overall fiscal deficit;
- (iii) To contain inflationary pressures, prevent capital flight, mobilize financial resources and improve efficiency in the use of financial resources, the Governor adopted supportive monetary and financial policies. A major financial sector reform was introduced in June 1983, which deregulated domestic interest rate and increased the flexibility of monetary management. A second round of financial measures has been initiated on 27 October and 20 December 1988, aimed at enhancing financial sector efficiency and boosting the capital market; and,
- (iv) Finally, to support demand management policies and to enable a recovery of economic growth over the medium term, the Government also initiated a series of trade and other regulatory reforms. These reforms are aimed at improving a more efficient private sector which is expected to create employment opportunities and raise non-oil exports.

The June 1983 banking deregulation involved removal of interest rate and credit ceiling for state bank operations, simplification of subsidized lending rates for priority sectors, replacement of credit ceilings with a system of reserve money management, and introduction of new instruments of monetary control.

Through the removal of credit ceiling and interest rates, banks were expected to be more competitive in mobilizing funds from the public and channel it to productive sectors while simultaneously reducing the distortions in market mechanism. In addition, the deregulation of interest rates was expected to relate the domestic and international interest rates and restrain capital outflow. The removal of ceiling on credits was also expected to restrain capital outflow because banks' liquid assets which constituted the potential sources to be invested in foreign currencies could be channeled in the form of credits. Through this banking

deregulation, direct money supply management was changed into indirect monetary management through reserve money control using the required reserve ratio, open market operation, and discount facilities.

During the period 1982/1983-1987/1988 narrow money (M1) increased by Rp. 5,247 billion (71.1 per cent) or an average of 14.2 per cent per annum. This relatively slow growth was mainly associated with the Government's efforts to re-phase several government projects as a consequence of a sharp fall in oil prices. The 1983 reforms brought about positive impacts on the economy as reflected, inter-alia, in the emergence of alternative sources of funds and significant increases in non-oil exports despite the decline in oil exports earning.

Within this period, net foreign assets increased by Rp. 11,810 billion, mainly due to positive impact of devaluation in March 1983 and September 1986. Other expansionary effect was contributed by claims on state-owned enterprises and private sector which rose by Rp. 23,700 billion. The significant increase in these claims is closely associated with the rapid increase in funds mobilized by banks since June 1983 which lessened banks' dependency on credit liquidity. Meanwhile, the increase in government revenues, mainly from taxes, has brought about a significant contractionary effects.

As a whole, the government measures including deregulation in the monetary and banking sector resulted in a favorable economic growth and stabilization. GDP grew at an annual average rate of 5.1 per cent for five years from 1984. The effect of the adjustment program on domestic inflation during 1983-1988 was quite significant. Inflation rate had been kept at a moderate single-digit rate and only at 8.8 per cent in 1986/1987 and 8.3 per cent in 1987/1988. Despite large devaluations, the cost-push pressures on domestic inflation were contained by lower world inflation and the Government's ability to restrain the growth in the price of rice. On the demand side, austere budget programs and the slowdown in domestic income growth have assisted in reducing demand pressures. The low transmission on inflationary pressures through cost-push and demand-pull forces was supported by an appropriate monetary response. To curb inflation, the Government responded partly by slowing the rate of growth of reserve money and also by inducing people to hold a larger volume of broad money (M2) by deregulating domestic deposit rates. The ability to bring down inflation even with two major devaluations (March 1983 and September 1986)

is a strong indicator of improved overall monetary management, as reflected in the Government's ability at curbing speculative pressures on the exchange rate in March and June 1987. In the same period, non-oil exports experienced an encouraging development and in 1987 started to exceed oil exports, reaching US\$ 11.6 billion or 58.4 per cent of the total gross exports by 1988. Consequently, the current account deficit decreased from US\$ 6.4 billion in 1983 to US\$ 1.9 billion in 1988.

As noted earlier, in order to increase more competition and efficiency in the banking and other financial sectors and in addition to the June 1988 financial reform, the Government in October 1988 took a wide-ranging series of deregulatory measures in the financial sector. The deregulatory measures known as a policy of October 1988 (Pakto), included permitting the opening of new private domestic banks and allowing existing domestic banks to open branches throughout the country. Besides, it also allows foreign bank branches to open sub-branch offices and to enter joint-ventures with domestic banks.

The Pakto followed by its supplementary regulations has had a positive impact on the financial sector and fostered the development of Indonesia's economy as a whole. The positive impact on the financial sector was mainly reflected in the rapid growth of funds mobilization, through banks and the capital market, and in the improvement of banking services along with the expansion in banks' operating network. The coordination among financial policies and other economic policies has promoted a high rate of economic growth accompanied by a low rate of inflation, strengthened the external balance as reflected in the rapid growth of non-oil/gas exports, and encouraged investment and production. The growth of GDP in 1989 and 1990 were 5.7 per cent and 7.4 per cent, respectively.

In 1988/1989 and 1989/1990, monetary development was characterized by a rapid increase in money supply. M1 rose by 75.5 per cent or an average of 33.2 per cent per annum reaching Rp. 22,155 billion at the end of March 1990, while the inflation rate rose only 6.55 per cent in 1988/1989 and 5.48 per cent in 1989/1990. It can be noted that the rapid monetary developments in 1989/1990 took place for the first time during the last ten years and were characterized by a higher growth rate of M1 (47.6 per cent) as compared to that of M2 (45.7 per cent). This was partly explained by the increasing demand for demand deposits (70.1 per cent) which were closely associated with buoyant

economic activities. The high increases in M1 and quasi money were not only closely associated with the increase in domestic income but also with the increased banking services, including the widening network of bank offices and the attractive savings schemes offered by banks.

In 1988/1989 and 1989/1990, the domestic sector recorded a significant expansionary effect on M1, while the external sector recorded a contractionary effect. The expansionary effect of the domestic sector originated from the huge increase in bank credit, whereas the government sector had a contractionary effect. Claims on entities, enterprises and individuals, which constituted an important factor in the increase in net domestic assets, had an expansionary effect of Rp. 41,598 billion. The increase in claims on private enterprises and individuals was mainly attributable to higher financing for working capital and investment.

The government sector recorded a contractionary effect of Rp. 161 billion. This contractionary effect was mainly attributable to the increase in tax revenues, which was closely associated with intensive and extensive efforts on tax collection, despite the increase in routine and development expenditures. The ability of banks to extend such high increase of credit was mainly supported by increase in quasi money which rose by Rp. 19,176 billion or 83.3 per cent. This significant increase was not only closely associated with the increase in domestic income but also with the increase in funds mobilization through the banking sector. Meanwhile, net foreign assets registered contractionary effects of Rp. 935 billion.

4.4 Interaction Between Monetary and Exchange Rate Policy

Indonesia's economy has been virtually open and the Government has maintained a free foreign exchange regime and adopted managed-floating exchange rates. As previously mentioned, before June 1983 interest rates on deposit at and lending by state banks were fixed and a ceiling was imposed on the expansion of lending by all banks. While these regulations were effective in controlling domestic interest rates and movements in the exchange rates, they did not encourage banks in mobilizing savings and extending credits. Frequently, banks accumulated more savings than the maximum amount of lending allotted during a certain period. Under an open economy with free foreign exchange system, banks sought to minimize the cost of accumulating

idle funds by purchasing foreign exchange from the Central Bank and making placement abroad. Obviously, such an activity brought about two adverse effects, namely, it crowded out the availability of funds for investment and it drained the reserves of the Central Bank.

Following the June 1983 reform which provided the discretion for banks to determine interest rates on deposit and lending and removed the ceiling on the expansion of credit, the interaction between monetary and exchange rate policy has become more intensified. For the effective implementation of monetary and exchange rate policies, Bank Indonesia as the Central Bank has to improve the money market and foreign exchange market as a means of indirect monetary instruments. Monetary control has been implemented indirectly by means of open market operation by introducing the Certificate of Bank Indonesia (SBIs). The money market instruments have enabled the Central Bank to accommodate smoothly short-term variations in the supply of and demand for reserves. In order to maintain monetary and balance of payments stability, the Central Bank always maintains the interest parity between domestic and overseas interest rates which consist of interest differential between domestic and overseas plus an expected depreciation of domestic currency.

In general, by maintaining the interest parity, monetary stability can be maintained while the economy grew at a satisfactory pace. In several occasions, however, some turbulences occurred. The first turbulence occurred in September 1984 when Bank Indonesia had been permitting the rupiah to decline gradually against the rising U.S. dollar and through most of 1984. This rapid depreciation brought about substantial amount of capital outflow and tightened rupiah liquidity, driving the overnight interbank rate upward, reaching 90 per cent with some banks holding on their reserves rather than lending in the market. In response to a shortage of liquidity in the interbank market, Bank Indonesia limited borrowings in this market to a maximum of 7.5 per cent of a bank's total rupiah deposit base. Besides, banks which were heavily dependent on interbank borrowings were allowed to borrow directly from Bank Indonesia under a special one-time credit facility, which was fully repaid at the end of September 1985. In order to help banks experiencing difficulties, the Central Bank offered the use of its discount window. Since it was limited to 5 per cent of a bank's deposit, the Central Bank opened a temporary special window charging a rate of 26 per cent. Through this facility, coupled with a reversal of capital

flow prompted by the high domestic rates and the deceleration of depreciation, bank reserves started to increase. The interbank rate fell from 47 per cent in September to an average of 14.7 per cent in October. Along with the decline in this rate, Bank Indonesia's discount rate was cut in stages to 22 per cent and the rate on temporary credit was also cut. In this environment, demand for 30- and 90-day SBIs picked up sharply. With the restoration of liquidity to the market, Bank Indonesia raised the ceiling on interbank borrowings to 15 per cent of rupiah deposits in August 1985.

In April 1987, there was an increasing capital outflow when Bank Indonesia sought to maintain its low interest rate policy. In an effort to stop this outflow, on 8 May, Bank Indonesia raised the SBI rate to a range of 14-17 per cent depending upon maturity. Similar adjustments were made in the SBPU rate. When the outflow continued unabated, at the end of June the Government ordered four state enterprises to withdraw deposits from the state commercial banks and buy SBIs from the Central Bank. This action drained Rp. 900 billion from bank reserves, leading to a scramble for funds domestically and internationally. Subsequently, Bank Indonesia raised further the rates on SBIs to 17.75 per cent on the 30-day SBIs and 18.75 per cent on the 1-month SBPUs. The discount rate was also raised from 18.5 per cent in April to 30 per cent on 3 July. The Central Bank also cut the ceiling of SBPUs by 30 per cent which necessitated the repurchase of the outstanding SBPUs by some banks.

Following these drastic steps, which succeeded in stopping the capital outflow, the interbank rate rose from 13.6 per cent in April to 23.5 per cent in June, reaching a peak of 39 per cent in early July. The high domestic rates also attracted with a lag the dollar deposits held offshore by Indonesian residents. The Central Bank's foreign exchange assets rose to \$6.25 billion at the end of July versus \$5 billion at the end of April.

4.5 The Operations of Deposit Money

In line with the decision taken in June 1983 to initiate a process of gradual deregulation and development of the banking system, Bank Indonesia has taken a number of steps which include the freeing of interest rates on deposits at state banks and interest rates on non-priority credit, the abolition of credit ceilings, and a limitation on the

availability of liquidity credits to deposit money banks. This measure was taken with a view to making the banking system more responsive to market forces. The banking deregulation measures proved highly effective in stimulating competition among banks in increasing a rapid expansion in deposits with the deposit money banks.

Mobilization of funds through the deposit money banks increased from Rp. 10.6 trillion at the end of June 1983 to Rp. 33.5 trillion at the end of June 1988 (five-year period after the June 1983 deregulation policy), with 25.9 per cent of a yearly average rate of growth. Time deposits increased by 40.7 per cent of yearly average rate of growth from June 1983, reaching Rp. 22.6 trillion at the end of June 1988. For the same period, demand deposits and savings rose by 9.1 per cent and 24.8 per cent of yearly average rates of growth from the end of June 1983, reaching Rp. 9.2 trillion and Rp. 1.8 trillion at the end of June 1988. The increase in mobilization of funds reduced the dependence of banks' liquidity credits on the Central Bank. At the end of June 1988, the share of liquidity credits only accounted for around 30 per cent from the total banking fund (Table 2.6a).

It can be added that the increased competition for deposits stimulated the interest rates on time deposit offered by state banks to rise to levels close to, but still below, the rates offered by private banks. As a result, the share of deposits of both the state banks and private banks increased tremendously while that of foreign banks decreased. The overall impact of deregulation thus seems to have strengthened the competitiveness of national banks vis-a-vis foreign banks. The rise in rupiah time and savings deposits after June 1983 was higher than that of foreign currency deposits. This pattern was a marked reversal of the pre-reform trend of faster growth in foreign currency deposits which was partly due to the exchange rate adjustment in March 1983. The portfolio shifts from foreign to rupiah deposits were even more pronounced, contributing substantially to the strengthening of Indonesia's external accounts.

In line with the growing mobilization of funds, credits extended by banks increased from Rp. 11.5 trillion at the end of June 1983 to Rp. 36.7 trillion at the end of June 1988, with 26.1 per cent yearly average rate of growth. This occurred even though the lending rate on non-priority sectors increased in the beginning years after deregulation was introduced.

The increasing competition among the banks following the June 1983 monetary reforms had resulted in an increase in domestic interest rates. Both nominal time deposit rates and working capital lending rates had increased since June 1983, influenced by foreign exchange speculation in 1984. The rates peaked in the middle of 1985 -- ranging from 19.70 per cent for three-month time deposit rates up to 23.4 per cent for working capital lending rates (Table 2.6b). The interest rate spread between deposit and lending rates during 1983-1989 gradually improved towards the latter part of the 1980s reflecting strong competition and efficient mobilization of funds following financial reforms. The Government's efforts to induce economic activities under a stable monetary condition in 1985 and 1986 by reducing the rates on SBIs and SBPUs resulted in a reduction of deposit rates by 4 per cent, reaching 14.5 per cent at the end of 1986, while working capital rate decreased only by 2 per cent to 21.1 per cent. The lower decrease in the lending rate had increased the spread between deposit and lending rates to 6.5 per cent in December 1986. Speculative pressures emerged by the end of 1986 due to the sharp drop in oil prices and further intensified during May-June 1987. Bank Indonesia was forced to increase the rates for SBIs and SBPUs which in turn induced the increase in deposit rate to 20.1 per cent in September 1987 and thereby reducing the spread to the lowest level of 2.14 per cent in September 1987.

As has been noted, in addition to the June 1988 financial reform, in October 1988 the Government took another series of deregulatory measures which among others included permitting the opening of new bank branches throughout the country. This measure had encouraged monetization which was reflected in the sharp increase in banks' deposits and credits. At the end of December 1989, total bank deposits rose by 45.0 per cent to Rp. 54.4 trillion due to increases in time deposits (36.1 per cent), demand deposits (46.4 per cent) and savings (39.8 per cent). In line with the rise in the funds mobilized, credits extended by banks also showed very strong growth of 48.2 per cent to Rp. 62.9 trillion at the end of 1989. The increase in banking credit was due mainly to increasing demand for liquidity needed to finance the growing economic activities as reflected in the growth of GDP in 1989 of 7.4 per cent (Table 2.6a).

The deposits mobilized continued to increase despite a decrease in three-month deposit rates to 17.06 per cent at the end of 1989 and the working capital lending rate to 21.0 per cent. This was due, among

Table 2.6a

**OUTSTANDING OF DEPOSITS AND
CREDITS WITH DEPOSIT-MONEY BANKS**
(In Billions of Rupiah)

	D e p o s i t s				Credits
	Demand	Time	Savings	Total	
1979					
Mar.	1791.9	1330.1	206.7	3328.7	3672.0
Dec.	2559.8	1458.2	225.6	4243.6	4105.0
1980					
Mar.	3016.1	1476.7	251.7	4744.5	4318.0
Dec.	4446.4	1650.8	313.7	6410.9	5426.0
1981					
Mar.	4481.8	1744.1	353.1	6579.0	5840.0
Dec.	5379.7	2209.9	419.5	8009.1	7510.0
1982					
Mar.	5507.6	2314.4	437.9	8259.9	8103.0
Dec.	5395.9	2981.6	489.8	8867.3	10251.0
1983					
Mar.	5914.4	3737.2	539.1	10190.7	11317.0
Jun.	5941.1	4099.6	591.3	10632.0	11507.0
Sep.	6194.3	4920.8	544.1	11659.2	12243.0
Dec.	6030.8	5781.8	583.9	12396.5	12943.0
1984					
Mar.	6350.4	6348.8	637.9	13337.1	13843.0
Jun.	6243.6	6886.8	688.3	13818.7	16063.0
Sep.	6800.6	7266.9	638.3	14705.8	18137.0
Dec.	6965.6	7778.9	753.7	15498.2	17943.0
1985					
Mar.	7187.7	8726.0	774.1	16687.8	18398.0
Jun.	6644.1	9973.9	846.9	17464.9	19362.0
Sep.	6779.6	11030.6	865.8	18676.0	20209.0
Dec.	7427.5	11726.6	1020.3	20174.4	21193.0
1986					
Mar.	7040.0	12590.4	1211.8	20842.2	21432.0
Jun.	6948.7	12660.5	1245.1	20854.3	22313.0
Sep.	7906.4	14447.2	1216.5	23570.1	24150.0
Dec.	8156.6	13967.5	1386.8	23510.9	25258.0
1987					
Mar.	7561.8	14911.8	1586.4	24060.0	26679.0
Jun.	8100.0	15443.1	1565.7	25108.8	29130.0
Sep.	8213.0	17905.0	1419.1	27537.1	30398.0
Dec.	8796.1	18907.3	1627.4	29330.8	31505.0
1988					
Mar.	8480.6	20654.3	1835.0	30969.9	33618.0
Jun.	9203.5	22550.7	1787.5	33541.7	36692.0
Sep.	9222.7	24602.8	1860.5	35686.0	39923.0
Dec.	10350.3	24985.7	2173.7	37509.7	42454.0
1989					
Mar.	10543.1	26474.4	2485.3	39502.8	44943.0
Jun.	11618.0	28662.0	2801.7	43081.7	51016.0
Sep.	12528.3	31093.6	3684.7	47306.6	56739.0
Dec.	15149.7	34012.5	5213.0	54375.2	62910.0

Table 2.6b

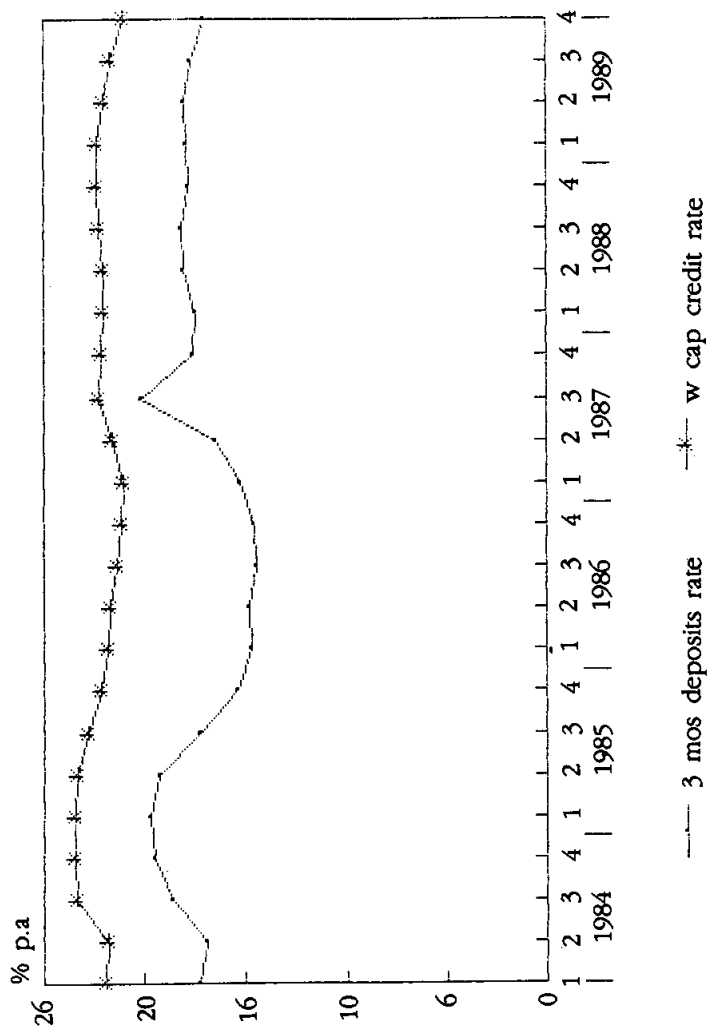
INTEREST RATES ON TIME DEPOSITS AND CREDITS

(Percentage Per Annum)

	Weighted Average of 3-Month Deposit Rate (a)	Weighted Average of Working Capital Lending Rate (b)	Difference (a-b)
1983: June 1/ December	15.36 15.99	21.2 21.5	(5.84) (5.51)
1984: March June September December	17.21 16.90 18.57 19.43	21.9 21.8 23.3 23.4	(4.69) (4.90) (4.73) (3.97)
1985: March June September December	19.70 19.24 17.20 15.39	23.4 23.3 22.7 22.1	(3.70) (4.06) (5.50) (6.71)
1986: March June September December	14.68 14.85 14.48 14.58	21.8 21.6 21.3 21.1	(7.12) (6.75) (6.82) (6.52)
1987: March June September December	15.20 16.43 20.06 17.54	21.0 21.5 22.2 21.1	(5.80) (5.07) (2.14) (4.56)
1988: March June September December	17.43 17.98 18.16 17.75	22.0 22.0 22.2 22.3	(4.57) (4.02) (4.04) (4.55)
1989: March June September December	17.95 18.03 17.65 17.06	22.3 22.0 21.6 21.0	(4.35) (3.97) (3.95) (3.94)

1 Since 1 June 1983, banks were free to determine their interest rates on time deposits and non-priority credits.

Chart 2.2
DEPOSITS AND CREDITS RATES



others, to favorable monetary condition as reflected in the low inflation rates of 5.5 per cent in 1988 and 5.9 per cent in 1989. The smaller spread between deposit and lending rates reflects an increasing efficiency in the banking sector persisting after Pakto 1988.

4.6 Relative Effectiveness of Direct and Indirect Method of Monetary Control

4.6.1 Direct Methods

The increase in oil export proceeds and foreign exchange reserves gave the opportunity to Bank Indonesia to create a huge amount of liquidity credits starting from the early of 1970s. In short, monetary policy before 1983 was characterized by the fact that the system of liquidity credits already in place was expanded in the course of the oil boom. The policy also employed a control over the deposit and loan rates of the five state banks, which accounted for three quarters of the bank deposits. Although constrained in their ability to open branches, the private banks, both national and foreign, were free to set their own rates on both deposits and loans. As a result, state bank deposit and loan rates were maintained below those of private banks, and made the state banks dependent on captive customers, such as public enterprises. The allowable credit expansion for each fiscal year was based on money supply estimates consistent with expected growth and inflation, and on the balance of payments target.

The continuation of liquidity credits backed up by the oil boom in the 1970s affected the banks' behavior in the mobilization of funds. The rate of growth of deposit mobilization declined continuously. In fact, the growth of deposits mobilized by state bank was influenced by the deposit rates fixed by the Central Bank. The growth deposits were lowered, coupled with other banks which were free to determine their deposit rates. On the other hand, the role of liquidity credits from the Central Bank significantly increased. The source of funds from liquidity credits increased from 37 per cent at the end of 1979 to 47 per cent at the end of 1982 for state banks and for other banks, the deposits rose from 10 per cent at the end of 1979 to 17 per cent at the end of 1982.

It has been recognized that the system of annual credit ceilings was reasonably effective in controlling credit expansion in most years. The

growth of liquidity credits by Bank Indonesia was roughly offset by the building up of government deposits at the Central Bank. However, deposit growth at commercial banks often exceeded allowable credit growth, leaving a sizable volume of excess reserves. In the meantime, banks moved sizable amounts of funds abroad to invest their excess reserves and to hedge the foreign currency deposits maintained with them by their domestic customers. The commercial banks share of the banking system's net foreign assets rose from 8 per cent at the end of 1977 to 52 per cent by mid-1983. As the balance of payments deteriorated in 1982/1983 and concern about a devaluation increased, between September 1982 and June 1983, Bank Indonesia required the banks to hold special deposits with it. Using the proceeds from repatriated funds, Bank Indonesia, in January 1978, started paying interest on rupiah excess reserves to restrain bank investment abroad and also paid interest on the repatriated deposits that was tied to the London Interbank Offered Rate (LIBOR).

The increasing share of international reserves held by commercial banks implied a reduction in Bank Indonesia's control of foreign assets. In addition, the credit ceiling and interest rate control which were not imposed on non-bank financial institutions allowed them to operate more freely at the cost of reduced competitiveness of the commercial banks. The accumulation of banks' excess reserves combined with the lack of competition in banking system and the control of domestic interest rate were likely to give rise to capital outflows, posing pressures to macroeconomic stability.

This experience provides the valuable lesson that in an open economy² like Indonesia where it is almost totally free of restrictions on the movement of capital and adopting managed floating exchange rates, the task of monetary management is relatively complex. Monetary disequilibrium will be adjusted not only through variation in prices and levels of activity but also through the capital and current accounts in the balance of payments. Domestic interest rates depend upon the international interest rates to the extent that domestic interest rates should not fall below the international rates, otherwise it may induce capital outflows.

2. In that period, Bank Indonesia set the daily exchange rate at which it is willing to buy or sell foreign exchange, and at those prices the public were free to buy or sell foreign exchange and to adjust their portfolios.

In short, the direct method of monetary control using credit ceilings and interest rate controls had distorted the pattern of financial intermediation, encouraged capital outflows, and tended to become ineffective.

4.6.2 Indirect Methods

Against this background and in view of the deteriorating macroeconomic environment, Bank Indonesia shifted the system of monetary control from direct restrictions on the development of broad money to a more indirect system based on reserve money management. The indirect monetary control method is implemented to affect deposit money banks' reserve positions by using instruments that rely on the open market operations, the discount windows and the reserve requirements. Among these instruments, open market operations are the most actively used to achieve the desired growth in reserve money.

Open market operation in Indonesia is implemented by affecting deposit money banks' reserve positions through buying and/or selling Bank Indonesia short-term securities (SBIs) and SBPUs. Bank Indonesia will sell SBIs to banks, and also to non-bank financial institutions (NBFIs), when there are needs to absorb reserves from the banking system. The system also allows banks to rediscount the SBIs and SBPUs directly with Bank Indonesia or indirectly through Ficorinvest (a non-bank financial institution acting as a discount house), when Bank Indonesia needs to provide reserves to the banking system. This accommodative process assists the banks to manage their excess reserves to an adequate level which in turn affect the cost of capital and the level of interest rate. The change in banks' reserves will affect the amounts of funds extended for credits. For example, the purchase of SBPU by Bank Indonesia will increase banks excess reserves and hence, provides a base for credit expansion. Subsequently, through the multiplier process, this will expand money supply. The increasing excess reserves would lead banks to lower their lending rates to encourage borrowing which in turn will affect interbank rates. On the other hand, the sales of SBIs will help banks reduce their excess reserves. The maintenance of banks reserves to an adequate level would stabilize interbank rates which in turn will affect the level of price, output, and employment.

The implementation of indirect monetary control in Indonesia using especially open market operation as an active monetary instrument had

proven the ability of the monetary authority to control reserve money in accordance with the achievement of immediate targets (commercial banks' reserves), and in turn through the existing money multiplier, also intermediate targets (narrow money and broad money). In addition, the indirect monetary control also made possible for Bank Indonesia to target interest rate in the short run which is an important factor in enhancing economic activities and reducing pressures on the balance of payments.

For example, in the period of 1985/1986 under a stable monetary condition as indicated, among others, by the relatively low inflation rate, i.e., 4.3 per cent in 1985 compared to 8.76 per cent in 1984 and 11.46 per cent in 1983, the Government took measures to induce economic activities by reducing the rates on all monetary instruments. The 30-day SBI cutoff rate was reduced from around 17.00 per cent in November 1984 to 16 per cent in February 1985 and to 14.0 per cent per annum in August 1985, and the 90-day SBI from 17.00 per cent to 15.0 per cent per annum in October 1985. In addition, the rediscount rate for SBPU's was reduced from 20.5 per cent per annum in February 1985 to 19.5 per cent per annum in May, to 18.0 per cent per annum in July, and to 17.0 per cent per annum in August 1985 and the rate of discount windows from 21.0 per cent to 19.5 per cent per annum in July and to 18.5 per cent in August 1985. The gradual reduction of these rates had brought about a reduction in the rupiah deposits rates by 4 percentage points to an average of 16.0 per cent per annum by the end of March 1986. This declining deposits rate in turn had gradually reduced the lending rates. However, the unexpected drop in oil prices to below \$10.00 per barrel in August 1986, which induced speculation in foreign exchange market, was a major constraint faced by the Government to continue reducing the domestic interest rates.

In the beginning of 1987, the Indonesian economy showed a remarkable improvement, as indicated by an increase in non-oil exports, better oil prices as well as relatively low rate of inflation. To see the encouraging signals in the economy, during the last two semesters of 1986/1987 Bank Indonesia adopted an accommodative monetary stance as reflected in the injection of funds to banks through open market operations. The interbank call money rate declined from 16.7 per cent in January 1987 to 13.6 per cent in April 1987. However, speculative pressures which emerged at the end of 1986, which was due to the sharp drop in oil prices in August 1986, intensified during May-June

1987.³ In order to safeguard the business environment and to maintain a sound balance of payments condition, in May and June 1987, Bank Indonesia took measures to increase short-term interest rates.⁴ To speed the adjustment process, in June 1987, the authorities ordered certain big state enterprises to withdraw their bank deposits in the banking system and utilized their funds to purchase SBIs. In addition, the ceiling on banks holding of SBPUs was reduced. The withdrawal of state enterprises deposits had an immediate effect on interbank call money rates which reached their peak at 47.0 per cent per annum by July 1987.

The combination of measures succeeded in restraining further capital outflows as lack in liquidity prevented banks from financing foreign exchange speculation. Eventually, as investors responded to the higher level of domestic deposit rates, the direction of capital flows was reversed. With the abatement of speculative pressures, interbank interest rates declined rapidly to below 13.0 per cent per annum by end of November and net foreign assets of the banking system rose significantly.

Besides its function to change banks' reserves condition to achieve a desired growth in reserve money, reserve money management is also directed to establish reasonable stability in the interbank rate during each reserve period. This last task requires a mechanism so that banks can manage their reserve appropriately during a certain reserve maintenance period. This, among others, can be mastered by using the discount facility which is intended as a temporary alternative source of funds to banks when the interbank market was too costly or unavailable.

3. This speculative pressure arose from the pessimistic view to ward the economic outlook launched by segments of society, including and unwarranted preoccupation that drastic monetary measures were about to be taken. At the same time, certain traders and dealers in foreign securities portrayed Indonesia in an unduly pessimistic way in order to persuade capital holders to exchange their rupiah assets into foreign currencies denominated assets.

4. The discount rates for SBPUs was raised from 17 per cent to 19 per cent per annum, the rediscount rates on 30-day maturity SBIs was raised from 14.0 per cent per annum in May and to 16.37 per cent per annum in June and the 90-day maturity SBIs from 15.0 per cent to 17.0 per cent per annum in May and to 18.0 per cent per annum in June 1987. The discount rate at discount window facility was increased from 18.5 per cent to 20.0 per cent per annum.

In the case of reserve requirement, an instrument which would be effectively used as a monetary instrument when the required reserves ratio is changed, it is used only in a limited way because any changes in its percentage ratio would have a large impact on the economy. In 1974, the ratio was increased from 15 per cent to 30 per cent to compensate the inflationary impact induced by the oil boom. In 1978, this ratio was reduced again to 15 per cent because the increasing government deposits with the banking system could sterilize the inflationary impact from the other sectors. In 1988, this ratio was reduced further to 2 per cent to increase banks' credit extension which is needed to induce the economic activity.

V. Constraints on Monetary Policy

To achieve the ultimate monetary goals, the monetary authority must determine the intermediate targets. These could be monetary aggregates and it could also be interest rates. There are some requirements for variables to function as intermediate target, among these is the predictability in the movement of economic activity in response to the movement in the intermediate target. For example, a general overview of the Indonesian economy indicates that the relationship between the money stock and price has been strong. When the money supply increased rapidly in the 1960s, the rate of inflation became very high. The same thing was true in 1973-1974 when a large inflow of oil money resulted in large increases in the money supply.

Although the relationship between the interest rate and economic activity seems not to be very strong, the openness of Indonesia's capital account had made the interest rate eligible as a short-run target. The interest rate in Indonesia, both in real and nominal terms, seems to be high by international standards, which creates a serious challenge to the conduct of monetary policy. Many believe that the high interest rate would impede further growth in the economy because high interest rate would discourage investment.

One of the major factors which influences the behavior of domestic interest rates is the openness of Indonesia's capital account. Under the system, the rupiah is freely convertible and there are only limited controls on capital or foreign exchange movements. Consequently, individuals, private firms and domestic banks become more responsive to developments in both international and domestic financial markets.

Hence, domestic interest rates are dependent on international interest rates to the extent that domestic interest rates should not generally fall below the international rates, simply because they may induce capital outflows. This risk of capital flight therefore represents the constraint faced by the monetary authorities in controlling the interest rate level. The risk of capital flight is dominated by some factors such as expectations on exchange rate risks associated with future oil price movements.

Whenever there appears a depression in the world oil market, this would lead to a sharp contraction in the government revenue. The public tend to expect that the situation will be accommodated by a set of Government's measures including devaluation. This exchange rate risk, in fact, has been a dominant factor in forming the public's expectations. Indeed, increased uncertainties in world oil price levels lately have focused public attention on the movement of exchange rates even closer than before. This, in turn, created another pressure on the banking system in adjusting the lower limit of interest rate levels. Any expected depreciation or devaluation of the rupiah, originated either from the overvaluation of the currency or from the decline in the price of oil, is thought by the money holders as the expected capital gain above the prevailing international interest rates. It is true that the authorities can gradually change their perceptions on exchange risks, especially those originating from the overvaluation of the rupiah due to inflation differential between Indonesia and its trading partners, through prudent monetary and fiscal policies. But, they have no control over world oil price movements. Therefore, the scope for reducing interest rates in Indonesia by official action is severely limited.

The indirect monetary control implemented after the June 1983 financial reform implies that this approach would be more effectively used if there was stability in the money multiplier over the long run. Given a stable money multiplier, the monetary authority could achieve the desired growth of money supply by manipulating reserve money, i.e., banks reserves, using indirect monetary instruments such as open market operation. After experiencing a stable money multiplier in the period of 1983-1988, it seems that the money multiplier after that period fluctuated due to environment changes as a result of the monetary, banking and financial policy package taken in October 1988. The freedom to establish new banks and to open bank offices have increased monetization, coupled with the lowering of reserve requirement to 2

per cent, had resulted in the decline of the ratio of C/D, so that m1 and m2 increased steadily.

The efficiency of implementing open market operation depends on, among others, the development of secondary market for SBIs and SBPUs and the existence of an active money markets. An active secondary market will enhance the ability of the Central Bank in:

- (i) achieving monetary policy objectives and enhancing the effectiveness of monetary instruments -- market makers can offer shorter maturity of SBI sales through repurchase agreement; and,
- (ii) enhancing the indirect control over banks liquidity and interest rates -- through auction, would get the idea either to sell SBIs or buy SBPUs.

A secondary market could be developed if the public have access to purchase and sell the papers, and the price information is available. To this end, an initial step had been taken by appointing PT Ficorinvest as the discount house. It can be added that prior to July 1987, the existing system did not support the development of a secondary market, partly because price information did not work. For example, under the existing auction system, each bidder indicated both the volume of SBIs he was willing to buy and the rate he was willing to accept, and Bank Indonesia set the cutoff rate for each auction. In practice, the cutoff rate on SBIs remained unchanged in a relatively long time which diminished the usefulness of price information since banks were able to anticipate the unchanged cutoff rates. The relatively constant cutoff rate happened because Bank Indonesia would consider the pressures on the balance of payments which was influenced by the uncertainty in the world oil prices. Should Bank Indonesia reduce cutoff rates as an indirect means to reduce the lending rate which could induce the economy, another threat in the form of capital flight was likely to emerge.

Efforts to enhance the activities of the secondary market were taken by Bank Indonesia in July 1987 by improving the trade of SBIs and SBPUs through a daily auction system as follows:

- (i) Bank Indonesia pronounces (through PT Ficorinvest) its plan to sell SBIs or to buy SBPUs based on the monetary target;

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- (ii) Each bidder indicates the volume of SBIs or SBPUs he is willing to buy or to sell, and the rate he is willing to accept;
- (iii) Bank Indonesia will announce the successful bids together with the rates; and,
- (iv) PT Ficorinvest is designated as an agent whereby taking position is not allowed.

In the short run, Bank Indonesia will temporarily sell SBIs or buy SBPUs to accommodate the needs of banks for short term funds. To enhance the secondary market in the near future, Bank Indonesia will also trade SBIs and SBPUs of longer maturities. The availability of price information had also been made in October 1988 through the designation of 15 market makers and 2 brokers in the secondary market.

Chapter 3

FINANCIAL REFORM AND MONETARY POLICY IN KOREA

by

Jae Chun Kim

I. Introduction

The waves of financial reform that have swept through both the developed and the developing world have also greatly affected Korea. Following the exposure of structural problems accumulated in the pursuit of rapid economic growth, the Korean Government has, since the early 1980s, undertaken extensive reforms aimed at bolstering reliance on the market mechanism and consolidating economic stability. In this context, a series of measures have also been taken to promote competition in the financial sector and, at the same time, to spur financial liberalization and internationalization.

The progress of financial reform might well have been expected to have a far-reaching impact on the formulation and implementation of monetary policy as well as on its relationship to the rest of the economy.

The purpose of this paper is to survey the actual development of financial reform and its implications for monetary policy in Korea throughout the 1980s.

II. Economic and Financial Development

2.1 Economic Environment Prevailing Both Domestic and Foreign

After launching the first five year development plan in 1962, the Korean economy recorded an average annual growth rate approaching 10 per cent in real terms, enabling it to more than quadruple in size in less than twenty years.

In the first year of the 1980s, however, Korea experienced negative growth for the first time since 1962, and this abrupt reversal was accompanied by high inflation and a severe deterioration in the nation's

balance of payments. These setbacks, although directly caused by domestic political unrest and world-wide recession following the second oil crisis, were, at a more fundamental level, the result of the structural problems that had been accumulating in the pursuit of the rapid economic growth during the previous two decades.

In carrying out ambitious economic development plans with a conspicuously insufficient level of domestic savings, the economy faced a serious lack of funds, and this investment-saving gap had typically been bridged by inducing an inflow of foreign capital or by expanding the money supply. In consequence, chronic inflation lingered on, weakening the long-term growth potential by deteriorating the international competitiveness of the economy.

A rush to invest in the heavy and chemical industries in the seventies, on the other hand, gave rise to excessive and overlapping investments in a few sectors, so that financial resources were squandered and the economy became over-reliant on foreign debt. Furthermore, the growth-oriented strategy resulted in the concentration of resources in large firms at the expense of the growth of small and medium firms.

Recognizing the seriousness of these structural problems, the Government extensively revamped its economic policy in the early 1980s. Initially, the Government emphasized price stability by implementing various stabilization policies. In addition, the Government shifted its policy stance from that of initiating the management of the economy to one of relying more on market forces. The Government's new policy orientation was based on the premise that direct intervention was no longer feasible nor indeed desirable in the light of the economy's increasing sophistication. In this regard, competition among firms was encouraged through the enactment of the Monopoly Regulation and Fair Trade Law.

The principle of competition has been further advanced by the gradual internationalization of the economy, with the ultimate aim and purpose of the creation of a fully open, free market economy. In this context, import controls have been liberalized continuously, and the import liberalization ratio reached 96 per cent in 1989. Efforts have also been made to expand foreign participation in Korean industries, particularly in cases involving the transfer of advanced technology and managerial techniques. The Government further liberalized foreign

investment by introducing an automatic approval system, under which all investment projects meeting certain conditions are to be automatically approved. It also adopted a negative list system which specifies prohibited or restricted projects, thereby ensuring approval for all projects other than those listed.

Helped by these policy reforms mentioned so far, the economy showed a remarkable improvement that was also boosted by a favorable world economic environment.¹ The rate of inflation, which had reached 20-30 per cent in the 1970s, was stabilized at the low level of around 2-3 per cent from 1983. Another notable attainment was that the current account, long saddled with a chronic deficit, moved into surplus from 1986. At the same time, the ratio of national savings to the GNP increased remarkably, surpassing the gross investment ratio. These positive developments, coupled with strong growth of over 12 per cent during 1986-1988, not only enabled the economy to stand on its own feet but laid a firm foundation for reduction of the foreign debt burden.

Right after this set of economic achievements came a set of several new problems which cast a new cloud over Korea's development prospects. In early 1989, the economic situation took a sudden turn for the worse. Economic growth slowed down considerably, while the current account surplus continued to shrink month by month, finally shifting into deficit in January 1990. These developments were initially seen, in part, as a process of cyclical adjustment. They are now more commonly attributed, however, to structural changes in the prevailing economic environment, internationally as well as on the domestic front. Let us look at the challenges on the domestic front first. In the course of political democratization, social demands for more influence in the political process, greater justice and a more equitable distribution of income and wealth have become widespread among various social classes and sectors. Perhaps the most obvious example of this new mood is the growth of the labor movement. Within two years from June 1987, the number of labor unions organized grew from only 2,700 to some 7,400, and the number of unionized workers from 1 million to around 1.8 million. The proportion of the work force organized into unions

1. This was characterized by the so-called "three lows", namely, low oil prices, low international interest rates and low U.S. dollar.

Table 3.1

KEY INDICATORS OF THE KOREAN ECONOMY IN THE 1980s

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Real GNP Growth Rate (%)	-3.7	5.9	7.2	12.6	9.3	7.0	12.9	13.0	12.4	6.7
Per Capita GNP (US\$)	1592	1734	1824	2002	2158	2194	2505	3110	4127	4968
Inflation Rate (CPI, %)	28.7	21.6	7.1	3.4	2.3	2.5	2.8	3.0	7.1	5.7
Current Account (Billion US\$)	-5.32	-4.65	-2.65	-1.61	-1.37	-0.89	4.62	9.85	14.16	5.06
Trade Balance	-4.38	-3.63	-2.59	-1.76	-1.04	-0.02	4.21	7.66	11.45	4.60

rose from 15 to 22 per cent. This dramatic increase in union activity led to wage hikes far in excess of productivity gains. During both 1988 and 1989 the annual rate of pay increases, which for the previous five years had averaged only 10 per cent, shot up to more than 20 per cent. These rapid rises in wage costs, along with the appreciation of the won, have substantially eroded the competitiveness of export industries.

The outcome is that firms have less incentive for investment, mainly because of the deterioration in profitability and the unfavorable economic prospects. Consequently, there has been a pronounced and continued slowing in the growth of both business investment and productivity.

Furthermore, price rises have been on an accelerating trend since late 1987 with especially sharp upward movements in 1990. This seems to be mainly attributable to the rapid rise in wage costs over the last three years and sharply increased housing rental charges following the re-emergence of real-estate speculation.

On the external front, the Korean economy must face up squarely to the tides of globalization and regionalization, which together are reshaping the face of the world economy.

Since the 1985 Plaza Agreement, the pace of liberalization and market-opening has quickened throughout the global economy. As a country whose trade volume placed it twelfth among all nations, Korea could not avoid strong pressure for the opening of domestic markets from its trading partners. Most notably, the U.S. and the E.C., which have experienced trade deficits with Korea, strongly demand that Korea fully open up its domestic markets including the primary products market and the service market.

There are also growing demands that Korea bear a greater share of responsibility for management of the world economy and provide more assistance to less developed countries, not only through increasing its contributions to international development institutions such as IDA and AFDF but also through technology transfer and granting loans.

In addition, Korean exports, which are still excessively dependent on labor-intensive industries such as footwear and textiles, are coming

under increasing pressure from late starters, like Thailand and China, as they encourage the growth of those export industries where they possess the advantage of lower labor costs.

Furthermore, it is feared that the prevalence of moves toward the building of economic blocks, exemplified by the integration of the E.C. economies and bilateral Free Trade Agreements, is leading to the erection of new protectionist barriers. Many Korean firms anticipate increasing difficulties in exporting to the E.C. as the process of integration gathers pace.

2.2 Financial Development

A sound development of the financial sector is a prerequisite for stable growth, and it was widely accepted in the 1980s that the Korean economy could not progress further without an adequate development of the financial sector. In response to this problem, and in parallel with the changes in the real sector, Korea has adopted extensive financial reforms which fall into two broad categories, liberalization and internationalization.

As part of the move towards financial liberalization, the Government handed over its controlling stake in the ownership of four nationwide commercial banks to private hands in 1981-1982. With the other nationwide bank already privately owned since 1972, the denationalization of all the five leading commercial banks was complete. Along with this the General Banking Act was revised towards the end of 1982 to give banks a freer hand in dealing with their own managerial affairs while boosting their public accountability by setting upper limits on the ownership of bank stocks per shareholder. At the same time, various regulations on the internal management and operations of banks were simplified and drastically reduced in number. Efforts were also made to reduce the share of policy loans.

In an attempt to create a more competitive environment in the financial market, entry barriers for banks and non-bank financial institutions were lowered. This resulted in the establishment of a number of new banks, investment and finance companies, and mutual savings and finance companies.

In addition, the business sphere of financial institutions has been widened. Since 1982, commercial banking business has been diversi-

Table 3.2

TREND OF WAGES AND LABOUR PRODUCTIVITY

(Unit: Rate of Increase, %)

	1986	1987	1988	1989
Wages in Manufacturing	9.2	11.6	19.6	25.1
Labor Productivity	15.0	11.6	13.0	8.2
Unit Labor Costs	-5.0	0.0	5.8	15.6

fied to include the sale of commercial bills, credit card operations, sales of government and public bonds under repurchase agreements (RPs), factoring, trust business, mutual installment savings and negotiable certificates of deposit (CDs). Among non-bank financial institutions, investment and finance companies and merchant banking corporations introduced commercial paper (CP) in 1981 and they were followed by large securities companies in 1984. Investment and finance companies and merchant banking corporations launched Cash Management Accounts (CMA) in 1984, a Korean version of the U.S Money Market Mutual Funds.

Furthermore, interest rates were partially deregulated. Beginning in 1984, banks were permitted to vary their lending rates within a limited range according to the borrower's creditworthiness.

It must be admitted, however, that this financial liberalization of the early eighties progressed at a rather slow pace and within a fairly narrow range. This was a reflection of the immaturity of the economic environment, the persistent current account deficit and the chronic excess demand for banking funds.

A more thorough-going liberalization has been undertaken since 1986 when the current account shifted into surplus with strong economic growth of over 12 per cent.

A set of measures has been implemented to grant commercial banks even greater autonomy in internal management, leaving only the minimum restrictions necessary for the maintenance of sound banking management. In addition, the commercial banks have all greatly increased their paid-in capital, thus boosting their competitiveness and raising their international stature.

A substantial step toward financial liberalization was taken in December 1988. An extensive deregulation of interest rates of banks and non-bank financial institutions was put into effect in order to enhance the efficiency of financial intermediation and to enlarge the basis for indigenous development and internationalization of the Korean financial industry. Most of the lending rates of banks and non-bank financial institutions were liberalized. With respect to interest rates on deposits, only those on deposits with long maturities were deregulated so as to avoid cut-throat competition among financial institutions. Interest rates

on money market instruments, such as certificates of deposit, repurchase agreements, commercial paper, financial debentures and corporate bonds, were also freed.

In conjunction with the interest rate liberalization, the Bank of Korea has made various efforts to switch from a direct monetary control system that fixes ceilings on individual bank loans to an indirect one whereby credit is controlled through such instruments as changes in reserve requirements, open market operations, and rediscount policy.

In October 1989, the Bank of Korea and the Government merged the two sectors of the call market, previously segmented into a market for direct transactions between banks and an over-the-counter market for transactions between non-bank financial institutions. In accordance with this, the former method of concentrating transactions for banking institutions at the Call Transaction Office was abolished and all transactions are now carried out over the counter by a dealing house or directly between participating institutions. At the same time, the preliminary transaction procedure among foreign bank branches was abolished and many regulations on transactions, such as the ceilings on call money requests (5 per cent of the average deposits of each institution) and the limit on hours during which transactions might be conducted, were eliminated. Along with these measures, the Government in December 1989 introduced a professional brokerage system in the foreign currency call market through which banks can adjust temporary shortages or surpluses of foreign currency funds among themselves. The Fund Brokerage House in the independent Korea Financial Telecommunications and Clearings Institute now carries out an intermediary function in the market.

Turning to the internationalization of the financial market, the shift of the current account into surplus also proved to be a watershed.

First, domestic commercial banks are nowadays diversifying their overseas networks by establishing merchant banks in addition to the existing branches which engage mostly in commercial banking. In this way, they are attempting to extend the scope of their international activities into loan syndication, the underwriting of bonds, securities investment, and so forth. These developments are expected to lead to a diversification of earnings sources and an increase in their profitability.

As for foreign banks, the monetary authorities have allowed another 34 branches to operate in Korea since 1981, raising the total number to 67 as of June 1990. The foreign banks have been placed on an equal footing with domestic banks by lifting certain restrictions on their operations while at the same time reducing their privileges. Foreign banks have been given access to the Central Bank's rediscount window, and have been permitted to engage in new business such as the money in trust and the issuance of CDs. It is now hoped that they will serve as catalysts in improving domestic banks' financial services and techniques rather than in introducing foreign capital as they did in the past.

Secondly, there has been considerable relaxation of foreign exchange controls since the beginning of 1987. Successive steps have been taken to liberalize payments for invisible transactions and to ease controls on overseas investment. In November 1988, the Government clearly stated the direction of its policy on foreign exchange liberalization by accepting the obligations of Article VIII of the IMF Agreements.

Furthermore, with effect from March 1990, the Government introduced a new exchange rate system as part of an effort to move to a fully-fledged system of market-based determination of exchange rates.² Under the new regime, the market average rate is determined by the weighted average of the interbank won-dollar exchange rates applied in spot transactions the previous business day. Customer telegraphic transfer rates for the U.S. dollar are set by the banks within an upper or lower limit of 0.4 per cent of the market average rate, while the cash buying and selling rates are established at the banks' discretion as in the past. The exchange rate of the won against other foreign currencies is calculated by combining the won-dollar market average rate in the domestic market and the exchange rates of the dollar against other foreign currencies in international currency markets.

Thirdly, foreign investors' access to the capital market has been substantially improved since 1981, when the Capital Market Internatio-

2. The foreign exchange rates in Korea were long posted by the Bank of Korea on the basis of the Special Drawing Rights (SDR) basket and the trade-weighted basket of five major foreign currencies. This multi-basket-peg exchange regime was used for ten years from February 1980.

nalization Plan was first announced by the Government. Several international trust funds, the Korea Fund and the Korea Europe Fund were established for foreign investors. Foreign securities companies are allowed to open representative offices and to own up to 10 per cent of the paid-in capital of large Korean securities companies.

In addition, domestic companies are permitted to issue CBs and BWs to foreign investors. From 1987, large Korean securities companies, investment trust companies, and insurance companies have been allowed to make direct investments of up to 30 million U.S. dollars in foreign capital markets. Moreover, in the December of 1988, in line with an already existing long-term plan, the Government announced a far-reaching schedule to expedite the internationalization of the capital market. According to the new schedule, foreign investors will be able to invest directly in the domestic securities market from 1992, though on a limited basis.

Lastly, the domestic insurance market has been opened, with the establishment of three foreign life insurance company branches in Seoul since 1987. Several joint-venture life insurance companies are also in the process of being established.

These developments involving the financial markets resulted in characteristic changes in the financial structure. The first thing worthy of note is that the demand for financial assets has steadily grown as the increase in disposable income enlarged the basis for savings and price stability raised the real returns on financial assets. In fact, the ratio of financial assets to nominal GNP, which represents the degree of financial asset accumulation, rose rapidly from about 2 throughout the 1970s to 4.1 in 1989.

Another conspicuous feature is that corporations have come to rely more and more on direct financing from the capital market, raising much of their funds not only through the stock market but also through the corporate debenture and commercial paper markets.

Finally, non-bank financial intermediaries have steadily built up their market share as measured in terms of deposits and loans. Thanks to some advantages in interest rates and in the degree of their autonomy in asset operations and internal management, they were able to pull ahead of banks at the end of 1985 and have continued to outstrip them.

III. Role and Implementation of Monetary Policy

3.1 Objectives and Targets of Monetary Policy

As with other macroeconomic policies, the final objectives of monetary policy generally quoted in the literature, are price stability, full employment, a satisfactory balance of payments and a sufficiently high rate of growth. Among them, the basic one, which is fundamental if the others are to be successfully accomplished, is the maintenance of economic stability and, in our experience, the efficient management of monetary policy plays a key role in achieving price stability. However, the policies designed to attain these objectives inevitably involve some tradeoff. It is, therefore, necessary to assign priorities among competing goals by judging the overall condition of the national economy.

In carrying out monetary policy, central banks set and operate various forms of intermediate targets so as to work effectively toward their ultimate policy objectives. In the case of Korea, M2, broadly defined money or the sum of currency in circulation and total deposits of banking institutions, has served as the principal target of monetary control since 1979. M1, narrow money, and M3, the broadest monetary aggregate comprising M2 plus the liabilities of non-bank financial intermediaries, are used as supplementary monetary indicators.

The rationale for the selection of M2 as the main target is based on the empirical findings of the relationship between monetary aggregates and the macroeconomic variables such as nominal income and price level. In addition, M2 has been found to be superior to other indicators in its predictability and controllability.

The annual target growth rate of M2 is determined in close collaboration with the Government and in consideration of major macroeconomic targets for the year, such as growth rate of GNP, controllable price rises, target level of balance of payments and so on. Based on domestic as well as international economic projections, these macroeconomic goals are set every year by the Government and included in the annual Economic Management Plan, together with the target rates of increase of monetary aggregates. In detail, the optimum level of M2 for the year is estimated on the basis of economic growth expectations, expected inflation rate and projected changes in velocity of money. In other words,

Table 3.3

DEPOSIT SHARES OF FINANCIAL INSTITUTIONS
(End of Period, Unit: %)

	1980	1983	1985	1986	1987	1988	1989
Deposit Money Banks	66.7	57.3	48.8	45.7	42.1	39.3	36.5
Non-Bank Financial Institutions	33.3	42.7	51.2	54.3	57.9	60.7	63.5

we envisage a money increase rate that is determined at a level which fosters stable economic growth without fueling inflation and without exerting pressure on the balance of payments through an increase in import demands.

When the annual target of M2 is determined, the Bank sets up quarterly and monthly management schedules. In setting the short-term targets, the Bank takes into consideration such factors as seasonal fluctuations of the demand for money in the private sector, scheduled outlays of public expenditure, and prospects for foreign trade and capital movements.

3.2 Monetary Policy Instruments

As in the case of other central banks, the Bank's monetary policy is exercised principally through three related and complementary instruments which affect the reserve position of banking institutions: changes in the terms and conditions of rediscounts, open market operations in specified securities, and changes in reserve requirement ratios. In addition to these policy instruments of an orthodox nature, the Bank is also empowered with such policy instruments as setting and altering maximum interest rates on each type of deposits and loans of banking institutions, and controlling the volume of bank credit directly in periods of pronounced monetary expansion.

As mentioned earlier, however, the Bank of Korea removed ceilings on almost all the lending rates of financial institutions as well as those on long-term deposit rates in December 1988.

Until the 1970s, the Bank relied mainly on a reserve requirement policy and other direct control measures in seeking to control monetary aggregates and domestic credit. In particular, from 1978 to 1981 when the excess demand for banking funds was at its height, the fixing of credit ceilings for individual banks was utilized as the main instrument in monetary control. Since the early 1980s, however, the Bank has made efforts to move gradually from a direct control system to an indirect control system under which such orthodox instruments as rediscount rates and open market operations are utilized.

3.2.1 Rediscount Policy

The Bank, like other central banks, can raise or lower interest rates on its loans to control the credit operations of banking institutions. The

Table 3.4

LOANS AND REDISCOUNTS OF THE BANK OF KOREA

(As of End of 1990, Unit: Billion Won)

	Amount	Percentage of Total	Interest Rate (% p.a)
Rediscounts on Commercial Bills	3 819.6	34.6	7.0
Loans for Export Financing	891.9	8.1	7.0
Loans for Agriculture, Fishery and Livestock	348.2	3.2	3.0- 5.0
General Loans	5968.4	54.1	7.0-15.0
Others	6.2	0.1	
Total:	11034.3	100.0	

Bank supplies credit to banking institutions either by rediscounting commercial bills or by extending loans on the collateral of their selected financial assets.

Loans for export financing are extended within 50 per cent of the amount advanced by banking institutions. Loans for agriculture and fisheries are extended to the National Agricultural Cooperative Federation and the National Federation of Fisheries Cooperatives.

General loans to banks are divided into two types. Type A general loans are quasi-policy loans made available to banks which have participated in such selective financing as loans for small and medium-sized enterprises, loans for energy saving equipment, etc. Type B general loans are frequently used as a means of adding liquidity to, or absorbing it from, banks to control their total reserve positions. The loans are also available as a contingency credit facility at penalty rates to banks which have temporarily fallen short of their reserve requirements.

At the end of 1990, general loans accounted for 54 per cent of the Bank's total loans and rediscounts as against 8 per cent for loans for export financing and 35 per cent for rediscounts on commercial bills.

Control of bank lending through changes in the Bank's loan and rediscount rates, however, has been limited in its effect. With chronic excess demand for bank credit, banking institutions tend to depend extensively on borrowing from the Bank of Korea. Accordingly, the interest rate policy mechanism of a Central Bank, whereby firms' demand for credit is eventually effected, has not functioned well in Korea. Bank lending rates have been determined simultaneously with rediscount rates by the Monetary Board, taking into consideration the interest costs of business firms and the profit conditions of banking institutions. Under these circumstances, the emphasis of the Bank's rediscount policy was placed on determining rediscount ratios and the availability of funds according to the bills concerned.

3.2.2 Open Market Operations

The Bank is authorized to buy or sell securities representing Government obligations, other securities fully guaranteed by the Government, and special negotiable obligations of the Bank, called Monetary Stabilization Bonds (MSBs), in the open market.

Table 3.5

TREND OF MONETARY STABILIZATION BOND ISSUANCE
(Unit: Billion Won)

	1981	1982	1983	1985	1986	1987	1988	1989	1990
MSBs Issued (Net)	--	-25	150.5	-59.5	2754.5	4915.9	7199.0	1931.9	2064.9
MSBs Outstanding	30	5	155.5	504.1	3258.6	8174.5	15373.5	17305.4	15240.5
Interest Paid on MSBs	..	..	13.0	61.5	152.0	656.6	1404.2	1950.9	1844.8

Open market operations in Korea had not, until the current account balance moved into surplus, been regarded as an important policy instrument to control financial market conditions. This was the result of a shortage of marketable instruments because the Government had been largely dependent in financing its fiscal deficit on borrowings from the Bank of Korea at low interest rates, rather than on the issue of government securities at money market rates.

The shift of the current account into surplus and accompanying change of the money supply channel in 1986-1989 raised a new problem with monetary control, namely, liquidity expansion. In the past, the foreign sector served to siphon off liquidity because the balance of payments remained chronically in the red. However, the foreign sector started to supply liquidity as the current account turned into surplus in 1986.

Under these circumstances, the monetary authorities had no option but to rely on the issuance of the MSBs. However, this quasi-open-market operation has its own limitations as increasing interest payments on the bonds themselves serve to increase the money supply.

3.2.3 Reserve Requirement Policy

The Bank of Korea is empowered to fix and alter the minimum reserve requirements against banking institutions' deposit liabilities. The ratios may not exceed 50 per cent, but in a period of pronounced monetary expansion, the Bank is authorized to impose marginal reserve requirements of up to 100 per cent of any increase in deposits.

The reserve requirements may be held in vault cash up to 25 per cent. In case the reserves of banking institutions fall short of the legal reserve amount computed semi-monthly in a manner determined by the Monetary Board, the Bank can impose a penalty of 1 per cent of the amount of the average deficiency during that half-month period. In addition to the above reserve requirements, the Monetary Board may, when it deems necessary, require each banking institution to hold special reserve assets in such a manner as may be determined by the Monetary Board.

Until June 1981, different ratios were applied to demand deposits and to time and savings deposits, while deposits with the National

Agricultural Cooperative Federation and the National Federation of Fisheries Cooperatives were subject to preferential ratios considerably lower than those for other banks in an effort to strengthen financial support for the relatively underdeveloped agricultural and fisheries sector. However, in July 1981, the Bank unified the ratios with the aim of countering the phenomenon that a shift of funds between financial assets with different reserve requirements resulted in added instability of the money multiplier. As of June 1991, the common ratio is 11.5 per cent while lower ratios are applied only to a few long-term time and savings deposits and non-residents' deposits.

During the period from April 1989 to January 1990, a marginal reserve requirement system was introduced temporarily to cope with the rapid growth of claims on the private sector. Under this measure, a marginal reserve requirement of 30 per cent on the average increment of demand deposits and time and savings deposits was imposed.

As the rediscount policy and open market operations had only limited effect, the Bank frequently resorted to changes in the reserve requirements when controls on credit volume were called for.

However, in many cases when banks were not able to meet the required reserves and had to pay penalties, the Bank extended them general loans so that they could make up the reserve deficiency, thereby weakening the effectiveness of this instrument.

3.2.4 Other Measures

In addition to the indirect instruments mentioned so far, the Bank is equipped with a wide range of direct or selective credit control instruments, determining the ceilings on interest rates of banks, limiting the volume of bank credit, establishing required loan ratios to small and medium-sized enterprises, and prohibiting the issuance of loans to certain sectors.

As for the ceilings on interest rates, only maximum interest rates for deposits are currently set by the Bank because loan rates were almost completely deregulated in late 1988.

Table 3.6**MINIMUM RESERVE RATIOS**

(As of June 1991)

	Percent
Won Currency Deposits:	
Workmen's property formation savings deposits	
Workmen's savings deposits for housing	3.0
Housing instalment deposits	
Workmen's long-term savings deposits mutual instalment deposits	
Time deposits with a maturity of 2 years or more	
Instalment savings deposits with a maturity of 2 years or more	8.0
Household preferential instalment savings deposits	
Demand deposits and other time and savings deposits	11.5
Foreign Currency Deposits:	
Residents' demand deposits	11.5
Residents' time and savings deposits	
Non-residents' demand deposits	1.0
Non-residents' time and savings deposits	

3.3 Implementation of Monetary Policy

3.3.1 Monetary Board

The supreme organ of monetary policy is the Monetary Board which is established in the Bank of Korea.

The Board formulates monetary policy and directs and supervises the activities of banking institutions as well as the operations of the Bank of Korea. The Monetary Board is composed of nine members. The Minister of Finance and the Governor of the Bank of Korea are ex-officio members. The other seven members are recommended by government ministers and banking institutions, and appointed by the President for three-year terms. Their appointments are based on a number of factors, but in the selection process careful attention is given to achieving an evenly-balanced representation of various interest groups.

The Board convenes every first and third Thursday each month with the attendance of seven members being needed for a quorum. Additional meetings, if necessary, may be called by the Minister of Finance, the Governor of the Bank or a majority of the other members.

Besides formal meetings, Board members make it a rule to have an informal meeting every Thursday morning to exchange views among Board members and with the Bank staff on an informal basis on general or specific topics.

The Minister of Finance presides at the Board's meetings if he is present. The general practice is, however, for the Governor to chair the meetings, as the Minister attends only infrequently.

Resolutions are adopted when a simple majority of the members present concur. The Minister of Finance has the right to request reconsideration of any resolution adopted by the Board. If his request is overruled by two-thirds of the Board members, a final decision is referred to the President. However, as the Minister has yet to exercise this right, it remains only as a symbol of the Government's ultimate veto on the shaping of monetary and credit policies.

In practice, members debate proposals so as to develop a consensus. When a certain item on the agenda is considered controversial,

the Board nominates a member of a special sub-committee to scrutinize the matter with the assistance of the Bank staff. The sub-committee then reviews the result of the inquiry before the issue is reevaluated at a formal meeting. Whenever dissent is voiced against a resolution passed, however, this is noted in the minutes.

3.3.2 Executive Branch

The executive branch supports the Board by providing members with the relevant information essential to the proper formulation of monetary policy, and implements the policies formulated by the Board.

The Research Department reports its research findings and policy recommendations to the Board through its analyses and forecasts of economic movements at home and abroad. The Statistics Department compiles various statistics including monetary indicators, wholesale prices and national accounts. The compilation of national income data, in particular, enables the Bank to have a better grasp of the movements in the real sector of the economy.

In the implementation of monetary policy, the Monetary Policy Department plays an important role. The Department makes rules and regulations on the fund operations of banking institutions on the basis of the Board's directives, and it determines the volume and timing of open market operations and lending to banking institutions.

The Bank, upon the authority of the Government, operates much of the foreign exchange control system. This includes the Bank's intervention in the foreign exchange market to maintain the stability of foreign exchange rates.

To ensure prudent banking practices and ensure that Board policies are implemented effectively, the Office of Bank Supervision and Examination oversees the operations of banking institutions and reports its findings to the Board. If any malpractices or deficiencies are discovered, the Superintendent of Banks takes the necessary action to correct them under the instructions of the Board.

3.3.3 Coordination with the Government

The Bank also actively participates in government policy formulation. By statute, the Government is required to consult with the Monetary

Board whenever it formulates important policies related to money and credit. At the Government's request, the Board deliberates on the matter at issue and sends a reply to the Government with its opinion and policy proposals.

To facilitate the coordination of Bank and government policies, the Governor of the Bank can attend the State Council to give his views whenever the agenda include monetary and credit matters. The Governor and Deputy Governor of the Bank likewise attend the Council of Economic Ministers and the Council of Vice-Ministers, respectively, and perform a similar function.

The Bank also participates in the formulation of the long-term economic development plans and annual economic management plans of the Government through formal and informal consultations. Members of the Bank staff join various working-level committees which draw up plans.

IV. Effectiveness of Monetary Policy and Impact of Financial Reforms

4.1 Demand for Money and Its Stability

The demand for money function plays an important role in the transmission mechanism of monetary policy. That is, the stability of the demand for the intermediate monetary aggregate is crucial if monetary policy is to have its desired effect on output and price level.

Since the early 1980s the Korean economy has experienced structural changes and this is especially true of the financial markets. In the course of these changes, it seems very likely that the money demand function has also undergone structural changes.

The stability of demand for money can be judged by the movements of income velocity of money, which represents the ratio between money stock and nominal output. M2 velocity has shown a long-term downward trend, falling at a 1.8-per cent annual rate since the latter half of the 1970s, although revealing several quite distinctive movements such as an exceptionally sharp decline in 1982 and short-lived spurts in 1979, 1984 and 1988.

Apart from 1979, M2 velocity recorded a rather rapid decrease from 1977 to 1981. After the unprecedented drop in 1982, however, the downward trend in M2 velocity apparently weakened, averaging a 0.9-per cent rate of decline from 1983 to 1989. This must have been influenced to a considerable extent by the recent changes in the financial environment described below.

Firstly, there was a remarkable flow of funds of households and enterprises into high-yielding deposit instruments offered by non-bank financial institutions. This development was largely led by the introduction of new financial instruments combining liquidity and high returns such as Bond Management Fund (BMF), Cash Management Account (CMA) and money in trust, the establishment of many non-bank financial institutions, and a great expansion of the demand for financial assets thanks to higher income levels and price stability.

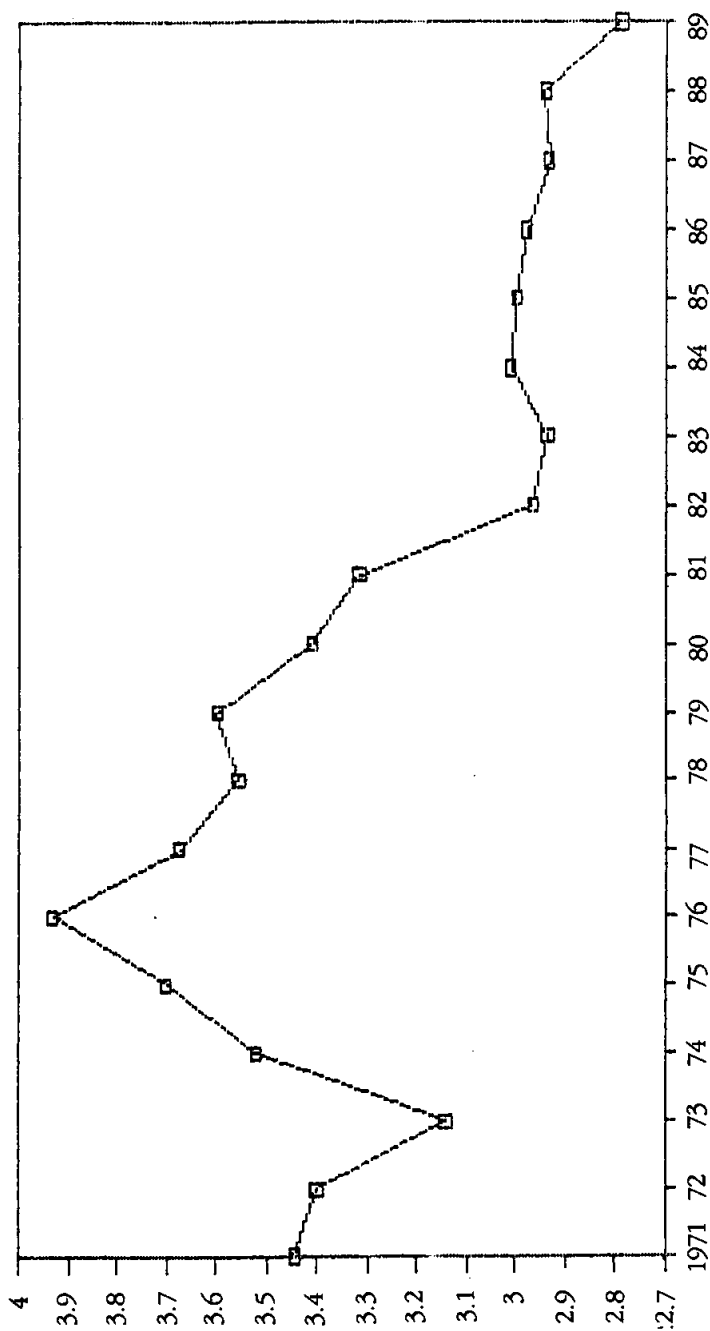
Looking at the trend of deposits in new financial instruments, since their introduction in April 1984, CMA deposits have increased at an annual rate of 50.3 per cent, and the total amount settled as money in trust exceeded 22 trillion won at the end of 1989. The total amount under BMF arrangements had soared to 2.0 trillion won within about two years of their introduction in September 1987.

Secondly, as cash management techniques improved and convenient means of payments such as credit cards and household checks were introduced, individuals tended to economize on their holdings of money balances.

Bank credit card business, which was introduced by a special bank in September 1980 and by nation-wide commercial banks in May 1985, is now handled by almost all deposit money banks; and, transactions using these cards amounted to 7,312 billion won in 1989. Household checks started to come into active use following (*Chart 3.1: Income Velocities of M2*) the introduction of the household checking deposits scheme in July 1981, and the amount transacted through such checks expanded steadily to total 12,166 billion won in 1989.

Judging from these changes in the financial environment, it is very likely that the easing of the downward trend of M2 velocity is not a transitory phenomenon but mirrors underlying structural changes.

Chart 3.1
INCOME VELOCITIES OF M2



However, considering that Korea's Marshallian k remains at a fairly low level compared to that of advanced countries, the slower deceleration of M2 velocity seems to be somewhat affected by the fact that M2 does not include short-term deposits of non-bank financial institutions. This argument is well supported by the fact that the income velocity of M2B, which includes the non-banks' short-term deposits, still shows high growth.

4.2 Trend of Money (M2) Multiplier

The Korean money (M2) multiplier showed a long-term upward trend until the third quarter of 1987, while there were slight short-term fluctuations. This can be largely accounted for by movements of reserve requirements and ratios of currency in circulation. During the period, the former dropped from 20.0 per cent to 4.5 per cent and the latter continued to decrease from 15.9 per cent to 8.8 per cent.

However, the multiplier experienced a turnaround in the fourth quarter of 1987, whence it started to drop steeply. This seems to have been also affected by changes in the two factors mentioned above; the reserve requirements, since then, have been increased three times to 11.5 per cent, and the ratio of currency in circulation has ceased its downward course.

The main focus of monetary policy has been on the link between monetary aggregates and ultimate goals of the policy. The explanation most often accepted for the relationship has been that changes in nominal money balances have a short-run impact on real output and a long-run impact on prices, especially in the presence of either informational imperfections or nominal rigidities. With the economy in the 1980s experiencing structural changes, however, some economists began to advocate that monetary aggregates receive less emphasis in the policy process because they are less reliably related to the economic objectives now than in the past.

In the case of the Korean economy, a recent empirical study³ showed that the relationship between money growth and ultimate goals such

3. Hong, Kab-Soo, "Empirical Analysis of Quarterly Price Changes: Relations with Wages, Money and Economic growth", *Monthly Bulletin*, The Bank of Korea, May 1990.

Table 3.7

TREND OF DEPOSITS WITH NEW FINANCIAL INSTRUMENTS OF NBFIs

(Unit: Billion Won; Rate of Increase: %)

	1984	1986	1987	1988	1989
CMA	882 (--)	2381 (39.1)	3698 (55.3)	5294 (43.2)	6341 (19.8)
Money in Trust	2236 (29.9)	5096 (29.7)	8741 (71.5)	13453 (53.9)	22119 (64.4)
BMF	--	--	355 (--)	1837 (418.0)	1970 (7.2)

Note: Figures in parentheses are rates of increase.

Table 3.8

TRENDS IN THE USE OF BANK CREDIT CARDS AND HOUSEHOLD CHECKS

(Unit: Billion Won; Rate of Increase: %)

	1984	1986	1987	1988	1989
Bank Credit Cards	222 (--)	899 (90.6)	2051 (128.2)	4453 (117.1)	7312 (64.2)
Household Checks	5350 (11.5)	6025 (3.9)	7164 (18.9)	9235 (28.9)	12166 (31.7)
Currency in Circulation	2534 (7.7)	2896 (8.2)	3347 (15.6)	3997 (19.4)	4646 (16.2)

Note: Figures in parentheses are rates of increase.

Table 3.9**TREND OF MONEY (M2) MULTIPLIER**

	I	II	III	IV
1979	2.90 (--)	3.00 (3.45)	3.01 (0.33)	2.90 (-3.65)
1980	3.64 (25.52)	3.93 (7.97)	4.00 (1.78)	4.30 (7.50)
1981	4.28 (-0.47)	4.48 (4.67)	5.53 (23.44)	5.90 (6.69)
1982	6.28 (6.44)	6.56 (4.46)	6.17 (-5.95)	5.84 (-5.35)
1983	5.88 (0.68)	6.25 (6.29)	6.23 (-0.32)	6.12 (-1.77)
1984	6.18 (0.98)	6.43 (4.05)	6.47 (0.62)	6.59 (1.85)
1985	6.57 (-0.30)	7.07 (7.61)	7.27 (2.83)	6.95 (-4.40)
1986	7.11 (2.30)	7.69 (8.16)	7.63 (-0.78)	7.39 (-3.15)
1987	7.43 (0.54)	7.73 (4.04)	7.83 (1.29)	6.86 (-12.39)
1988	6.26 (-8.75)	6.27 (0.16)	6.36 (1.44)	6.15 (-3.30)
1989	5.38 (-12.52)	5.51 (2.42)	5.49 (-0.36)	5.29 (-3.64)

* Figures in parentheses are rates of change (%).

Table 3.10

**TREND OF RESERVE REQUIREMENTS OF
DEPOSIT MONEY BANKS**

(Unit: Percent)

	Time and Savings Deposits	Demand Deposits
1979.11.23	20.0	27.0
1980. 1. 8	11.0	20.0
9.23	10.0	14.0
1981. 7. 1	5.5	5.5
11.23	3.5	3.5
1982. 5.23	5.5	5.5
1984. 9. 8	4.5	4.5
1987.11.23	7.0	7.0
1988.12.23	10.0	10.0
1990. 2. 8	11.5	11.5

Table 3.11**TREND OF RATIOS OF CURRENCY IN CIRCULATION**
(Unit: Percent)

	I	II	III	IV
1979	15.9	14.6	14.7	16.1
1980	15.5	13.7	13.9	14.0
1981	13.9	12.8	12.5	12.3
1982	12.2	11.1	11.2	12.1
1983	11.8	10.7	11.0	11.3
1984	11.3	10.5	10.7	11.0
1985	11.1	10.1	9.7	10.3
1986	10.1	9.3	9.2	9.6
1987	9.6	9.0	8.8	9.7
1988	9.6	9.2	9.1	9.4
1989	9.5	8.9	9.1	9.1

as inflation rate and real GNP is still as meaningful as it was before the financial reforms in the 1980s, though the degree or lag-structure of its effect has experienced some changes.

Hong (1990) shows that money growth in 1981-1989 exerted a distinct effect on the price level with lags of two to four quarters, while the effect in the 1970s, according to Byun (1985),⁴ peaked in the sixth quarter. This shortening of the lag between money supply and the inflation rate seems to be mainly due to loosened price control at the micro-level, along with the fundamental shift of the Government's policy stance to a market-oriented mechanism, and the increased sensitivity of economic entities to various items of economic information including monetary indicators.

Looking at the impact of monetary policy on GNP, according to Hong (1990), an additional money supply of 1 per cent in the 1970s brought about an additional growth of 1.2 per cent in real GNP in the second quarter, and further increases of 0.41-0.09 per cent until the fifth quarter. During the 1980s, however, additional money growth of 1 per cent resulted in additional growth of only 0.19 and 0.11 per cent in the first and second quarter, respectively, and the effect slackened off conspicuously from the third quarter.

4.3 Interaction Between Monetary and Exchange Rate Policies

Although floating exchange rates are generally thought to promote monetary autarchy, this cannot be absolutely true when we take the imperfection of price mechanism into consideration. As can be seen from recent experience in major advanced countries, external equilibrium is not obtained automatically due to such factors as time lags in the process of adjustment.

Furthermore, the enhanced role of market forces in determining exchange rates, along with the overall liberalization of financial and capital markets, increases the interaction between interest rates and exchange rates. The fluctuation of interest rates caused by that of exchange rates may come to act as an obstacle to the implementation of monetary policy.

4. Byun, Ki-Seok, "The Lagged Effect of Money on Prices", *Monthly Bulletin*, The Bank of Korea, October 1985.

Until the seventies, the Korean exchange rates had been maintained within narrow margins in terms of the U.S. dollar and had even been depreciated several times to offset the rise of domestic prices and the balance of payments deficit. In February 1980, however, the system moved to a multiple-basket pegged system,⁵ under which the exchange rate became to reflect market forces more precisely. In March 1990, the Government adopted a market average foreign exchange rate system,⁶ making a big stride toward the introduction of a full-fledged floating rate system.

As a result of this, and fueled by recent liberalization of other financial markets, the interaction between monetary and exchange rate policies has undergone considerable change. In the past, the influence running from one policy to the other was restrictive and indirect, functioning only through changes in aggregate demand and current balance, because interest and exchange rates were unable to fully reflect demand and supply in the two markets.

However, as interest and exchange rates are increasingly reflecting the market forces and the restrictions on inflows and outflows of foreign capital are eased, the linkages between the two policies are becoming ever closer.

4.4 Movement from Direct to Indirect Methods of Monetary Control

Many economists are opposed to the use of direct methods of monetary control on the grounds that they interfere unduly with the

5. The Bank of Korea concentration base rate, which was basic to determining such other rates as the interbank rate and the customer rate under the system, was calculated as follows:

- (i) The Korean won-U.S. dollar exchange rate was calculated on the basis of the SDR basket and a trade-weighted basket by averaging the two basket rates according to their assigned weights.
- (ii) The rates against foreign currencies other than the U.S. dollar was determined by arbitrating between the U.S. dollar rate of the currency in the international exchange market and the above won-U.S. dollar concentration base rate.

6. The market average rate, basic to all the foreign exchange transactions, is determined by the weighted average of interbank won-dollar exchange rates applied in spot transactions the previous business day.

Table 3.12

MAJOR INDICATORS RELATED WITH MONETARY AND EXCHANGE RATE POLICIES

	1981	1982	1983	1984	1985	1986	1987	1988	1989
Exchange Rate 1/ (Won/US\$)	700.5	748.8	795.5	827.4	890.2	861.4	792.3	684.1	679.6
Yield on Corporate Bonds (%)	24.4	17.3	14.2	14.1	14.2	12.8	12.8	14.5	15.2
Growth of M2 (%)	27.4	28.1	19.5	10.7	11.8	16.8	18.8	18.8	18.4
Current Balance (Billion US\$)	-4.6	-2.7	-1.6	-1.4	-0.9	4.6	9.9	14.2	5.1

1/ Year-end.

freedom of borrowers and lenders to determine their own priorities in line with an efficient allocation of resources.

In developing countries, however, the most traditional monetary instruments tend to be subject to many limitations prompted by various institutional factors such as the lack of development in the financial market and the urgent need to promote or rein in specific sectors of the economy. In such circumstances, direct controls on the credit of commercial banks or interest rates are potentially powerful and they have, in practice, been frequently used in many developing countries.

Nevertheless, as the economic scale expands and the financial markets develop, direct control patently reveals the shortcomings mentioned and, eventually, fails to accomplish the goals assigned to it by central banks.

As noted earlier, the Bank of Korea, until the 1970s, heavily relied on direct or selective credit control systems such as ceilings on the loans outstanding of banks or establishing general guidelines on the allocation of banking funds. In connection with the general guidelines for fund operations, a considerable portion of banking funds was earmarked for use in selective financing for specified industries of strategic importance in economic development and small and medium enterprises in financial difficulties. Loans for exports also fell under the category of selective financing by the Bank.

Entering the 1980s, however, the Bank of Korea attempted to move gradually from a direct credit control system to an indirect system whereby credit is controlled through reserve requirements, open market operations and rediscount facilities. This change was based on the judgment that the Korean economy and its financial sector had grown too big and complex to be operated efficiently through rigid intervention. Furthermore, the envisaged financial deregulation would have made it more difficult to continue with a system of direct control.

In spite of various institutional and structural factors that limit the effectiveness of orthodox indirect control instruments as has been pointed out in Chapter 1, the Bank of Korea and the Government have made various attempts to make greater use of indirect instruments. Though very limited in size and frequency, auctions are, now and then, held by the Bank for the sale of Monetary Stabilization Bonds to the general

public, including non-bank financial intermediaries. And the Bank, in order to control short-term liquidity, actively conducts sales of government and public bonds under repurchase agreements at prevailing market interest rates. The Government depends increasingly on the issuance of government bonds rather than direct borrowings from the Bank. To promote rediscount policy, the Bank reduced the share of bank loans eligible for automatic rediscount in late 1988 and early 1989.

4.5 Efficiency of Financial Resource Allocation

One of the improvements generally expected in the process of financial liberalization is increased efficiency in financial resource allocation thanks to the enhanced role of the price mechanism and the accentuation of competition among financial institutions. While precise evaluation of the degree of efficiency of financial resource allocation is somewhat problematic, we can examine simply whether the efficiency has improved or not by looking at such indicators as the structure of lending rates and the intermediation cost of financial institutions. That is, more diverse lending rates indicate that interest rates better reflect the costs of funds and risks involved and a lower intermediation cost means that demanders of funds can obtain the use of financial resources more cheaply.

In the case of Korea, the interest rates applied to most loans with maturities of less than one year were 10 to 11.5 per cent per annum, a range of 1.5 per cent before the liberalization in 1988. But, after the December 1988 deregulation, the range widened to over 2.5 per cent as banks began differentiating between borrowers according to their creditworthiness and the risks involved.

The intermediation cost, which can be inferred from the spread between the lending and deposit interest rates of financial institutions, exhibited until 1987 irregular movements as a result of the authorities' direct or invisible controls over interest rates, but spreads have, in fact, widened since 1988 when an extensive deregulation of interest rates was put into effect.

This unusual phenomenon is thought to be closely connected with the fact that in 1988 lending rates were largely liberalized while deregulation of deposit rates was limited to those with long maturities. In this circumstance, the spread between lending and deposit rates hardly reflect the intermediation cost and thus financial efficiency.

Table 3.13

**TRENDS OF AVERAGE LENDING AND DEPOSIT RATES:
THE FIVE MAJOR COMMERCIAL BANKS**
(Unit: Percent)

	1981	1982	1984	1986	1987	1988	1989
Average Lending Rates (A)	16.92	11.84	9.93	9.14	8.69	9.14	10.28
Average Deposit Rates (B)	12.18	9.79	5.45	6.47	6.38	5.65	5.76
A - B :	4.74	2.05	4.48	2.67	2.31	3.49	4.52

4.5.1 Internal Constraints

One of the main characteristics of the Korean financial market, as pointed out earlier, is that firms have relied heavily on indirect financing through banking institutions, and there has been constant pressure of excess demand for bank funds. This has been a major obstacle to maintaining total liquidity at a proper level.

Though corporations, taking advantage of recent rapid growth of the securities market, have come to rely increasingly on direct financing from the capital market, they still have a very high level of indirect financing compared to those of advanced countries. The excess demand for bank loans provides the main reason why banking institutions have tended to depend extensively on borrowings from the Central Bank, some of which have been of the nature of policy loans. Under these circumstances, discount policy cannot but remain essentially passive.

The immaturity of the money market and shortage of marketable instruments is another constraint on efficient monetary control. The outstanding issuance of MSBs totaled 17,305 billion won as the end of 1989 and annual interest payments on the bonds reached almost two trillion won, which is more than 2 per cent of M2 stock.

Turning to the fiscal sector, Korea suffered a chronic budgetary deficit in the process of implementing the economic development plans. Accordingly, until the period of the fourth economic development plan (1977-1981) the government sector represented a burden on monetary control, occasionally supplying a double-digit per cent of the total M2 increase.

However, with the change in the direction of economic policy in the early 1980s, the Government stressed price stability through the implementation of various stabilization policies and adopted the view that the degree of centralization of economic activities should be reduced through greater reliance on the market mechanism. The Fifth Five Year Plan (1982-1986) was based on this new approach. Since then the comparative volume of the fiscal deficit to current GNP has decreased, and the budget eventually moved into surplus in 1987. The fiscal sector has no longer been a burden but sometimes, especially during 1987-1989, it has absorbed a large amount of liquidity.

Table 3.14**TREND OF FISCAL DEFICITS IN KOREA**
(Annual Average)

	1972- 1976	1977- 1981	1982- 1986	1987	1988	1989
Deficit (A) (billion won)	149	719	838	-478	-2009	1391
A/Current GNP (percent)	1.8	2.3	1.3	-0.5	-1.6	1.0

Table 3.15**TREND OF M2 INCREASE BY SECTOR**

(Unit: Percent)

	1972- 1976	1977- 1981	1982- 1986	1987	1988	1989
Government	16.4	9.0	1.4	-25.7	-25.1	-20.5
Private	108.9	133.9	160.1	89.0	89.4	169.1
Foreign	-7.1	-8.3	-29.1	140.1	117.9	24.4
Others	-26.9	-26.6	-32.3	-103.4	-82.2	-72.9

Table 3.16

STOCK MARKET RELATED INDICATORS
(Unit: Billion Won)

	1985	1986	1987	1988	1989	1989.3	1990.8
Composite Stock	138.9	227.8	417.6	693.1	918.6	965.9	637.8
Price Index 1/							
Aggregated Market	657.0	1199.4	2617.2	6454.4	9547.7	7196.4	6754.4
Value of Listed Stocks 2/							

1/ Average during the period.

2/ End of the period.

Finally, the recent dullness of the stock market creates significant difficulties in controlling the money supply at an adequate level. Due to the past double-digit economic growth, current account surpluses and expectations of the opening of capital market, the Korean stock market expanded rapidly with equity prices surging by about 600 per cent in just three years from 1986. Since the spring of 1989, however, equity prices have continued on a steady downward trend, dampened by deteriorating economic fundamentals. Despite the Government's repeated efforts to stimulate the market, it has shown few signs of recovery, stagnating in a one and half year-long slump. At the end of August this year, the Composite Stock Price Index had plummeted to 607 from about 1,000 in March 1989. Under these circumstances, such institutional investors as non-bank financial institutions have little capacity to underwrite MSBs, which have been the major instrument deployed to absorb the excess liquidity since 1986. Furthermore, as the linkages between stock prices, interest and exchange rates strengthen, the depressed state of stock market becomes a more important constraint on the control of the money supply.

4.5.2 External Constraints

Following the shift of the current account into surplus in 1986, the Korean monetary authorities, since 1986, experienced great difficulties in controlling the large amount of money supply through the foreign sector. Though the current account slid back into deficit in the first half of this year, movements of current account must still be an important factor capable of causing great disturbances to monetary control, especially in an economy not well equipped with effective indirect control instruments.

A more significant constraint than the movements of current account may be capital flows between nations. The scheduled capital market opening to foreigners in 1992 may well trigger a major increase in the volume of international capital transactions. What is of general concern with regard to such capital transactions is that domestic interest rates would come to be influenced by overseas interest rate fluctuations more frequently and to a higher degree than before. That is, the Korean money market, which must still be considered as in its infancy, is very likely to be disrupted by wide fluctuations of international short-term interest rates.

Moreover, should expectations of exchange rate appreciation or depreciation take hold of the markets, then capital inflows or outflows might occur on such a scale and within such a short period that spot-forward exchange rate spreads would be unable to adjust sufficiently and spot exchange rate fluctuations, along with irregular increase or decrease of total domestic liquidity, would make monetary control more complicated and problematic. In such a case, a raising or lowering of domestic short-term interest rates coupled with intervention by the Central Bank in the foreign exchange market would be effective in cooling off market sentiment with a resultant moderation of exchange rate volatility, but this would be at the cost of a loss of freedom in monetary policy.

4.6 Problems of Monetary Control Arising from Financial Reforms

Financial reforms and the associated structural changes in the financial system have potentially far-reaching implications for the design and implementation of monetary policy. While some argue that financial reforms in Korea have still not advanced enough to alter the operation of monetary control to any significant degree, it is generally recognized that the reform measures have been causing several problems to the effective performance of monetary policy.

First of all, as new financial instruments with both liquidity and high returns increased sharply, it has become difficult to distinguish between narrow and broad definitions of money on the basis of moneyiness. Especially in Korea, these new instruments largely originated from non-bank financial intermediaries. Under these circumstances, the authorities can no longer ensure the effectiveness of policy by keeping watch on the movements of M2 alone. This is because M2, which has been adopted as the intermediate target variable since 1979, is composed only of currency in circulation, demand deposits and the time and savings deposits of banking institutions. The Bank of Korea is now moving to adopt a new measure of money stock which excludes the long-term savings deposits of banking institutions but includes the demand liabilities of non-bank intermediaries.

Beyond definitional and indicator matters, there are some signs that financial reforms added instability to the demand for money, as we already have seen in Section IV.

In addition, financial reforms may have increased the variability and unpredictability of interest rates. This would mean an augmentation of the difficulties in the strategy for monetary control where a trade-off is emphasized between achieving monetary growth targets and stabilizing the movements of interest rates.

In reality, even though the extent of any increase in the variability of interest rates due to the reform process is far from clear, interest rates have been much more variable during the 1980s than the 1970s. Perhaps the most important reason for this greater interest rate variability is the increased competition in the banking system and financial markets where a larger part of the adjustment has to be accomplished through interest rates.

Moreover, it must be pointed out here again that even if the money stock can be measured and controlled at a more or less satisfactory level, its usefulness as a monetary target is becoming questionable in a situation where the financial reform process may cause some changes in the conventional relationship of monetary aggregates to economic activity and prices.

V. Summary and Conclusions

The financial sector in Korea has undergone a process of reform since the early 1980s, which was initiated by the change in the Government's policy stance toward stabilization and liberalization and whose pace was accelerated by the shift of the current account into surplus. While these reforms enhanced the effectiveness of the financial system through the increased role of the price mechanism in the market, they appear to have posed several problems in the design and implementation of monetary policy:

- (i) Increasing difficulties in defining the monetary aggregates and selecting a reasonable intermediate target.
- (ii) Instability in the money demand
- (iii) Larger fluctuations in interest rates.
- (iv) Changes in the transmission mechanism of monetary policy: the money stock will no longer serve as an exclusive indicator of domestic economic activities and instead, the importance of interest rates is becoming steadily greater.

Table 3.17

TREND OF MARKET INTEREST RATES

(Unit: Percent)

	Yield on Corporate Bonds	Yield on Government and Public Bonds
1972	22.9	18.9
1973	21.8	16.7
1974	21.0	21.0
1975	20.1	21.1
1976	20.4	19.8
1977	20.1	20.8
1978	21.1	21.6
1979	26.7	25.2
1980	30.1	28.8
1981	24.4	23.6
1982	17.3	17.3
1983	14.2	13.8
1984	14.1	14.3
1985	14.2	13.9
1986	12.8	11.6
1987	12.8	12.4
1988	14.5	13.0
1989	15.2	14.4

- (v) The increasing possibility of rapid and excessive cross-border capital movements: the necessity for maintaining optimal exchange rates through intervention in the foreign exchange market as well as adjustment of domestic short-term interest rates is becoming an important policy task.

Under circumstances in which the direct control system, largely owing to those reforms, has revealed its limitations, further efforts should be made with a view to activating the indirect control system. In this regard, urgent priority should be given to diversification of marketable instruments for open market operations, and to extending reserve requirements to short-term financial instruments which have a high degree of moneyness, but are not included in the present intermediate aggregate (M2).

Together with this, it is necessary to alleviate the pressure of the persistent excess demand for bank loans. This will call for a greater flexibility in the lending rates of banks and encouragement to large firms to make the maximum use of direct financing.

Furthermore, the inefficient allocation of funds caused by the segmentation of financial markets should be rectified through activation and realignment of money markets and promotion of fair competition between banks and non-banks. It should be stressed here that the restructuring of the financial system has to be handled cautiously so as to minimize possible disruption and shocks which could threaten the stability of the existing financial markets, and even the economy as a whole.

Carrying out all these policy tasks completely cannot be done overnight. And, in the years ahead, there will doubtless be numerous unexpected obstacles to be overcome in the process of liberalization and internationalization of the financial sector and in the implementation of monetary policy. Nevertheless, the fresh challenges that these financial reforms pose are not to be avoided but faced with resolution, tempered by prudence.

CHRONOLOGY OF EVENTS OF KOREAN FINANCIAL REFORMS IN THE 1980s

	Lowering of Entry Barriers	Introduction of New Financial Instruments	Interest Rate Deregulation	Opening of Domestic Financial Market	Others
1980 Feb.		Repurchase agreements (securities companies)			
Jul.					
Sep.		Credit cards (Citizen National Bank)			
Nov.		Factoring (merchant banking corporations)			
Dec.				Establishment of representative office of foreign securities companies	Approval of futures transactions between won & foreign currency
1981 Jan.				Announcement of long-term schedule for capital market internationalization	
Jun.		Commercial papers (investment & finance companies, merchant banking companies)		Privatization of Hanil Bank*	

* One of the five existing commercial banks.

Cont

	Lowering of Entry Barriers	Introduction of New Financial Instruments	Interest Rate Deregulation	Opening of Domestic Financial Market	Others
1982 May		Credit cards (nationwide commercial banks)			
Jul.	Establishment of Shinhan Bank				Abolition of regulation on control of credit ceilings to private sector of banking institutions
Sep.		CP (deposit money banks)			Privatization of Korea First Bank* and Bank of Seoul*
Nov.		RP (deposit money banks)			
1983 Jan.				Abolition of Temporary Act on Bank Administration (Removal of the power of the Superintendent to approve or dismiss senior bank officers)	Amendment of Banking Act (abolition of the article em- powering the Superinten- dent of the Bank of Korea to issue comprehensive orders or instructions)
Mar.	Establishment of Koram Bank				
May.		Money in trust (local banks)			Privatization of Chohung Bank*
During 1982-83	Establishment of 12 investment & finance companies				

* One of the five existing commercial banks.

Lowering of Entry Barriers	Introduction of New Financial Instruments	Interest Rate Deregulation	Opening of Domestic Financial Market	Others
1984 Jan.				Permission of interest rate swap & currency swap
Feb.	Money in trust (commercial banks)			
Mar.	Cash management account & international factoring (investment & finance companies)			
Apr.	CP (securities companies)			
Jun.	Negotiable certificate of deposits (deposit money banks)			
Jul.		Abolition of Banking Association Agreements (interest rates on deposits & loans of banking institutions can be decided freely within the guidelines set by the Governor of the Bank of Korea.)		
Aug.			Establishment of Korea Fund	
Nov.		Deregulation of call rates & issuing rates of corporate bonds without guarantee		

Con't

	Lowering of Entry Barriers	Introduction of New Financial Instruments	Interest Rate Deregulation	Opening of Domestic Financial Market	Others
1985 Feb.					Permission of the issue of convertible bonds abroad
Mar.		Household money in trust & preferential savings deposits (all banks)		Approval of foreign bank branches' rediscount from BOK for export financing	
May			Deregulation of issuing rates of convertible bonds corporate with warrant		
Jul.				Approval of foreign securities companies' equity participa- tion in domestic securities companies	
Sep.		Money in trust (foreign bank branches)			
Oct.			Deregulation of issuing rate of CP (high-grade companies)		

Lowering of Entry Barriers	Introduction of New Financial Instruments	Interest Rate Deregulation	Opening of Domestic Financial Market	Others
1986 Mar.		Deregulation of issuing & loan rates of CD, issuing rate of financial debentures & corporate bonds with guarantee		
Jun.				Integration of Korean Clearing & Credit Reporting Center & Korea Bank Giro Center into Korea Financial Telecommunications & Clearing Institute
Jul.			Approval of foreign bank branches' rediscount on commercial bills	
Sep.	CD (foreign bank branches)			
Dec.		Deregulation of all lending rates & some long-term deposit rates		

Cont

Lowering of Entry Barriers	Introduction of New Financial Instruments	Interest Rate Deregulation	Opening of Domestic Financial Market	Others
1987 Feb.				Reduction of denomination of CD from 1,000 million won to 500 million won
Apr.			Establishment of branches of foreign life insurance companies. Establishment of Korea- Europe Fund.	
Sep.	Company money in trust (all banks). Bond management fund (securities companies)			
Oct.				Permission of financial futures

	Lowering of Entry Barriers	Introduction of New Financial Instruments	Interest Rate Deregulation	Opening of Domestic Financial Market	Others
1988 Mar.				Permission of foundation of joint-ventures and corporations of foreign life insurance companies	
Apr.	Approval of opening of dual branches of foreign bank in Seoul				
Aug.				Permission of foreign bank branches' B2-type funds borrowing from BOK	
Oct.					Increase of the limit on basic expense for overseas travel & the limit on external remittance by residents to US\$5000 respectively
Nov.					Accept the responsibilities of the Article VIII of the IMF Agreements. Permission of the contract in won currency (export & import transactions).
Dec.		Company saving deposits & large-denomination RPs (deposit money banks)		Announcement of new schedule for the promotion of capital market internationalization	

Con't

	Lowering of Entry Barriers	Introduction of New Financial Instruments	Interest Rate Deregulation	Opening of Domestic Financial Market	Others
1989 Jun.					Deregulation of customer exchange rates
Aug.				Permission of conversion of CBs into stocks	
Sep.	Establishment of Donghwa Bank				
Nov.	Establishment of Dongnam Bank & Daidong Bank				
Dec.					Integration of call market for banks & market for non- banks. Opening of foreign currency call market.
During 1989	Establishment of 5 local investment trust companies, leasing companies & life insurance companies				
1990 Mar.					Adoption of Market Average Exchange Rate System

Chapter 4

MONETARY POLICY IN MALAYSIA : 1979 - 1989

by
Sukhdave Singh

I. Introduction

The 1980s were characterized by a volatile economic environment. To attempt to describe all the issues that confronted monetary policy during the decade is beyond the scope of this paper. Therefore, for the most part this paper limits itself to the role of monetary policy in maintaining monetary stability. The regulatory and supervisory role of the Central Bank is touched upon only briefly. This paper starts by describing the macroeconomic environment in which monetary policy was conducted during 1979-1989. It chronicles the financial reforms undertaken, but the list is not comprehensive and is meant only to provide a perspective of the broad direction of monetary policy and the transformed financial environment within which it operated. Then monetary policy is examined and its effectiveness evaluated in the light of these financial reforms.

II. Economic and Financial Development

2.1 Economic Environment

The dawn of the 1980s saw the world suffering from high inflationary pressures, induced to a large extent by the "second oil shock" of 1979-1980. The tight monetary and fiscal policies implemented to combat this inflation caused the most severe and prolonged world recession since the 1930s. For Malaysia, the period 1981-1982 witnessed stagnating exports and economic activity slowed.

Believing the slowdown to be short-lived, the Government implemented "counter-cyclical" policies to boost public expenditure and spur economic activity. But the exercise proved to be costly when the expected recovery in the industrialized economies was slow to come. There was a marked increase in the fiscal deficit and the current account of the balance of payments deteriorated. Realizing that such imbalances were unsustainable in the long-term, the Government reined

in its expenditures in the second-half of 1982. However, a recovery in global economic activity in 1983 moderated the severity of the impact of the sharp decline in government expenditure on the Malaysian economy. Subsequently, economic activity strengthened further in 1984.

Unfortunately, the Malaysian economy went into another sharp downturn in 1985 arising from adverse external factors. The two years, 1985-1986, recorded the worst economic performance for the Malaysian economy in nearly two and a half decades. The sudden and sharp deterioration in the international terms of trade (-4.5 per cent in 1985 and -15.5 per cent in 1986), combined with a government policy stance of restraint had widespread deflationary effects never experienced before. Under the deflationary impact of declining commodity prices on exports, incomes and domestic demand, real GDP declined by 1 per cent in 1985, the first negative growth on record. National income, as measured by GNP at current prices, also declined by 2.9 per cent. Although real GDP increased by 1.2 per cent in 1986, the loss of \$7.7 billion in export earnings arising from the deterioration in commodity prices caused nominal GNP to decline by 8 per cent in 1986.

The Malaysian economy rebounded in 1987 to grow by 5.3 per cent, helped by favorable commodity prices, increasing foreign investment, and an acceleration in exports of manufactured goods. As a result, the Government's overall deficit fell to less than 10 per cent of GNP, while the external current account showed a substantial surplus of 8 per cent of GNP. Economic activity continued to accelerate in 1988 and 1989, growing by 8.9 per cent and 8.8 per cent, respectively. This was achieved in an environment of relatively low inflation and without any noticeable strain on the balance of payments. A strong rise in revenue and continued restraint on expenditures helped the Government to attain a surplus in its current account in both 1988 and 1989. The Malaysian economy had undergone a transformation: in 1987, the manufacturing sector accounted for 22.5 per cent of GDP, overtaking for the first time the share of agriculture. In 1989 manufactured exports increased by a record 35.5 per cent to account for 54 per cent of total exports receipts.

Apart from the increasing concentration of economic activity in manufacturing, the Malaysian economy underwent other structural changes during the 1980s, particularly on the level of government involvement in the economy. In the early 1980s, a decline in national

savings combined with a high level of private investment and increased government spending inspired by a counter-cyclical fiscal policy, led to increased borrowing from abroad. When combined with the decline in the value of the ringgit vis-a-vis other currencies, particularly the yen, there was a ballooning of Malaysia's external debt during the 1980s. The large unsustainable budget deficits in 1981-1982 led to renewed emphasis on the private sector as the "new engine of growth" for the economy. There was a reversal of the rapid expansion in government involvement in the economy. The overall budget deficit was reduced to a sustainable level and development expenditure under the Fifth Malaysia Plan of 1986-1990 was reduced by 35 per cent. Efforts were also made to consolidate the position of the non-financial public enterprises (NFPEs). A privatization program for major public sector enterprises was initiated. Consequently, the share of the public sector in aggregate expenditure (GNP) declined from 37.3 per cent in 1983 to 24.6 per cent in 1989. In fact, by 1988, the Government's financial position had improved to such an extent that it was able to prepay some of its external borrowings.

2.2 Financial Development

Most of the financial reforms were undertaken after 1985 since the somewhat unstable environment of the first-half of the 1980s was unsuitable for carrying out such reforms. The list of reforms is not comprehensive and is meant only to indicate the broad direction of the Central Bank's policies.

2.2.1 Interest Rate Reforms

Interest rates were liberalized in 1978, allowing the financial institutions to set their deposit and lending rates. This led to increased competition among banks and interest rates increased. Then, from 1 November 1983, all borrowing rates, except those charged to the priority sectors, were anchored to each bank's declared base lending rate (BLR), which was based on the bank's cost of funds, after providing for the cost of statutory reserves, liquid assets requirements and overheads. As the actual cost of credit to borrowers was determined by the BLR and an interest margin based on the borrower's credit standing, this measure was intended to remove much of a bank's discretion on which of its borrowers benefited or was penalized and to what degree, whenever interest rates changed. The move to BLR was

inspired by the fact that when banks are allowed to decide their lending and deposit rates, the lending rates tended to behave in an asymmetrical manner. When the cost of funds rose, the banks immediately passed it to their customers in higher lending rates. But when the cost of funds declined, lending rates tended to be sticky downwards with a prolonged lag.

In the tight liquidity environment of 1985, interest rates rose sharply as the financial institutions bid for funds. The high level of interest rates was inconsistent with the fact that the country was in the middle of the worst recession ever. Not wanting to reimpose direct controls, but yet desiring to restrain the unhealthy bidding up of interest rates, the Central Bank got the commercial banks and finance companies to peg their interest rates for deposits of up to 12-month maturities to the deposit rate of the two leading domestic banks, effective 21 October 1985. The maximum differential vis-a-vis the lead banks was 0.5 percentage point for the commercial banks and 1.5 percentage points for the finance companies. Subsequently, when the economy recovered and liquidity returned to the system, the pegged interest rate arrangement was dismantled in February 1987 to allow all financial institutions to again freely determine their deposit rates.

However, the Central Bank observed that when deposit rates fell, the commercial banks and finance companies adjusted their BLRs and actual lending rates only after a long time lag. After using moral suasion several times to lower these rates, the Bank issued guidelines on 1 September 1987, requiring the BLR of the commercial banks to be no more than 0.5 percentage point above the BLR of the two lead banks. The margin by which lending rates can exceed the BLR was limited to not more than 4 percentage points, depending on the credit standing of borrowers. Penalty rates on delinquent loans were not to exceed 1 per cent per annum. The finance companies were subject to a similar set of guidelines.

As of 1 February 1991, the BLR was freed from the administrative control of the Central Bank. Each commercial bank or finance company may freely set its BLR based on its own cost of funds including the cost of holding statutory reserves and liquid asset requirement, and administrative costs but excluding costs of provisions for bad and doubtful debts. Except for interest rates on certain priority sector lending, which are still subject to Central Bank guidelines, all other interest rates are

now to be freely determined by market forces. The emergence of market-oriented yield curves will benefit the future development of the capital market, particularly the development of viable secondary markets for public and private securities.

2.2.2 Statutory and Liquidity Requirements

These requirements are very important policy instruments that the Central Bank uses to achieve its monetary objectives. The trend has been to ease the burden of carrying these reserves by allowing the financial institutions more flexibility in meeting the requirements. As of February 1987, the commercial banks, finance companies and merchant banks were allowed to observe the minimum liquidity requirement (MLR) on a two-week average basis, subject to a maximum daily variation of 2 percentage points above or below the requirement. Previously, the requirement had to be met daily. Apart from lowering the costs of operations of the financial institutions, the measure was also intended to dampen the volatility in interbank market interest rates caused by banks seeking funds to meet the daily requirements. Similarly, from January 1989, the banking institutions were allowed to observe an average statutory reserve ratio (SRR) within a 0.5 percentage point band over a two-week period. The SRR for the banking institutions was realigned so that all of them had a common ratio thus placing them on a more even footing to promote greater competition. The primary liquidity ratios of the finance companies and commercial banks were abolished in January 1989 and June 1990, respectively.

Beginning 1 July 1990, the commercial banks, finance companies and merchant banks were required to observe the SRR and MLR by way of the averaging of eligible liabilities (EL) instead of the use of a single base day. To illustrate, the SRR and MLR observed during 1-15 July 1990 is computed based on the average daily amount of EL in base period 1-15 June 1990. The SRR and MLR for 16-31 July 1990 is based on the average daily amount of EL in base period 16-30 June 1990. With the averaging of EL, the computation of both SRR and MLR now have a common base period.

2.2.3 New Financial Instruments

In May 1979, the Central Bank introduced negotiable certificates of deposit (NCDs) and bankers acceptances (BAs) to extend the variety of

papers available on the money market. Both these instruments proved to be popular with investors. From a mere \$200 million at the end of 1979, the amount of outstanding NCDs increased to \$9,156 million by end-1989, whereas the outstanding amount of BAs increased from \$825 million to \$2,029 million over the same period. From February 1987, six merchant banks that met the minimum capital requirement of \$30 million, were allowed to issue NCDs for the first time. In 1980, the Central Bank issued its own certificates but these were not actively traded on the market. In July 1983, non-interest bearing Government Investment Certificates (GICs) were introduced to allow Bank Islam Malaysia, and other institutions to invest their liquid funds on an Islamic basis. The returns are declared by the Government on the anniversary date of the issue of the Certificates. The outstanding volume of these Certificates increased from \$100 million at end-1983 to \$1,000 million at end-1989. With the establishment of the national mortgage corporation (Cagamas Berhad), mortgage-backed bonds were first issued in October 1987. These bonds are issued on an auction basis through a system of principal dealers. By the end of 1989, the total outstanding amount of Cagamas bonds was \$2,550 million. In June 1988, floating rate negotiable certificates of deposit (FRNCDs) were introduced. The interest rates are refixed every three or six months based on the Kuala Lumpur interbank borrowing rates (KLIBOR). In January 1989, the Central Bank issued guidelines to provide a framework for the growing market in corporate bonds and promissory notes. By the end of 1989, the total funds raised through the issue of private debt securities had increased to \$1.7 billion from \$250 million in 1987.

2.2.4 Technological Change

Apart from encouraging greater computerization and the modernization of bank operations, the Central Bank itself implemented several new arrangements to improve the efficiency of the financial system. The Kuala Lumpur Automated Clearing House (KLACH) came into operation in early 1984 to provide automated cheque processing of cheques cleared through the commercial banks in Kuala Lumpur and Petaling Jaya. The coverage was subsequently broadened in stages. The Day-One Settlement System was introduced in 1986, giving same day value to local cheques deposited at banks. More importantly, the Day-One Settlement System promoted interest rate stability as its mechanism ensured that, at the end of the day, when all the cheques are cleared, those banks with a net surplus will automatically lend the funds

on an overnight basis to banks with a deficit, at a rate equivalent to the weighted net average overnight rate transacted in the money market that day. Therefore, there was no need for banks to scramble for funds toward the end of the day, which, previously had pushed up interest rates to unreasonable levels. Toward the end of 1989, the Interbank Funds Transfer System (IFTS), an on-line electronic fund transfer system, was implemented to expedite the daily interbank fund transfers and settlements among participating institutions. This was followed by the Scripless Securities Trading System (SSTS) in January 1990. The SSTS is an on-line book-entry system that effects and records the trading of government papers and Cagamas bonds between member institutions. It is an efficient system for the settlement of dealings between counterparts, registering the securities, and keeping up-to-date records of the stock in security accounts. Since scrips are no longer issued, the risk of loss, destruction and the forgery of certificates has also been eliminated.

2.2.5 Institutional Development

During the 1980s, the Central Bank continued to improve and diversify the financial intermediaries. In 1983, the Islamic Bank of Malaysia (Bank Islam Malaysia) began operations to provide non-interest based banking services along the Islamic principles. The national mortgage corporation, Cagamas Berhad, was incorporated in December 1986, to provide a vehicle to promote an active secondary mortgage market in Malaysia. The securitization of the banking system's long-term assets in housing loans has improved significantly the banking system's liquidity and the quality of the assets, while introducing a new high quality fixed interest instrument in the market. To ensure that low cost funds continued to be available to key sectors in the recessionary high-interest environment of 1985, the Central Bank set up the \$1.7 billion New Investment Fund (NIF) to finance new investments in manufacturing, agriculture and tourism sectors. As part of its efforts to strengthen the stockbroking industry, the Government granted stockbroking licenses to the three largest local banks. Subsequently, in October 1988, local companies with shareholders' funds exceeding \$100 million were allowed to buy stakes of up to 100 per cent in securities firms. Foreign stock-broking houses were allowed to raise their stakes in local brokerages to as much as 49 per cent, against 30 per cent previously. To improve the financing provided to exporters, the Bank revamped its Export Credit Refinancing (ECR) scheme. In March 1989,

the Central Bank issued guidelines on the setting-up and operations of the property trusts companies. The objective was to protect investors' interest as well as to provide direction for the industry's development.

2.2.6 Liberalization of Priority Sector Lending Guidelines

The Central Bank has been issuing annual guidelines to the banking institutions to ensure that priority sectors have access to funds at reasonable cost. The guidelines have been flexible and have been progressively liberalized according to developments in the economy. For example, agricultural food production is no longer included in the guidelines. Remaining quantitative lending guidelines apply only to the Bumiputera community and the small-scale enterprises (SSEs), but these loans are no longer subject to ceiling interest rates. Ceiling interest rates are set only for loans made to individuals for the purchase of owner-occupied houses costing \$100,000 or less, and for loans made to SSEs under the Principal Guarantee Scheme of the Credit Guarantee Corporation.

2.2.7 Exchange Control Liberalization

Exchange control regulations have been progressively dismantled. The current system is liberal and allows free inflow of funds into Malaysia. The remaining exchange control regulations are meant mainly to ensure that export receipts are received promptly in Malaysia, to assist the Central Bank in monitoring the settlement of international payments and receipts, and to encourage the use of the nations's financial resources for productive purposes.

2.2.8 Prudential Measures

While introducing financial reforms to enhance competition and efficiency, the Central Bank upgraded prudential regulations to safeguard the stability of the financial system. Firstly, the Bank undertook to rectify the weak links in the financial system through the rehabilitation of problem institutions and by legislative reforms. Merchant Banks were brought within the ambit of the Banking Act of 1973, in January 1979. In May 1988, the Central Bank assumed the role of supervising the insurance industry. On 1 October 1989, the Banking and Financial Institutions Act (BAFIA), 1989, came into force. The Act unified and improved the regulatory framework for the financial system based on

experiences and prospective requirements. It empowers the Central Bank to supervise and regulate all institutions involved not only in deposit-taking, but also in the provision of finance and credit. Secondly, various guidelines were issued, covering such areas as the code of ethics for the management and employees of financial institutions, and the treatment of interest on overdue loans and the adequacy of provisions for bad and doubtful debts. Thirdly, the financial institutions were required to observe a risk-based capital ratio to ensure that they maintain sufficient capital to absorb unexpected losses.

2.2.9 Developments in the Capital Market

One central priority of the Bank during the 1980s was to develop the capital market in Malaysia. In this respect, special emphasis was placed on the development of a viable secondary market for government securities. However, after the liberalization of interest rates in 1978 several impediments surfaced in the system that hampered the development of such a market. The yields on Malaysian Government Securities (MGS) were significantly below other financial assets, making them unattractive to investors. Furthermore, the bulk of the MGS were held by "captive" institutions, and what was available for trading on the secondary market was only a small proportion of the total. The unavailability of large amounts of MGS on the market also limited the Central Bank's ability to conduct open market operations and hence, curtailed its ability to control money supply and credit.

Recognizing that a market-based yield on government securities was necessary for the development of an active secondary market in these securities, appropriate measures were undertaken to, firstly, change the operating procedures of monetary management to increase the role of the market in providing liquidity for MGS; secondly, reduce the scope of captive markets; and thirdly, move toward a market-based pricing of primary issues of MGS. Some of these reforms have already been discussed and include adjustments of statutory and liquidity requirements, increasing the number of money market participants by allowing well-capitalized finance companies to participate in the interbank money market, using KLIBOR as an indicator of conditions in the interbank market, the establishment of the Interbank Funds Transfer System, the Scripless Securities Trading System, the Kuala Lumpur Automated Clearing House and the Day-One Settlement System. MGS with market-based coupon rates were first issued in 1987. Several major reforms were undertaken in January 1989:

- (i) Appointment of principal dealers: A panel of principal dealers comprising 23 financial institutions (nine commercial banks, seven merchant banks and all seven discount houses) have been appointed to underwrite the primary issues of MGS, and to make markets for these issues by providing two-way quotations in the secondary market.
- (ii) Issue of MGS by auction: Issues of MGS with maturities of up to ten years are now auctioned through the principal dealers, unlike the previous practice of accepting advance subscriptions. However, longer-dated securities are still offered on a subscription basis, but only to the Employees Provident Fund and the National Savings Bank.
- (iii) Central Bank's open market operations: The Central Bank's open market operations are now conducted through the principal dealers only. The Central Bank's role in the money market has now changed to one of maintaining liquidity in the system as a whole instead of responding to the needs of individual institutions. Individual institutions with excess liquidity or which are short of funds have to square their positions in the market and not with the Central Bank. Only the principal dealers have access to the Central Bank's discount window.
- (iv) Freeing of discount house operations: With the reforms, the discount houses became securities dealers where previously they functioned only as "keepers of liquidity". As such, restrictions on the investment of their funds were removed in June 1990 and they are now free to decide their portfolio structure, subject only to the adequacy of capital on a risk-weighted basis. They are also allowed to invest in securities with maturity periods of up to 10 years, where previously, they were limited to papers with maturities of five years or less.

Apart from developing the secondary market for government securities, the Central Bank also took steps to develop a market for corporate bonds. In line with the objective to deepen the financial system, there is a need for viable primary and secondary markets for private debt securities to provide corporations and institutional borrowers with alternative sources of funds and to give investors more avenues for investing in a wide range of financial assets. Initial steps were taken in December, when the Central Bank issued guidelines on the issue of

private debt securities. A private credit rating agency was set up in November 1990 and is expected to begin operations in 1991.

III. Role and Implementation of Monetary Policy

3.1 Objectives

The broad macroeconomic objectives of monetary policy are to promote price stability, rapid income growth and a high level of employment. In working towards these objectives the Central Bank seeks to maintain monetary stability and provide adequate liquidity for real economic activity. To improve the efficacy of monetary policy, the transmission mechanism, that is the financial system, must be well-developed and capable of performing efficiently its role in the intermediation of funds. It is for this reason that the Bank has devoted a great deal of attention to developing a stable and sophisticated financial system.

3.2 Targets

For operational purposes, the Bank uses various measures of money supply as intermediate targets, through which it seeks to influence the broad macroeconomic variables. Traditionally, the emphasis was on M1 since it had been empirically proven to have a stable and consistent relationship with aggregate income. However, changes in the liquidity preference of the public and persistently high interest rates during the early 1980s led to a structural change in the demand for money. As the financial system got more sophisticated, so did the public; savers became increasingly sensitive to interest rate changes. The traditional relationship of M1 to aggregate income was compromised. This led to a shift in focus to M2 and M3, broader definitions of money supply that are less subject to interest-induced fluctuations. However, M2 did not meet the criteria. Its movements were distorted by the disintermediation of deposits from the commercial banks to the other non-bank financial institutions, especially the finance companies, which offered higher interest rates. Therefore, the Central Bank chose M3, which is the broadest monetary aggregate available, covering not only the commercial banks, but also the finance companies, merchant banks, discount houses, and the Islamic Bank. Charts 4.1 and 4.2 trace the relationship of M1 and M3 to output and prices since the 1970s. But realistically,

Money, Output and Prices

Chart 4.1: GDP Deflator

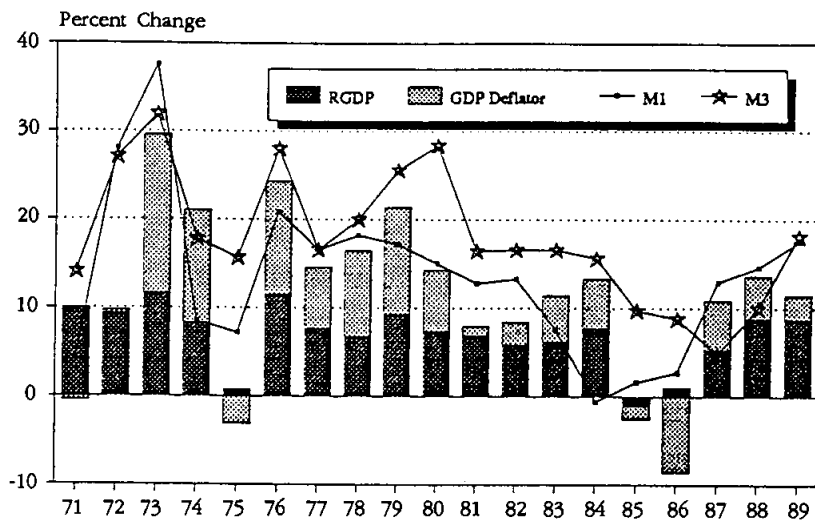
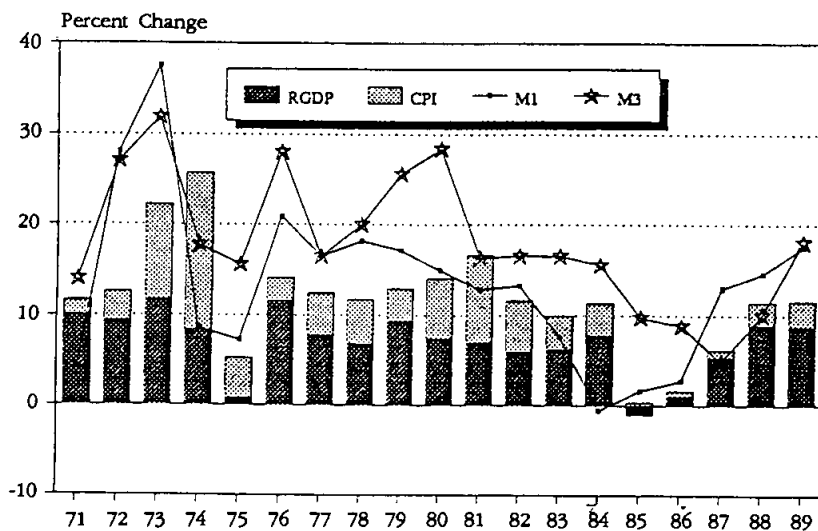


Chart 4.2: Consumer Price Index



monetary policy is not conducted on the basis of any single aggregate. The Bank looks at a broad range of indicators to gauge the state of the financial system and the economy, and to evaluate the impact of monetary measures.

3.3 Instruments and Policies

The growing complexity of monetary management in the 1980s required the Central Bank to broaden its range of monetary instruments. The Bank continued to use its traditional instruments, including the interest rates rediscount facilities, the statutory reserve ratio and liquidity requirements, as well as the use of a range of selective measures, such as credit guidelines, swaps and buy-back facilities. However, increasing emphasis was placed on open market operations in the money market to reinforce the effectiveness of monetary control. These open market operations were conducted either through the direct sale/purchase of securities, or by means of repurchase agreements (Repos). An additional instrument is the placement of government deposits with the Central Bank, which are moved in and out of the banking system depending on the prevailing conditions. In 1989, the Central Bank resorted to borrowing directly from the market to drain excess liquidity.

3.4 The Conduct of Monetary Policy

The economic and monetary management during the early 1980s was confronted with multiple challenges posed by the prolonged recession in the international economy, the consequent slowdown in domestic economic activity, a deterioration in the Government's finances and ballooning balance of payments deficits. At its height in 1982, the overall budgetary deficit was 18 per cent of GNP and the deficit in the current account of the balance of payments was 14 per cent of GNP. The overall stance of monetary policy had to be selectively restrictive to counteract the fiscal expansion. This was to ensure that money will not be the source of financial instability but instead will promote an orderly growth of the economy. This was the time when the Central Bank had to ensure that the banking system had the required liquidity to support loan demand at reasonable cost.

Under the above circumstances, monetary policy was directed at slowing down the growth of money supply in the early 1980s. A major element to this monetary policy was to allow a gradual rise in the

general level of interest rates in response to demand. The rising trend in interest rates at the time was considered necessary to promote savings and combat inflation. This was also to reduce the differential vis-a-vis the much higher interest rates abroad, to retain domestic savings and protect the balance of payments. But the Central Bank was simultaneously faced with a hard choice, as it was also concerned over the damage that a sharp increase in interest rates could do to undermine business confidence and hence adversely affect the prospects for an early revival.

Therefore, while keeping to its moderate monetary expansion stance the Central Bank, simultaneously, intervened in the money market through open market operations to dampen interest rate volatility. The approach adopted involved a change in emphasis among the various modes of market intervention during the year. Although the traditional method of dealing in government securities and direct loans against collateral continued, greater reliance was placed on the use of foreign exchange swap facilities, because their self-liquidating nature ensured that Central Bank funds to the banking system were made available only for specific periods of time. By influencing the volume of liquidity in this manner, the Central Bank was also signaling to the banking system that accommodation was only temporary and that when market conditions became fundamentally tight, the natural tendency for funds to become more limited and costly must be accepted. The preference for using foreign exchange swaps was also influenced by the need to counter the effect of short-term capital flows on the balance of payments.

The slowdown in government expenditure and the resulting rapid buildup of government deposits with the Central Bank during 1983 had a sharp contractionary impact on bank liquidity. Consequently, the Central Bank's policy shifted to being more expansionary to counteract the tightening conditions in the money market. This was done mainly through open market operations, foreign exchange swaps and the recycling of government deposits.

With the onset of the poor international environment and depressed commodity prices in the mid-1980s, conditions in the money market were extremely tight. The Central Bank had to pursue an expansionary monetary policy to ensure that liquidity was sufficiently large to fund private sector demand. Again, the Bank had to manage interest rates

judiciously to balance two conflicting tendencies: high interest rates to mobilize savings and discourage the capital outflows, and low rates to stimulate domestic private investment.

In 1985, the Central Bank continued to rely on recycling government deposits and foreign exchange swaps to inject liquidity into the system. And to ensure that rising interest rates would not act as a disincentive to investment in new productive capacity, the Government set up a \$1 billion New Investment Fund -- which was later raised to \$1.7 billion -- to provide financing to encourage fixed investment outlays in selected priority areas at reasonable cost.

By 1986, the Central Bank had to withdraw funds that were recycled into the banking system as the government balances with the Central Bank were drawn down to the minimum working levels. As an alternative, the Bank resorted to reducing the statutory reserves and liquidity requirements of the commercial banks to replenish liquidity in the banking system. In addition, the Central Bank had to use moral suasion to bring down interest rates. At the same time, the commercial banks agreed to peg their deposit rates to those of the two lead banks, namely Bank Bumiputra and Malayan Banking, to avoid large increases in the cost of funds as they bid for scarce deposits.

In managing the liquidity situation during 1986, the Central Bank policy was, for most part of the year, confronted with the conflicting objectives of maintaining stability in the foreign exchange market and reducing interest rates in the money market. The contractionary influence of the balance of payments on bank liquidity, arising from weak commodity prices, was compounded by mounting speculative pressures on the ringgit, which required the Bank's intervention to purchase ringgit in exchange for U.S. dollars. As a matter of policy, priority in the short term was given to maintaining stability in the value of the ringgit. Consequently, interbank interest rates during the first ten months of 1986 soared to record levels.

The whole scenario changed considerably in October 1986. There was an inflow of funds into the country because of the strengthening of the current account of the balance of payments when commodity prices began to recover. This change of fortune was reinforced by the strong export performance of manufactures in 1987, partly contributed by the competitive exchange rate of the ringgit. Consequently, the money

market became flush with funds. To prevent interest rates from collapsing, Bank Negara absorbed \$4.5 billion from the system in 1987, mainly through open market sales of government securities under repurchase agreements and the unwinding of foreign exchange swaps with the commercial banks. In addition, the Bank issued \$780 million of its own certificates, and urged the Government to refinance its external borrowings with domestic borrowing. The Bank also encouraged commercial banks and finance companies to lower their lending rates in the face of lower cost of funds available in the market.

With the economic recovery in late 1986 and in 1987, the Central Bank's attention focused on developing and strengthening the financial system and increasing the effectiveness of its monetary instruments, particularly open market operations.

In 1989, with strong economic expansion and the accompanying sharp increase in private credit demand, the Central Bank became more concerned about the excess liquidity in the banking system for fear of building up inflationary expectations. Accordingly, the Central Bank conducted contractionary policy to mop up the large amounts of excess liquidity in the system, mainly through open market operations, direct borrowings from the market, and raising the statutory reserve requirements of the banking institutions. This helped to ease inflationary expectations and raised interest rates to levels where depositors were able to get a fair return on their deposits. However, in allowing the interest rates to rise, the Central Bank had to balance the interest of the depositors against the needs of the investors for reasonably priced funds.

IV. Effectiveness of Monetary Policy

4.1 Achievement of Objectives

As stated earlier, the central objective of monetary policy in Malaysia is to maintain price stability in the country by ensuring that the growth in money supply is enough to accommodate the real growth in the economy without causing inflationary pressures. To achieve this, the bank tries to aim -- although not formally and no monetary targets are announced -- at a medium term rate of monetary expansion that is consistent with the underlying growth in real GDP and a desired low rate of inflation, after due allowance has been made for the monetiza-

tion of the rural sector. However, experience shows that sometimes the prescription is easier said than done. Given the open nature of the economy, monetary policy has not always been successful in meeting its objectives fully.

This was particularly true during the 1970s when monetary growth was consistently above 20 per cent per annum and the banking system had large amounts of excess liquidity. Apart from the inflationary pressures arising from external shocks to the economy, the high monetary growth and relatively high inflation was also indicative of the weaknesses of monetary policy. Apart from the statutory reserves and liquidity ratio requirements, the Central Bank did not have any other tools to mop up excess liquidity from the banking system. With the statutory reserves of the banking institutions ranging between 5-10 per cent and the liquidity requirement set at 25 per cent for most of the 1970s, there was little scope for the Central Bank to maneuver. As such it had to resort to such drastic steps as imposing credit ceilings and using guidelines to redirect credit toward productive sectors.

It may be argued that the high rate of monetary growth was necessary in view of the rapid development in the economy and that a major objective of monetary policy in the 1970s was to provide a supportive environment for the large expenditures of the Government under the Second and Third Malaysia Plans. However, as Table 4.1 shows, the price was clearly a higher rate of inflation.

In the 1980s, the Central Bank reaped the benefits of its earlier and ongoing efforts to broaden and deepen the financial system. It was able to avail itself to a broader range of instruments to conduct monetary policy. To counteract pressures in the banking system, the Bank still relied on the statutory and liquidity requirements, but increasingly it resorted to other techniques involving the use of foreign exchange swaps, open-market operations, recycling government deposits, and borrowing directly from the interbank market. The fact that the financial operations of the Government were considerably less expansionary after 1982, compared to the 1970s, was also a significant factor contributing to monetary stability. Looking again at Table 4.1, it is obvious that the rate of monetary growth during 1982-1989 was significantly less than during the 1970s. More importantly, both the inflation rate and real GDP were also considerably lower during 1982-1989.

Table 4.1**MONEY, OUTPUT AND PRICES**

(Average Annual Change in Percent)

	1971- 1972	1973- 1974	1975- 1979	1980- 1981	1982 1989
Real GDP	9.7	10.0	7.3	7.2	5.4
Inflation (CPI)	2.4	14.0	4.1	8.2	2.5
Money Supply (M3)	20.5	24.8	21.2	22.4	12.5

At a more micro level, the reforms allowing greater flexibility in the interest rates offered by financial institutions, enabled depositors to receive consistently positive real rates of return on their funds. Unfortunately, an attempt to prove a statistical relationship between the level of interest rates (nominal and real) and the growth in private sector deposits with the banking system was not successful. This does not mean that depositors are insensitive to interest rates. There were clear shifts in deposits among financial institutions during the 1980s whenever there was a significant gap in the interest rates offered on deposits by the different financial institutions. There were also noticeable shifts in the public's maturity preferences for deposits depending on their expectations of the trend in interest rates, especially during 1988-1990 when rising interest rates led to a clear preference for shorter-term deposits. Therefore, what can be inferred from all this is that while interest rates seem to have an impact on the distribution of deposits within the banking system, in terms of instruments and institutions, there is no discernible impact on total deposits with the banking system. Among the reasons that can be forwarded to explain this pattern would be the lack of alternative investment opportunities outside of the banking system, as well as the presence of several corporations with large deposits that change more in response to the cash flows of the corporations than to interest rates movements.

In terms of the interbank interest rates, the introduction of the Day-One Settlement System, and the relaxation of the requirements on the liquid assets ratio and the statutory reserves ratio from daily observation to a fortnightly average basis, have substantially reduced the violent fluctuations in these rates that were observed during the 1970s and the first half of the 1980s (Chart 4.3). The differentials between the various interest rates have also been narrowed.

It is also interesting to look at the effect of the reforms on the efficiency of the banking institutions as intermediaries of funds. One measure of efficiency is the spread between the average cost of funds and the average lending rates (Chart 4.4). The spreads for both commercial banks and finance companies have widened between 1980 and 1989. One reason for the widening gap is the improved quality of services provided by the banks, as in the area of electronic banking. Since the banks are not allowed to charge a service charge for these services, the incorporated in the margin. However, the spreads have widened during and after periods of economic slowdowns. The spread

Chart 4.3
Interbank Money Market Interest Rates

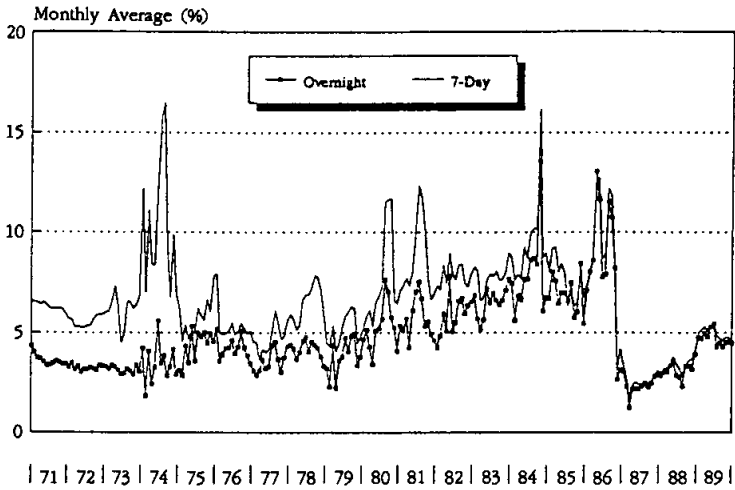
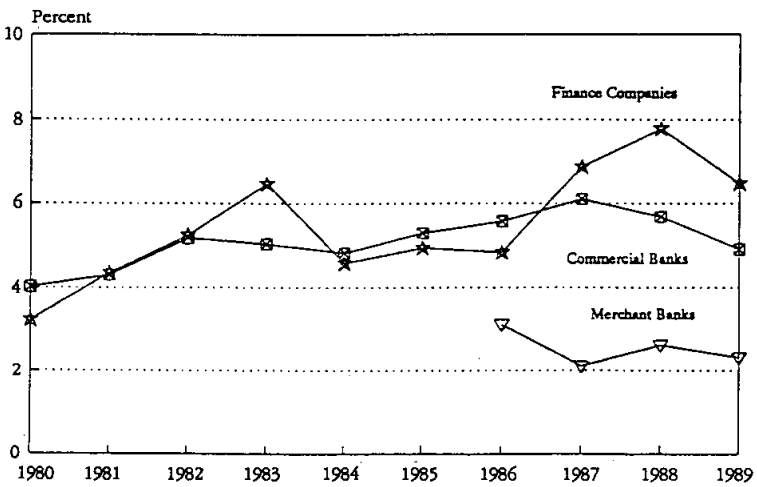


Chart 4.4
Interest Margins



for the commercial banks widened during 1981-1982 and 1985-1987. There are two possibilities. Firstly, the banks become more discerning and "risk averse" in bad times and charge higher interest rates on loans. Secondly, the banks try to recover the costs of bad loans by passing these costs to depositors and new borrowers. Therefore, on the basis of the spread, there appears to have been no improvement in the efficiency of the banks. In fact, the reverse appears to be true.

The financial liberalization during the late 1970s -- particularly the freeing of interest rates in 1978 -- and throughout the 1980s also had important effects on the public's demand for money.

4.2 Demand for Money

Table 4.2 gives results of regression equations testing the relationship between the various monetary aggregates and variables like income, inflationary expectations and interest rates. Quarterly real GDP is used as the real income variable Y . As proxy for inflationary expectations, the quarterly change in the Consumer Price Index is used, with the assumption that expectations are fully realized and that the expected rate of inflation is equal to the actual rate. The interest rate variable is represented by the three-month fixed deposit interest rate of commercial banks. Other specifications, using interest rates on fixed deposits of six and 12 months, and weighted deposit interest rates, did not yield results that were any better.

For $M1$, the coefficients of all the independent variables are statistically significant. Unlike the earlier study (SEACEN, 1979), interest rates are significant and negative. This confirms that $M1$ has become more sensitive to interest rate changes during the 1980s. The income variable is positive, which is expected since $M1$ represents transaction balances, and the demand for such balances would be strongly influenced by changes in the pace of economic activity. What is not expected is the positive coefficient for inflationary expectations. This is contrary to the belief that people will minimize their holdings of non-earning assets if they expected prices to increase. An attempt to use other lagged values of inflation to proxy expectations did not have much success as all the statistically significant lags also had positive coefficients with respect to $M1$. The earlier 1970-1978 study had found the relationship to be negative, but the coefficient was statistically not significant. As it is, it can either be concluded that the demand for $M1$

Table 4.2

RESULTS OF MONEY DEMAND REGRESSIONS

Real Money	Constant	Real GDP	Inflation	Interest Rates	Lagged Money	Adj. R-Sqr.	D.W.	SEE
M1	-0.318 (-0.794)	0.344 (2.770)	1.458 (2.324)	-0.005 (-2.480)	0.616 (4.586)	0.959	1.762	0.369
M2	-0.183 (-0.444)	0.153 (1.936)	0.755 (-1.798)	- -	0.854 (16.811)	0.993	1.948	0.163
M3	-0.460 (-1.296)	0.165 (2.680)	-0.857 (-2.448)	- -	0.870 (24.753)	0.997	1.900	0.105

Money Demand Equation:

$$\log M(t) = \lambda b(0) + \lambda b(1)\log Y(t) + \lambda b(2) \pi(t) + \lambda b(3)IR(t) + (1-\lambda)\log M(t-1) + U(t)$$

where, M = Real Money Balances (M/P)

Y = Real GDP

π = Quarterly Change in Logged CPI

IR = 3-month bank fixed-deposit interest rate of commercial banks

Note: *t*-values are in parentheses below the coefficients.

SE = Sum of Squared Residuals expressed as a percent of the dependent variable's mean.

balances is positively related to inflationary expectations, or that the coefficient is spurious and that inflationary expectations do not affect the demand for M1.

In the case of M2 and M3, interest rates proved to be statistically insignificant and did not add to the explanatory power of the equations. These findings are not surprising given the earlier observation on the failure to find a statistically valid relationship between interest rates and deposits, as M2 and M3 are for the most part deposits. Therefore, the interest rate variable is omitted from the M2 and M3 equations. The income and inflationary expectation coefficients are significant and have the expected signs for both M2 and M3. The statistical relationship between M2 and the independent variables is weaker, due to structural changes which led to the disintermediation of deposits from banks in response to the higher interest rates offered by the other financial institutions. The growing importance of the non-bank financial institutions during the mid-1980s led to the Central Bank's shift in emphasis away from the M2 aggregate as a measure of broad money.

The general conclusion that can be drawn from the regression results is that aggregate income is the most significant factor affecting money demand. The short-run income elasticities are the coefficients on the income variable in the regressions. The long-run income elasticities are given below in Table 4.3 and compared with those obtained in the earlier 1970-1978 study (SEACEN, 1979). The long-run elasticities of real income balances declined during the 1980s compared to the 1970s. This is to be expected, as the 1970s was a period of rapid monetization of the economy with the spread of banking services throughout the country. The slowing of the monetization process during the 1980s led to a slower rate of increase in the demand for real money balances relative to the increase in real income. As the Malaysian financial system matures, a more proportional relationship should develop between real income and money demand.

4.3 Impact of Money on Prices

Earlier, it was noted that the periods of high monetary growth also had high rates of inflation. In this section, an attempt is made to statistically test (using OLS estimation of a polynomial distributed lag model) the relationship between changes in money supply and prices in Malaysia. The results vary greatly according to the assumptions made

Table 4.3

**LONG-RUN INCOME ELASTICITIES ¹
OF REAL MONEY BALANCES**

Monetary Aggregate	1970-1978	1979-1989
M1	1.228	0.896
M2	1.649	1.048
M3	-	1.269

1/ Based on the regression equation:

$$\log M_t = b_0 + \lambda b_1 \log Y_t + \lambda b_2 \pi_t + \lambda b_3 IR_t \\ + (1-\lambda) \log M_{t-1} + U_t$$

the long-run income elasticity is calculated by dividing the short-run elasticity (λb_1) by one minus the coefficient of lagged money ($1-\lambda$).

regarding the degree of the equations and the end-point constraints imposed. What can be said here is that the results showed that the significant lags were between one and seven quarters, with the mean lag being about five quarters. However, over the twelve quarters only about 47 per cent of the change in M1 and 35 per cent of the change in M3 is reflected in the movement of prices. This means either a very long-lag structure or an inefficient transmission mechanism, or both. In particular, since the mid-1980s the short-run relationship between the monetary aggregates and price changes has had become more unpredictable. This has made it necessary for the Bank to use multiple indicators in the conduct of monetary policy.

4.4 Income Velocity of Money and the Money Multipliers

A look at the income velocity of money and the money multipliers can provide some indication of the effectiveness of monetary policy. The significance of these ratios can be summarized as follows:

$$\begin{array}{l} \text{RESERVE MONEY} \Rightarrow \text{Multiplier} \Rightarrow \text{MONEY SUPPLY} \\ \text{MONEY SUPPLY} \Rightarrow \text{Velocity} \Rightarrow \text{INCOME} \end{array}$$

Basically, the multiplier is the link between reserve money, which the central bank controls, and the intermediate target of money supply. A predictable or stable multiplier makes it possible for the central bank to determine the amount of reserve money needed to achieve a desired money supply target. On the other hand, the income velocity of money is the link between the intermediate target, money supply, and the ultimate target, aggregate income. Again, a stable velocity allows the central bank to target a level of money supply to finance aggregate income.

The trends in the income velocity of M3 and the M3 multiplier since 1970 are shown in Chart 4.5. The two ratios show trends that are almost mirror images of each other. While velocity has been declining for most of the 1970s and 1980s, the multiplier has generally been increasing.

Looking at velocity first, the impact of changes in real income on velocity depend on the income elasticity of the demand for real money balances. If income elasticity is one, then the demand for money changes in the same proportion as income, implying a constant velocity. If income

elasticity is greater than one, money demand increases faster than income and velocity would decline. The reverse would be true if income elasticity was less than one. Looking back at Table 4.3, the long-run elasticity of M3 is 1.269, which is what would be expected given the declining velocity. The declining trend in the velocity of M3 reflects the monetization of the economy whereby the demand for money has been rising relative to income. The slowing of the monetization process in the future, combined with financial innovation, will reduce the demand for money relative to income. As the income elasticity becomes less than one, the velocity will reverse its historical trend and start to increase.

Movements in the multiplier, that is, changes in the relative growth rates of reserve money and money supply, arise from several factors. The multiplier is affected by the amount of currency the public chooses to hold, the amount of excess reserves the banks keep, and the statutory reserve ratios imposed by the Central Bank. These factors are in fact "leakages" from the multiplier process since they represent funds that are not available for the deposit-loan cycle that creates money. Chart 4.6 plots the M3 multiplier against its determinants which are given as ratios of total deposits included in M3.

The single most important factor behind the rising trend in the multiplier has been the decline in the cash holdings of the public. Monetization has led to a strong increase in deposits, and improvements in the payments mechanism have allowed the public to economize on cash balances. Changes in the statutory reserves have at various times either assisted or offset the impact of the declining cash holdings on the multiplier. Prior to 1974, declines in both currency and excess reserves were offset by increases in statutory reserves, arising from measures undertaken by the Central Bank to dampen monetary growth and high inflation. Consequently, the multiplier stagnated. From 1974-1986, the statutory reserves declined steadily, as did the currency ratio. The multiplier shows a continuous upwards trend during this period. However, the growth in the multiplier moderated in 1985-1986 and subsequently, declined steadily from 1987 onwards. There was a moderation in the growth of deposits in 1985 due to the shift in private funds into higher yielding deposits with the cooperative societies and other non-bank institutions that were not regulated by the Central Bank. The outflow worsened in 1985, when the Central Bank imposed ceilings on interest rates the banking institutions could pay to depositors.

Chart 4.5
M3: Velocity and Multiplier

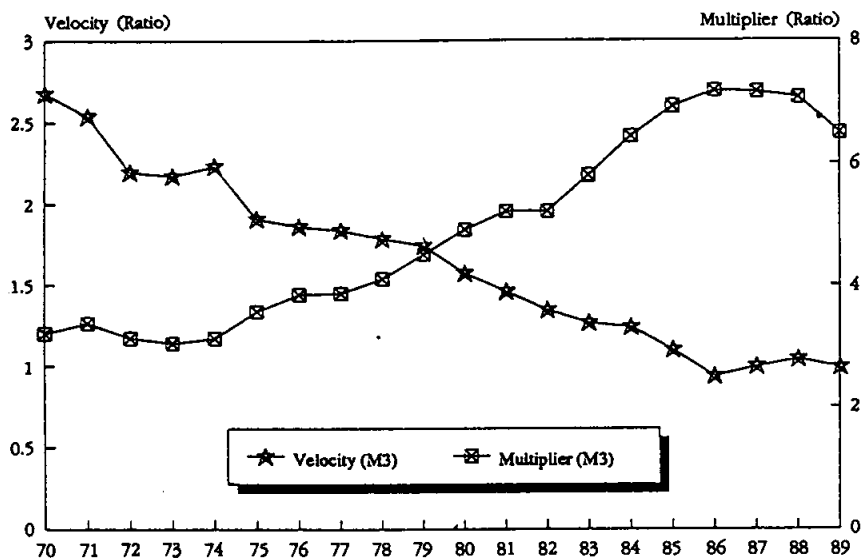
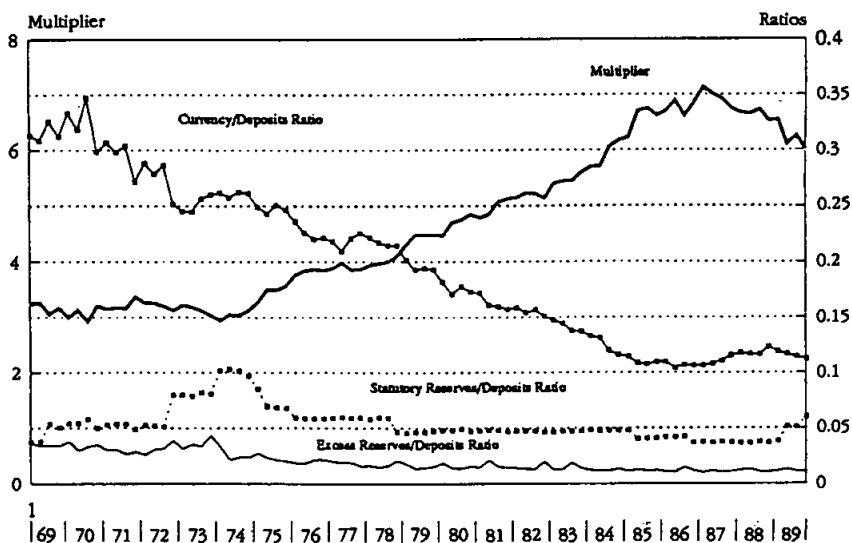


Chart 4.6
Factor Affecting M3 Multiplier



Subsequently, in 1987, inflows of large amounts of liquidity in the face of stagnating loan demand led to a sharp fall in interest rates. This led to increased holdings of cash by the public as the opportunity cost of holding such balances declined. As lending rates remained high in the face of historically low deposit rates, both the private sector and the Government withdrew their deposits and used the funds to pay off their domestic and external borrowings. Economic growth and rising interest rates in 1988-1989 put the currency ratio back on its historical downwards path. But the impact was negated by the raising of statutory reserves by the Central Bank, which was faced with large amounts of excess liquidity in the banking system and fears of inflation.

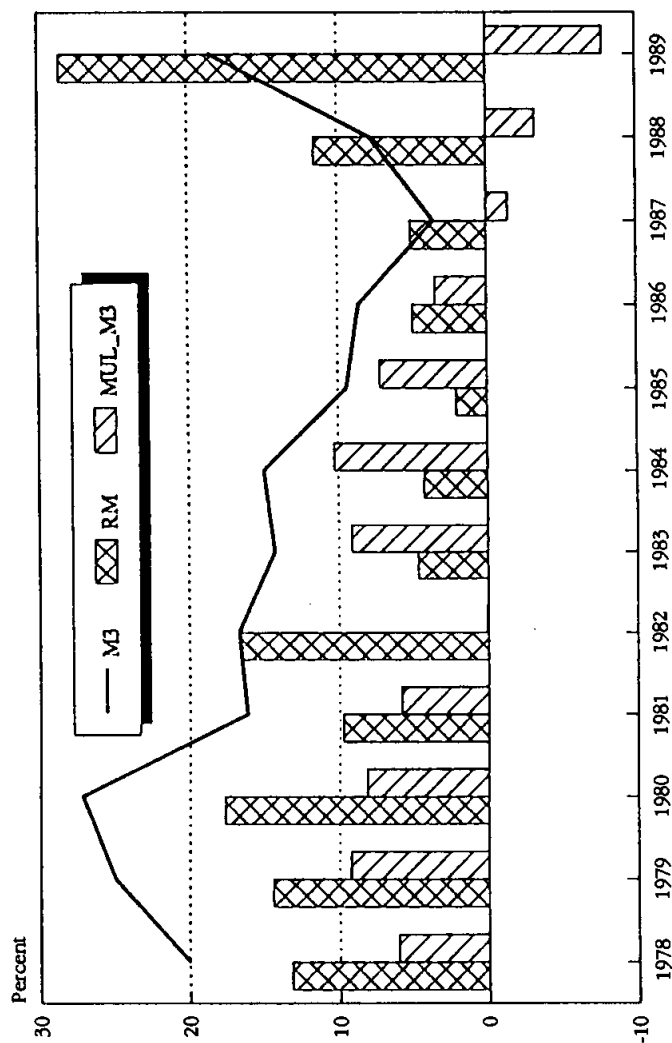
Monetary growth during 1978-1989 came primarily from growth in reserve money (Chart 4.7). On the average, M3 grew at an annual rate of 14.7 per cent during the period, of which 10.9 per cent was attributable to reserve money and only 3.7 per cent to the multiplier. However, for the period 1983-1986 the contribution of the multiplier was 8.9 per cent, much higher than the 3.7 per cent of reserve money, giving an average M3 growth of 12.9 per cent per annum. Tight liquidity and high interest rates were responsible for this reversal. In general, the contribution of the multiplier declines when there is excess liquidity in the banking system, and increases when liquidity is tight. This implies that the Central Bank needs to be cautious in injecting liquidity into the banking system during times when liquidity is tight, as the high multiplier can cause a surge in monetary growth.

To summarize, the declining currency holdings (rising deposits) of the public have allowed the multiplier to rise, increasing the amount of money supply generated by a given increase in reserve money. In turn, the rapid increase in money supply caused velocity to decline. The trend in the multiplier and velocity in the past has been fairly predictable, indicating a stable relationship between reserve money and money supply, and money supply and income. Given these stable relationships, the monetary authorities could determine how expansionary or contractionary their operations must be to accommodate aggregate income. However, the instability of the velocity and the multiplier since the mid-1980s makes the conduct of monetary policy less certain.

4.5 Interaction between Monetary and Exchange Rate Policies

In a developed economy with mature financial markets, there is a clear link between domestic monetary policy and the exchange rate.

Chart 4.7
Contribution to Growth in M3



Excessive monetary growth causes interest rates to fall and funds to flow out of the country, weakening the exchange rate. In the reverse case, when monetary policy is contractionary, interest rates rise, leading to the inflow of funds and a strengthening of the exchange rate. In an open developing country like Malaysia, the relationship holds but is less clear cut. Inflows of funds from the external sector are less likely to be linked to the prevailing interest rates in the country than to the general economic climate, the strength of the current account, and the perception of foreign investors on the investment opportunities within the country. However, low interest rates can still lead to outflows of funds in search of better returns. Similarly, high interest rates are likely to affect the exchange rate in that they help to stem some of the outflow of domestic funds, rather than inducing foreigners to place funds in the country.

Therefore, in Malaysia the foreign exchange rate is affected more by the strength of the country's current account, foreign long-term capital inflows, and the Government's external borrowings. Being a trade dependent economy, maintaining a stable and competitive exchange rate is of the utmost importance. The policy of the Bank is to intervene on the foreign exchange market only to smoothen excessive fluctuations or to ward off speculators, and not to fight the trend in the exchange rate if it is based on economic fundamentals. Prudential domestic monetary policy management has helped to maintain a relatively stable exchange rate. When the ringgit looked set to strengthen in 1987-1988 in response to strong inflows from abroad, the Bank advised the Government to repay and prepay some of its external loans by borrowing domestically. These outflow of funds helped to offset the rise in the ringgit.

Nevertheless, at times the domestic and foreign exchange objectives are at conflict and the Central Bank is put into the position of having to choose between the two. In 1986, for example, the Bank was faced with the conflicting objectives of maintaining stability in the foreign exchange market and reducing interest rates in the money market. Adverse developments in the economy led to a tight monetary situation. Attempts to inject liquidity were largely neutralized by leakages overseas, fueled by speculative pressures on the ringgit during April-May and August-September of that year. The open nature of the economy made monetary management difficult as the fostering of economic revival required easy money whereas the objective of pro-

tecting the ringgit necessitated tighter money. The Central Bank opted for stabilizing the foreign exchange markets and hence was unable to implement measures affecting the domestic economy until pressures on the ringgit had been effectively controlled.

4.6 Relative Effectiveness of Direct and Indirect Methods of Monetary Control

In Malaysia, the Central Bank has used whatever instruments are at its disposal. The choice of instruments has been on the basis of what would be most effective in achieving the desired objectives. However, in the 1980s, the Central Bank has, wherever possible, opted for the use of indirect instruments of monetary control, since these are considered least intrusive and more market-oriented. Furthermore, indirect instruments allow greater flexibility to monetary policy to adjust to changing conditions. Injections of liquidity into the banking system through open market operations, direct borrowing, or the recycling of government deposits can easily be reversed if the need arises.

However, there are limitations on the extent to which the Central Bank can carry out these indirect operations. To illustrate, a major constraint on the Central Bank's open market operations is the lack of government securities and other papers which it can sell to the private sector. This imposes a limit on the size of the Central Bank's open market operations. These issues will be discussed at greater length in the next section.

To reinforce its indirect instruments, the Central Bank has adjusted the statutory reserve requirement for the financial intermediaries, issued guidelines and regulations and used moral suasion. The experience of the Bank in the 1980s has been to use indirect instruments where possible, and when these prove inadequate, to use any other instruments at its disposal, including direct ones.

V. Constraints on Monetary Policy

Malaysia's open economy makes it vulnerable to external influences. Monetary policy is inextricably linked with developments in the external sector. The liquidity in the banking system is determined to a great extent by developments in the balance of payments. Large inflows of

funds, of the type that occurred in 1986-1987, must be effectively sterilized if monetary stability is to be maintained. The Bank's ability to perform such sterilization exercises is tied to the availability of suitable instruments. Despite its preference for indirect instruments, the Central Bank has had to use direct methods like the raising of statutory reserves when indirect controls proved inadequate.

The Bank's use of open market operations has been constrained by the shallowness of the domestic money and capital market, both in terms of instruments and participants. Measures undertaken by the Bank, particularly since 1986, have led to noticeable improvements, but there is still a long way to go before these markets become efficient channels for monetary policy. For example, the system of principal dealers who are supposed to be market makers have yet to live up to their promise. Having suffered losses on their portfolios as a result of rising interest rates, they have retreated to the sidelines. Trading activity has been dampened. The Central Bank has taken the attitude that this is a natural part of the "learning process" that must occur during the transition. Over time, it is hoped that the dealers would gain experience in operating and profiting from a market where interest rates move according to market forces. The recent freeing of the BLR emphasizes the Bank's desire to allow the free play of market forces, subject only to certain prudential requirements.

Another problem that has hampered the development of the capital market is the lack of instruments. In sterilizing the impact of the external sector, the lack of securities has prevented the Central Bank from conducting open market operations on a large scale. It is for this reason that the bank has in the past resorted to doing swaps and borrowing directly from the interbank market. The downsizing of government borrowing requirements in recent years has caused a shortage of government securities on the market, further exacerbating the problem. There are now large amounts of liquidity from such institutions as the Employees Provident Fund. The Bank will have to introduce additional instruments to supplement those currently available on the market. Towards this end, the Central Bank has been promoting the development of a market for private corporate bonds. However, taking into account the reduced supply of government securities, and the constraints imposed on its open market operations by its small holding of securities, the Central Bank may have to start issuing other securities (e.g., Central Bank Certificates). The Central Bank must have sufficient

securities at its disposal if it is to conduct open market operations efficiently.

In other areas, the constraints have become less significant. In the 1970s, monetary policy was constrained by the need to provide adequate liquidity to finance the Government's expansionary fiscal policies while at the same time trying to restrain the resulting price pressures. However, the 1980s have seen a more coordinated policy approach. During the recession, monetary policy was relaxed to buttress the Government's efforts to revive the economy. In 1987 and 1988, the Government assisted in the control of excess liquidity in the banking system by borrowing domestically to repay and prepay its external loans. The Government's funds are now placed with the Central Bank giving it an additional policy instrument, whereby it can affect the liquidity in the banking system through the recycling of these funds to the banking system.

VI. Concluding Remarks

The operation of monetary policy has been both complicated and facilitated by financial reforms. Financial innovation and the development of new financial assets has led to structural changes in the demand for assets that comprise the monetary aggregates, affecting the relationship of the monetary aggregates with the ultimate objectives of monetary policy. On the other hand, monetary policy has been facilitated by the increased depth of the financial system which has led to the availability of a broader range of monetary instruments. Financial liberalization itself has not been a smooth process. The lessons from the 1980s are that reforms should only be undertaken during times of macroeconomic stability. Allowances need to be made for a "learning" period, when both the monetary authority and the market participants adjust to operating in the new environment. This has been Malaysia's experience with interest rate liberalization and the development of a viable secondary market for government securities.

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MALAYSIA: KEY MONETARY INDICATORS (1979-1989)

	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
	<i>(Percent Change)</i>										
Money Supply M3	25.6	28.4	16.4	16.6	16.6	15.6	9.8	8.8	4.9	10.0	18.1
Domestic Credit	19.7	43.0	30.0	20.5	22.5	21.1	10.1	8.2	4.3	10.8	17.0
Credit to Govt. (net)	-63.8	145.4	97.5	46.3	2.3	28.1	-30.6	28.3	43.9	-2.6	-9.1
Credit to Pvt. Sector	32.1	38.8	25.1	17.6	25.4	20.3	15.1	6.7	0.7	12.5	19.9
Net Foreign Assets 1/	42.7	-1.8	-11.6	0.8	-4.2	-23.4	49.0	57.1	36.8	6.9	11.7
Components:											
Currency	14.4	16.2	7.2	12.3	5.2	-0.9	4.0	5.6	11.9	13.8	9.4
Demand Deposits	20.7	14.0	17.0	14.7	10.2	-0.6	-0.1	0.8	14.1	15.2	24.4
Quasi Money	30.0	35.0	18.2	17.8	19.9	21.3	12.0	10.3	2.9	8.8	18.3
Reserve Money	14.4	17.6	9.7	16.6	4.7	4.3	2.1	5.0	5.1	11.5	28.6
	<i>(Percentage Contribution to Growth in M3)</i>										
Net Foreign Assets 1/	14.3	-1.3	-2.9	-1.2	-1.5	-4.4	4.3	10.0	11.4	4.0	4.6
Credit to Govt. (net)	-6.8	4.5	5.7	4.6	0.3	3.1	-3.7	2.2	4.0	-0.3	-1.0
Credit to Private Sector	23.1	29.5	20.6	15.5	22.6	19.4	15.0	7.0	0.8	12.3	20.0
	<i>(Ratio)</i>										
Money Velocity (M3) 2/	1.7	1.6	1.5	1.3	1.3	1.2	1.1	0.9	1.0	1.0	1.0
Money Multiplier 3/	4.5	4.9	5.2	5.2	5.8	6.4	6.9	7.2	7.2	7.1	6.5
	<i>(In Percent)</i>										
Excess Bank Liquidity	-	3.4	7.0	6.4	3.2	4.3	2.4	3.4	7.1	6.1	2.9
Loan-Deposit Ratio	78.5	85.5	84.2	84.2	88.6	89.2	92.4	91.6	85.7	86.4	89.7
Interbank Rate (7-day)	5.1	7.6	8.6	7.8	7.8	9.5	7.7	8.9	2.6	3.4	4.6
Average Lending Rate	-	10.2	12.1	12.3	11.6	12.8	12.1	12.0	9.7	9.0	8.7
Deposit Rate: Nominal 4/	7.0	9.0	11.0	10.0	9.0	10.8	7.5	7.0	4.3	4.3	5.5
: Real	2.9	1.8	1.8	4.2	5.3	6.9	7.1	6.3	3.2	1.5	2.6
Interest Rate Different. 5/			-6.6	-4.2	-1.7	-1.2	-0.1	2.3	-4.0	-4.3	-3.8
Memorandum Items:											
Inflation Rate (CPI)	4.1	7.2	9.2	5.8	3.7	3.9	0.4	0.7	1.1	2.8	2.9
Real GNP Growth	9.3	7.4	6.9	5.9	6.3	7.8	-1.0	1.2	5.3	8.7	8.7
OECD Real GNP	-	-	1.6	0.3	2.2	4.8	2.7	2.7	3.5	4.4	3.6

1/ Valuation adjustments reversed.

2/ Ratio of GNP (at current prices) to M3 (end-period).

3/ Ratio of M3 to Reserve Money (end-period).

4/ 12-month fixed deposit rate of commercial banks (end-period).

5/ Malaysian 3-month interbank rate (annual average) against 3-month LIBOR on U.S. dollar.

MALAYSIA: OTHER MACROECONOMIC INDICATORS (1979 - 1989)

	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
	<i>(Percent Change, unless otherwise indicated)</i>										
Output											
Real GDP	9.3	7.4	6.9	5.9	6.3	7.8	-1.0	1.2	5.3	8.7	8.7
Real Dom. Demand 1/	9.4	15.5	10.3	8.2	5.3	4.4	-7.0	-10.0	0.8	12.9	13.7
Net Exports 1/	-0.1	-8.1	-3.4	-12.3	1.0	3.4	6.0	11.2	4.5	-4.2	-5.0
Nominal GDP	19.0	14.8	8.1	8.6	11.8	13.7	-2.5	-7.5	11.1	13.9	11.7
Terms of Trade	7.5	2.8	-8.9	-1.9	3.1	6.9	-4.5	-15.6	8.6	2.5	-0.9
Public Finance											
Federal Govt. Deficit:											
M\$ Billion	-3.7	-7.1	-11.0	-11.2	-9.2	-7.1	-5.7	-7.5	-6.2	-3.9	-5.3
% of GNP	-8.3	-13.8	-19.8	-18.7	-14.0	-9.5	-7.9	-11.2	-8.2	-4.5	-5.4
Net Foreign Borrowing (M\$ billion)	0.7	0.3	3.4	4.9	4.6	3.1	1.0	1.3	-2.4	-3.1	-1.0
Net Domestic Borrowing (M\$ billion)	2.5	2.3	4.1	6.0	4.5	3.2	3.6	4.9	8.7	7.9	2.5
Balance of Payments											
Exports (M\$ billion)	24.2	28.2	27.1	28.1	32.8	38.6	38.0	35.3	45.2	55.3	67.8
Imports (M\$ billion)	17.2	23.5	26.6	29.0	30.8	32.9	30.4	27.9	31.9	43.3	60.9
Current A/c Balance:											
M\$ Billion	2.1	-0.6	-5.6	-8.3	-8.1	-3.8	-1.5	-0.4	6.3	4.5	-0.6
% of GNP	4.6	-1.1	-10.0	-14.0	-12.4	-5.2	-2.1	-0.6	8.4	5.2	-0.6
Overall Balance (M\$ b.)	1.8	1.0	-1.1	-0.6	-0.1	0.3	3.2	4.3	2.9	-1.1	3.3
External Reserves:											
M\$ Billion	9.2	10.3	9.8	9.3	9.5	9.7	12.5	16.6	19.5	18.3	21.7
Months of Imports	6.5	5.3	4.4	3.9	3.7	3.5	4.9	7.1	7.3	5.1	4.3

1/ Contribution to percentage change in GDP.

Chapter 5

MONETARY POLICY IN MYANMAR: AN UPDATE (1979-1990)

by
Than Lwin

I. Introduction

Myanmar gained independence on 4 January 1948, and from that period the country was managed basically along the principles of a market economy with the private sector occupying an important role. However, with the assumption of power by the new government March 1962, a complete change in the political system had transformed Myanmar's economy to move along the path of socialism or centrally planned economic system. Nevertheless, following the assumption of political power by the State Law and Order Restoration Council (SLORC) on 18 September 1988, the socialist economic system was officially abandoned and Myanmar was redirected towards a market-oriented economic system, allowing once again the private sector to flourish alongside the state sector.

II. Economic and Financial Development

2.1 Economic Environment Prevailing Both Domestic and Foreign

In the context of this study, the development in the Myanmar's economy will be viewed from two different periods. First, the period which extends from March 1962 through August 1988 where socialist economic principles were implemented and second, the period which extends from September 1988 up to the present where major financial reforms have taken place.

Following the transition from market-economy to socialist economic system, the financial, industrial and foreign trade sectors came under the complete control of the State. Even in the domestic trade, the State and cooperative sector played a dominant role allowing the private sector to supplement and facilitate the former in the Government's implementation of short-term and long-term economic plans. On the other hand, the agricultural sector remained more or less under the ownership of individual farmers although the State had a wide influ-

ence over them through manipulation of agricultural credits and compulsory delivery system of paddy and other selected crops. Nevertheless, the private sector remained active basically in small-scale cottage industries and as petty traders. Motivated by restrictions in the trade sector and periodic shortages of goods available in the official market, black marketeering came to exist to a certain extent.

Myanmar's major fiscal reform was initiated in 1975/1976 when the State Economic Enterprises (SEEs) were put to operate on commercial guidelines (by which they are required to seek interest-bearing credits from the banks instead of operating from interest-free budgetary allocation) and major changes in the tax system were implemented. These policy reforms had generated extra revenues, better realistic price adjustments of the SEEs, promote exports, lower inflationary pressures and finally achieved growth with limited stability. Furthermore, the second oil shock of 1979/1980, which had negligible impact on Myanmar's economy, and the subsequent rise in international price of rice had further strengthened the balance of payments position. Thus, by 1980/1981, the international reserves on gross basis had risen to its highest level in recent years.

However, the absence in the adoption of new policy measures since 1975/1976 had brought signs of internal and external imbalances by 1981/1982. Among these are significant rise in budget deficits, a continuous rise in inflation rates since 1981/1982, deterioration in current account position of the balance of payments, and drastic declines in international reserves. In an attempt to redress the situation, the Government had resorted to strong policy measures, such as by reducing capital expenditures and imports and also by demonetization. However, these measures, instead of achieving the desired results, had been partly responsible for lower growth in the medium-term analysis.

On 1 September 1987, the Government decontrolled the domestic trade of crops including paddy to induce the farmers to raise production and also to improve efficiency in production. In February 1988, as a major step to privatize the export trade, and to facilitate the export promotion efforts, the Government allowed the private sector to export for the first time since 1964. In August, the Government made drastic changes in its general economic policies by allowing private sector to do business in almost every economic undertakings, with the exception of teak, petroleum and natural gas, communications, air transportation

and railways. The intention to set up joint-ventures was also announced. However, due to political disturbances since March 1988, these measures were never implemented. Subsequent to these developments, GDP in real term declined for three consecutive years since 1986/1987.

On 18 September 1988, the SLORC had assumed political power. Immediately following this development, the new government put emphasis on the change in economic system, i.e., from one of socialist to market-oriented economy. Accordingly, a series of important reforms were announced and implemented by the Government.

One of the most important new measures undertaken was the promulgation of foreign investment law in November 1988, followed by an endorsement of its procedure. Likewise, privatization was initiated by allowing private enterprises and joint-ventures to establish and operate for the first time since 1964. Moreover, they are also given the right to engage in both domestic and foreign trade transactions. Up to end-September 1990, a total of (3244) private enterprises, including seven joint-venture corporations are being established.

Furthermore, the farmers were given the freedom to cultivate any type of crop they prefer as contrast to regionally fixed plan crops they had to grow under the former planned economy. In order to attain better management system, the SEEs were made to operate in accordance with budgetary guidelines instead of borrowing from the banking system. As the Government has decontrolled the pricing limits, the SEEs are allowed to set realistic pricing policies to reflect their efficiency and profitability. However, unprofitable SEEs are now being considered for hiring to domestic or foreign partners on a case-by-case basis.

With a view to smoothening transportation and stabilizing commodity prices, the Government has improved roads and bridges on a wide scale throughout the country. Moreover, new towns are established in order to alleviate the congestion in the cities. In this regard, the state employees are entitled to bank financing (subject to limits) in constructing their houses at allotted plots of land.

Finally, the Government, in cooperation with UNDP, has conducted a series of workshops for private exporters and importers in order to improve their proficiency in trade and finance and to tide over problems encountered in a transition to market economy.

2.2 Financial Development

2.2.1 Institutional Financial Instruments

Under the leadership of the socialist government, which assumed power in 1962, all private domestic and foreign banks were nationalized in February 1963. This was soon followed by the nationalization of all private trading and industrial enterprises, including foreign-owned companies, and of private schools. Accordingly, the foreign trade sector came under absolute control of the State.

Moreover, in order to maximize control over the financial sector and to mobilize financial resources more effectively, all nationalized banks, together with the central bank (then Union Bank of Burma), the state-owned State Commercial Bank, State Agricultural Bank, savings institutions, Union Insurance Board and small loans business were amalgamated in 1969 to form a unique mono-bank system, namely, the People's Bank of the Union of Burma. By and large, it was discovered that this monolithic banking structure was too cumbersome to be administered effectively as was originally intended to be.

Accordingly, by the enactment of the Bank Law in 1975, the People's Bank was decentralized in April 1976, by establishing the Union of Burma Bank (as central bank, while later the name was changed to the Central Bank of Myanmar), the Myanma Economic Bank (specializing in domestic banking), Myanma Foreign Trade Bank (specializing in international banking services) and Myanma Agricultural Bank (specializing in agricultural finance). However, insurance business was taken out of the banking system to operate as non-bank financial institution, namely, the Myanma Insurance Corporation.

Following the adoption of market-oriented economy in September 1988, it was discovered that the present financial system required to be restructured in order to cater to the needs of liberalization measures, particularly for the growing private sector and foreign enterprises which have invested in the domestic economy. Accordingly, the new banking laws, namely, the Central Bank of Myanmar Law, the Financial Institutions Law and the Agricultural and Rural Development Bank Law were promulgated in July 1990.

2.2.2 The New Central Bank of Myanmar Law, 1990

The Central Bank of Myanmar Law, which was enacted on 2 July 1990 and which replaces the old Bank Law of 1975, put emphasis on reforms and restructuring of the present monetary system. By doing so, the Government aims to raise the efficiency of the state-owned economic enterprises, develop and expand the private sector, promote exports by increased production, create more employment opportunities and enhance regional development within the State.

In addition to its traditional functions of a central bank, the Central Bank of Myanmar has a wider power to manage the international reserves of the State in such a way as to insure a stable and viable balance of payments position. However, in the old Law, no such authority is specifically given in dealing with the external sector of the country.

For the first time since February 1963, the New Bank Law has allowed the private financial institutions to be established in parallel with those of the state-owned. Moreover, foreign banks will also be allowed to open and operate their branches or representative offices, or to establish joint-ventures with domestic counterpart under the terms and conditions of Foreign Investment Law. By this development, it becomes necessary for the Central Bank to impose minimum reserve requirements of the bank.

Another new feature of the new Bank Law is the determination of the tenure of the Governor, the Deputy Governor and members of the Board. The Governor and Deputy Governor are appointed for a term of five years, whereas for other members the period is fixed as four years, all to be served full time. Under the old Law, no such period is determined as both Governor and Deputy Governor are employees of the Central Bank, while other board members are representatives of respective ministries.

Furthermore, under Section 45 of the new law, it is specifically guaranteed for any amount of currency notes to be fully refunded in case of any withdrawal of such notes from circulation. In the old law, no such guarantee was given.

Finally, in addition to its duty as advisor to the Government, the Central Bank is required to prepare financial programme on annual

basis to be reviewed quarterly by the Board. This responsibility is additional to its duty to submit an annual report to the Government. Under the Bank Law of 1975, the Central Bank is required to draw cash and credit plans in accordance with the planned economy.

2.2.3 *Financial Institutions of Myanmar Law, 1990*

Under the old Bank Law of 1975, only state-owned commercial banks were allowed to operate, namely, Myanma Economic Bank, Myanma Foreign Trade Bank and Myanma Investment and Commercial Bank. However, the Financial Institutions of Myanmar Law, enacted in July 1990, allows the establishment of private financial institutions alongside those of the state-owned subject, however, to permission from the Central Bank.

Accordingly, the types of private financial institutions, which need to be established as limited liability companies, are classified as commercial banks, investment or development banks, finance companies and credit societies.

The state-owned financial institutions which are explicitly mentioned in the Law include the Myanma Economic Bank (specializing in domestic banking with a wide network of branches throughout the country), the Myanma Foreign Trade Bank (specializing in international trade and finance) and the Myanma Investment and Commercial Bank (MICB).

The former banks were established in April 1976, while the latter bank came into being in September 1989. The MICB was established with the sole purpose of providing investment and banking facilities to local and foreign investors, joint-venture companies, local and foreign business enterprises and the Myanma Chamber of Commerce.

The functions of both state-owned and private financial institutions are broadly defined to include borrowing and lending of money, buying, selling and collecting and dealing in bills of exchange, promissory notes, drafts, bills of lading, securities, etc., granting and issuing of letters of credit and travellers' cheques, buying and selling of foreign exchange, acting as agent of local governmental authorities or the Central Bank, and undertaking other financial activities.

2.2.4 *The Myanmar Agricultural and Rural Development Bank Law, 1990*

The Myanmar Agricultural and Rural Development Bank (MARDB), which took over the functions of Myanmar Agricultural Bank established under the old Bank Law, was restructured in July 1990 under the new Myanmar Agricultural and Rural Development Bank Law, 1990. The main aim of the MARDB is to effectively support the development of agricultural livestock and rural socio-economic enterprises in the country by providing services.

In other words, the MARDB is responsible to encourage and cultivate the banking habits in the rural areas on a broader basis. Accordingly, the main functions of the Bank include advancing of annual, short-term and long-term loans to state-owned agricultural organizations, livestock organizations, cooperative societies, private persons, village banks, farmers, entrepreneurs and laborers, receiving deposits and making loans and advances or allowing overdrafts with or without security.

2.2.5 *Foreign Investment Commission*

One of the most important new measures undertaken by the Government was the promulgation of the Foreign Investment Law in November 1988, and subsequent creation of the Foreign Investment Commission. This law aims to provide incentives for inflow of direct foreign capital and technology which is essential to expedite the development of the national economy. Following up to this development, the state-owned Economic Enterprises Law was enacted in March 1989. The latter law allows the establishment of joint-ventures between the Government and private investors in areas which are limited exclusively for State Economic Enterprises (SEEs).

In the meantime, other reforms have been undertaken in the monetary sector. For the Myanmar Foreign Trade Bank, permission has been given for the first time since 1964 to any Myanmar citizen who holds legitimate foreign exchange earnings to operate foreign currency accounts which enable them the right to import vehicles and other commodities of their choice and which also has given the right to enjoy medical treatment abroad. For the Myanmar Economic Bank, availability of credits to the private sector is made easier and expanded considerably, while in the past such credits are negligible. For the Agri-

cultural and Rural Development Bank, new credits are being extended to farmers for cultivation of industrial crops in addition to credits given for other normal agricultural crops.

Furthermore, a new financial management programme was initiated in April 1989 to replace the former Union Government Consolidated Fund by the State Fund Accounting System to be managed by the Central Bank. In accordance with this new system, the SEEs are to be streamlined and redressed under budgetary guidelines instead of bank financing arrangements under the old system, which made them heavily indebted to Myanmar Economic Bank.

In order to uncover black money and to ensure increased inflow of domestic investment, the Ministry of Planning and Finance had permitted to relax profit tax on the value of property and money voluntarily declared from February 1990 to 15 May 1990.

With a view to conforming to prevailing market situation, all category of interest rates, including the bank rate, were raised effective September/October 1989. In particular, the Central Bank's bank rate was increased from 4 per cent to 11 per cent, that of Treasury bills from 1 per cent to 4 per cent and those of Treasury bonds from 2.5/3 per cent to 10/10/5 per cent depending on their maturity structure. Similarly, interest rates to the private sector, including the farmers, and on-call deposits and fixed deposits were all increased. This is the first time since the private banks were nationalized in 1963 that the interest rate has been revived as an effective financial instrument although interest rates on bank savings have been manipulated solely to mobilize domestic financial resources.

As is expected in any planned economy, Myanmar's money and financial market does not exist at the present moment. However, with the enactment of new banking laws in July 1990 and the expansion of the private sector due to market-oriented policy adopted by the Government, the financial market will be gradually established.

III. Role and Implementation of Monetary Policy

3.1 Identification of Objectives

Between 1962 and 1988, Myanmar's monetary policy was directed towards achieving growth with stability and equity. After 1988, the

monetary policy as a general guideline is aimed to develop the economy's market system in order to attain growth with a stable and viable balance of payments position. Price stability, although conducive to growth, is not considered an end in itself, particularly in a transition from socialist to market economic system for Myanmar.

Furthermore, as is expressed in the Central Bank of Myanmar Law, 1990, and the Financial Institutions Law, 1990, it is also the objective of the monetary authority to establish and develop the financial market by a gradual development of the private financial institutions including those of foreign-owned.

3.2 Identification of Targets

As expected in a planned economy, the target of monetary policy before 1988 was appropriately domestic credits extended by the Central Bank via Myanma Economic Bank and Myanmar Agricultural and Rural Development Bank, respectively. In such a situation, money supply did not become a useful target because domestic credit which caused the changes in money supply was not directly related to the balance of payments adjustments brought about by the changes in international reserves. This is understandable in a planned economy where both the size of domestic credit as well as balance of payments transactions are all determined by a centralized planned system. Under such environment, the exchange rate plays a minor role.

However, the change in economic system by 1988 has revived the role of interest rate to play a more dominant role in the economy. As interest rates are significantly increased for the first time in several years, it becomes imperative for the monetary authority to choose it as a target because interest rates will determine the size of domestic credits to a certain extent. Nevertheless, the domestic credit is still an attractive target under the present transition of market economy.

3.3 Identification of Instruments Credit Policies

In a pre-reform period before 1988, financial claims in the form of loans and credits are the main financial instruments in Myanmar. Interest rate was then utilized solely for the purpose of mobilization of savings. As all banks are state-owned, their liabilities were not subject to reserve requirements. Besides, a financial market did not exist.

Following a drastic change in the economic system which occurred in 1988, credit (subject to ceilings) is still utilized but as a more effective instrument as the Central Bank of Myanmar becomes more authoritative. However, the interest rate emerges as an important instrument of monetary policy because long-neglected interest rates are significantly raised for the first time since 1977 to reflect the true nature of the market. According to the Central Bank of Myanmar Law, 1990, the interest rates will be subject to ceilings to be imposed by the Central Bank. This is essential in order to regulate the banking system in anticipation of the emergence of private banks and of the financial market eventually.

On the other hand, domestic credit is still an effective monetary instrument as more credits are made easier to meet the growing economy, particularly by Myanmar Economic Bank, Myanma Investment and Commercial Bank and Myanmar Agricultural and Rural Development Bank.

3.4 Implementation and Conduct of Monetary Policy

The experience of Myanmar showed that during the planned economic system before 1988, monetary policy was conducted mainly through direct control of domestic credit. The introduction of a market-oriented economy in 1988 has put emphasis on the use of market-based instruments, although direct controls are not removed pending the private financial market which remains to be developed. For example, official interest rates are increased to be more or less in line with those prevailing in the unorganized money market.

However, interest rates will be subject to ceilings to be imposed by the Central Bank for all banks established in the country. Moreover, these banks will also be required to maintain a reserve ratio of 35 per cent of their liabilities. As Myanmar is in a transition to market economy and as the financial market is yet to be developed, deregulation of interest rates, lesser reliance on banks' reserve requirements and the introduction of open market operations by the Central Bank is not yet considered for the moment.

IV. Effectiveness of Monetary Policy and Impact of Financial Reforms

4.1 Demand for Money and Stability

Estimation of demand for real money in Myanmar is given in Table 5.1. From these six equations as shown, we may conclude that the demand for money (M1 and M2) can be explained by RGDP and money lagged for one-quarter period. In other words, the equations render us the important insight that RGDP is more important in explaining the demand for both M1 and M2, and people tend to adjust to their expectations with one-quarter lagged period. In fact, people seem to have no direct interest in price changes. Price increases do not affect the spending habits of the people basically because of lack of interest to save as interest rates remained fixed for a long time.

In the estimation of demand for real money in Myanmar, quarterly data for GDP as provided by the IMF are available up to 1986. Therefore, the series are included only up to 1986 for the regression analysis. Moreover, as interest rates in Myanmar did not change from 1977 until 1989, the growth rates for Net Domestic Credit is taken as a proxy variable. This variable is defined as the negative of the rate of domestic expansion, which again can be defined as a credit restraint variable as had been done by Dr. Chorng-Huey Wong¹ in his paper.

4.2 Calculation of Multiplier

In 1981, money multipliers for both narrow and broad money declined sharply basically because of the Government's decision to transfer value of all Treasury bills and bonds owned by state enterprises to government deposit accounts at the Central Bank. However, significant declines in the multipliers in 1985 and 1987 were mainly caused by demonetization measures undertaken at those periods. In 1989, almost all loan outstanding of SEEs were transferred from Myanmar Economic Bank to the Central Bank's Government Investment Account, thereby increasing the latter's liabilities. This in turn caused the multipliers to decline sharply as large increases in money supply due to development expenditures could not offset increases in reserve money.

1. Chorng-Huey Wong, "Demand for Money in Developing Countries: some Theoretical and Empirical Results", DM/74/72, IMF Institute, July 1974.

Table 5.1
REGRESSION EQUATIONS OF DEMAND FOR REAL MONEY IN MYANMAR

Equation No.	Dependent Variable	Constant Term	RGDP t	Estimated Coefficient of:			R ²	SEE	D.W.
				Pr t	M1 t-1	M2 t-1			
1.	M1	-8312.44 (2.39132)	0.15608 (2.39132)	62.79517 (3.64208)	0.36247 (1.88442)	0.97434	483.6487	1.57	
2.	M2	-13890.3	0.26200 (2.65719)	75.00315 (3.61894)	0.47154 (2.72244)	0.99194	468.7913	1.63	
3.	M1	-12371.5	0.26582 (8.57841)	82.54413 (5.81774)		0.97134	503.1391	1.22	
4.	M2	-25105.2	0.51918 (16.36565)	118.2463 (8.14071)		0.98996	515.0885	1.19	
5.	M1	-12525.6	0.26670 (9.03598)	82.47814 (5.99467)		0.97450	491.6413	1.31	
6.	M2	-25150.1	0.51465 (17.09477)	119.6105 (8.52316)		0.99108	501.4677	1.22	

Where: RGDP = Real GDP

Pr = Consumer Price Index with 1978 as base year

NDC = Net Domestic Credit of the banking system

(The Figures in parenthesis are 't' values for the corresponding estimated parameters.)

For both 1986 and 1988, substantial increases in multipliers could be explained by increases in money supply from a low base following demonetization of currency notes.

Details on calculations of money multipliers are given in Tables 5.2 to 5.4.

4.3 Impact of Monetary Policy on Overall Economic Objectives

Myanmar's experience had shown that before pre-reform period of 1988, fiscal policy rather than the monetary policy had a significant impact on economic objectives of the State. Monetary policy then was intended to supplement and strengthen the fiscal aspect of the Government. After the reform period of 1988, monetary policy became more prominent in attaining growth and achieving new measures undertaken in accordance with market-oriented economic system.

With the introduction of the Foreign Investment Law and the State Economic Enterprises Law, a favorable climate had been created and the potential for investment in Myanmar has been raised. This is demonstrated by a number of foreign investors that have taken the opportunities offered. Since the enactment of this law, 16 proposals for direct foreign investment have been permitted, out of which nine were related to exploration of oil and gas on a production sharing basis, one for the exploration of offshore tin mining, four to promote exports and two for the development of tourism. More investment proposals are in the pipeline and are expected to be implemented in the near future. These foreign investments will encourage local investors to increase their participation while simultaneously, they definitely facilitate the production and export sectors.

Following the establishment of the Myanmar Investment and Commercial Bank, foreign investors, joint-ventures and other private investors have taken the facilities offered by the bank. With the stabilization of the economy, withdrawals from banking accounts have declined appreciably and confidence in the banking sector is substantially restored.

Similarly, domestic credits extended by the Myanmar Economic Bank (MEB) to the private sector has also increased as new loans on housing construction are also tendered. Moreover, an important measure un-

Table 5.2**AVERAGE GROWTH RATES OF MONETARY VARIABLES
(1979 - 1989)**

Period (End-Dec.)	Narrow Money (M1)	Broad Money (M2)	Reserve Money	Narrow Money Multiplier	Broad Money Multiplier
1979	11.1	16.9	6.9	3.9	10.3
1980	12.1	16.2	14.3	-1.3	1.0
1981	15.7	20.9	44.9	-20.5	-16.5
1982	7.5	12.9	13.2	-4.8	0
1983	13.0	15.8	23.0	-8.5	-6.2
1984	15.3	17.6	19.2	-3.7	-1.3
1985	-9.5	-1.8	26.9	-28.9	-22.7
1986	41.3	31.3	17.5	21.6	12.1
1987	-40.8	-23.9	-8.5	-35.6	-16.9
1988	64.1	29.8	19.3	34.5	9.3
1989	35.1	31.6	58.9	-12.8	-18.7

Source: Central Bank of Myanmar.

Table 5.3**MONETARY VARIABLES**

(In Millions of Kyat)

Period (End-Dec.)	Reserve Money	Narrow Money (M1)	Broad Money (M2)	Narrow Money Multiplier 1/	Broad Money Multiplier 2/
1978	8307	6357	7310	0.76	0.08
1979	8877	7064	8545	0.79	0.96
1980	10147	7916	9931	0.78	0.97
1981	14700	9157	12010	0.62	0.81
1982	16645	9844	13565	0.59	0.81
1983	20476	11128	15702	0.54	0.76
1984	24409	12830	18469	0.52	0.75
1985	30979	11612	18145	0.37	0.58
1986	36397	16404	23819	0.45	0.65
1987	33401	9713	18126	0.29	0.54
1988	39849	15937	23521	0.39	0.59
1989	63327	21536	30942	0.34	0.48

Source: Central Bank of Myanmar.

1/ Ratio of Narrow Money to Reserve Money

2/ Ratio of Broad Money to Reserve Money

Table 5.4**FACTORS AFFECTING CHANGES IN RESERVE MONEY**

(In Millions of Kyat)

Period (End-Dec.)	Reserve Money	Net Foreign Assets	Claims on Government (Net)	Other Assets (Net)
1978	8307	98	6405	1804
1979	8877	888	8008	-19
1980	10147	1489	9591	-933
1981	14700	1272	11013	2415
1982	16645	235	14027	2383
1983	20476	23	16549	3904
1984	24409	-110	19909	4610
1985	30979	-863	23069	8773
1986	36397	-433	27432	9380
1987	33401	-236	31498	2139
1988	39849	283	36125	3441
1989	63327	1495a/	41239	20593a/

Source: Central Bank of Myanmar.

a/ Provisional data.

dertaken by the Myanmar Foreign Trade Bank (MFTB), by permitting citizens to operate foreign currency account, has resulted in a tremendous increase in these accounts which now total more than 11,000 with a net value of between US\$ 10 million and US\$12 million at any one time. As more liberal measures are expected to be undertaken in this regard, the value of these accounts will continue to increase.

On the other hand, new loans extended by Myanmar Agricultural Bank (MAB) for industrial crops are expected to increase the yields which will favorably affect the export potential of the agricultural sector. The 100-per cent retention incentive given to exporters will boost their activity to a great extent and will have a chain reaction on the economy as a whole, resulting in a more favorable balance of trade. Allowing businessmen to declare their secret hoards of money with a simple 25-per cent straightline taxation and rendering the money legal has brought in approximately nearly K.5189 million declared by 15 May 1990, giving the State more tax income and the business community more funds for investment.

4.4 Interaction Between Monetary and Exchange Rate Policies

Myanmar's kyat has been pegged to the SDR at K. 8.50847 per SDR since 1975. In order to alleviate the problem of overvaluation of the kyat, the previous government had established the Export Price Equalization Fund (EPEF) which subsidized losing export products out of the surpluses of those profitable exports. Thus, the monetary policy which results in changes in money supply was not counteracted via the flexible exchange rate policy as they are both determined by a centralized system. Following the reform introduced in 1988, the kyat continues to be pegged to the SDR at a fixed rate. But in place of EPEF, which was intended solely for the SEEs, a new incentive system allowing exporters 100 per cent of their export receipts to be utilized for imports boosted the export potential of the private sector. Hence, the expansionary monetary policy is partly offset by an expansion in the trade sector.

4.5 Relative Effectiveness of Direct and Indirect Methods of Monetary Control

Since 1962 and before 1988, Myanmar had practised direct methods of control to attain monetary objectives. Accordingly, as domestic credit

was allocated through the system of planned process, the monetary authorities had to oversee that these credits were disbursed according to plan. Any untimely requirements of funds were not entertained and thus affecting growth, particularly in the productive sector. After 1988, although direct methods of monetary control are still continued, a flexible system is introduced to allow any justifiable requirements of funds during the course of implementation. This measure has resulted in a favorable impact on production.

V. Constraints on Monetary Policy

5.1 Internal Constraints: Fiscal Policy, Institutional Development

Prior to 1988, the tool of monetary policy followed by the monetary authorities was direct domestic credit controls. In case where fiscal policy became expansionary, the monetary authorities could exert minimum influence by restraining domestic credits. After the post reform period from 1988, the new financial management system has enabled the Central Bank of Myanmar to exercise its rights to limit the size of domestic credits. Moreover, as long neglected interest rates are being raised for the first time in several years conducive to market situation, any abnormal changes in fiscal expenditures can now be counteracted via the interest rate mechanism. In the future, the establishment of new banks, both private and joint-venture, will widen the scope of credits available to the public and private sectors.

5.2 External Constraints: International Capital Mobility

Myanmar in the past had resorted to short-term interbank financing particularly required in the conduct of foreign trade. As Myanmar had been regular on her debt servicing until recently, acquirement of loans was made easier in the international money market. However, due to constraints encountered in the external sector during a transition to market economy, direct access to international capital has become more difficult than in the past.

5.3 Problem of Monetary Control Arising from Financial Reform Movement Towards Indirect Control Flexibility of Interest Rates

As Myanmar's financial reforms have been implemented very recently, its immediate impact cannot be assessed adequately. Hence, the problems associated with them are too early to be identified.

VI. Summary and Conclusion

The experience of Myanmar in the conduct of monetary policy under the centralized planned economic system was directed towards the development of the economy mainly through the achievements of the state agencies. Under the market-oriented economy, the monetary policy is being conducted more or less to attain growth through the development of the State as well as the private sectors.

**CHRONOLOGY OF EVENTS ON FINANCIAL REFORMS IN
MYANMAR (1979 - 1990)**

With the assumption of power by the present State Law and Order Restoration Council (SLORC) in September 1988, the socialist economic system, which had regulated the country's economy for a quarter century, was abandoned and in its stead, a market-oriented economic system was established. Accordingly, major financial reforms are implemented only after September 1988, although some significant measures were undertaken before that period as shown below.

1981

July: Since 1964, the external sector was entirely controlled by the Government, with the State as the sole owner of foreign exchange. However, from July 1981, a partial ownership of foreign exchange by Myanmar citizens was temporarily allowed. According to this relaxation, Myanmar citizens were permitted to open foreign currency accounts with the state-owned Myanma Foreign Trade Bank with proceeds from legitimate earnings abroad. From the operations of these accounts, they could purchase prescribed goods from abroad or buy locally at the diplomatic departmental stores.

1984

July: A temporary relaxation for partial ownership of foreign exchange was regularized by specifying types of citizens who can operate foreign currency accounts. These include Myanmar sailors working abroad, staff of Myanmar embassies abroad and government officials who are sent abroad on deputation.

1985

November: In order to uncover black money, K. 100, K. 50 and K. 20 currency notes were demonetized by the Government.

1987

- September: With a view to stabilizing price levels, the Government had again demonetized K. 75, K. 35 and K. 25 currency notes; effectively decreasing the money supply by about half.
- October: Loans to the private sector by the Myanmar Economic Bank was permitted on limited scale to those enterprises which had registered under the Private Enterprises Law.

1988

- November: Introduction of market-oriented economic system was announced. Simultaneously, Foreign Investment Law was promulgated for the first time since 1960. Salient features of this law include non-nationalization clause, enjoyment of tax holiday for three years and allowance of 100-per-cent foreign capital ownership.
- December: Procedure relating to Foreign Investment Law was endorsed.

1989

- January: According to the new notification, permission had been given to all Myanmar citizens to operate foreign currency accounts with Myanmar Foreign Trade Bank in respect of foreign exchange they have received on accounts of:
- (a) pensions received from abroad,
 - (b) salaries received locally or abroad,
 - (c) services rendered to foreign government, international organizations, companies, firms or individuals,
 - (d) rentals received from houses, motor vehicles, etc.,
 - (e) inheritance received from relatives abroad,
 - (f) compensations received from abroad,
 - (g) gifts received from relatives or friends, and
 - (h) any other legitimate receipts such as training, seminars, etc.
- Private registered importers are allowed to open foreign currency accounts with Myanmar Foreign Trade Bank from their export proceeds. Moreover, with their foreign cur-

rency holdings, exporters are entitled to import under valid import licences issued by the Ministry of Trade.

April: New Financial Management Programme was introduced whereby the former Union Government Consolidated Fund was replaced by the State Fund Accounting System. According to this new system, all current accounts of the State Economic Enterprises (SEEs) with Myanmar Economic Bank were converted into drawing accounts with a view to streamlining the SEEs and to raise them to better and realistic management system. It is intended that by this reform, the SEEs will minimize loss, reduce unnecessary and wasteful expenditures and prescribe more flexibility in pricing their products conducive to prevailing market situations.

For the first time since 1972, salaries and wages for employees of the public sector were increased up to several times their former pay scales. Moreover, minimum daily wage level was also raised from K. 8.50 to K. 15.

September: For the first time since April 1975, the Central Bank's bank rate was increased from 4 percent to 11 percent and interest rate on three-month Treasury bills from 1 percent to 4 percent. Similarly, interest rate on working capital loans to cooperative sector was increased from 8 percent to 15 percent and that of the private sector from 9 percent to 15 percent for the first time since November 1977.

The Myanmar Investment and Commercial Bank (MICB) was newly established with a view to provide foreign banking facilities as well as local banking and financial services to foreign and local investors, commercial business enterprises, business representatives, and to importers and exports in Myanmar.

October: For the first time since November 1977, interest rate on three-year Treasury bonds was increased from 2.5 percent to 10 percent and that of five-year Treasury bonds from 3 percent to 10.5 percent. Similarly, call deposit rate was increased from 0.25 percent to 3 percent, while those of fixed deposit rates were increased from 1 percent to 3.5 percent (3 months), from 1.5 percent to 9 percent (6 months), and from 2 percent to 9.5 percent (9 months).

Moreover, interest on loans to farmers was also raised from 12 percent to 18 percent.

Further to the formation of MICB loans to private enterprises, registered under the Myanmar Companies Act, were extended on a wider scale and availability of credits made more easier by Myanma Economic Bank and MICB.

1990

- February: With a view to uncovering black money and to increasing inflow of domestic investment, the Ministry of Planning and Finance had issued a relaxation on profit tax on the value of property and monetary voluntarily declared up to 15 May 1990.
- March: In order to meet the ever-growing requirements of its customers, the state-owned Myanma Insurance had unveiled its latest programme whereby insurance can be effected in a freely convertible currency, i.e., if premium is paid in a freely convertible currency, the claims will be met with the same type of currency.
- May: With the intention to quicken banking services extended to its customers, the Myanma Economic Bank had introduced instant banking measures, named Coded Cheque System, for most bank branches in Yangon under Phase I programme. This system will also be expanded to include some bank branches in other parts of the country under Phase II programme.
- July: The most important and far-reaching financial reform was the enactment of the Central Bank of Myanmar Law on 2 July 1990, the Financial Institutions of Myanmar Law on 4 July 1990, and the Myanmar Agricultural and Rural Development Bank Law on 6 July 1990, thereby repealing the existing Bank Law of 1975. These new laws constitute by far the most comprehensive and widespread reform of the financial sector since Myanmar gained independence in 1948. Financial institutions, whether joint-venture or privately-owned, are now permitted to establish and operate side by side with state-owned financial or banking institutions. Moreover, foreign financial institutions or their

branches or their representative offices will be allowed to operate in the country. Besides, these laws have also given permission to open investment and development banks, finance companies and credit societies, in addition to commercial banks. The new laws have also given wider powers to the Central Bank of Myanmar to oversee these financial institutions, whether state-owned or private.

Chapter 6

MONETARY POLICY IN NEPAL

by

Bijaya Nath Bhattarai

I. Introduction

The objective of the monetary policy after the establishment of Nepal Rastra Bank (NRB) as a Central Bank in 1957 was initially focused on the elimination of the dual currency system; and, the monetization of the non-monetized sector. The regulatory operations of the bank started since the fiscal year 1966, with the establishment of a unified currency system and with the operation of two institutions in the field of commercial banking.

During the 1970s, the focus of monetary policy shifted towards mobilizing financial savings into the banking system, diversion of credit flow towards the priority sectors and the maintenance of adequate liquidity in the economy without adverse impact on the price situation. To attain these objectives, NRB not only pursued an aggressive branch expansion policy but also directed the commercial banks to divert a specified percentage of total loans and advances towards the priority sector. Similarly, to restore the monetary balance (which emerged due to higher credit demand on account of significant rise in import prices of petroleum and fertilizers as well as larger volume of imports on the one hand and slow growth in the mobilization of resources at the prevailing interest rates on the other), the bank revised upwards the interest rate structure of commercial banks and financial institutions during 1975. As this revision assured depositors a positive real rate of return, it was favorable in restoring the monetary balances and ensuring adequate liquidity in the economy. Furthermore, interest rates, were later revised a little downwards in February 1977, when recessionary tendency was observed in the economy due to higher lending rates which even discouraged the flow of credit to the priority sectors. The price control objective of the monetary policy could not be effectively imple-

mented due to: (i) open and unrestricted access to the Indian market; (ii) global rise in petroleum and fertilizer prices; and, (iii) fragmented money and capital markets which restricted the scope of monetary policy.

During the 1980s, the objective and targets of monetary policy in Nepal have shifted gradually towards regulating the level of liquidity in the economy with a consistent price and balance of payment objectives. With the implementation of structural adjustment program, the monetary policy objectives have been target-oriented. In the context of broad macroeconomic objectives of the program (to increase the mobilization of domestic resources, improve the utilization of foreign aid and promote a more efficient allocation of resources, thereby contributing to an acceleration of the pace of economic development while making progress towards the achievement of a viable external position), indicative ceilings have been fixed on the domestic assets of the banking system, net bank credit to the Government and credit to the non-financial public enterprises. These measures were supported by a prudent credit policy and a flexible exchange rate policy which allowed the gains in competitiveness from the devaluation of the Nepalese rupee in 1985/1986 to be broadly maintained. Similarly, to increase the efficacy of monetary policy, various financial sector reform measures were implemented under the SAP program, such as a program of action to strengthen the financial position of the two largest commercial banks, increased capitalization, improvement in bank supervision, establishment of credit information bureau, introduction of appropriate loan classification and provisioning policies, rationalization of treatment on the interest of non-performing loans, introduction of new reporting requirements for banks, etc. A more significant measure was amendment in the banking legislation during the beginning of 1989/1990, which empowered the bank for strict compliance with its directives and monetary policy decisions.

A change in the strategy and targets of monetary policy was thus the outcome of various socio-economic factors both external as well as internal. Among the domestic factors, the need to generate adequate resources to meet the gap between savings and investment and maintain a smooth sectoral flow of credit became eminent in the context of changing planning strategy and primary nature of the economy. However, the openness of the economy posed serious problems in regulating the price situation which were to a large extent influenced by the price level in India due to open and unlimited access to the one thou-

sand kilometer long open border. Similarly any change upwards in the level of liquidity influenced the balance of payments position and exerted pressure on the trade weighted exchange rates. The need to maintain these two balances were thus eminent in the Nepalese context. On the external factors, the need to sustain development was reflected in new financial development including strengthening of the existing financial institutions and the innovation of the new financial instruments became the order of the day. The change in the concept of financial development, particularly financial liberalization in the 1980s, significantly influenced the conduct of monetary policy from an economic management to a more target-oriented approach. The monetary control was rather indirect, allowing the market forces for efficient allocation of resources.

II. Economic and Financial Developments

2.1 Economic Developments

The country's real gross domestic product, during the period covered by our study, (1978/1979-1988/1989) increased on an annual average rate of 3.95 per cent which is slightly higher than the population growth rate 2.67 per cent. This slow growth in real income can be ascribed to a less than satisfactory performance in the agricultural sector and slow growth in the non-agricultural sector. The average growth rate in the agricultural sector was 4.02 per cent while the non-agricultural sector recorded an average growth rate of 3.93 per cent.

The agricultural sector is the mainstay of the Nepalese economy. It provides employment to around 90 per cent of the economically active population and also contributes around 61 per cent of gross domestic product in constant prices. However, the agricultural sector is still uncertain and highly dependent on favorable weather conditions. Irrespective of a high priority accorded to this sector in the successive five-year plans, growth in agricultural production and productivity has been slow. Consequently, growth in food production has lagged behind growth in population, thereby reducing per capita availability of food grains. The economy which used to export significant amount of food grains has severely cut back on exports of food grains due to domestic demand pressure. This slow growth in agricultural production and productivity has been a subject of close concern to the economic

development authorities. The concept of priority sector lending emerged on account of concentration of commercial bank lending in the commercial sector, while a significant credit gap existed in the agricultural, cottage and small-scale industries and the services sector.

The manufacturing sector which contributed around 4.1 per cent of gross domestic product during the fiscal year 1978/1979 has shown modest growth. The share of the manufacturing sector has grown to 5.5 per cent of GDP by the end of 1988/1989. Such modest developments in the growth of manufacturing has been due to structural constraints including the small size of the market, land-locked nature of the economy (the nearest seaport of Calcutta being some 500 miles away), difficult geographical terrain, poor natural resource endowment as well as policy constraints such as underdeveloped capital market, lack of entrepreneurship, lack of a coordinated approach towards industrial development among the concerned line agencies and inconsistency in policy implementation. As a result, the whole manufacturing sector is concentrated in the production of few industrial goods such as tobacco, food-processing, textiles, cement, soap and detergent, and beverage industries. In a bid to divert commercial bank resources for the promotion of industries, Nepal Rastra Bank has included cottage and small industry financing under the priority sector and also amended commercial banking laws to provide for the corresponding working capital requirements and for longer term financing.

The external sector in Nepal is structurally weak and the export items limited to a few primary product and selected industrial items such as ready-made garments and woollen carpets, etc. Consequently, the export base is vulnerable to exogenous shocks. While the requirement for import is strong and rising particularly due to import of petroleum, oil and lubricant products (including coal), chemical fertilizers, industrial machinery and raw materials including transport equipment and other consumer goods, there is a growing trade and current account deficit. The trade balance which was negative by Rs. 1608.8 million by 1979 grew to Rs. 12086.0 million by 1989. Current account deficit as percentage of gross domestic product increased from 0.2 per cent in 1979 to 8.2 per cent in 1989. However, the overall balance of payments position remained favorable during most of the years (the exceptions being 1983, 1984 and 1985) due to a significant inflow of net official capital. The implementation of structural adjustment program since the fiscal year 1986/1987 largely helped improve the external reserves position.

The rising price level has been a subject of close concern to the monetary authorities. The National Urban Consumer Price Index (base year 1972/1973=100) rose at an annual average rate of 9.99 per cent, of which the food and beverages group averaged 10.11 per cent and the non-food and services group at 9.90 per cent. Among the factors responsible for this price rise, the external factors are the increase in Indian wholesale prices and depreciation in the exchange rate of the Nepalese rupee with the convertible currencies including the U.S. dollar. As India is a close trading partner of Nepal with a long and unrestricted open border (which has facilitated the movement of goods and services) and the existence of free convertibility between these two currencies, any change in the Indian price situation has a direct bearing on the Nepalese price level. The Indian Wholesale Price Index (base year 1970/1971=100) increased annually at an average rate 8.15 per cent. The extent of exchange rate depreciation can be explained by the fact that between 1979 (mid-July) and 1989, the rupee/dollar exchange rate (mid-rate) deteriorated from Rs. 12 to Rs. 27.50 per U.S. dollar. A significant depreciation in the exchange rate of the Nepalese rupee with other convertible currencies has also been observed. Among the internal factors responsible for this price rise are the expansionary fiscal policy of the Government which has pumped in extra liquidity in the economy, low level of production (particularly agricultural production) and rising demand from the population pressure.

The public sector in Nepal has been highly expansive. The overall budgetary deficit as percentage of gross domestic product has risen from 2.7 per cent in 1979 (mid-July) to 11.0 per cent in 1989 (mid-July). The impact of this budgetary deficit has been a significant increase in the borrowings from the banking system, with the corresponding impact on the overall liquidity in the economy. Available data show that borrowings from the banking system as percentage of budgetary deficit which was as high as 34.2 per cent in 1984 (mid-July) rose to 36.6 per cent in 1985, and gradually declined to 15.4 per cent after the implementation of Structural Adjustment Program which severely restrained net bank credit to the Government. This high level of public spending was due to the implementation of ambitious development projects (the sixth and the seventh plans fixed an annual real growth rate target of 4.3 per cent and 4.5 per cent respectively) by the Government in the absence of a sound revenue base. This monetization of the budgetary deficit has been a source of continuous monetary expansion with adverse effects on prices and balance of payments position. Various measures

have been taken by the monetary authorities to improve the marketability of these securities in the non-banking sector including a system of auctioning. However, the relative contribution of the non-banking sector in the budgetary deficit has improved only moderately from 5.9 per cent in 1984 (ending mid-July) to 8.5 per cent in 1989 (ending mid-July).

The low level of savings and investment reflected in a rising resources gap has remained an issue of close concern to monetary authorities and development planners. Gross domestic savings as a percentage of GDP has hovered within the range of 7.2 per cent and 14.1 per cent without any steady pattern. But total investment as a percentage of gross domestic product has ranged between 15.8 per cent to 22.9 per cent. The gap between gross domestic savings and total investment is met mainly by foreign savings either in the form of loan or grants. This low level of gross domestic savings has severely restrained the scope of implementing ambitious development projects. There is an eminent need to generate additional savings in order to boost up the scale of investment and reduce dependency on foreign savings to finance development activities. Monetary policy measures have accorded top priority in mobilizing additional resources from the banking system not only through its effort in expanding bank branches but also through financial sector reform measures which include interest rate reforms.

2.2 Financial Developments

Financial developments during the 1980s have concentrated on strengthening of the existing institutions and creation of new financial institutions to cater to the needs of the public in the context of changed economic condition. Currently, the financial system comprises of a monetary authority (NRB), five commercial banks, Agricultural Development Bank, Nepal Industrial Development Corporation Provident Fund Corporation, National Insurance Corporation, Credit Guarantee Corporation, Securities Marketing Centre, and private sector insurance companies (please refer Chart 6.1 for structure of the financial system).

(1) Central Bank

The financial sector has expanded rapidly after the establishment of NRB, as the Central Bank in 1957. Initially, NRB performed some

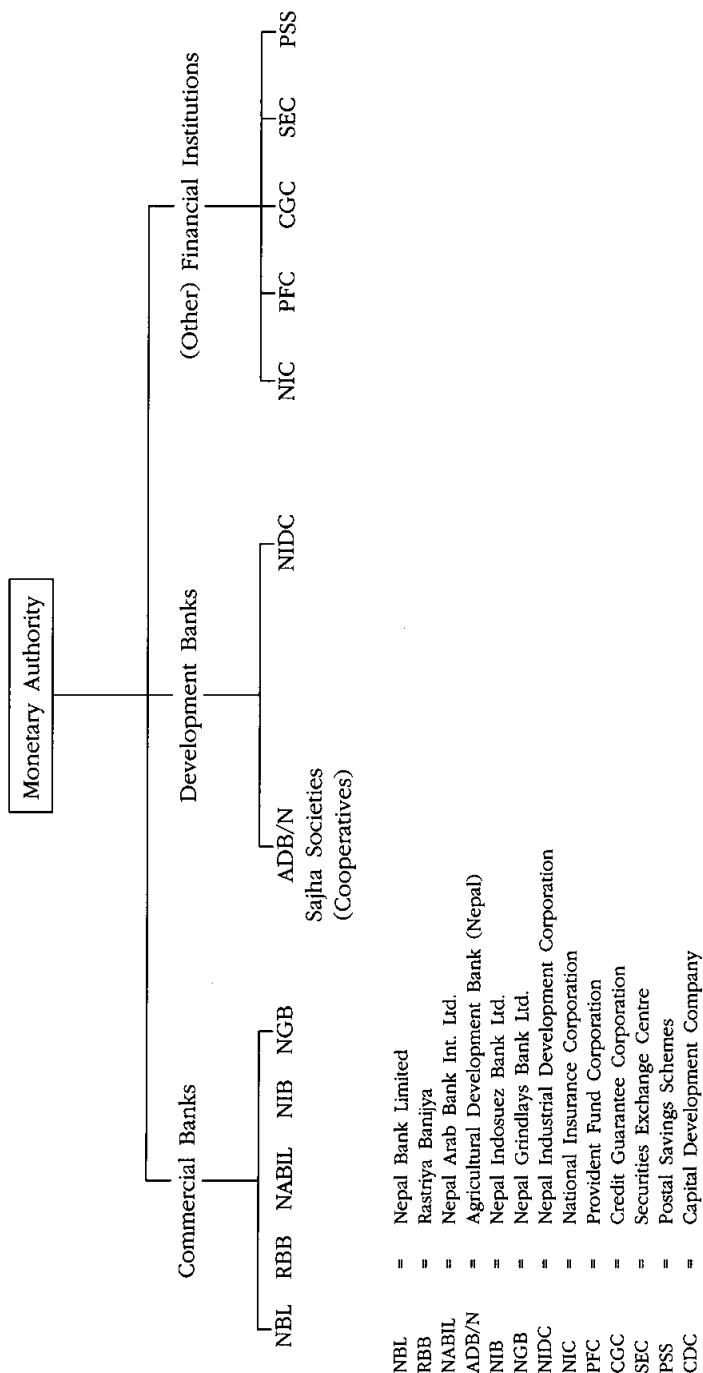
commercial banking functions, which it gradually relinquished to the Rastriya Banijya Bank, a state-owned bank established in 1966. During the initial phase of its establishment, the strategy of the bank was to end the dual currency system and maintain stability in the exchange rates. During the 1970s, this strategy shifted towards the expansion of monetized sector through an extensive network of bank branches to increase the scope and efficacy of monetary policy, promotion of an organized financial system, mobilization of domestic resources and participation in economic development through diversion of more and more resources in the priority and productive sector of the economy. During the 1980s, the monetary strategy has focused on maintaining external and internal stability in the economy and sustain economic development. Currently, apart from its traditional role of the bankers bank and banker to the Government, NRB holds claims against the financial public enterprises and the private sector through purchases of debentures and equity.

In the field of monetary management, until 1988/1989, government borrowing from the Rastra Bank was mainly through the use of overdraft facilities during the course of the financial year with government securities issued only at end of the year. As this practice hampered monetary control, the bank, beginning fiscal year 1989/1990, changed to borrowing mainly through the issuance of debt instruments. Commercial bank borrowing from the Central Bank which is mainly limited to rediscounting of government securities and loans to the priority sector has not been significant and comprised around 1 per cent of outstanding domestic claims by the end of 1989 (mid-July). It is relatively difficult for NRB to have effective credit control due to limited scope for open market operation and high liquidity of commercial banks. Consequently, NRB has resorted to direct measures such as moral suasion and bank specific credit ceilings as principal methods of credit control. In the field of financial sector, various reform measures have been implemented along with a comprehensive reserve money management program effective 1989/1990, which depends on indirect measures of monetary control. The measures included liberalization in the interest rate structure of banks and financial institutions, upward adjustment in the interest rate on government overdraft facilities, including interest rate on short-term Treasury bills to make it more market-oriented. Through a concerted effort in improving the financial sector, the bank has secured its role as regulator of the financial system and active participant in economic management of the country. Similarly, it has

Chart 6.1

STRUCTURE OF THE FINANCIAL SYSTEM

Nepal Rastra Bank



also strengthened its position as advisor to Government on national economic management.

(ii) Commercial banks

The first commercial bank, Nepal Bank Ltd., was established in 1937 under the joint ownership of Government and the private sector. This was followed by the establishment of Rastriya Banijya Bank in 1966 under a full public ownership. After the removal of a ban on foreign banking, three joint-venture banks, viz., Nepal Arab Bank Ltd., Indo-Suez Bank and Nepal Grindlays Private Ltd. have been established. Although joint-venture banks have grown rapidly, they remain small compared to the public sector banks which account for about 71 per cent of banking sector productive assets and 90 per cent of deposits. The two largest public sector banks operate an extensive network of branch offices - about 430 offices by 1989 (mid-July) and do not have special preference for a particular type of lending activity. The joint-venture banks, however, have limited area of operation particularly in Kathmandu Valley and few other places. The joint-venture banks have preference for off-balance sheet transactions and cater to the requirement of specialized consumer mainly foreign trade agencies.

The portfolio of commercial banks which comprised of traditional investment activities such as short-term commercial paper, pledge loans and importers credit, etc., have gradually shifted to loans in priority and productive sectors inclusive of agriculture, services and cottage industries. The size of banking sector assets and liabilities has grown significantly during the review period mainly due to three reasons: (a) monetization of the hitherto non-monetized sector; (b) extensive network of bank branches; and, (b) generally positive deposit interest rate in real terms. The combined assets and liabilities of commercial banks which was Rs. 3918.6 million in 1979 (mid-July) have grown to Rs. 21,834.3 million by 1989 (mid-April). Similarly, the size of total deposits which was Rs. 2920.9 million in 1979 (July) has grown to Rs. 18,105.5 million by 1989 (mid-April).

(iii) Non-monetary system

The non-banking financial system comprise of two specialized lending institutions: the Nepal Industrial Development Corporation (NIDC) and the Agricultural Development Bank (ADB/N). Whereas the former

specializes in lending to the medium- and large-scale enterprises (not necessarily manufacturing enterprises), the latter lends to agriculture and cottage industries and more recently, to energy sector enterprises. Other financial intermediaries include Rastriya Beema Sansthan; Provident Fund Corporation, Credit Guarantee Corporation and Securities Marketing Centre, etc., for specialized financial services. The Nepal Industrial Development Corporation was established in 1959 as a specialized financial institution to cater to the demand for industrial credit through project preparation appraisal and lending, including modernization of existing mills through financial and technical assistance. The principal source of finance for NIDC are equity subscriptions by the Government and NRB (including debentures), and financing from international institutions (Asian Development Bank, the World Bank (IDA) and U.N. agencies) through lending arrangements with the Government. Borrowings from the Rastra Bank remained a major source of finance. It constituted 60.3 per cent of total borrowing in mid-April 1989. The total assets of the corporation which was Rs. 156.9 million in 1979 (mid-July) gradually increased to Rs. 595.3 million by 1989 (mid-April).

The NIDC grants loans to the extent of 80 per cent of the fixed assets of an industry depending on the nature of the industry and location. Similarly, the corporation has also started financing the working capital requirement of the industries. The policy of co-financing for industrial projects has also been initiated. As at mid-July 1988, the NIDC's direct loan outstanding stood at Rs. 690.5 million of which 42.0 per cent went to the manufacturing sector, 33.0 per cent to the tourist sector particularly hotels, 4.1 percent to the services sector and 20.9 percent in miscellaneous sectors.

2.3 Financial Instruments

The list of financial instruments available in the financial sector has grown significantly along with the process of financial development. The array of available financial instruments on the sources side of the financial institutions are: currency (issued by the monetary authorities); deposits - demand, savings and fixed (domestic as well as foreign) including importers margin and interbank; capital, reserves, subsidies, grants, provident fund, insurance premium; and, others. Some other financial instruments that have been introduced during the 1980s are debentures issued by the ADB/N and NIDC, Agricultural Saving Certifi-

cates issued by the ADB/N and new series of National Saving Certificates issued by the Government. These instruments have widened, to some extent, the list of available financial instruments. The list of available financial instrument on the users' side includes foreign exchange assets, government securities (Treasury bills, development bonds, National Saving Certificates), credit to various sectoral entities -- government, government enterprises, the private sector -- share and debenture holdings, and other investment. However, the list of available financial instrument for investment purposes is quite few. The stock exchange activity is limited to a few tradable securities. Some shares of listed companies such as banks, insurance and business house, etc., are traded at a highly premium price, while major companies have not listed their shares with the Securities Marketing Centre. As such, there is no secondary market for their equity and debt instruments. The only available market is for government securities. Even then, they are not available for all type of securities. Most of the financial instruments available in the market are not tradable upon demand except for government securities holdings in the private sector which have a high degree of liquidity and can be sold upon demand.

2.4 Money and Financial Markets

The money and financial market in Nepal is highly fragmented. As such, there is no consolidated type of money and financial market. Participants in the money market include village money lenders and goldsmith in the unorganized private sector and cooperative credit societies, Agricultural Development Bank, commercial banks, Nepal Industrial Development Corporation, National Insurance Corporation, Provident Fund Corporation and others in the organized financial sector. Commercial banks and other financial institutions in the organized sector operate side by side with the village money-lenders in the unorganized money market. There is a significant differential in the interest rates charged by these institutions. For example, the interest rate on major agricultural loan on priority sector credit is 15 per cent per annum whereas the interest rate with the village money lender is 25 per cent per annum at a minimum. Similarly, in the unorganized money market, the interest rate with the village money lender is 25 per cent per annum at a minimum. Similarly, in the unorganized money market, the interest rate on short term trade credit is 36.5 per cent per annum. Even after a phenomenal development in the financial sector role and activities, monetary policy has not been effective in narrowing

the gap between the interest rates in the unorganized and the organized financial sector. This is due to several factors such as: (i) existence of credit gap in agricultural and rural financing requirement; (ii) non-availability of consumption or social purpose loan from the organized financial sector; (iii) collateral-based system of credit; (iv) existence of a non-monetized sector; (v) low level of education; and finally, (vi) lack of banking habit and information among the users of bank credit.

The monetary authorities, in line with this existing economic condition, have not only made it mandatory to lend a specified percentage of total loans and advances to the priority sector including agriculture, services sector and cottage industries but have also provided necessary training and institutional linkage such as the establishment of credit guarantee corporation, etc. Similarly, Nepal Rastra Bank (NRB) has directed commercial banks to advance credit especially on the priority and the productive sector on a project-based approach irrespective of the collateral. Similarly, the branch expansion policy of the Central Bank has been motivated to bring the hitherto non-monetized sector into the ambit of monetization and for the development of banking habit among the people at large. However, very recently, the Bank has changed its branch expansion strategy as many commercial bank branches in remote areas of the Kingdom suffered operational losses. So commercial banks are advised to open new branches in areas only when it is commercially feasible. To bring down the gap between interest rates in the organized and unorganized sector, NRB not only partially liberalized the interest rate structure of banks and financial institutions in 1986, but has completely liberalized the interest rates since 1989, with a view towards maintaining an equilibrium rate of interest determined by the forces of demand and supply. The impact of such liberalization, however, after a year of reform, is somewhat mixed. The commercial banks, under some sort of tacit understanding among themselves, have not only lowered the interest rate on term deposits between 0.5 to 1.5 percentage points but have managed to widen the spread between lending and borrowing rates by further increasing the lending rates between 1 and 2 percentage points.

One more participant has been added to the financial market during 1989. NRB, with a view to lessening commercial bank dependency on the bank for short-term funds, decided to establish a call money market. The establishment of this market has facilitated commercial banks

and other financial institutions to borrow short-term funds without recourse to central bank finances. Similarly, the financial market was further consolidated when the Commercial Bank Act was amended in 1974 to enable commercial banks to forward long-term credit for a maximum period of 12 years. Consequently, the banks have been able, to some extent, to diversify their portfolio from commercial loans to industrial and agricultural loans. As a result, the financial market is growing following the introduction of new financial instruments after the liberalization of the financial system and other deregulatory moves.

Depending upon the structure of the financial system and the level of financial deepening, it has been observed that small changes in the interest rate on lending side do not play a significant impact on the lending decision of investors. However, the maintenance of a positive deposit rate has been a proven instrument for additional mobilization of domestic resources as was evidenced in 1975 when a large amount of resources from the banking system was mobilized following a positive deposit rate in real terms. In the long run, it is expected that competitive market forces will gradually adjust the interest rate structure to a more equilibrium rate and will help in developing a consolidated money and financial market.

III. Role and Implementation of Monetary Policy

3.1 Identification of Objectives

The long-run objectives of the monetary policy have been identified in the planning document which is in line with the ultimate target of growth with stability. With the realization that monetary policy plays a key role in the mobilization of domestic resources as well as in the promotion of investment and sustained economic development process with stability in the price and balance of payments position, considerable attention has been given to the implementation of this objective in the monetary policy approach. Prior to the implementation of the sixth five-year plan which began in 1980, while the financial sector was not fully developed, it was nevertheless assuming a greater role in national economy. The responsibility of the financial sector was changing in the context of structural change in the economy and as gradual monetization of economic activities largely enhanced the effectiveness of monetary and credit policy. With the understanding that the mo-

netary and the financial sector can further accentuate the process of economic development, major monetary policy objectives during the 1980s have been spelled out in plan documents. They are:

- (i) *Regulation in the level of liquidity consistent with the price and balance of payment objectives:* For example, the sixth plan objective was to limit growth in M1 at an annual average of 12 per cent. However, the seventh plan stipulated targeted annual growth rate of 13 per cent. While no limit was set for domestic credit expansion during the sixth plan, it stipulated use of credit control measures on the one hand and restrained deficit financing on the other. The seventh plan, however, stipulated a growth in domestic credit expansion at 16 per cent on an average to maintain external and internal stability.
- (ii) *Maximum flow of bank credit to priority and productive sectors of the economy:* The absence of institutional credit arrangements for priority and productive sector and the concentration of commercial bank lending in the business sector alone distorted the pattern of investment. Given the agrarian nature of the economy and the relative contribution of this sector to national economic development, it was necessary to divert financial resources to this sector.
- (iii) *Mobilization of domestic resource:* With a very low savings to GDP ratio and a persistently rising resources gap, the need to generate more financial resources from the banking system need not be overemphasized as the prime objective of monetary policy. Both plans have adopted an objective of mobilizing maximum resources through the banking sector which included, among others, a review of the existing interest rate structure in the context of maintaining a positive real rate of return to the depositors in line with development in price and other macroeconomic indicators. While the sixth plan stressed on the use of interest rate and margin rate policy to discourage semi-luxury and luxury production and encourage the production of essential goods, the seventh plan has highlighted the need for financial sector reform including strengthening of capital market activities.
- (iv) *Gradual reduction in deficit financing to meet financing requirement of the public:* Both plan documents have highlighted the need for reducing the size of the deficit finan-

- cing in order to meet increasing public expenditure. The plan document has rightly pointed out the need for additional revenue generation in order to lessen the impact of a monetization of the budgetary deficit. We can find a common consensus on increasing the amount of borrowing from the non-banking sector to meet the budgetary deficit.
- (v) *Improvement in the financial sector:* The sixth plan stressed the need for amendment in the existing banking laws for efficient loan disbursement, and recovery for banks and financial institutions. Similarly, development of legal foundation for streamlining banking and financial sector modernization and development was adhered to. The seventh plan, apart from strengthening activities in this sector, felt the necessity of making banking services consumer oriented. It not only stressed on competition but agreed in principle to open joint-venture banks with foreign collaboration and private sector banks.
 - (vi) *Financing of the public sector enterprises:* For financing of the public sector enterprise, the plan document stressed lesser amount of financing from the banking system and the need to generate resources from the private sector through issue of debentures, etc. In line with this development, for the first time, a term lending institution (Agricultural Development Bank) was allowed to collect deposits from the public sector.
 - (vii) *Institutional development:* The plan document stressed the need for the formation of a high level committee under the leadership of the monetary authority to evaluate commercial bank lending (including lending in priority and productive sectors of the economy), including streamlining the activities of the cooperatives. The seventh plan stressed the need for rationalizing the activities of non-bank financial institutions.

In the first place, although it seems that there are various objectives of monetary policy, the basic aim is to attain sustained growth with relative stability in price and balance of payments. Although the plan document provided a positive guide on overall macro objectives of the monetary policy, annual monetary budgets were prepared in the context of accommodating changes in real sector, price developments and external sector developments within this broad macroeconomic objec-

tive. During the 1980s, the stance of monetary policy which was rather direct and relied on regulating the cost and volume of credit later shifted towards the latter part of the eighties to a more indirect and flexible approach of monetary control after the liberalization in interest rate structure of banks and financial institutions. In the next section, we will review how monetary targets are fixed, and how the strategy of monetary policy has shifted from selective credit control towards target-oriented and finally towards indirect methods of control.

3.2 Identification of Targets

Monetary targets in most cases have been identified within the framework of the overall macro objectives of monetary policy. During the first two years of the review period, monetary targeting was centered in regulating the level of domestic credit consistent with price and balance of payments objectives which covered credit to the private sector and non-financial public enterprises to control money supply. However, due attention was provided to the need of growing banking sector activities. Some of the factors which initiated the monetary authorities for restrained domestic credit expansion during the fiscal year 1979/1980 were: (i) slowdown in the agricultural production; (ii) high rise in monetary liquidity; (iii) symptom of a rising price level which was further accentuated by a rise in Indian wholesale price index; (iv) symptom of a growing trade deficit; and, (v) excessive credit demand following a liberal trade policy by the Government.

During the fiscal years 1980/1981 and 1981/1982, the focus of monetary target was to restore monetary balance, which had emerged due to growing credit demand on the one hand, and the available supply of resources on the other. Increased demand for bank credit in the context of slow mobilization of financial resources had exerted serious pressure on the sources of commercial banks. Consequently, the banks heavily used the refinance facility of NRB to bridge this gap between demand and supply. For example, during December/January 1981/1982, the liquidity of Rastriya Banijya Bank (a public sector undertaking) was as low as 13.9 per cent and a credit deposit ratio of 108.7 per cent. As this extremely low level of liquidity and high credit deposit ratio reflected the monetary imbalance in the economy with its likely impact on price and balance of payments position, NRB not only imposed a minimum liquidity requirement of 25 per cent but fixed the ratio of bank loan to capital fund at 3:1. Similarly, minimum reserve

requirement was prescribed at 9 per cent of total deposit liabilities which included 4-per cent cash in vault and 5-per cent balances with NRB. These measures had a positive impact in the restoration of monetary balance.

Consequently, not only the liquidity situation improved but credit deposit ratio also came within a normal trend. A further measure to restore monetary balance was taken during the fiscal year 1981/1982 when interest rates on bank deposits were revised upwards by 0.5 percentage point and loan rates by 1.0 percentage point. The rationale of this measure was to mobilize additional resources from the banking system and thereby restore monetary balance without adverse impact on price and balance of payments. During the fiscal years 1982/1983 and 1983/1984, the target of monetary policy was not only to consolidate the gain in restoring monetary balance through changes in the interest rate structure but also to regulate pressure on balance of payments by measures such as, export promotion, conservation of foreign exchange, encouragement for long-term investment in agriculture and diversion of bank credit to priority and productive areas. These measures also became necessary in the context of growing monetization of budget deficit. During the fiscal year 1982/1983, as the agricultural production plunged downwards due to adverse weather situation, the supply of food grains suffered a setback (-15.9 per cent) and the need for food imports became evident. As exports were shrinking and imports rose, immense pressure was felt in the balance of payments position.

During the fiscal year 1983/1984, some changes were enacted in measures of monetary control which included liberal margin for import of construction materials and development goods, liberal policy for imports from socialist countries, gradual liberalization of restricted items for import and other export promotion measures which included a pre-export credit of up to 80 per cent of export value at concessional interest rate of 8 per cent for 45 days including the formation of a separate export unit by the commercial banks in main export centers. Similarly, as it was felt necessary to divert commercial banks funds into priority and productive sectors, the ratio of such lending was revised upwards to 8 per cent and 25 per cent of total loans and advances, respectively. Similarly, as per government direction, loans to educated unemployed were fixed at 0.10 per cent of outstanding loans and advances. However, it was without any collateral and subject to a limit of NRs. 25,000 per loan.

During the fiscal years 1984/1985 and 1985/1986, the target of monetary policy was in the first stance: (i) restoration of monetary balance (which had emerged due to large-scale monetization of budgetary deficit and increased credit flow to non-financial public enterprises); (ii) maintenance of equilibrium in the foreign exchange market; (iii) credit flow towards more productive areas, (iv) partial liberalization of interest rate structure; and, (v) concessional credit to remote districts. Various measures to assert these tendencies in the economy included: fixation of credit deposit ratio at 75 per cent (at mid-July 1985); tight import policy through higher margin and interest rates, limit on the use of overdraft facilities; concessional credit facilities to procure transport equipment at concessional rates of interest and concessional credit at 2 per cent less than nominal rate in 18 hilly districts to facilitate production in agriculture and cottage industries effective 29 May 1985. They were further supported by a refinance facility at rates 4 per cent less than what they charged in these districts; measures to augment industrial production through liberal margin policy for the import of industrial raw materials effective 28 November 1984; partial liberalization of interest rate effective 13 November 1984 wherein commercial banks and financial institutions were granted autonomy to offer higher interest on savings up to 1.5 per cent and 1 per cent on time deposits than the prevailing interest rates; and finally, permission to ADB/N branches conducting general banking function to conduct commercial banking business to lessen dependence on NRB for the use of funds.

Major monetary measures during the fiscal year 1985/1986 included: (i) devaluation of Nepalese rupee by 14.7 per cent effective 30 November 1985 with a view to restoring equilibrium in the foreign exchange market following adverse balance of payments position for three consecutive years (1982/1983-1983/1984) because of an expansionary fiscal policy of the Government which not only generated excess liquidity in the economy but instilled a considerable pressure on imports; (ii) ceiling for domestic credit expansion at 15.5 per cent, of which credit to the government and public enterprises was fixed at 12 per cent and private sector at 2.6 per cent. Other measures on 7 May 1986 included downward revision on credit approved but not sanctioned and limit on the use of overdraft and domestic bills purchase facilities, etc.; (iii) partial autonomy to commercial banks and financial institution to fix interest rates effective 29 May 1986, subject to a minimum rate on deposits and maximum lending rate on priority and productive sector as prescribed by the NRB. For this purpose, the minimum interest rate on saving

deposits was fixed at 8.5 per cent and on one-year time deposits at 12.5 per cent, for deposits exceeding one-year maturity above 12.5 per cent and maximum lending rate for priority sector fixed at 15 per cent; and, (iv) change in refinance rate - refinance rates were fixed at 11 per cent for the loans provided to the specific sectors and purpose for which a maximum lending rate was fixed at 15 per cent.

Since the fiscal year 1986/1987, Nepal adhered to the structural adjustment program which was supported by the International Monetary Fund. The monetary policy measures under this program were made more target-oriented, including a series of financial sector reform and liberalization measures. During the fiscal year 1986/1987, although the overall balance of payments position became favorable after the devaluation, current account deficit continued to widen necessitating cautious monetary management approach. Thus, the monetary policy objective was geared towards restraining domestic credit, thereby restricting the growth of money supply to the desired level as envisaged in the seventh five-year plan to insulate the economy against distortions in the external and the internal sector. Monetary measures included a credit ceiling on all sectors which were binding to all commercial banks, banking branches of ADB/N and NRB itself, and changes in margin rate which encouraged the import of necessary consumer items and industrial raw materials and discouraged imports of luxury products.

Monetary policy since the fiscal year 1987/1988 also aimed to maintain a smooth flow of credit desired sectors of the economy, with a view to regulating the supply of money consistent with price and balance of payments objectives. As a consequence, the prudent credit management policy which was initiated since the fiscal year 1985/1986 has been continued. Thereby, domestic credit has been regulated to maintain external and internal balance in the economy without losing sight of the requirement on the credit need of priority and productive sector of the economy. In line with these developments, monetary measures for 1987/1988 included imposition of ceilings on domestic credit expansion. For this purpose, quantitative credit ceilings were set on net bank credit to government, non-financial public enterprises and the private sector (inclusive of financial public enterprises). Apart from this, other measures included non-capitalization of overdue interest on loans extended to the agricultural and cottage industries. Credit extended to educated unemployed was up to 90 per cent of approved project loans, subject to a limitation of NRs. 50,000 effective 20 July 1987. This limit was later revised upwards to Rs. 300,000.

During the fiscal year 1988/1989, NRB continued the policy of regulating the level of liquidity through quantitative credit ceilings. Among other monetary measures, margin rates were further revised downwards in favor of basic necessities and industrial raw materials and industrial goods following trade and transit impose with India effective March 1989. In line with the spirit of structural adjustment program, various prudential measures were implemented not only to increase the supervisory authority of NRB on commercial banks but also to establish standard banking norm in maintaining solvency and profitability such as capital adequacy, single borrower limit, classification of outstanding loans and provisioning requirement, credit information bureau and the establishment of a call money market to facilitate interbank borrowing.

However, since the fiscal year 1989/1990, NRB has used the ceilings only as indicative benchmarks without any ceilings on commercial bank credit extension except on non-financial public enterprises. The monetary policy stance which was more direct and operated through restriction in volume and cost of credit has been made more indirect particularly after the liberalization in the interest rate structure of banks and financial institutions effective August, 1989. The Central Bank has not only adhered to a comprehensive short-term reserve money programming exercise but has moved towards indirect control through the open market operation of public securities. The interest rate on government securities have been made more market related through the introduction of auction of short-term Treasury bills and development bonds at regular interval of time. These measures have been further supported by other financial sector reforms such as repayment of government guarantee loans on public enterprise to improve fiscal discipline, upward adjustment in the interest rate on government overdraft facilities, redesigning of refinance facility, issue of new national saving certificates and change in tax exemption status and change in reserve requirement.

3.3 Identification of Instruments

The choice of monetary policy instrument to control monetary aggregates have been based on: (i) nature of the economy; (ii) nature of the target variable; (iii) nature of the problem; and, (iv) the level of urgency. The important monetary policy instruments that have been used quite frequently to influence the volume and cost of credit are

credit ceiling, interest rates, margin rates, open market operation and portfolio restriction, particularly lending to the priority and productive sectors of the economy.

Credit ceiling has been preferred as the most direct method of regulating the volume of credit. The credit ceiling, which was imposed during the beginning years of the review period particularly during the fiscal years 1978/1979 and 1979/1980, encompassed only credit to the private sector and non-financial public enterprises. The concept of credit ceiling has changed particularly since the fiscal year 1985/1986 when it encompassed net bank credit to the Government, credit to the non-financial public enterprises and credit to the private sector, including credit extended to the financial public enterprises and net domestic assets of the banking system. The idea was not only to regulate the overall level of liquidity but also to discourage excessive borrowing of the Government from the banking system in the context of an increasing monetization of budgetary deficit. As this system of credit ceiling proved counter productive to the resource mobilization effort of commercial banks, the Central Bank used the ceiling as simply indicative during the fiscal year 1989/1990 and instead resorted to indirect methods of monetary control.

The interest rate mechanism has been widely used to influence the cost of credit. The regulated system of interest rates covered deposit and lending rates of banks and financial institutions including interest rate structure of term lending institutions. This system of interest rate, which was mostly regulated, differentiated between priority and non-priority sectors with the priority sectors received a concessional rate of interest. It was also thought that regulated interest rate regime was a most potent tool in the mobilization of financial savings. If we look at the monetary history, we find that changes in interest rates occurred to correct monetary imbalance following higher credit demand and less mobilization of economic resources. The concept of interest rate liberalization as a means to mobilize financial savings was first accepted during the year 1986. With the concept of financial deregulation sweeping the world financial markets, the Nepalese authorities decided for a complete liberalization of interest rate structure of banks and financial institutions on 31 August 1989. The rationale for this liberalization measure was to grant autonomy to banks and financial institutions to mobilize additional resources by offering higher rates of interest and to increase the allocative efficiency of interest rate while making investment deci-

sions. The liberalization of interest rate structure and the auctioning of government securities was also intended to ensure monetary control through indirect measures.

Margin rates have been used quite frequently as a means of monetary control. Margin rate, as the name suggests, does not operate through influencing the cost of credit; rather, it influences the volume of credit. In the Nepalese monetary system, the imposition and changes in margin requirements have been to facilitate particular types of imports and discourage the imports of semi-luxury and luxury goods. In extreme cases, this measure has been used to discourage imports of particular commodities wherein commercial banks were directed not to open import L/C for particular type of commodity or group of commodities. Similarly, margin requirements have been used as a mechanism to discourage investment in unproductive assets such as gold and silver.

The use of open market operation as a means of monetary management has been quite frequent. However, the use of this mechanism was in most cases to accommodate public borrowing from the banking system to meet budgetary deficit. As the Government pursued an expansionary fiscal policy without any corresponding rise in the revenue base, the budgetary deficit continued to increase. The budgetary gap, which could not be met by foreign savings, was thus met by borrowing from the banking system as the private sector was not willing to participate in the public security holding in a larger scale, owing to lack of an effective secondary market and the low level of interest rates. The use of open market operation as a tool of monetary management began after the implementation of structural adjustment program. The implementation of short-term comprehensive monetary programming since the fiscal year 1989/1990 and the system of regular auctioning of short-term Treasury bills and development bonds at regular intervals established open market operation as an indirect means of monetary control. For monetary control, NRB for the first time sold government securities out of its own portfolio.

Restriction in the portfolio of commercial banks is not very common. Apart from prudential financial requirements such as reserve ratio, etc., the only restriction on portfolio is lending to the priority and productive sectors of the economy. This concept was introduced to divert the flow of bank credit to productive and priority sector such as agriculture, services, cottage industries, etc., following a significant credit

gap in the sectors. Commercial bank lending was concentrated in traditional sector such as commercial activities and trade, etc. Given the relative importance of this sector to national economic development, this concept has been further strengthened with the need to divert more and more resources to this sector. On most occasions, such credit enjoyed a concessional rate of interest. However, the banks are still unwilling to divert major resources to this sector due to the higher cost of funds following regular on-site supervision, high delinquency ratio, lack of expertise for proper project formulation and evaluation. Apart from these instruments of monetary control, some other measures used by the monetary authorities include bank rate, moral suasion and selective credit control.

IV. Implementation and Conduct of Monetary Policy

4.1 Interest Rate Policy

In Nepal, interest rates for commercial banks and other financial institutions have been regulated for a long time. The use of interest rate as an instrument of monetary policy has been to determine the quantity and the price of credit. Interest rates have not been used as a cost of capital but rather used as the cost of credit. This type of policy has not only slowed down the process of financial intermediation by banks and other financial institutions but has distorted to some extent the pattern of investment because the allocative efficiency of interest rates could not be achieved as interest rates were kept at a considerably low level given the market forces. This policy of regulating the interest rates of banks and other financial institutions was favored not only to differentiate between priority and non-priority sectors. It also motivated monetary or credit expansion together with a socially or politically desirable optimal rate of interest. It was also thought that direct control of deposit rates was a potent tool in the mobilization of domestic savings. The concept of providing a positive real rate of return to the depositors was first established in 1975, when a major revision took place in the deposit and loan rates of banks and financial institutions to correct the existing monetary imbalance (Tables 6.1a and 6.1b). The impact of this revision was that it not only assured depositors a positive real rate of return; it also established time deposits as the most significant instrument on the sources side of the commercial banks balance sheet. The process of financial intermediation

Table 6.1a
INTEREST RATES ON DEPOSITS
(Per cent Per Annum)

Account	Before 28 Apr. 1975	Effective 28 Apr. 1975	Effective 16 Jul. 1976	Effective 12 Feb. 1977	Effective 15 Jun. 1982	Effective 16 Nov. 1984	As of 28 May 1986 (Pre-reform)	As of 28 May 1986	As of 15 Jul. 1988	As of 26 Mar. 1989	As of 15 Jul. 1989
Current		0	0	0	0	0	0	0	0	0	0
Savings	6.5	8	8	8	8.5	8.5-10.0	8.5	8.5-10.0	8.5-10.0	8.5-9.5	8.5-9.5
Fixed:											
3 months less	4	0	0	0	0	0	0	0	0	5.0-8.0	0
3 months	4	4	4	4	4.5	4.5-5.5	4.5	8.5	8.5	8.5	8.5
6 months	-	10	10	9	9.5	9.5-10.5	9.5	8.75	8.75	8.75-9.00	8.75-9.0
9 months	-	0	0	0	0	0	0	0	0	9.0-12.0	9.00-10.0
1 year	9.5	15	14	12	12.5	12.5-13.5	12.5	12.5	12.5	12.5	11.5-12.0
2 years	9.75	16	15	13	13.5	13.5-14.5	13.5	13.5	13.5	13.5	12.5-13.0
3 years	10							13.65	13.65	13.65-14.0	
4 years	10.25							13.75	13.75	13.75	
5 years	10.5							14	14	14	

Table 6.1b

LENDING RATES OF COMMERCIAL BANKS AND FINANCIAL INSTITUTIONS
(Percent Per Annum)

	Effective 12 Feb. 1977	Effective 15 June 1982	Effective 29 May 1986	Recent Rates
1. Industrial Loans	10-16	11-17	15-18	16-18
2. Agricultural Loans	8-14	10-15	15-20	16
3. Services Loans	14	15	15	15-17
4. Export Bills	12	8-14	15-16	15-16
5. HMG Development Bonds	14	1.5% more than the specified rates for respective bonds	2% more than the specified rates	2% more than the specified rates
6. Fixed Deposit Receipts	2% more than fixed deposit rates	2% more than fixed deposit rates	2% more than the specified rates	2% more than the specified rates
7. Other Loans	16 minimum	17 minimum		
8. Overdue Loans	2% more than the specified rates	2.5% more than the specified rates		

which was relatively significant during the initial years of reform as reflected by a strong recovery in time deposits gradually slowed down as the real return on deposits continued to decline following the onset of inflationary pressures.

Apart from the use of interest rate as a tool to mobilize financial savings in the banking system, it has also been used as a tool to regulate consumption of luxury import and encourage investment in priority and export sector. The social aspect of credit has received attention in the form of concessional rates of interest and commercial banks have been directed to invest a fixed portion of their deposit liabilities in the priority sector.

The move towards financial sector liberalization that swept the world financial markets also had a profound impact in the Nepalese financial system. Consequently, effective 31 August 1989, both deposit and lending rates of commercial banks were completely liberalized and left at their own discretion. The rationale behind this interest rate liberalization has been to promote competition among the banks and maintain the interest rates at market-determined levels with a view to promote efficient allocation of resources mobilized by these commercial banks. On the question of priority sector lending, the bank has applied moral suasion to the commercial banks not to increase the lending rates beyond 15 per cent. After this liberalization in the interest rate structure, contrary to rational expectation commercial banks have lowered deposit rates between 0.5 to 1.25 percentage points and increased the lending rates, thereby widening the spread between deposit and lending rates.

Over the less than one-year period of interest rate liberalization, the observed facts are: (i) lowering of deposit rates down to 0.5 and 2.00 per cent; (ii) increase in the lending rates between 1 and 2 per cent; and, (iii) slowdown in the growth rate of time deposits from 25.4 per cent during the fiscal year 1988/1989 to 19.3 per cent in 1989/1990. However, this slow growth in time deposits can be due to a significant slowdown in economic activity following the trade and transit impasse with India effective 10 March 1989. The monetary authority at present is keen on maintaining a positive real rate of return to the depositors, and will use other monetary instruments as far as feasible.

4.2 Open Market Operation

The open market operation in general has been used as a tool for generating public revenue rather than used as an instrument for monetary management. As the size of the public budget grew larger with the implementation of ambitious development projects by the Government, the resource gap (difference between actual revenue receipts and actual public expenditure) continued to widen, which was in most part financed by borrowing from the banking system. This monetization of the budget deficit injected additional liquidity into the economy, thereby adding pressure on prices and the balance of payments position. The magnitude of this monetization of the budget deficit is evidenced by the fact that between the fiscal years 1980/1981 and 1988/1989, it ranged between 5.6 per cent and 15.5 per cent of actual public expenditure (both regular and development) (Table 6.2). The public authorities, while aware of the pitfalls of excessive borrowing from the banking system could not generate required resources from the non-banking sector due to several reasons. They were: (i) lack of an active secondary market in government securities; (ii) low interest rates; (iii) low level of savings; (iv) limited number of participants; and finally, (v) lack of information system. Although there exists some potential for active central bank intervention in the money market to regulate the level of liquidity, this has not been possible due to the above-mentioned constraints.

In order to popularize the sale of government bonds and broaden the base for government securities, NRB has initiated several measures under the structural adjustment program. They include regular auctions of Treasury bills (first auction held at 25 November 1988) of both 91-day and 182-day maturity and development bonds (with a maturity period of three years, five years and seven years) within a time-bound schedule. As these auctions were held in the context of short-term monetary programming framework, interest rates on Treasury bills and development bonds were more market determined. The first auction of development bonds on 13 July 1989 established the coupon interest rate on three-year, five-year and seven-year development bonds at 10.0 per cent, 10.5 per cent and 11.0 per cent, respectively. The tax exemption status of these development bonds was withdrawn. The interest rate on short-term Treasury bills, which was exceptionally low at 5 per cent, reduced their attractiveness to the commercial banks and other borrowers with the result that the NRB became the purchaser of these bills, accounting

Table 6.2**MONETIZATION OF BUDGETARY DEFICIT**

(Rs. in Million)

Fiscal Year	Expenditure	Budgetary Deficit	Internal Loan	Banking System	Banking System as Percent of Internal Loan
1978/79	3020.5	609.4	200.0	-	-
1979/80	3470.7	785.1	180.0	-	-
1980/81	4092.3	804.2	250.0	-	-
1981/82	5361.3	1688.5	500.0	-	-
1982/83	6979.2	3047.5	1000.0	-	-
1983/84	7437.3	3151.4	1576.8	1076.8	14.5
1984/85	8394.8	3554.8	1799.9	1299.9	15.5
1985/86	9797.1	3979.7	1403.4	903.4	9.2
1986/87	11513.2	4253.0	1644.7	1116.3	9.7
1987/88	14105.1	4677.8	1130.0	790.6	5.6
1988/89	18004.9	8547.5	1330.0	1320.0	7.3

for 27 per cent of the total amount at the end of 1988/1989. The system of regular auctioning has pushed up the interest rate on Treasury bills up to 7.53 per cent. The introduction of these measures have helped the monetary authorities in expanding the market for government securities through a more flexible interest rate structure. Similarly, in order to augment the participation of non-bank financial institutions in the domestic debt management, NRB, during the fiscal year 1989/1990, introduced a new series of National Saving Certificates of Rs. 700.0 million, with a maturity period of three years, five years and seven years with an interest rate of 15.0 per cent 15.25 per cent and 15.50 per cent, respectively. As these interest rates were attractive in comparison to other similar instruments such as bank fixed deposits and enjoyed a high liquidity, they were fully subscribed. The earlier series on National Saving Certificates carried an interest rate of 13.0 per cent. These measures have to some extent helped the monetary authorities in their mopping-up operation of the liquidity of banks and other financial institutions. However, the open market policy operation of the Central Bank is not successful in effectively regulating the level of liquidity simply for the reason that banks have remained highly liquid owing to lack of attractive investment opportunities, even as they do not hold a stable cash ratio of deposits.

4.3 Selective Credit Control

4.3.1 Margin Requirements

Of the various from of selective credit control measures used by NRB, changes in importers margin requirement have been by and large the most important. On most occasions, margin requirements have been used in either regulating the flow of credit in non-priority areas or in maintaining the supply of primary or intermediate goods. During the period of analysis, commercial banks were first directed to apply a 40-per cent margin in cash on L/C against import of synthetic yarns and on loans against these items related documents effective mid-April 1981. However, this measure was applied only in cases of commercial import.

The efficacy of margin requirement as a selective control measure is limited due to the fact that it operates on the volume of credit rather than the availability or cost of credit. However, combined with other monetary control measures, the efficacy of this instrument has been

boosted at times. But, it is often painful to the public at large when margin requirements are set at an extremely high level.

4.3.2 Liquidity Ratio

The minimum liquidity clause which was rescinded on 12 February 1977, following trends of high liquidity and low demand for credit after the interest rate revision in April 1975, were redirected to maintain minimum liquid assets/deposit ratio at 25 per cent effective 16 July 1981. This requirement included 4-per cent cash in vault and 5-per cent statutory cash reserves with NRB. Prior to this, the statutory cash reserve with NRB was 7 per cent of their total deposit liabilities. This measure was initiated with an objective to correct monetary imbalance emanating from low liquidity and a high credit/deposit ratio with its possible adverse impact on prices and the balance on payments position. Similarly, bank credit capital fund ratio was fixed at 3:1.

During the fiscal year 1984/1985, when rapid expansion in domestic credit pushed up the money supply by 11.1 per cent, credit/deposit ratio went up to 80.5 per cent. To reduce such acceleration in credit/deposit ratio and contain monetary growth within a desirable limit for the rest of the year, NRB undertook several measures, including: (i) a credit deposit ratio of 75 per cent by mid-July 1985; (ii) margin rates (discussed in the preceding section); (iii) upward revision of minimum interest rate on import credit from 17.0 per cent to 19.0 per cent; and, (iv) over draft credit contained at mid-April 1985 level. Similarly, the 25 branches of ADB/N that were permitted to operate commercial banking functions in 1984/1985 were brought under the purview of minimum liquidity requirements. This measure helped the Central Bank in enforcing monetary discipline as these term-lending institutions were mobilizing private sector savings.

These liquidity requirements remained in force through 28 May 1986. Following the partial liberalization of interest rates of banks and the financial institutions on 29 May 1986 when only minimum interest rate on deposits and maximum rate on priority lending were fixed by the monetary authorities without any ceiling on maximum rates, the Bank abolished the provision of maintaining the minimum 25-per cent liquidity. However, the provision of keeping 4-per cent cash of total deposit liabilities in their own vault and 5 per cent of total deposit liabilities with NRB was retained intact. Failure to comply with cash

in vault requirement would result in a 5.5-per cent interest paid on the residual amount to NRB. Similarly, failure to maintain 5 per cent of total deposit liabilities with NRB was penalized with an 11-per cent interest on the shortfall amount. To mop up the excess liquidity in the economy, the Bank increased the cash reserve requirements of commercial banks from 9 per cent of deposit liabilities to 12 per cent effective as of September 1989. This measure was supplemented by a sizable open market sales of government securities out of NRB's ownership.

4.3.3 Reserve Requirements

In Nepal where the open market operations alone are not significant enough to influence the level of liquidity, reserve requirements have sometimes been used as a monetary instrument because it directly affects the lending capacity of the commercial banks. During the review period, the first directive on reserve requirement was issued on 16 March 1981, wherein commercial banks were directed to maintain a minimum 4-per cent cash reserve in their vaults and 5-per cent statutory cash reserves with NRB, including a total liquidity of 25 per cent of total deposit liabilities. This measure was initiated to restore the monetary imbalance which emerged on account of a very low liquidity and a high credit/deposit ratio of commercial banks. This restoration of monetary balance not only helped in easing the adverse impact on prices and the balance of payments but also helped in regulating growth in the nominal supply of money. This reserve requirement provision was left intact until April 1986. It was sometimes found that commercial banks did not comply with the directives. Effective September 1989, NRB directed the commercial banks to maintain 4-per cent cash in vault and 8-per cent statutory cash reserve with NRB. The initiation of this measure was part of the tight monetary policy adopted by NRB to help maintain the interest rate on bank deposits at sufficiently high level following the complete liberalization in the interest rate structure of banks and financial institutions effective 31 August 1989. This measure was also strengthened by redesigning the refinancing windows into: (i) basic; (ii) selective; and, (iii) lender of the last resort, whereby a basic refinance rate on 11 per cent on eligible government securities with a maturity period of 30 days or more (which was later extended up to 45 days for treasury bills) was fixed. The former practice of rediscounting government securities of longer-term maturities was completely discouraged.

Although this measure of monetary control is significant at influencing the lending capacity of commercial banks, frequent use of this instrument is not desirable as it will often be painful for the commercial banks to adjust their portfolio in the short span of time while significantly influencing the cost of funds as a significant amount will remain idle without any interest. The idea whether it will be prudent to provide some sort of compensation to the commercial banks on the amount deposited with NRB from the point of view of sound financial management is an issue for further consideration.

4.3.4 Quantitative Credit Ceiling

Quantitative credit ceiling, as the name implies, is a direct restriction on the volume of bank credit. This monetary measure, although painful, has been often used in regulating the level of liquidity in Nepal. During the period of analysis covered by this study, the first directive was issued on 26 May 1980, whereby the outstanding bank credit to the non-financial public enterprises and the private sector taken together on mid-July 1980 was limited to Rs. 2,366.2 million. The rationale provided for the implementation of this measure was to control the possible adverse impact of excessive credit allocation on price, foreign exchange, reserves and money supply. The actual credit expansion to these sectors, however, exceeded the ceiling by Rs. 251.9 million (10.6 per cent) at mid-July 1980. After this, the imposition of quantitative credit restriction was avoided to the possible extent and monetary management was practiced through the use of other monetary policy instruments. However, with the need to regulate excessive liquidity in the economy, ceilings for the expansion of domestic credit and its components were reimposed in January 1986, which were to be achieved by the end of the fiscal year. Accordingly, expansion of domestic credit by the banking system was limited to 15.5 per cent of which net bank credit to the government and public enterprises was fixed at 12.0 per cent each; and, to the private sector, at 26 per cent.

However, after the trade and transit points to India and exports to India came to a standstill as both countries resorted to most favored nations treatment, Nepal lost its comparative advantage because of its primary nature of exports. To facilitate the supply of essential goods and industrial raw materials including P.O.L. products and coal, the Government adopted a liberal licensing system to ease the supply situation, similarly margin rates were lowered on all essential items to

facilitate imports. Consequently, net bank credit to the Government and net domestic assets of the banking system increased beyond the ceiling. However, growth in credit to the non-financial public enterprises was restrained within the ceiling. The quantitative credit ceiling under the structural adjustment program has been motivated to regulate the supply of credit in line with real growth in output and projected inflation. Similarly, this measure has taken note of the factor that the private sector activities will not be crowded out by over-concentration of bank credit in the public sector.

4.3.5 Bank Rate

Providing refinance facilities by the monetary authorities on credit extended by the commercial banks, Agricultural Development Bank and Nepal Industrial Development Corporation on certain specific sectors has been used as an instrument of monetary management. However, the scope of this monetary tool is limited in the absence of an well organized market for eligible commercial securities. The use of this monetary management mechanism has been to some extent an encouraging factor to banks and financial institutions in the diversion of resources to these sectors as they can easily avail of the refinance facilities at interest rates significantly below their lending rates on the one hand, and remain liquid on the other. The eligible securities for refinancing which were limited to credit against export bills and loans for registered industrial establishments during the initial period were later extended to cover the entire agricultural sector, the services sector, government securities and industrial establishments particularly basic industries, import substituting industries, export promoting industries, agriculture-based and tourist promoting industries including credit for cooperatives. However, the refinance rates differ with the types of credit and the degree of priority accorded to them.

The imposition of these rates was to end the automatic refinancing enjoyed by commercial banks on government securities. As the commercial banks always enjoyed a high degree of liquidity, it became imperative to control such capacity of commercial banks in the context of prudent financial management. After the imposition of these rates, commercial bank borrowings from the Central Bank against government securities have significantly gone down. For short-term credit requirement, they have resorted to borrow from the interbank market which was established during the fiscal year 1989/1990.

Table 6.3a**REFINANCE RATES FOR COMMERCIAL BANKS**

(Percent Per Annum)

Purpose	Effective April 1977	Effective June 1982	Recent Rates
1. Industrial Loans	6-12	7-15	11
2. Agricultural Loans	4-10	6-11	11
3. Services Loans	12	11	11
4. Export Bills	11	12-13	11
5. HMG Development Bonds	14	1.5% more than the specified rates for respected bonds	12.5

Table 6.3b**REFINANCE RATES FOR AGRICULTURAL DEVELOPMENT BANKS**

(Percent Per Annum)

Purpose	Effective April 1977	Effective June 1982	Recent Rates
1. For Cooperative Societies & Sajha Institutions	2-6	7	11
2. For Individual & Other Institutions	2-10	6-11	11
3. Services Sector	-	11	11
4. Overdue Loans	2% more than the specified re- finance rates	2.5 % more than the specified re- finance rates	11

4.4 Moral Suasion

NRB has at times morally persuaded the commercial banks on the desirability of certain courses of action. They include branch expansion in the semi-urban and rural areas, including lending in the priority sector. The branch expansion activities were promoted since the late 1960s and commercial banks not only received interest free loans but were also compensated for the operating losses for a number of years. This measure had a positive impact in extending bank branches and the numbers increased from 231 in 1979 to 441 bank branches in 1990 (up to mid-April). However, this policy had impact on the profitability of commercial banks due to geographical remoteness, small scale of operation and significant overhead expenditure of bank branches.

Even after the liberalization of interest rate structure, NRB has applied moral suasion to the commercial banks not to increase the interest rate on priority sector lending above 15 per cent. This moral suasion, although simple to administer, has met limited success in the diversion of bank lending in the priority sector mainly due to regulated interest rate structure. Similarly, the cost of funds, especially for the two large public sector commercial banks is significantly higher to prevent desired financing in these sectors.

V. Effectiveness of Monetary Policy and Impact of Financial Reforms

5.1 Demand for Money and Stability

In estimating the demand for money equation, the following functional form was used:

$$\ln m_t = \lambda b_0 + \lambda b_1 \ln y_t + \lambda b_2 \pi_t + (1-\lambda) \ln m_{t-1}$$

The equation specifies the demand for real money as a function of real income, the expected rate of inflation and lagged real money demand.

The data series on M1 and M2 are seasonally adjusted. Real income is represented by real GDP (at 1974/1975 prices). Quarterly real GDP data are interpolated from the annual series by assuming constant

growth rate of the real GDP during each quarter of the year. Expected rate of inflation is represented by the current rate of inflation.

The result of the equation for M1 definition appears as follows:

$$\ln m_{1t} = -1.01 + .256 \ln y_t - .001 \pi_t + .806 \ln m_{1t-1}$$

(-2.3)* (2.2)* (-1.5) (8.4)*

$$R^2 = 0.98, \quad F = 741.7, \quad DW = 1.88$$

Sample period: 1979.1 - 1989.4

(Figures in the parentheses are respective t-values. * and ** indicate significance at 5-per cent and 10-per cent levels, respectively.)

From the result, it can be observed that all the coefficients have the expected signs. However, the coefficients on real income and lagged real money stock are statistically significant only at the 5-per cent level. The coefficient on expected rate of inflation is not statistically significant at the 5-per cent level.

The results of the estimated equation for M2 definition are as follows:

$$\ln m_{2t} = -1.02 + .192 \ln y_t - .002 \pi_t + .898 \ln m_{2t-1}$$

(-1.71)** (1.61)* (-2.45) (12.7)*

$$R^2 = .99, \quad F = 2808.5, \quad DW = 2.16$$

Sample period: 1979.1 - 1989.4

From the result, it can be observed that the coefficient on current level of real income is not statistically significant. But the coefficients on the expected rate of inflation and lagged dependent variable are statistically significant at the 5-per cent level.

5.2 Impact of Money on Prices

To measure the impact of money on prices, the rate of change in CPI (P^0) was taken as the dependent variable and rate of change in money supply (M_0), current as well as lagged, as independent variables for both narrow and broad definitions of money. The estimated equa-

tion for seasonally adjusted M1 as explanatory variable is presented below:

$$P^0 = 1.67 + .233 M1^0$$

(1.56) (1.01)

$$R^2 = .001, \quad F = 1.02, \quad DW = 2.03$$

Sample period: 1979.1 - 1989.4

The result shows that the coefficient of $M1^0$ is not statistically significant although it has the positive sign as expected. The explanatory power of the model is very poor as reflected by the value of adjusted R^2 . To measure the lagged effect of money on prices, the regression was ran but the results in this case were also not statistically significant.

Regarding the relationship between broad money and prices, the results appear as follows:

$$P^0 = .435 + .476 M2^0$$

(.23) (1.24)

$$R^2 = .01, \quad F = 1.52, \quad DW = 2.08$$

Sample period: 1979.1 - 1989.4

From the results, we observe that broad money also has no significant effect on prices as the coefficient of $M2$ is insignificant at the 5-per cent level and R^2 is also very low. For the lagged effect of broad money on prices, the regression results also could not be found as statistically significant.

There may be two reasons why price is not affected by monetary changes in quarterly analysis. First, the quarter to quarter relationship between money and prices could not be observed because money may exert its impact on prices only in the long run. Second, as in most of the open economies, domestic prices might have been mostly affected by international prices and the exchange rate movements.

5.3 Calculation of Multiplier

The narrow and broad money multipliers were calculated on the basis of these formulations:

$$\begin{aligned}(1) \quad K_1 &= (1+cd)/(rd+cd) \\ (2) \quad K_2 &= (1+cd+rd)/(rd+cd)\end{aligned}$$

Where cd is the currency demand/deposit ratio, rd is reserve/demand deposit ratio, and td is time deposit/demand deposit ratio. Table 6.4 presents the results of calculating the narrow money and the broad money multipliers from 1979:IQ through 1989:IVQ using equations 1 and 2.

An analysis of time series data for movement in narrow money multiplier shows in the first place that it varies from quarter to quarter. Secondly, the size of the multiplier seems to be on a gradually declining trend during the review period. Thirdly, the unstable nature of the multiplier suggests that narrow money aggregate cannot be regulated by only regulating the high powered money.

The broad money multiplier also shows an unstable pattern in the first place. The value of the multiplier, however, seems to be on the rise reflecting the increased role of financial intermediation. Factors that influence the changes in broad money multiplier are banking system regulations and the asset preferences of the holding public.

From the expression of the money multiplier, factors that influence the value of the multiplier are currency/demand deposit ratio (cd) and the reserve; demand deposit ratio (rd). By observing the trend in cd and rd , there appears to be very little scope in influencing k , by manipulating these ratios. In our case, the public preference for holding currency relative to demand deposits is significantly higher. In some cases, it is even more than twice the volume of demand deposits. This in turn reflects a low level of banking habit among the people. It is expected that cd will follow a downward trend with the development of banking habit and the use of negotiable instruments such as bank cheques and credit card, etc. It is expected that growth in real income would also induce a decline in cd . There is very little scope for influencing cd through policy measures controlling the money supply.

Another component of the money multiplier, rd , is relatively higher than represented in the Table 6.4 because reserve requirement refers to the total of demand and time deposits. The reserve requirement of commercial banks which was 7 per cent of total deposit liabilities before July 1981, was raised to 9 per cent afterwards (4-per cent cash reserves in the vault and 5-per cent statutory cash reserves with NRB). It remained effective till 24 September 1989, when it was revised upward to 12 per cent of total deposit liabilities (4-per cent cash in vault and 8-per cent statutory cash reserve). However, in reality commercial banks mostly have been holding excess reserves and seem to be in a highly liquid position. Keeping in view the bank tendency to hold excess reserves, changes in reserve requirements may not be effective in regulating the money stock.

5.4 Impact of Monetary Policy on Overall Economic Objectives

In measuring the overall impact of monetary policy on macroeconomic objectives, we have proceeded through a step-by-step approach wherein movement in monetary aggregates are evaluated in the context of various specified objectives.

The first and foremost objective of monetary policy was regulation in the level of liquidity consistent with the price and balance of payments objective. The sixth plan target for monetary expansion, which was set at 12 per cent, increased at an annual average rate of 14.2 per cent. This expansion in monetary liquidity was mainly due to large-scale monetization of budgetary deficit particularly since the third year of the plan (1982/1983). The seventh five-year plan stipulated a growth rate in money supply during the first four years of the plan period which was 21.2 per cent significantly higher than the stipulated growth rate. Similarly, the objective of regulating expansion in domestic credit at 16 per cent could not be achieved when it actually went up by 20.8 per cent during the first four years of the plan period. This was mainly due to large-scale borrowing by the Government from the banking system particularly during the fiscal year 1988/1989 following trade and transit stalemate with India, with its immediate impact on public revenue without any corresponding decrease on the expenditure side. One more reason for monetary expansion has been significant increase in foreign assets of the banking system particularly after the implementation of structural adjustment loan, without any mechanism to sterilize the adverse impact.

Table 6.4
COMPUTATION OF MULTIPLIER FOR NARROW AND BROAD MONETARY AGGREGATES

Year/Month	Reserve Money (1)	Currency (2)	Demand Deposits (3)	Time Deposits (4)	Reserve (1-2)	Current- cy/DD Ratio	Reserve/ DD Ratio	TD/ DD Ratio	Multi- plier K1	Multi- plier K2	Total Deposit	Reserve/ TD Ratio
1979 Mar.	1897.6	1551.5	830.0	1894.7	346.1	1.8693	0.4170	2.2828	1.2550	2.2535	2724.7	0.1270
Jun.	2138.9	1633.6	858.2	1973.8	505.3	1.9035	0.5888	2.2999	1.1650	2.0878	2832.0	0.1784
Sep.	2105.1	1576.6	853.3	2089.2	528.5	1.8477	0.6194	2.4484	1.1543	2.1467	2942.5	0.1796
Dec.	2156.1	1627.1	907.3	2177.9	529.0	1.7933	0.5830	2.4004	1.1755	2.1856	3085.2	0.1715
1980 Mar.	2447.7	1870.2	969.7	2268.3	577.5	1.9286	0.5955	2.3392	1.1602	2.0869	3238.0	0.1784
Jun.	2533.9	1900.2	1060.9	2396.6	633.7	1.7911	0.5973	2.2590	1.1686	2.1144	3457.5	0.1833
Sep.	2399.2	1700.8	1049.7	2558.7	698.4	1.6203	0.6653	2.4376	1.1464	2.2129	3608.4	0.1935
Dec.	2379.0	1814.1	1050.3	2661.4	564.9	1.7272	0.5378	2.5339	1.2040	2.3227	3711.7	0.1522
1981 Mar.	2528.2	2093.1	1131.9	2781.8	435.1	1.8492	0.3844	2.4576	1.2756	2.3759	3913.7	0.1112
Jun.	2676.7	2148.0	1149.1	3009.5	528.7	1.8693	0.4601	2.6190	1.2318	2.3561	4158.6	0.1271
Sep.	2555.1	1964.4	1032.9	3220.5	590.7	1.9018	0.5719	3.1178	1.1731	2.4335	4253.4	0.1389
Dec.	2722.2	2146.6	1058.1	3375.2	575.6	2.0287	0.5440	3.1899	1.1772	2.4171	4433.3	0.1298
1982 Mar.	3048.2	2397.1	1135.9	3517.5	651.1	2.1103	0.5732	3.0967	1.1590	2.3130	4653.4	0.1399
Jun.	3323.1	2420.0	1172.0	3788.3	903.1	2.0648	0.7706	3.2323	1.0809	2.2209	4960.3	0.1825
Sep.	3413.5	2250.3	1236.7	4090.9	1163.2	1.8196	0.9406	3.3079	1.0215	2.2200	5327.6	0.2183
Dec.	3393.5	2407.6	1288.3	4274.5	985.9	1.8688	0.7653	3.3179	1.0891	2.3487	5562.8	0.1772
1983 Mar.	3658.4	2642.9	1445.0	4386.1	1015.5	1.8290	0.7028	3.0354	1.1174	2.3163	5831.1	0.1742
Jun.	4028.8	2729.6	1427.3	4774.5	1299.2	1.9124	0.9103	3.3451	1.0318	2.2169	6201.8	0.2095
Sep.	3822.7	2508.8	1386.6	5103.6	1013.9	1.8093	0.7312	3.6807	1.1058	2.5546	6490.2	0.1562
Dec.	3927.3	2782.9	1583.0	5228.4	1144.4	1.7530	0.7229	3.3028	1.1117	2.4430	6811.4	0.1680
1984 Mar.	4443.2	3201.2	1607.8	5257.4	1242.0	1.9910	0.7725	3.2699	1.0823	2.2656	6865.2	0.1809
Jun.	4448.6	3282.2	1685.8	5430.2	1166.4	1.9470	0.6919	3.2211	1.1168	2.3374	7116.0	0.1659
Sep.	4206.7	3110.7	1636.0	5631.7	1096.0	1.9014	0.6699	3.4424	1.1284	2.4671	7267.7	0.1508
Dec.	4555.8	3301.7	1640.7	5898.8	1254.1	2.0124	0.7644	3.5953	1.0849	2.3796	7539.5	0.1663

Table 6.4 (cont'd)
COMPUTATION OF MULTIPLIER FOR NARROW AND BROAD MONETARY AGGREGATES

Year/Month	Reserve Money (1)	Currency (2)	Demand Deposits (3)	Time Deposits (4)	Reserve (1-2)	Cur- cy/DD Ratio	Reserve/ DD Ratio	TD/ DD Ratio	Multi- plier K1	Multi- plier K2	Total Deposit	Reserve/ TD Ratio
1985 Mar.	4966.4	3783.0	1636.5	6230.9	1183.4	2.3116	0.7231	3.8075	1.0912	2.3458	7867.4	0.1504
Jun.	5147.3	3785.8	1815.2	6814.8	1361.5	2.0856	0.7501	3.7543	1.0881	2.4121	8630.0	0.1578
Sep.	4635.0	3429.6	1667.4	6998.1	1205.4	2.0569	0.7229	4.1970	1.0997	2.6095	8665.5	0.1391
Dec.	5151.9	3796.7	1819.2	7398.2	1355.2	2.0870	0.7449	4.0667	1.0901	2.5261	9217.4	0.1470
1986 Mar.	6131.6	4686.5	1884.8	7718.0	1445.1	2.4865	0.7667	4.0949	1.0717	2.3304	9602.8	0.1505
Jun.	6475.7	4920.6	2100.1	8152.5	1555.1	2.3430	0.7405	3.8820	1.0842	2.3431	10252.6	0.1517
Sep.	5992.6	4421.6	1938.1	8294.0	1571.0	2.2814	0.8106	4.2794	1.0613	2.4453	10232.1	0.1535
Dec.	6548.8	4787.1	2164.4	8591.9	1761.7	2.2117	0.8136	3.9696	1.0615	2.3735	10756.3	0.1638
1987 Mar.	6911.3	5448.9	2249.5	8714.1	1462.4	2.4223	0.6501	3.8738	1.1139	2.3747	10963.6	0.1334
Jun.	7248.6	5683.5	2363.9	9319.6	1565.1	2.4043	0.6621	3.9425	1.1102	2.3959	11683.5	0.1340
Sep.	7174.7	5430.3	2541.7	9793.9	1744.4	2.1365	0.6863	3.8533	1.1111	2.4762	12335.6	0.1414
Dec.	7745.0	5826.5	2855.0	10342.6	1918.5	2.0408	0.6720	3.6226	1.1209	2.4563	13197.6	0.1454
1988 Mar.	8682.3	6429.3	2911.2	10706.1	2253.0	2.2085	0.7739	3.6776	1.0758	2.3089	13617.3	0.1655
Jun.	8709.7	6478.5	3160.5	11668.6	2231.2	2.0498	0.7060	3.6920	1.1067	2.4464	14829.1	0.1505
Sep.	8447.5	5866.2	3176.2	12450.8	2581.3	1.8469	0.8127	3.9200	1.0704	2.5443	15627.0	0.1652
Dec.	8916.9	6670.7	3155.1	13393.5	2246.2	2.1143	0.7119	4.2450	1.1019	2.6040	16548.6	0.1357
1989 Mar.	9932.2	7404.6	3291.2	14075.5	2527.6	2.2498	0.7680	4.2767	1.0769	2.4940	17366.7	0.1455
Jun.	10920.6	7954.8	3743.3	14635.1	2965.8	2.1251	0.7923	3.9097	1.0712	2.4113	18378.4	0.1614
Sep.	10444.2	7216.9	3854.9	15755.5	3227.3	1.8721	0.8372	4.0871	1.0601	2.5686	19610.4	0.1646
Dec.	10916.7	7737.2	4002.6	16440.9	3179.5	1.9330	0.7944	4.1076	1.0754	2.5814	20443.5	0.1555

As the commercial bank activities have concentrated in the traditional sector, the effort to diversify commercial banks portfolio towards the priority and productive sectors of the economy met a limited success. The reasons are: (i) higher cost of capital particularly due to regular or site supervision requirement; (ii) high loan delinquency rate due to socio-political factors; (iii) lack of expertise and personnel in properly analyzing and evaluating project proposal; and, (iv) relative inefficiency in identifying potential sector for lending. The banks investment in the priority sector which was 6.9 per cent of total deposits in mid-July 1979 dropped to 4.9 per cent in mid-July 1988. This was far below the required minimum lending of 10 per cent of total loans and advances. The productive sector lending, however, accounted for 24.2 per cent of total loans and advances, slightly lower than the minimum requirement of 25 per cent as prescribed by NRB at mid-July 1988.

Mobilization of domestic resources is yet another important objective for which NRB has provided due attention. For this the bank has not only pursued an aggressive branches expansion policy but also monitored the level of interest rates and made changes as and when necessary. The number of commercial bank branches which were 231 by the end of 1979 (mid-July) increased up to 436 by mid-July 1989. Similarly, the size of commercial bank deposits which was Rs. 2,812.2 million in mid-July 1979 (excluding the importers margin deposit), gradually increased to Rs. 18,290.5 million in mid-July 1989. The partial liberalization of interest rate in 1986 and complete liberation in 1989 are measures taken by the Central Bank by allowing the market forces to determine the amount and cost of deposit.

Growing monetization of the budgetary deficit has been a source of monetary expansion. Similarly, the public authorities are also extensively using the overdraft facilities provided by the Central Bank. Consequently, the banking system's net claims on Government has increased significantly with its adverse impact on overall economy including the monetary sector. The objective of reducing budgetary deficit in the first hand and borrowing from the non-banking sector to meet this deficit as far as feasible has not produced any tangible outcome. The relative contribution of public sector in total money supply outstanding has grown from 45.1 per cent in 1979 (mid-July) to a peak of 118.5 per cent in 1985 (mid-July) and gradually declining to 104.8 per cent in 1989 (mid-July). This significant increase in the public sector

has been due to expansionary fiscal policy adopted by the Government since 1983 (mid-July).

With regard to the objective of improving the financial sector, NRB has initiated several measures. The establishment of three joint-venture banks has paved the way for the creation of a competitive environment in the banking system. The commercial bank Problem Analysis and Strategy Study (CBPASS), which has been initiated to improve the entire operation of two target public sector banks, NBL and RBB, is a significant milestone towards these ends. Similarly, the establishment of a call money market has facilitated the inter-bank borrowing between banks themselves and between bank and financial institution. The prudential requirements which have been imposed on commercial banks including the introduction of a new reporting requirement will not only improve the solvency and profitability of banks but will also introduce some sort of transparency in their financial transactions. The recently enacted law has empowered NRB with more legal authority for commercial banks to comply with the directives provided by it. Similarly, now the Central Bank can impose strict penalty in case of non-compliance of its directives. Other financial sector reform measures such as public repayment of loans on account of government guarantee, regular auctioning of public securities at a market determined interest rate, the establishment of a credit information bureau, redesigning of refinance facility and introduction of short term monetary programming have introduced greater element of flexibility through indirect means of control, introduction of fiscal discipline and has enhanced the role of Central Bank in effective monetary management.

Regarding the financing of public sector enterprises, the banking system is still playing a lead role. In line with the objectives of generating resources from the private sector, the term-lending institutions namely Agricultural Development Bank and Nepal Industrial Development Corporation floated debentures. However, these were not enough participants and eventually NRB had to buy them. The novel objective of mobilizing resources from the private sector came into existence when NRB permitted ADB/N to receive private sector deposit. The permission for a term-lending institution to receive deposit was significant measures as this has largely reduced the dependence of ADB/N on NRB funds for its activities. For example, the total private sector deposits with ADB/N by mid-July, 1989 was Rs. 1092.1 million.

5.5 Interaction Between Monetary and Exchange Rate Policies

In the Nepalese economy, the objective of monetary policy has been spelled out -- among other things, controlled growth in the supply of money consistent with price and balance of payments objectives. Consistent within this policy framework monetary and credit controls such as (i) credit ceiling, (ii) margin rate, (iii) interest rate, and (iv) refinancing, etc., have influenced the movements in foreign exchange by regulating the level of liquidity. While credit ceiling is a direct control on the volume of rate of credit expansion, changes in importers margin requirement restrains pressure on the foreign exchange reserves by manipulating credit availability for particular imports. Similarly, changes in interest rate have influenced the volume of exports or imports through changes in foreign exchange demand. The refinancing windows have also been used to influence the credit demand and thereby, reduce pressure on the foreign exchange market.

The monetary authorities have never spelled out the exchange rate policy. However, it has been agreed in principle as a potent tool of attracting investment (domestic plus foreign) in creating a sustainable and responsive export sector. The role of exchange rate policy as an instrument for diversifying trade has also been established. In line with these objectives, the first exchange rate reform, during the period covered by this study, was made in February 1980 wherein the dual currency system, the dual exchange rate system against the U.S. dollar was introduced in March 1978. According to this system, two exchange rates were quoted for the U.S. dollar, namely (i) the basic exchange rate, and (ii) the second rate. The basic rate was quoted at Rs. 12 per U.S. dollar and applied for international debt settlements and for the imports of essential and development goods.

From 1 June 1983, the exchange rate of the Nepalese rupee was pegged with the Indian rupee and the exchange rates. Other convertible currencies were quoted daily with the U.S. dollar as the intervention currency. Even while pegging the Nepalese rupee to the Indian rupee, the monetary authorities used the exchange rates prevailing since 1977 irrespective of a sharp decline in the real effective exchange rate of the Nepalese rupee. The exchange rate of the Nepalese rupee vis-a-vis the Indian rupee was held constant -- Rs. 1.45 without any structural improvement in the Nepalese economy vis-a-vis the Indian economy while the exchange rate of the Nepalese rupee with the U.S. dollar

depreciated by around 54.9 per cent. The persistent rise in the balance of payments deficit owing to widening trade and current account balance, including a slow inflow under official capital, net and growing monetary liquidity in the economy due to a significant amount of domestic credit flow in the public sector, put a severe strain on the foreign exchange reserves of the banking system. The level of foreign exchange at mid-July 1985, could hardly cover two- to three-month imports of goods and services which was very low even by the international norm of maintaining reserves for about six months import of goods and services. In anticipation of a sharp devaluation of the Nepalese rupee, vis-a-vis the Indian rupee, the Indian rupee was much in demand. Under these circumstances, the monetary authorities with a view to fixing realistic exchange rate of the Nepalese rupee in order to maintain the report competitiveness of domestic product and encourage import substituting industries, devalued the rupee by 17 per cent vis-a-vis the Indian rupee and by 14.7 per cent against the convertible currencies effective 30 November 1985. The immediate impact of this measure was an improvement in the balance of payments as the exchange rates became more realistic and the amount of foreign exchange, particularly Indian currency which were held for speculative purposes, came into the banking system.

When the concept of financial sector liberalization came into existence, the concept of exchange rate reform gained momentum. As it was not prudent to peg the Nepalese rupee to a single currency and devalue time and again to minimize the effect of short-run fluctuations emanating from changes in real effective exchange rates, the need for a more flexible system became eminent. Consequently, since June 1986, the Nepalese rupee has been pegged to a trade weighted basket of currencies of its major trading partners. A constant monitoring of real effective exchange rate based on this currency basket system has provided a built-in flexibility in the exchange rate system. So far, this exchange rate reform has proven successful in restoring the foreign exchange balance in the monetary system. This devaluation has become a necessity in the context of an open border with India and unlimited convertibility of Nepalese rupee viz-a-viz the Indian rupee as administrative and fiscal measures were not enough to regulate the volume of imports.

Table 6.5**ANNUAL AVERAGE OF EXCHANGE RATE**
(U.S. Dollar)

1980/81	1981/82	1982/83	1983/84	1984/85	1985/86	1986/87	1987/88	1988/89
11.90	11.30	13.10	14.40	16.70	17/30	21.10	22.00	23.70
11.90	11.90	13.10	14.80	17.00	18.00	21.30	21/80	24.00
11.90	13.10	13.10	14.80	17.40	17/50	21.30	21.90	24.50
11.90	11.90	13.10	14.80	17.30	17.70	21.90	21.90	24.70
11.90	13.10	13.10	14.80	17.70	20.80	21.90	21.90	25.90
11.90	13.10	14.20	15.65	18.20	20.60	21.90	21.90	25.10
11.90	13.90	14.20	15.65	18.50	18.50	21.20	21.90	25.10
11.90	13.10	14.20	15.65	18.90	20.80	1.90	21.70	25.60
11.90	13.10	14.20	15.65	18.30	21.20	21.60	22.00	26.20
11.90	13.10	14.20	16.00	18.30	20.90	21.00	22.10	26.80
11.90	13.10	14.40	16.00	18.10	21.05	21.50	22.60	27.60
11.90	13.10	14.40	16.30	17.60	81.10	21.80	23.50	27.40
11.90	12.90	13.77	15.40	17.83	19.84	21.57	22.10	25.52

Table 6.6

FACTORS AFFECTING MONEY SUPPLY
(Mid-July)

	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
1. Foreign Assets, net	2288.0	2231.9	2414.5	3097.4	2611.4	2539.8	1897.6	2600.0	3059.9	5573.6	6203.5
a. Foreign Assets	2805.6	2806.0	3134.9	3911.2	3251.7	3213.6	2600.2	3743.3	4477.2	7395.4	8691.0
b. Foreign Liabilities	517.6	574.1	720.4	813.8	640.3	673.8	702.6	1143.3	1417.3	1821.8	2487.5
2. Domestic Credit	3540.8	4305.8	5161.4	6041.1	8490.9	9824.5	12550.9	15322.9	17803.1	20469.3	26584.3
a. Net Claims on Govt.	1129.3	1258.3	1262.7	2061.5	4089.6	5028.7	6492.1	7495.7	8712.3	9259.0	12345.1
Claims on Govt.	1313.1	1421.3	1334.3	2061.5	4089.6	5028.7	6492.1	7495.7	8712.3	9259.0	12345.1
Govt. Deposits	183.8	163.0	71.6	-	-	-	-	-	-	-	-
b. Claims on Govt.	1079.9	1131.0	1400.6	1343.4	1702.2	1621.8	2022.2	2659.3	2811.1	2901.6	2998.2
Enterprises	401.9	429.4	454.2	503.6	565.3	668.4	855.8	933.7	955.1	935.4	830.3
Financial	678.0	701.6	946.4	839.9	1136.9	953.4	1163.4	1725.6	1856.0	1966.2	2167.9
Non-Financial	1331.6	1916.5	2498.1	2636.2	2699.1	3174.0	4036.6	5167.9	6279.7	8308.7	11241.0
c. Claims on Private Sector	2006.5	2454.9	3099.9	3846.5	4873.5	5523.7	6816.6	8129.7	9378.0	11826.0	14829.7
3. Time Deposits (-Increase)	1317.4	1252.4	1268.2	1682.5	1879.9	1909.1	1251.9	2763.9	3364.8	4620.3	6182.7
4. Capital and Other Items, Net (-Increase)	2504.9	2830.4	3207.8	3611.5	4348.9	4931.5	5480.0	7029.3	8120.2	9596.6	11775.4
5. Money Supply	1651.2	1799.3	2065.7	2436.7	2752.0	3273.4	3737.3	4842.9	5683.5	6374.6	7946.6
a. Currency	889.7	1031.1	1142.1	1174.8	1596.9	1658.1	1742.7	2186.4	2436.7	3160.5	3828.8
b. Demand Deposits											

Table 6.7a

**COMPARATIVE INTEREST RATES ON DEPOSITS
BETWEEN NEPAL AND INDIA**
(Percent Per Annum)

	Nepal	India
Current	0	0
Saving	8.5-9.5	5.6-5.5
Fixed:		
45 days	0	3.0-4.0
3 months	8.5	4.0-6.0
6 months	8.75-9.00	8.0-8.5
1 year	11.5-12.00	8.0-9.5
Above 1 year	12.5-13.00	10.0-10.5

Table 6.7b

**COMPARATIVE INTEREST RATES ON DEPOSITS
BETWEEN NEPAL AND INDIA**
(Percent Per Annum)

	Nepal	India
1. Industrial Loans	16.0-18.0	12.5-16.5
2. Agricultural Loans	16.0	10.0-15.5
3. Export Bills	15.0-16.0	15.0-16.5
4. Fixed Deposit Receipts	2% more than the specified rates	2% more than the specified rates
5. Government Bonds	2% more than the specified rates	16.5

Table 6.8a**NATIONAL URBAN CONSUMER PRICE INDEX**

(Base Year: 1972/73 = 100)

Year	Food	Non-Food	Overall
1978/79	158.8	167.8	161.8
1979/80	176.2	180.7	177.6
1980/81	199.9	204.8	201.4
1981/82	221.9	224.0	222.4
1982/83	257.4	247.7	254.0
1983/84	270.9	268.7	269.8
1984/85	274.5	295.3	288.9
1985/86	325.4	327.1	325.5
1986/87	374.8	358.1	368.7
1987/88	420.1	390.5	409.3
1988/89p/	444.9	440.6	442.4

p/ = Provisional

Table 6.8b**INDIAN WHOLESALE PRICE INDEX**

(Base Year: 1970/71 = 100)

1978/79	185.8
1979/80	217.3
1980/81	256.9
1981/82	280.4
1982/83	288.1
1983/84	315.3
1984/85	338.0
1985/86	357.5
1986/87	376.8
1987/88	405.4
1988/89p/	434.5

5.6 Constraints on Monetary Policy

The successful implementation of monetary policy demands, among other things, a close coordination between fiscal and monetary measures. An expansionary fiscal policy, if not in line with the monetary policy objective of regulating the level of liquidity, will be counterproductive in a target-oriented approach to monetary management. In Nepal, long-term monetary targets are generally spelled out in the plan document. In the sixth and seventh plan periods, the targets for monetary expansion were fixed at 12.0 per cent and 13.0 per cent, respectively. Similarly, the rate of domestic credit expansion, in line with monetary objectives, were targeted to increase by 16.0 per cent during the seventh plan. However, the fiscal policy has been generally expansionary as evident in the fact that during fiscal years 1979/1988-1988/1989 while public revenue as a percentage of gross domestic product ranged between 8.1 per cent and 10.6 per cent, public expenditure as a percentage of gross domestic product rose from 13.6 per cent in fiscal year 1978/1979 to 23.3 per cent in fiscal year 1988/1989. This led to large increases in the budgetary deficit mostly financed by borrowing from the banking system. The share of the public sector (government and state-owned or controlled non-financial public enterprises), which was 51.04 per cent of outstanding total domestic credit in mid-July 1970, increased to 61.5 per cent and gradually declining to 54.6 per cent by mid-July 1989. The relative contribution of changes in the public sector credit as percentage of money supply growth went up from 46.9 per cent in mid-July 1980 to 315.3 per cent in mid-July 1983.

Institutional development also has an effective role in the implementation of target-oriented monetary policy. In the Nepalese economy, the money market is highly fragmented with the lending rates in the organized priority sector – ranging from 15 per cent on an average to 36.5 per cent for the commercial loans in the unorganized private sector operating side by side. The concern in most cases is not the cost of credit but rather its availability on demand. Financial intermediation by the existing banking institutions is very small, thereby reducing the efficacy of monetary policy. Banking system savings as percentage of GDP, which was 9.0 per cent in mid-July 1979, has gradually risen to 19.2 per cent by mid-July 1989, reflecting the need for additional financial intermediation. This low level of financial intermediation on the one hand and concentration of bank branches mostly in urban areas have severely restrained the scope for monetary policy.

The efficacy of monetary policy is also constrained by the movement of foreign exchange reserves. Given the limited earnings from exports, mainly primary commodities and a few industrial commodities such as garments and carpets which are simply value-adding industries, the export sector is structurally weak and vulnerable to exogenous shocks. Movements in international reserves have thus been regarded as exogenous -- largely influenced by developments in the real sector and the amount of grants and loans available from bilateral and multilateral agencies including the World Bank, Asian Development Bank and UNDP. This unpredictable movement in foreign exchange reserves have severely restrained the liquidity management operation of the Central Bank.

The openness of the Nepalese economy to the Indian economy has further constrained the scope for monetary policy. Nepal has almost 1,000 kilometer long open border with India. It is unique in the sense that there is no restriction in the free movement of goods and services including personnel. India is the closest trading partner of Nepal and supplies most of its essential requirements including industrial raw materials, development goods and consumer items. Available data on the direction of foreign trade show that between the fiscal years 1978/1979 and 1989/1990 exports to India averaged 51.9 per cent of total exports while imports from India accounted for an average of 43.6 per cent of total imports. Any change in the Indian price level, be it of agricultural origin or of industrial origin, has a direct bearing on the Nepalese price level. Because of an open border, the price policy is not independent of Indian influences whenever any essential items of production such as chemical fertilizers, sugar and petroleum products are being sold at a cheaper price than what prevails in the Indian market.

VI. Summary and Conclusions

The objective of monetary policy which was initially focused on the elimination of the dual currency system and monetization of the non-monetized sector has gradually shifted towards mobilizing the financial savings into the banking system and diversion of credit flow towards more priority and productive sectors of the economy. While the savings investment gap is still large and commercial banks are reluctant to divert their resources in non-traditional area due to various constraints, the monetary strategy has moved a step further in regulat-

ing the level of liquidity in the economy consistent with the price and balance of payments objectives. These measures have been further consolidated through a prudent credit policy and a flexible exchange rate policy based on trade weighted basket of currencies. During the 1980s, particularly after the implementation of the Structural Adjustment Program, monetary policy objectives have become more target oriented. However, the openness of the economy has posed serious problems in regulating the price and balance of payments objectives. Monetary management in the context of changed economic circumstances has not only opened new vistas of financial development including strengthening of the existing financial institutions but have helped in new financial innovations. Over the years, the monetary policy approach which was more direct in influencing the volume and cost of credit has become gradually indirect allowing the market forces for efficient allocation of resources.

In measuring the effectiveness of monetary policy and impact of financial reforms, the demand for real money balance as a function of real income, the expected rate of inflation and lagged money supply for both M1 and M2 have been used. While doing so, the relative contribution of each variable in explaining the variance including the level of confidence and predictability have been explained. In assessing the impact of money on prices, the price level as the dependent variable and the nominal money stock including lagged values as the independent variable with the correction of serial correlation have been used. The results of the equation are that since they do not entirely correspond to monetary theory. This underlies the need for a more comprehensive monetary equation to suit the particular situation of the country. Similarly, in assessing the impact of monetary policy on movement of multiplier, their movements have not only been explained, but the factors and the relative weakness of monetary measures in influencing the movement in multiplier have also been pointed out.

In assessing the relative effectiveness of direct and indirect methods of monetary control, an explanation on direct method including the constraints on the success of such mechanism has been provided. The constraints include: (i) the extensive use of central bank overdraft facilities by the Government and monetization of fiscal deficit; (ii) the expansionary public sector; and, (iii) the lack of mechanism to sterilize the impact of foreign exchange flows in the economy.

The constraints on monetary policy include: (i) expansionary fiscal policy of the Government; (ii) fragmented money market; (iii) low level of financial intermediation; (iv) low level of foreign exchange reserve; (v) openness of the economy; (vi) unlimited convertibility of Indian currency; (vii) interest rate constraint; (viii) absence of an effective and operational capital market; (ix) existence of non-monetized sector; (x) poor banking habit of the people; and, (xi) limited number of financial assets.

In outlining the problems of monetary control emanating from financial reforms, it has been pointed out how a partially regulated interest rate structure discouraged the initiative of commercial banks in the mobilization of resources when lending was subject to credit ceiling. This not only acted as a deterrent for further savings mobilization efforts but also hindered the efficient allocation of resources. The move towards indirect control came into existence only from 1989 when interest rates were completely liberalized along with other financial sector reform measures. This system has the advantage of mobilizing more financial savings without any quantitative restriction on the uses of funds. The indirect methods of monetary control, which largely relies on OMO to pump in and pump out liquidity in the system, have limited practical value due to limited participation by commercial banks and financial institutions in the regular treasury bill auctions including a low level of interest rate which hinders private sector participation. Other reasons are lack of an active secondary market and lack of knowledge among participating banks. Other constraints on the use of indirect monetary measures are possible crowding out of private sector deposit by higher interest on government securities, including an interest rate which does not seem to be flexible to promote competition among banks, and the relative inflexibility of reserve requirement as a frequent fool of monetary management.

Chapter 7

PHILIPPINE MONETARY POLICY IN THE EIGHTIES: AN UPDATE

by

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I. Introduction

To keep up with international financial standards and to correct structural and institutional weaknesses which impede financial deepening and development vital to economic growth, the Philippines adopted in the 1980s extensive financial reforms based on the principles of market orientation and deregulation. The financial liberalization process had direct and indirect implications on monetary policy - its role, formulation, implementation, and effectiveness in achieving overall economic objectives. This paper aims to review and analyze monetary policy developments during the decade of the eighties in the face of difficulties and major policy reforms in the financial sector.

II. Economic and Financial Development

2.1 Economic Environment Prevailing - Both Domestic and Foreign

During the period 1980-1989, the Philippine economic experience could be classified into three major sub-periods as follows:

- (i) 1980 to third quarter of 1983 - a period of growth, accompanied by increasing pressure on external payments, and a money market crisis in 1981.
- (ii) Fourth quarter of 1983 to mid-1985 - a period of economic contraction, high inflation, devaluation of the peso vis-a-vis the U.S. dollar, and extremely high nominal interest rates.
- (iii) Mid-1985 to 1989 - a period of gradual economic recovery and growth.

The period 1980 to mid-1983 was characterized by positive growth rates as experienced in the 1970s, increasing imbalance in international

payments, and a money market crisis. Despite the adverse impact of the second round of oil price increases, the Philippine economy registered positive growth rates in 1980 and 1981 and continued to expand up to mid 1983 (Table 7.1). GNP growth, however, was achieved at the cost of increasing pressure on the balance of payments. For this four-year period, the external current account deficit as a percentage of GNP averaged 4.1 per cent.

In 1981, the Philippine economy was struck by a money market crisis which reverberated throughout the economy. This crisis was triggered when a textile magnate defaulted from his debts, which ran into hundreds of millions of pesos, thus creating liquidity shortages even for non-financial firms not directly connected with the crisis. The Dewey Dee case and the insolvencies it caused uncovered a series of problems, namely, the financial weaknesses of money corporate issuers of commercial papers and frauds experienced in certain other financial institutions.

During the last half of 1983, destabilizing political developments and uncertainties following the assassination of former Senator Benigno Aquino accelerated an already declining confidence in the Philippine economy resulting in a critical capital flight, and a withdrawal of suppliers' credits. In response to this situation, in October 1983, the Government introduced a rationing system for foreign exchange and a moratorium on capital repayments abroad. During this period the export sector remained weak while imports fell sharply as a result of a contraction in overall economic activity, and partly due to a tightening of import restrictions. The economic crisis which the Philippines went through from mid-1983 to 1985 was the worst since the Second World War. The resulting decline in economic activity during 1983-1985 was disproportionately felt. For instance, while manufacturing and construction sectors exhibited a decline in activity, the agriculture sector continued to grow. On the demand side, while real consumption spending remained virtually unchanged, capital formation significantly fell. The high interest rates that prevailed during the period and increased risk aversion of banks in lending added to the political uncertainties to bring about a large decline in investments.

The resumption of external sources of financing in 1986, combined with a reversal of capital flight and renewed confidence in the economy particularly boosted by the installation of a new Government which

Table 7.1

SELECTED ECONOMIC INDICATORS

	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Real GNP Growth in %	6.9	5.0	3.4	1.9	1.1	(-7.1)	(-4.1)	1.9	5.8	6.8	5.7
Personal Consumption Expenditure (as % of GNP)	0.67	0.67	0.68	0.70	0.71	0.77	0.78	0.77	0.75	0.73	0.73
Total Consumption Expenditure (as % of GNP)	0.76	0.75	0.76	0.79	0.79	0.84	0.86	0.85	0.83	0.82	0.83
Gross Domestic Investments (as % of GNP)	31.0	30.7	30.7	28.8	27.1	17.4	14.3	13.2	16.2	17.4	18.7
Gross Domestic Savings (as % of GNP)	25.5	25.5	25.3	21.9	20.3	17.3	17.3	17.9	20.3	22.0	20.6
Overall Budget Surplus/ Deficit(-) (as % of GNP)	31.0	(-1.3)	(-4.0)	(-4.3)	(-1.7)	(-1.6)	(-2.0)	(-5.6)	(-2.4)	(-2.8)	(-2.0)
Total Liquidity (M3) (as % of GNP)	26.3	25.6	27.0	28.4	30.2	23.2	22.5	23.5	23.0	24.1	26.4
Current Account Surplus/ Deficit(-) (as % of GNP)	(-5.1)	(-5.4)	(5.4)	(-8.2)	(-8.1)	(-3.5)	(-0.3)	(3.2)	(-1.3)	(-1.0)	(-3.3)
Overall BOP Surplus/ Deficit(-) (as % of GNP)	(-1.9)	(-1.0)	(-1.4)	(-4.2)	(-6.2)	0.8	7.2	4.1	0.8	1.7	1.0
Pesos Per U.S. Dollar Rate (Period Average)	7.4	7.5	7.9	8.5	11.1	16.7	18.6	20.4	20.6	21.1	21.7
Reserve Money (12-Month Change in %)	21.0	10.7	9.9	4.8	50.0	20.3	14.3	32.7	13.1	16.5	38.0
Selected Domestic Interest Rates											
91-day Treasury Bill Rates	12.2	12.1	12.6	13.8	14.2	30.5	26.8	14.4	11.4	14.4	19.3
Savings Deposit Rates	9.0	9.0	9.8	9.8	9.7	9.9	10.8	8.0	4.5	4.1	4.4
Time Deposit Rates (All Maturities)	-	-	16.7	15.8	15.3	24.2	21.8	14.8	9.8	13.4	17.0
Lending Rates on Secured Loans (All Maturities)	-	-	17.1	18.2	19.3	26.7	28.2	17.3	13.3	16.0	19.5
Money Market Rates	12.8	13.3	15.7	14.2	16.8	27.2	20.6	13.3	11.1	13.7	15.7
Inflation Rate	17.5	18.2	13.1	10.2	10.0	50.3	23.1	0.8	3.8	8.8	10.6
Unemployment Rate	4.0	7.9	9.0	9.6	10.4	10.4	12.5	11.8	11.2	9.6	9.2

promised extensive reforms provided the stimulus for an economic recovery. Meanwhile, interest rates declined and stabilized, gross international reserves rose to more than twice the end-1985 level, inflation was substantially reduced, and most importantly real GNP grew by 1.9 per cent in 1986 after two consecutive years of decline. The economic recovery strengthened during 1987, with real GNP growth rising to 5.8 per cent, largely on the strength of the recovery in manufacturing and construction activities. However, increased domestic demand, in conjunction with drought-induced agricultural shortages caused annual inflation to accelerate to 3.8 per cent by end-1987 from its previous year's rate of 0.8 per cent. Meanwhile, the weakening of confidence in the wake of an attempted coup in August 1987, together with the revival in import growth associated with the recovery, contributed to the deterioration in the external position in 1987 despite a strong export performance.

In the next two years, 1988 and 1989, economic growth was generally satisfactory, with real GNP growing by 6.8 per cent in 1988 and 5.7 per cent in 1989. Inflation, though rising as the economic recovery progressed, was kept below 10 per cent until mid-1989. On the external front, payments problems were avoided despite a heavy debt service burden. For 1990, macroeconomic imbalances had emerged while growth decelerated. From 5.7 per cent in 1989, real GNP growth fell by 3.8 per cent in 1990, even as it registered 6.3 per cent in the first quarter of 1990. Inflation accelerated from 8.6 per cent in the first half of 1989 to 13 per cent in the first semester of 1990. The external current account widened substantially in 1989 and in early 1990. Contributing to these developments were a widening public sector deficit; a substantial deterioration in external trade; a series of unanticipated shocks, namely, a coup attempt in December 1989 and drought and power shortages during the summer of 1990.

2.2 Financial Sector Developments and Reforms

Before the onset of the eighties, there was already a growing awareness of the need for more reforms in the financial sector. The financial system at the time was heavily burdened with insufficient savings mobilization, inefficient allocation of resources, and high intermediation costs. The state of the financial system was traced to inadequate competition, highly-restricted activities and operations of financial institutions, dearth of long-term capital funds, and interest rate controls. To

address these problems, and following the recommendations of a joint IMF/ IBRD Financial Sector study in 1979, the Philippines embarked upon a program of financial reforms beginning 1980 which sought to fundamentally expand on the 1970 financial sector reforms. The major objectives of the reforms were: (i) to achieve greater efficiency in financial intermediation through increased competition and economies of scale; (ii) greater availability and use of long-term funds; and, (iii) rationalization of financial market regulations. The first important measure of the reform program was the introduction of a modified concept of universal banking system (an expanded commercial banking system) which took effect in July 1980. The universal banking thrust aimed at reducing the functional distinctions among financial institutions through the removal of legislated specialization and by allowing financial firms to engage in a wider range of services. Under this system, a bank with a minimum capitalization of 500 million Philippine pesos could be authorized to perform expanded commercial banking, i.e., to engage in commercial banking and investment house operations such as underwriting, securities dealership and equity investments in non-financial undertakings. At the same time, other restrictive measures which limited the activities of specialized sectors were also rationalized to give more flexibility to these financial institutions.

The 1980 financial reform package included specific measures to improve efficiency in the provision of financial services by increasing the scope for more competition and allowing banks to engage in other activities. These measures included authorizing savings and private development banks to open demand deposit accounts; allowing commercial banks to engage in the securities business; rationalization of regulations governing agriculture and private sector development banks; and, approval for investment houses to conduct trust and foreign exchange operations. In order to encourage the formation of fewer but stronger and more stable financial entities, the Government raised minimum capital requirements and allowed 100-per cent investment by commercial banks in savings and private development banks.

To increase the availability of long-term capital funds, measures were adopted to develop the securities market and liberalize deposit interest rates. To develop the securities market, banks were allowed to undertake investment house functions such as underwriting, securities dealership and equity investments in non-financial undertakings. Moreover, ceilings on commercial bank long-term lending and securi-

ties investment were removed and the central bank rediscounting facility was extended to quasi-bank financial institutions, which are an important source of long-term capital.

As a complementary move to the rationalization of the legal and regulatory framework of the financial system, interest rates were also liberalized, a major move after three decades of administratively-set ceilings on interest rates. The lifting of interest rate ceilings started in July 1981 with the removal of the interest rate ceilings on deposit and loans (except those with maturities of less than two years), and completed on 1 January 1983 with the removal of the remaining ceiling on short-term loans. The Central Bank's rediscounting facility was also rationalized through changes in rediscount ceilings, rates and loan values to encourage banks to mobilize other sources of funds. Reserve requirements on short-term deposits were also reduced to increase banks' loanable funds and reduce intermediation costs.

While these financial reforms were being implemented, a commercial paper market fiasco occurred in 1981. This incident triggered a confidence crisis and temporarily put a brake on the development of the financial system. This crisis is commonly referred to as the "Dewey Dee" crisis. Dewey Dee, an industrial magnate, borrowed heavily from the commercial paper market. In June 1981, he fled the country and left behind almost a billion pesos of debt. Several commercial paper borrowers defaulted on a large scale after money market investors panicked and did not renew their funding. Meanwhile, smaller depositors shifted their funds from non-banks to large commercial banks perceived to be not affected by the commercial paper market panic. As a result of the crisis, financial savers refused to accept any but the highest quality paper and moved their funds to more stable and conservative banks. Lenders became more selective and security minded. One of the results of the crisis was the collapse of the commercial paper market. After the crisis, some of the weaker non-bank financial institutions were merged with commercial banks.

The thrift and rural banking sectors were not spared by the confidence crisis triggered by the money market fiasco. Several bank failures in the thrift and rural banking sectors were recorded, but since the combined assets of these banks (around 2.0 per cent of the total in 1981) were only a small fraction of the total assets of the banking system, the failures did not lead to a system-wide crisis. To prevent the

corporate and bank failures to turn into a financial system-wide collapse, the Government provided assistance to non-financial corporations and financial institutions. Emergency lending and equity contributions were made to public corporations and government financial institutions (GFIs) took over troubled private banks for restructuring and eventual disposition.

Also in response to the 1981 crisis, rules and regulations governing the money market were strengthened. For instance, money market borrowings were restricted to prime paper and prime issuers only, the credit rating system to appraise large loans was improved, and a credit information bureau was established. The deepening loss of confidence experienced by the financial system since 1981 led to a financial panic when an official announcement of a moratorium of external debt payments to foreign commercial banks in October 1983 triggered a series of bank runs which involved even the commercial banks. Massive bank deposit withdrawals occurred and capital flight in a large scale took place.

The sharp drop in bank credit to the private sector during this period reflected the significant slowdown in demand as investments were postponed due to political uncertainties and high interest rates. Banks also became more cautious in lending as the uncertain political and economic climate made increased loan exposure more risky. The increased caution in bank lending could be inferred from the shortening of maturities in bank loans. The share total of outstanding loans of commercial banks of loans with 0- to 1-year maturities rose to 69.1 per cent of the total in 1986 from 61.0 per cent in 1984 while those with 1- to 3-year maturities dropped from 24.2 per cent of total in 1984 to 18.1 per cent in 1986 and those with 3- to 5-year maturities likewise declined from 14.8 per cent in 1984 to 12.8 per cent in 1986. It is worthy to note that the shortening of loan maturities even worsened after 1986 (Table 7.2). The benefits that the financial system could have reaped from the 1980 reforms were thus negated by the unstable financial and political climate from 1981 to 1986. Opportunities in the non-banking sector that were opened to unibanks could not be actively pursued due to management's preoccupation with surmounting the effects of an unstable environment.

After the 1983-1985 crisis, measures were adopted to strengthen the banking system. These measures were: (i) the rehabilitation of the

two state-owned banks - DBP and PNB - and the transfer of their selected non-performing assets and related liabilities to the National Government; (ii) the privatization of government-owned and/or government-acquired banks, (iii) the implementation of a rural bank rehabilitation program; and, (iv) the lifting of restrictions on bank branching in rural areas. The country's financial liberalization process, temporarily interrupted by the 1983-1985 economic and financial crisis, continued in 1987, this time focusing on the improvement of the legal and supervisory framework for the financial system.

The belief is that a good legal and supervisory framework is a prerequisite for the success of any liberalization program. The 1987 financial reform program, supported by a loan from the World Bank, aims to strengthen the banking system, reduce intermediation costs and improve the mobilization of long-term credit. The specific measures under this reform program included: (i) the strengthening of the legal framework for bank supervision; (ii) the strengthening protection for depositors through the state-controlled Philippine Deposit Insurance Corporation (PDIC); (iii) the liberalization of bank branching; (iv) the eventual phase-out of the withholding tax on interest income for inter-bank transactions and the gross receipts tax on financial institutions; (v) the gradual transformation of the DBP into primarily a wholesale institution responsible for raising long-term funds and channeling them to retail financial institutions; and, (vi) the reduction in Central Bank's involvement in credit allocation.

As a result of developments and reforms in the financial sector, definite changes in the financial structure had emerged. First, the number of financial institutions rose from 4,745 in 1979 to 7,267 in 1989, or by 53 per cent. The number of non-bank financial institutions had considerably increased, i.e., by more than 133 per cent, thereby increasing its share in the total number of financial units from 33 per cent in 1979 to 51 per cent in 1989. Meanwhile, the number of commercial banks grew by only 26 per cent over the ten-year period. The number of rural banking units declined from 1,086 in 1979 to 1,043 in 1989. The relatively slower growth of the number of banks could be attributed to the restrictive policy on bank branching and barriers to entry over most of the 1980s. To illustrate the extent of official barriers to entry into the banking business, in the last 20-year period ending mid-1990, only two new commercial banks had been licensed to operate. Also, another factor explaining the slower growth of the number of banks was

TABLE 7.2*Philippine*

**LOANS OUTSTANDING OF COMMERCIAL BANKS, 1/
CLASSIFIED BY MATURITY, 1979-1989**
(Percentage Distribution)

End of Period	Total	Demand	Short-Term	Intermediate Term	Long Term
1979	100.0	65.2	16.3	18.5	0.0
1980	100.0	13.5	64.6	10.0	11.9
1981	100.0	12.3	61.1	17.3	9.3
1982	100.0	9.5	59.5	18.1	12.9
1983	100.0	9.4	60.0	15.1	15.5
1984	100.0	7.2	53.8	24.3	14.8
1985	100.0	9.2	57.1	16.7	16.9
1986	100.0	12.7	56.4	18.1	12.8
1987	100.0	18.6	53.8	22.3	5.4
1988	100.0	15.8	55.6	20.8	7.8
1989	100.0	17.8	57.0	19.1	6.0

Source: Central Bank of the Philippines, Statistical Bulletin.

1/ Excluding past due items, items in litigation, domestic and foreign bills clean.

the policy of encouraging mergers and consolidations to achieve stronger banking units. As of end-1989, the CBP had approved a total of 11 mergers involving 27 financial institutions, and the consolidation of 4 financial institutions. The total assets of the financial system (excluding the CBP) grew by more than 200 per cent from 1979 to 1989 - this despite the fact that financial sector resources declined in 1985 and 1986 amidst the difficulties and uncertainties during the crisis period.

III. Role and Implementation of Monetary Policy

3.1 Objectives of Monetary Policy

Monetary policy actions are guided by the following charter-defined objectives of the Central Bank of the Philippines (CBP):

- (i) to maintain internal and external monetary stability in the Philippines, and to preserve the international value of the peso and convertibility of the Philippine peso into other freely convertible currencies; and,
- (ii) to foster monetary, credit and exchange conditions conducive to a balanced and sustainable growth of the economy.

While the general implicit policy is to strike a balance between the two major objectives mentioned above, the CBP sometimes faces the difficult task of choosing between achieving price stability at the expense of bank failures or maintaining public confidence in the banking system at the expense of price instability. When faced with these conflicting objectives, monetary policy actions are dictated and influenced by the specific economic and financial conditions at the time, the urgency of dealing with one problem over the other, and the prevailing macroeconomic objectives on output and prices. Specific monetary policy actions during the 1980s in the pursuit of the objectives mentioned above will be discussed later under sections on monetary policy developments and the effectiveness of monetary policy.

3.2 Monetary Policy Targets

The CBP has no direct control over the ultimate macroeconomic targets, e.g., output and price targets, but could influence these variables via changes in the level of money supply or liquidity. In estimat-

ing the level of liquidity consistent with given levels of output and prices, the CBP defines the level of liquidity to be a certain multiple of reserve money. The liquidity multiplier is basically determined on the basis of assumed levels of the currency-to-deposit ratio and required reserve ratio. The control of liquidity as an intermediate variable in achieving ultimate objectives is done through "controllable" aggregates (from the point of view of the CBP) which directly affect the level of liquidity, such as base money.

The adoption of base money as an immediate policy target took place with the shift to a floating exchange rate system in October 1984. Before October 1984, the immediate monetary target was the net domestic assets (NDA) of the monetary authorities or the domestic portion of base money. Prior to the adoption of a floating exchange rate system, the CBP intervened in the exchange market only to maintain the net international reserves of the CBP at some predetermined level. With net foreign assets of the monetary authorities fixed, targeting the net domestic component of base money is the same as targeting base money. With the floating exchange rate system, however, there is a difference between targeting base money and its domestic component, since intervention by the monetary authorities in the exchange market depends on movements in the exchange rate and other monetary variables, and no longer on merely achieving a specific level of net foreign reserves.

When inflation peaked at 50 per cent during the 1983 crisis period, the shift of operating procedures of monetary control to base money targeting gave the CBP more flexibility in containing inflationary pressures. To provide for unanticipated shifts in money demand that could lead to substantial external capital inflows, the CBP allowed an upward adjustment in the targeted path for base money whenever its net international reserve position improved by more than a targeted amount. In general, base money is defined as the sum of: (i) currency in circulation including cash held by deposit money banks; and, (ii) deposit money banks' reserve balances with the monetary authorities.

In the Philippines, the above definition is referred to as reserve money with base money having a broader concept. Base money in this country is defined as reserve money plus holdings of reserve eligible government securities and reserve deficiencies of deposit money banks. At their peak in April 1984, bank holdings of these reserve eligible securities were equivalent to about one half of reserve money, but with

the policy of gradually retiring these securities, by end-1989 they were about 3 per cent of reserve money. Meanwhile, some banks had shown to have registered substantial reserve deficiencies for a certain period of time which in effect is equivalent to an increase in reserve money.

3.3 Identification of Instruments

Changes in the reserve requirements on deposit liabilities of deposit money banks and open market operations (OMO) were the two principal monetary instruments used by the CBP to influence movements in monetary aggregates during the eighties. Other instruments such as regular rediscounting and special lending facilities were available but these were not relied upon in attaining base money targets. The choice of which instrument to use in a particular situation was guided by the magnitude of the policy response required and the relative flexibility and effectiveness of the instruments in bringing about the necessary movements in monetary aggregates. OMO had been resorted to because of the greater flexibility with which it allows the CBP to influence the liquidity of the banking system in small or large steps and at short and frequent intervals. OMO are undertaken through outright sales or purchases of government securities, through lendings under the repurchase window and borrowings under the reverse repurchase facility. On the other hand, when there is a real and urgent need to effect a lasting change in the liquidity of deposit money banks, the reserve requirement tool was resorted to.

In 1984, in the face of high inflationary pressures, the CBP started to issue substantial quantities of its own high-yielding bills (CB bills) which were primarily of short-term, i.e., 30-90 days, maturity. These CB bills became the principal open market instrument used during the 1983-1985 crisis period to reduce unwarranted growth in liquidity. The sale of these CB bills together with Treasury securities however complicated interest rate policy and the management of domestic public debt. In October 1986, the CBP modified its open market operations by starting with the phase-out of CB bills to give way to auctioned Treasury bills as the primary instrument of open market operations. This move kept interest rates at low levels. An important element of this policy measure was the arrangement that the National Government (NG) deposit the proceeds of the auctioned Treasury securities in excess of the Government's deficit financing requirement with the CBP to minimize or offset the expansionary impact of the phase-out of CB

bills. This type of modified open market transactions has continued up to the present. In fact, from 1989 up to 1990, movements in reserve money closely followed changes in the levels of NG deposits with CBP.

Complementing the use of open market operations as the primary monetary policy instrument is the use of the reserve requirement. Changes in the reserve requirement on deposit liabilities and substitutes of commercial banks were resorted to when the CBP needed to effect a lasting change in the liquidity of commercial banks. The monetary authorities, however, had used this tool only when very necessary since a small change in the reserve ratio could result in a relatively substantial adjustment in banks' loanable funds.

3.4 Implementation and Conduct of Monetary Policy

The highest monetary policy-making body in the Philippines is vested on the Monetary Board. The Board consists of the Governor of the Central Bank as Chairman, the Secretaries of Finance, Budget, Trade and Industry, and Economic Planning and two representatives from the private sector as members. The composition of the Board aims to enhance coordination among monetary, fiscal and real sector policies, while considering the private sector views regarding the effect of these policies on private sector activities. The Board holds regular weekly meetings and special meetings when necessary to discuss major issues which has impact on monetary policy. During the discussion, the Board takes into account overall economic objectives and the specific implications of the issues concerned.

The Open Market Committee (OMC) likewise plays a vital role in the implementation and conduct of monetary policy. Headed by no less than the CBP Governor as Chairman, the OMC is composed of top-level representatives with their technical staff from the Department of Finance, the Department of Budget and Management, the NEDA, and several departments of the CBP such as the Research Sector, Treasury, Loans and Credit, Accounting, Foreign Exchange and Investments and Management of External Debt. The primary functions and responsibilities of the OMC are to prepare the financial and economic programs, to identify and propose appropriate monetary measures in support of these programs, to closely monitor financial and economic developments, particularly reserve money and CB-NIR and to coordinate monetary, foreign exchange and fiscal policies given overall economic objectives.

3.5 Monetary Policies Adopted in the 1980s

This section reviews monetary policy thrusts and measures adopted during the eighties, being more descriptive than analytical to avoid overlapping with a later discussion on effectiveness of monetary policy. During the period from 1980 to 1982, the CBP adopted a moderately expansionary policy. The principal goal of this policy stance was to stimulate demand by more than to compensate for the contractionary effects of the country's foreign transactions following adverse external developments such as the second round of oil price increases, global recession, and the rise in foreign interest rates. A selective credit policy was also pursued with the bulk of credit channeled to agriculture, exports and other preferred activities. Financial assistance, but on a highly selective basis, was also granted to financial institutions which were heavily affected by the crisis during this period.

The CBP tempered liquidity strains in the banking system through open market operations under the repurchase window. Specifically, open market transactions during the year, which were generally expansionary, were directed towards stabilizing and compensating for developments such as oil remittances, inflow of loans negotiated by the CBP and through foreign currency deposit units (FCDUs), tax payments and other influences. Starting in the fourth quarter of the year, the repurchase rate on central bank certificates of indebtedness (CBCIs) was adjusted upwards and aligned with the rediscount rate to reflect a more realistic lending rate and at the same time encourage banks to tap other fund sources. Repurchase operations, hotel financing scheme, sales and redemptions of CBCIs ended the year with a net expansionary impact on liquidity.

In 1981, the CBP used a coordinated set of policy instruments to achieve the desired level and cost of credit needed to support growth and price objectives. Also adopted were measures to stabilize the financial markets as in the case of insulating or cushioning the destabilizing effects of oil remittances and tax payments. For instance, to encourage banks to lend to domestic borrowers instead of building up their net foreign asset position, the rediscount window was closed to banks whose net foreign asset position exceeded the limit in relation to their outstanding import letters of credit. Following the financial crisis in the early part of 1981, the CBP, through the extension of loans and the establishment of the Industrial Fund, undertook selective rehabili-

tation of distressed but viable industrial and financial institutions affected by the crisis. To moderate the inflationary impact of these loans, CBCIs amounting to ₱ 500 million were issued.

In line with the new market-oriented interest rate policy and the universal banking thrust of the financial system towards a less differentiated system, reserve requirement ratios for demand deposits, short-term deposits and deposit substitutes were intended to be equalized across banks and non-banks. Initiated in February 1981, the reserve requirement was to be lowered by 1 percentage point every semester until 16-per cent reserve ratio would have been reached in February 1983. However, the programmed reduction in reserve requirements scheduled in 1983 was suspended to prevent a further build-up of liquidity brought about initially by exogenous shocks.

Meanwhile, the use of government securities as a tool of open market operations was intently pursued in 1981. The reduction of outstanding CBCIs continued and was accompanied by an increase in direct Treasury issues to the public. At the same time the Government adopted a program for the rationalization of the terms and yields of government securities. To develop the secondary trading of government securities, the network of accredited government securities dealers was strengthened. Selective allocation of credit to priority activities likewise continued to be part of over-all monetary and credit strategy. Credit measures to this effect included the rediscounting of paper for small-scale projects and the increase in the rediscounting ceiling of rural banks.

Monetary policy adopted in 1982 continued to be generally expansionary. As in 1981, monetary policy measures included the completion of interest rate deregulation, the development of the government securities dealership, and financial assistance to priority sectors in the form of special or preferential schemes. In contrast to 1980-1982, the period 1983 to 1985 were difficult and challenging years for monetary management as the country went through its worst foreign exchange crisis. The increasing debt service burden, the deteriorating terms of trade, among others, and the withdrawal of foreign financing due to the political crisis which started in August 1983 led to a national economic crisis in which the country was forced to seek a debt moratorium from its foreign creditors. The debt moratorium generated a large amount of liquidity in the monetary system equivalent to the peso value of

these postponed payments. To minimize the adverse effects of the crisis, the CBP immediately implemented a series of significant policy measures which included the temporary suspension of foreign exchange trading, the pooling of foreign exchange to guarantee the availability of crucial imports, substantial depreciations of the peso, tight control of monetary aggregates to reduce inflationary pressures and the restructuring of some of the country's foreign debts. Prominent among the measures to dampen foreign exchange demand and relieve inflationary pressures were: the increase in reserve requirement, extensive use of open market operations (OMO) and greater selectivity in the grant of rediscount credits.

OMO of the CBP were actively pursued from 1983 to 1985 to support the objectives of slowing down liquidity expansion and reducing inflationary pressures. In particular, reverse repurchase (RRPs) transactions of the CBP were actively used to mop up excess liquidity by raising the yields associated with RRP's. As liquidity levels continued to grow beyond program levels and further adjustments in reserve requirement could exert far-reaching effects on the banking system, the CBP introduced another open market instrument, the CB bills, at competitive and above market rates to restrain unwarranted growth in liquidity. With the easing of market conditions due to the stabilization in the inflation and foreign exchange rates towards the second half of 1985, a relative easing of monetary policy was undertaken to stimulate economic activity. For instance, the reserve requirement against short-term deposit liabilities of banks was reduced from 24 to 23 per cent effective 30 September 1985.

Meanwhile, to enhance the role of the rediscount window as a mechanism for liquidity control rather than for credit allocation, the rediscount system was further rationalized and simplified. From a floating Manila Reference Rate (MRR)-based rate, the rediscount rate was set on the basis of interest rates on borrowing instruments of both the commercial banks and the Central Bank. The ceilings on bank spreads were likewise removed to allow banks greater flexibility in charging varying interest rates based on risk factors, and to enhance market conditions. Moreover, interest rates on government securities, particularly Treasury Bills and CB bills were gradually reduced starting mid-1985 to stimulate investments.

For the period 1986-1988, monetary policy was expansionary and accommodative of economic recovery objectives. Monetary measures adopted in 1986 included the following:

- (i) The lowering of the reserve requirement on short-term bank deposits by 1 percentage point from 23 per cent to 22 per cent in May 1986 and by another in August 1986 to 21 per cent.
- (ii) The reduction of the rediscount rate to 10.0 per cent in December 1986 from 12.75 per cent at end-1985 to align it with the movement of other market-determined interest rates.
- (iii) The lowering of the CB bill rates on all maturities to an average of 19.082 in 1986 from 26.970 per cent in 1985.

In October 1986, the CBP adopted a policy of redeeming its bills on maturity dates to give way to auctioned Treasury bills as the primary open market instrument and ultimately to avoid the pre-pricing of CB bills from exerting upward pressures on interest rates. Part and parcel of this policy measure was the obligation on the part of the National Government to deposit the proceeds of the auctioned Treasury securities in excess of the Government's deficit financing requirement with the CBP to minimize or offset the expansionary impact of the phase-out of CB bills. In 1987, the CBP found it necessary to grant overdraft credits to liquidity-strained banks to help stabilize the banking system. It likewise engaged in foreign exchange operations/ transactions in the local spot market to help smoothen out fluctuations in the exchange rates between the US dollar and the peso. To further check persistent speculations in foreign exchange currency and to control the growth in reserve money levels, the CBP undertook active open market operations through its reverse repurchase facility.

In 1988, the arrangement whereby the proceeds of Treasury bills issued in amounts in excess of the NG's deficit financing requirements were deposited with the CBP continued to be relied upon as an instrument of monetary control. The increase in NG deposits with CBP helped reduce the need for the issuance of the CBP's own instruments to achieve monetary aggregate targets which could unduly compete with NG issues in the open market.

From 1989 up to the second half of 1990, monetary policy measures were generally contractionary consistent with efforts to realign domestic demand with prevailing supply conditions. Specific measures included the increase in the reserve requirement of banks and the increase in the rediscount rate from 10.0 per cent to 12.0 per cent. The increase in the reserve requirement was accompanied by the standard-

ization of the reserve requirement across banks which eliminated the subsidy effect of a lower reserve requirement previously enjoyed by rural banks and thrift banks. Open market operations likewise played a major role in monetary management.

IV. Effectiveness of Monetary Policy

4.1 Stability of Demand for Money

The effectiveness of monetary policy with particular emphasis on targeting monetary aggregates is predicated on the existence of a stable and predictable relationship between the demand for money and economic activity, as measured by income. The Philippines during the eighties was subjected to several exogenous shocks and adopted major financial reforms and deregulatory moves that could have affected the stability and predictability of money demand.

During the eighties, M3 velocity exhibited fluctuating movements: it declined from 1980 to 1983 by an annual average rate of 5.2 per cent, rose by 29.5 per cent in 1984, was relatively steady between 1985 and 1987, and started dropping, albeit gradually, from 1988 to 1989 by an average annual rate of 6.7 per cent (Table 7.3). (M2 velocity, meanwhile, generally followed movements of M3 velocity, so the discussion here is limited to M3). It may be mentioned that the rise in M3 velocity in 1984 followed the drop in demand for real M3 as investors' portfolio shifted from regular bank deposit substitutes to high-yielding Treasury and Central Bank bills. In other words, demand for bank deposits and deposit substitutes dropped sharply after 1983 and was replaced by a rise in demand for Treasury bills. Interest rates on these government securities rose to very high levels as the fiscal deficit widened. This development was indicative of a highly interest-sensitive demand for financial assets. Financial liberalization had led to a general rise in interest rates which had a positive effect on the effect on the increased availability of capital. However, the investment instrument that showed the highest increase in demand was Treasury bills at the expense of bank deposits.

4.2 The Money Multiplier

The money multiplier (m) is defined as the ratio between domestic liquidity (M3) and reserve money (RM).

TABLE 7.3

SELECTED MONETARY INDICATORS

	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Money Multiplier (m)	3.87	4.14	4.56	5.00	4.09	3.64	3.49	2.83	2.80	2.95	2.73
M3 Velocity	3.80	3.90	3.70	3.52	3.32	4.30	4.46	4.26	4.35	4.15	3.79
Currency-to-Deposit Ratio	0.19	0.18	0.16	0.15	0.21	0.22	0.22	0.25	0.28	0.26	0.26

M3 and RM are defined as follows:

$$M3 = C + D$$

$$RM = C + R$$

where, C is currency in circulation or the currency held by the non-bank public, D is total deposits (demand deposits, savings deposits, time deposits, and deposit substitutes), and R is reserves of commercial banks which includes cash in banks' vaults and reserve balances or deposits of commercial banks with CBP.

$$\text{Thus, } m = \frac{C + D}{C + R}$$

Dividing each component of m by D on the assumption that these components are proportional to total deposits, m becomes:

$$m = \frac{c + 1}{c + r}$$

where, "small" c = currency to deposit ratio
r = required reserves against deposits

The money multiplier or m showed a general declining trend from 1980 to 1989 primarily as a result of an increasing currency-to-deposit ratio (Table 7.3). The general uptrend in the currency-to-deposit ratio was accompanied by an increasing rate of consumption expenditures as a proportion of GNP. Data show that the ratio of personal consumption expenditures to GNP showed an increasing trend from 0.67 in 1980 to 0.72 in 1989. In addition, the ratio of total consumption expenditure to GNP increased from 0.75 in 1980 to 0.83 in 1989.

From 1980 to 1982, m increased from 4.14 to 5.00 as the currency-to-deposit ratio declined from 0.18 to 0.15 and the reserve ratio dropped by 2 percentage points. The lower C/D ratio in 1982 compared to 1980 could be attributed to the increase in real interest rates on bank deposits during the year following the full deregulation of deposit interest rates in 1981. In 1983, m dropped to 4.09 from 5.00 in 1982 as the reserve ratio rose by 5 percentage points and the C/D ratio rose to 0.21 from 0.15 following an increased preference to hold cash relative to

deposits as the country went through an uncertain period of political and economic crisis. In the Philippines, the currency ratio was found to be highly sensitive to non-economic factors such as uncertainties over political and peace and order conditions. During 1984 to 1989, the multiplier declined from 3.64 and 2.73 as the increased preference to hold cash vis-a-vis deposits was more than offset by the decline in the reserve ratio. Compared to the period of the eighties, in during the seventies showed an increasing trend primarily due to the decline in the C/D ratio as the reserve ratio was kept constant at 20 per cent.

4.3 Monetary Policy and the Real Sector

In the midst of difficulties and conflicting objectives, monetary policy was generally effective in bringing about monetary stability. But, this was achieved at a cost measured in terms of a decline in real economic activity as high interest rates coupled with reduced demand arising from political uncertainties adversely affected private investment decisions. From 1981 to the third quarter of 1983, priority was given to containing the spread of financial distress and stepping up selective credit policies. As a lender-of-last-resort, the CBP provided emergency assistance to liquidity-strained financial institutions. The CBP similarly increased its concessional rediscount credit to some financial institutions. In 1983, it also began to realize huge losses on swap and forward cover operations. All these developments exerted upward pressure on liquidity so that by end-1983, compounded by the liquidity effect of the debt moratorium, annual growth of reserve money was registered at 50 per cent and M3, at 19.8 per cent, from 4.8 per cent and 16.1 per cent in 1982, respectively. During the next two years at least until mid-1985, a restrictive monetary policy was adopted to offset the expansionary effects of earlier developments and the liquidity created by the debt moratorium since the last quarter of 1983. The monetary contraction, reflected in the drop of liquidity growth to 7.2 per cent in 1984, halted the spiral of inflation. By 1986, the inflation rate dropped from 23.1 per cent in 1985 to 0.8 per cent in 1986 (Table 7.1).

Stabilization of money supply was, however, achieved at the expense of significantly high interest rates and consequently a slowdown in investments. For instance, in 1984, the use of CB bills as an open market instrument substantially helped reduce growth in money supply but it led to significant increases in general market interest rates as these CB instruments were offered at higher than market rates. The

introduction of a more attractive investment outlet than bank deposits caused massive withdrawals of investible funds from the banking system for placement in these high-yielding CB securities. Following the increase in interest rates on CB bills, banks followed by increasing their lending rates. Average bank lending rates on secured loans rose from 19.3 per cent in 1983 to 26.7 per cent in 1984 and 28.2 per cent in 1985 (Table 7.1). The lending spread of banks, or banks' lending rates less borrowing costs, which could also serve as an indicator of intermediation costs, subsequently peaked at 7.1 percentage points in 1985 after recording a 4.5 spread in the previous year. Partly due to the high cost of bank financing (compounded by a slack in business demand) and increased caution in lending on the part of banks due to political uncertainties, real sector activity significantly slowed down. Gross domestic investment as a proportion of GNP dropped from 27.1 per cent in 1983 to 17.4 per cent in 1984, 14.3 per cent in 1985, and 13.2 per cent in 1986. Real GNP declined by 7.1 per cent in 1984 for the first time in several years and continued to drop in 1985 by 4.1 per cent. The depressed real sector activity affected the labor force as open unemployment rose from 10.4 per cent in 1983 to 12.5 per cent in 1985 (Table 7.1).

The rise in M3 growth from 1986 was part of the monetary policy designed to ease up on liquidity needed by the economy to recover from its negative growth rates in the previous years. As a result of the accommodative monetary thrust, interest rates in general declined; bank lending rates dropped to an average of 17.3 per cent in 1986 and 13.3 per cent in 1987. Intermediation cost likewise declined primarily due to the narrowing of the bank lending spread from 5.0 percentage points in 1986 to 3.9 percentage points in 1987 and 3.6 percentage points in 1988. The easing of monetary policy from the second half of 1985 up to 1988 which resulted in increases in bank credits particularly to the private sector at lower interest rates, plus other measures to stir the economy to recovery, helped achieve a turnaround in economic activity during the third quarter of 1986 as GNP posted a real growth of 6.5 per cent after two and a half years of successive decline. In 1986, real output grew by 1.9 per cent, accelerated to 5.8 per cent in 1987 and further to 6.7 per cent in 1988 following increases in domestic demand. An improvement in employment conditions was noted as the unemployment rate went down from a peak of 12.5 per cent in 1985 to 9.6 per cent in 1988. The average annual inflation rate dropped from 23.1 per cent in 1985 to single-digit levels in 1986-1988. The external sector

likewise performed well as the BOP was consistently in surplus, the peso-dollar exchange rate stabilized, and the external debt to GNP ratio dropped from a peak of 93.7 per cent in 1986 to 71.6 per cent in 1988. Despite increasing liquidity growth from 1986 to 1988, inflation rates remained at single-digit levels.

With inflation hitting double-digit levels for the first time in three years, monetary policy reverted once again to liquidity-restraining measures in 1989 so as to realign domestic demand with existing supply conditions. The intention was to preserve the gains of the previous years without unnecessarily restricting liquidity needed to sustain output growth. Progress, therefore, continued to be made in several key areas. Growth of real GNP was at 5.6 per cent although lower than the decade high of 6.6 per cent recorded in 1988. Investments led the growth in 1989, as compared to a consumption led growth in the previous years. The unemployment rate dropped from 9.6 per cent in 1988 to 9.2 per cent. The external debt to GNP ratio also improved from 71.6 per cent in 1988 to 62.4 per cent in 1989. In 1989, growth, however, was achieved at some costs. The inflation rate at 10.6 per cent hit a double-digit level for the first time in more than three years. Interest rates started to rise in 1988 after two years of declining rates reflecting the sustained increase in the demand for funds and the contractionary measures adopted by the monetary authorities. The cost of intermediation as inferred from the bank lending spread likewise showed a rising trend.

4.4 Interaction Between Monetary and Exchange Rate Policies

The Philippines has been under a floating exchange rate standard, more accurately a managed floating exchange rate system, since October 1984. Under this managed floating exchange rate arrangement, adjustments in the peso-U.S. dollar exchange rate were effected by allowing the peso to depreciate against the U.S. dollar several times during the eighties to achieve a more realistic exchange rate which reflects domestic inflation. The rationale behind the exchange rate adjustments was that a more competitive peso would improve the trade balance and the overall balance of payments, one of the major objectives of monetary policy at the time.

With the greater role of market forces in exchange rate determination following the shift to a floating, albeit managed, system, and with

a relatively more liberalized financial market arising from the 1980 financial reforms, changes in interest rates through reserve management, and exchange rates have played important roles in the stabilization program of the country. However, to facilitate the adjustment process particularly in the fiscal sector which is heavily burdened with huge interest payments, the premium for devaluation expectation that had been built into the domestic interest rate structure (at least until mid-1990) must be eliminated through a more competitive exchange rate policy. During the 1980s, contractionary monetary measures undertaken by the CBP (which were accompanied by high interest rates) were not only aimed at reducing inflationary pressures but also at starving off speculative attacks against the peso. While this policy led to more stable exchange rates and minimized the destabilizing effects of speculation, it had adversely affected investment activities of the private sector as interest rates had correspondingly risen.

4.5 Relative Effectiveness of Direct and Indirect Methods of Monetary Control

During the 1970s, selective credit control was primarily used by the monetary authorities to influence the allocation of credit. Selective credit controls channeled bank credits to priority sectors of the economy without affecting the overall supply and cost of bank credits. During the 1980s, monetary authorities relied less on selective credit control measures and more on indirect methods such as the use of reserve requirements, open market operations and rediscount facilities to pursue their objectives. The use of direct quantitative limits on bank credits were no longer used as main credit control instruments particularly during the middle and latter parts of the 1980s in line with the prevailing thrust toward market orientation and deregulation. The use of selective and direct control on bank credits were also found out to be counterproductive as beneficiaries of this policy were found to be operating inefficiently. The only remaining direct control on bank credits is the requirement for banks to set aside a certain portion (25 per cent) of their loanable funds for agricultural and agrarian reform credits. The CBP has recently proposed to abolish this requirement (which is not a direct CBP regulation but in compliance with a national law) since it had not attained its objective of increasing fund flows to the agricultural sector and has raised the intermediation cost of banks.

While direct means of monetary control were found to be counterproductive and inconsistent with the general policy thrust of deregu-

lation and market orientation, the use of indirect instruments also had their limitations. For instance, while the reserve requirement is a very powerful tool in controlling overall liquidity in the banking system, abrupt increases in the required ratio may prove disastrous to relatively small banks which would suffer from huge reserve deficiencies. This is particularly true in the Philippines where the financial system is composed of a few big banks co-existing with several small banks.

Open market operations (OMO), while more flexible than the reserve requirement because they can be carried out in modulated volumes and at frequent intervals without having disruptive effects on individual banks' liquidity position, also have their limitations. For instance, the size of the CBP's and the banking system's holding of securities that are eligible for OMO places transactional limits to the use of this instrument. The effective use of OMO for liquidity management and control would require a well-developed financial system where there is ample supply of marketable government securities.

While rediscounting may not be as potent a monetary tool as OMO and reserve requirement, in the Philippines, the psychological impact of rediscount rate changes on the public's view of the stance of monetary policy has made it quite effective as a complementary monetary tool. Periodic changes in the rediscount rate are viewed by the banking system as signalling a general interest rate movement which monetary authorities desire to bring about.

V. Constraints on Monetary Policy

The conduct of monetary policy in the Philippines during the eighties would have been less difficult and more successful in the absence of certain constraints on monetary policy. The huge fiscal deficit financing requirement is one important constraint on monetary policy. As fiscal agent of the National Government (NG), the CBP is the official depository of the Government and conducts the flotation of Treasury securities in its behalf. Huge and, specifically, greater-than-programmed withdrawals of NG deposits with CBP had exerted expansionary effects on reserve money which for several times during the decade of the eighties more than offset any programed contractionary measures undertaken by the monetary authorities. In addition, an increase in the programed flotation of Treasury bills under the auction system had added

upward pressure on interest rates which sometimes conflicted with the desire of monetary authorities to bring down interest rates. This was particularly true when the public perceived that NG badly needed the funds to finance its growing cash budgetary deficit. Banks accredited to participate in the primary auction of Treasury bills would bid higher interest rates on these securities, expecting that CBP would float a specified amount of Treasury bills at any price.

In addition to the huge financing requirements of NG, the limited number of entities authorized to participate in the weekly primary auction of government securities had also limited the power of monetary policy in influencing the direction of interest rate movements. These few accredited dealer banks could collude and exert a very strong force in raising interest rates on Treasury issues. In the early eighties, the CBP's task of controlling monetary aggregates, particularly reserve money, was complicated by significant losses it incurred on various quasi-fiscal activities such as swap and forward cover transactions. Before its suspension in the last half of the eighties, these transactions had exerted significant expansionary effects on reserve money particularly during periods of substantial exchange rate adjustments. Other constraints on monetary policy were discussed in earlier sections. These involved the limitations or weaknesses of monetary tools such as the reserve requirement and open market operations.

Constraints originating from the institutional structure of the financial system have also posed problems to monetary management. The oligopolistic nature of the banking system has not enhanced effective competition in the industry. The banking structure of the Philippines is made up of a few large and strong banks co-existing with several small and relatively weak banks. During the period 1981-1986, some of these weak banks were bailed out by the CBP in the form of overdraft accommodations and emergency advances which had an expansionary effect on reserve money and served to conflict with price stability objectives. The high degree of control over entry into the banking system during the eighties may have hindered competition among banking institutions. On the external side, restrictions on foreign capital flows also affected monetary management. These restrictions included exchange control regulations during the 1983-1985 crisis, limits on foreign borrowings, restrictions on foreign investment in the local market, and the sensitivity of the Philippines as a small and open country to international economic and financial developments.

VI. Other Monetary Control Problems Arising from Financial Reforms

The financial liberalization program started in 1980 complicated monetary management in some other aspects not mentioned in the earlier sections. One factor which made it difficult to achieve monetary stability during the crisis period of the eighties was the lack of sufficient regulatory and institutional framework to reduce irregularities and unfair practices in financial transactions. The 1981 money market crisis exposed the weak regulatory and legal standards for commercial paper transactions. When the 1983-1985 economic chaos further weakened banks, a number of bank failures occurred, revealing questionable management practices, among other malpractices. To preserve confidence in the financial system, the CBP had to extend assistance to liquidity-strained banks. The expansionary effects of CBP's role as a lender-of-last resort further exerted inflationary pressures to the already high inflationary conditions during the 1983-1985 economic turmoil, thereby making monetary stability more difficult and painful to achieve.

Another factor complicating monetary control is related to the permission given to savings and private development banks to accept demand deposits. While a number of these banks including those already issuing savings and time deposits have grown since the eighties, these banks' deposits are not included in the coverage of M3 which serves as the intermediate monetary variable. The measure of liquidity that the CBP has been targetting includes the deposits and deposit substitutes of deposit money banks which refers only to commercial banks and rural banks allowed to accept demand deposits. A more comprehensive measure of liquidity should include also the deposits created by savings and other banks. The non-exclusion of other deposit-creating banks in the definition of the intermediate monetary aggregate target for policy purposes would provide an inaccurate estimate of the total demand for money, and may lead to incorrect policy responses.

VII. Concluding Remarks

During the 1980s monetary policy was generally aimed at achieving price stability while preserving confidence in the financial system. Specific monetary policy measures were, however, formulated in line with the general thrust toward financial liberalization and market-orient-

tation. While it may be said that monetary policy was generally effective in achieving its overall objectives, this had to be pursued at some cost to the economy such as a slowdown in private investment activities as a result of an increase in the cost of bank financing and a reduction in the loanable funds of the banking system. The effectiveness of monetary policy also depended a lot on the perception of the banking public on the stability of the financial system and the fundamentals of the economy. This explains why great importance was given in assisting liquidity-strained banks during the crisis period so as to avoid a financial system-wide failure.

The financial liberalization process which was started in 1980 was significantly hampered by the economic and financial turmoil of the period 1981 to 1985. However, the continuing financial reforms, if properly implemented, and the relatively stable financial environment of the late eighties, if preserved, could provide ample basis for longer-term macroeconomic stability. More importantly, prudence in the fiscal sector and a more competitive and efficient banking system with sufficient supervision and adequate legal and regulatory framework may significantly contribute to achieving monetary stability and the success of any financial liberalization program.

**CHRONOLOGY OF EVENTS ON FINANCIAL
REFORMS IN THE 1980S**

1980

1. On 1 April 1980, the Philippine law-making body, the "Batasang Pambansa" approved the adoption of universal banking in the country, as modified, by amending basic acts/laws governing the financial system, namely: the Central Bank Charter, the General Banking Act, the Rural Banks Act, the Private Development Banks Act, the Savings and Loan Association Act, the Charter of the Development Bank of the Philippines and the Investment Houses Law.

Under the modified concept of universal banking, the categorization of banks and the recognition of other organized financial intermediaries introduced in 1973 were retained, with certain important changes introduced in long-held and traditional banking practices. Basically, the changes introduced in the financial structure consisted of:

- (a) the introduction of expanded commercial banks;
- (b) the elimination of all functional distinctions among thrift banks;
- (c) a reduction in differentiation among categories of banks and non-bank financial intermediaries authorized to perform quasi-banking functions; and,
- (d) an increase in the powers and functions for non-bank financial intermediaries authorized to perform quasi-banking functions.

These reforms permitted financial intermediaries to opt for voluntary specialization and/or to engage in a variety of financial services in response to emerging demand.

2. To complement the amendments to the banking structure which had to be done through revision in banking laws, further operational changes have also been undertaken, as follows:
 - (a) Higher capitalization requirement for all financial institutions. This move would increase resources for long-term lending and equity financing, as well as enable banks to engage in

new and diversified banking activities under economies of scale operations. Through mergers and consolidations or through holding companies, the minimum required capitalization of such type of financial institution may be met.

- (b) To generate funds for the long-term financing needs of the growing economy, financial and non-financial allied undertakings of financial institutions have been expanded and limitations on equity investments have been relaxed.
 - (c) Safeguards to forestall problems of undue concentration of economic power as well as that of guarding the interest of depositors and the minimization of risk in equity investment were adopted, such as but not limited to:
 - (i) the settling of quantitative limits on equity investments of banks in allied undertakings, and
 - (ii) modifications in the regulations on interlocking directorship for purposes of efficient and sound management of financial institutions.
3. In mid-August, the basic rediscounting regulations were amended with new rediscount ceilings, rates and loan values in addition to making eligible for discounting, papers with medium- and long-term maturities. One of the objectives of these amendments was to encourage banks to tap other sources of funds and lessen their dependence on cheap central bank credit. In spite of these amendments, however, the rediscount window remained accommodative with regard to the financing needs of government-favored activities such as supervised agricultural credit programs, exports and small- and medium-scale industries. A special credit accommodation scheme was made available not only for banks but also for non-banks performing quasi-banking functions. This scheme operates as a lender of last resort facility in the rediscounting window and charges an interest rate equivalent to a Rediscount Reference Rate (RRR) determined by the Central Bank (CB) plus an allowable add-on rate.
4. With the adoption of the modified universal banking concept, a new categorization as to which banks could give the 1/2-percentage point interest rate differential to their savings and time deposits was issued. Under CB Circular 751, thrift and rural banks were authorized to pay an interest rate of 1/2-percentage point higher than those of banks with expanded commercial banking authority, commercial banks, the Development Bank of the Philippines and the Land Bank of the Philippines.

5. Circular No. 755 floated the interest rate of loans with maturities of more than four years. However, such a floating rate shall not exceed a reference rate known as the Manila Reference Rate (MRR) plus a margin not exceeding 3 percentage points. The MRR is determined and announced fortnightly by the CB base on the weighted average of the interest rates paid by the five banks with the largest volume of business transacted during the immediately preceding 90 days on time deposits with maturities of more than 730 days.
6. To allow for a uniform application of interest rates in the organized financial system, regulation on interest rates on deposits and loans of non-stock savings and loan associations and ceilings on loans granted by pawnshops were also issued during the year.

1981

1. During the early part of January, the CB's supervisory power was enlarged to include supervision of subsidiaries and affiliates of banks and non-banks with quasi-banking functions. These additional powers, contained in P.D. No. 1771, were also complemented with an increase in the CB's capitalization from ₱ 10 million to ₱ 10 billion.
2. Selective rehabilitation of distressed but viable industrial and financial institutions affected by the financial crisis of early 1981 was undertaken through the granting of advances and the establishment of the Industrial Fund. The Industrial Fund was established to provide financial relief and assistance to viable enterprises which experienced severe liquidity problems but with crucial role in the economy.
3. The CB in coordination with the Securities and Exchange Commission (SEC) drew up new rules and regulations governing borrowings in the money market. These rules included a limit on the total outstanding liabilities or borrowings of a commercial paper issuer to no more than 300 percent of its net worth and the requirement that any proposed issue shall have to be supported by a committed credit line agreement with a qualified bank.
4. The CB also initiated the setting up of a credit information system and a credit rating bureau in order to provide lending institutions

with more information on total borrowings and credit standing of their borrowers.

5. In the area of capital market development, commercial and specialized government banks which availed themselves of loans under the stock financing program for relending to securities dealers, stockbrokers and investors for the purchase of "blue chips" common and preferred shares were allowed to rediscount such loans with the CB effective June 1981.
6. A new government securities dealership network was also set up late in the year to enhance the role of accredited dealers in developing the government securities market. Efforts of these dealers will be concentrated in selling Treasury issues since the CB is gradually phasing out issuance of its own certificates of indebtedness.
7. Interest rate movements were kept within reasonable bounds after the monetary authorities decided to float interest rates on deposits and loans. Effective 1 July 1981, ceilings on interest rates on savings and time deposits and NOW accounts (Circular No. 777), deposit substitutes (Circular No. 779) and on loans and yields on purchases of receivables with maturities beyond 730 days (Circular No. 738) were lifted. Interest rate ceilings on short-term loans were, however, maintained at 16 percent and 18 percent of secured and unsecured loans, respectively. This was made not only to place an informal limit to short-term deposit rates and thereby moderate any undue fluctuation that might occur while the market adjusted itself to the new environment, but also to serve as a benchmark for other interest rates. The definition of short-term loans and purchases of receivables was amended from 730 days to 365 days effective October 1981 (Circular No. 817), thus limiting the coverage of imposed ceilings on these instruments to a shorter maturity period.
8. In line with the new interest rate policy and the modified universal banking orientation of the financial system, the reserve requirements of deposits and deposit substitutes were modified. The reserve requirement against deposit demand deposits was reduced from 20 percent to 16 percent, at the rate of 1 percentage point starting 1 January 1982, and every semester thereafter until the new rate has been attained. This was intended to increase the

loanable funds of banks and at the same time lower their reserve-holding cost. Moreover, the reserve requirement on other liabilities with similar characteristics was also made uniform across various financial institutions as provided for in Circular No. 782.

9. Selective allocation of credit to priority activities continued to be part of overall monetary and credit strategy. Measures to this effect included the rediscounting of paper involving credits for the financing of mini-hydro system and similar small and self-contained energy projects and dendro-thermal plants. To give further support to rural banks which provide the bulk of the credit needs of the agricultural sector, their rediscounting ceiling was increased to 300 percent of their average savings and time deposits.
10. New financing programs were also established in 1981 to support new projects undertaken by the Government. An initial fund of ₱ 1 billion administered by the CB was set up for the Kilusang Kabuhayan at Kaunlaran (KKK) livelihood projects, an undertaking designed to tap the participation of the citizenry at grassroot level in production activities.
11. On the external sector, the CBP adopted import liberalization procedures in 1981 to complement the tariff reform program of the Government.

1982

1. The CB lifted the remaining ceilings on short-term loans, the last phase in the deregulation of interest rates, effective 1 January 1983.
2. To complement interest rate deregulation, the CB instituted a prime rate monitoring system for expanded commercial banks, commercial banks and specialized government banks to provide up-to-date information on the lowest effective lending rate charged by banks. The prime rate refers to the rate charged on loans to borrowers with the highest credit ratings on 90-day loans of ₱ 500,000 and above, which are not rediscountable at preferred rate with the CB.
3. To prevent the build-up of excess liquidity, the programmed reduction in the reserve requirement scheduled in 1983 was suspended.

Meanwhile, the scheduled increase in reserve requirements on long-term deposits and deposit substitutes of universal banks, commercial banks, government specialized banks, and quasi-bank and non-bank financial intermediaries was continued as originally provided for since January 1982.

4. Special rediscounting facilities were opened by the CB to priority industries. An "energy window" was included in the preferential rediscounting scheme of the CB, particularly the financing of hydro systems and dendro-thermal plants. Credit support to the food production program was also expanded. Among others, upland farming and orchard growing were encouraged with the opening of special rediscount facilities. In addition, a rediscount window for manpower exporting firms and for loans extended to overseas contract workers was established to further encourage and assist the labor export program.
5. The CB also allowed commercial banks with expanded banking authority, together with the Development Bank of the Philippines (DBP) and the Land Bank of the Philippines (LBP) to avail themselves of a special medium- and long-term rediscounting facility to assist high-priority industries in their refinancing and expansion plans. This facility also consolidated provisions which were incorporated in the Industrial Rehabilitation Fund set up in 1981 by the CB and the special financing program for traded stocks established in the early part of 1982, both of which have been superseded.
6. Efforts to develop government securities as a tool of open market operations continued in 1982. Specifically, the reduction of the outstanding levels of CBCIs continued and this was accompanied by an increase in direct Treasury issues to the public, implementing a program for the rationalization of the terms and yields of government securities. During the last quarter of 1982, dollar-denominated Treasury bills were floated to help finance government projects and to test the market for such securities. In addition, a network of accredited government securities dealers was organized primarily to develop secondary trading of government securities. These accredited dealers, now numbering 15, also enjoy inventory financing facilities of the CB.
7. The paid-up capital requirement for thrift and rural banks was increased from ₱ 10 million to ₱ 20 million.

8. For expanded and regular commercial banks, guidelines on their bond issuances were promulgated to provide them with alternative sources of long-term funds.
9. A credit information bureau which could develop into a full-fledged credit rating bureau was set-up with the support of the CB to provide vital information on the activities and track records of borrowers.
10. The CB and the SEC formulated measures to strengthen the money market. The measures for instance provided that only prime borrowers could avail themselves of funds in this market and the same time holders of surplus of funds could be provided protection. The new measures provided, among others, careful evaluation of corporate borrowers credit worthiness and financial ability to meet their obligations on the basis of certain criteria. Any proposed borrowings, such as flotation of short-term commercial paper, would have to be supported by a committed credit line agreement with a qualified bank.

1983

1. The reserve requirement on short-term deposit liabilities of all banks was raised by a full 5 percentage points on a staggered basis from September to December 1983. For short-term deposit liabilities, the reserve requirement increased to 23.0 percent for commercial banks and 13.0 percent for thrift banks. Moreover, marginal deposits on all types of imports were also subjected to 100-percent reserve requirement starting 1 November 1983.
2. To compensate banks for the opportunity cost of maintaining a higher level of reserves, the 3-percent interest on bank reserves deposited with the CB was reinstituted, to be paid on banks' balances only up to the minimum cash reserves required for deposit with the CB.
3. Reverse repurchase transactions of the CB and the sale of CBCIs were actively used to mop up excess liquidity by raising the yields associated with these instruments. The planned phase-down of CBCIs was temporarily suspended to allow CBCIs to perform the more immediate task of absorbing excess liquidity, particularly during the last quarter.

4. Fees on new swap availments from the CB were also tied to the Manila Reference Rate (MRR) to minimize, if not eliminate, CB losses arising from swap contracts, and their concomitant expansionary effect on total liquidity.
5. Moreover, the CBP established mechanisms to sterilize the liquidity arising from swap contract renewals and the non-payment of maturing foreign obligations covered by the standstill arrangement. In particular, the CB created a special blocked peso account to temporarily withhold from commercial banks the additional pesos accruing to them arising from renewal of their swap contracts with the CB. Similarly, to mop up excess liquidity arising from the non-payment of maturing foreign obligations, banks were encouraged to deposit under a special account with the CB, the peso equivalent of these foreign obligations by providing them forward cover on these foreign liabilities.
6. The rediscount regulations were rationalized during the latter part of the year by aligning the rediscount rates with existing market rates, as indicated by the MRR, except those for supervised and non-supervised food production programs. A liquidity window was established with a basic rediscount rate also tied with MRR (90). These changes were made to heighten the role of the rediscount facility as a tool for managing liquidity rather than as a means for allocating credit.

Preferential rediscount facilities continued to be provided to high-priority industries for economic self-sufficiency objectives. For instance, the rediscount ceilings of rural banks were raised from 300 to 500 percent of their networth plus 300 percent of their monthly average savings and time deposit liabilities. Moreover, the opening of a special rediscount facility for paper backed by sales of coconut millers participating in the coco-diesel program, similar to those already enjoyed by coconut exporters under existing CB rules and regulations was also initiated during the year.
7. To encourage competition and efficiency in intermediation, the remaining ceiling on short-term interest rate was removed starting 1 January 1983. The complete deregulation of interest rates contributed to the expansion in savings and time deposits during the year. In addition, a prime rate monitoring system, which provided up-to-date information on the lowest effective lending rates charged by banks, was also introduced to minimize sharp fluctuations in interest rates after complete deregulation.

8. Special Credit Assistance: Special credit assistance program in the form of loan restructuring was extended to rural banks whose farmer-borrowers sustained losses due to the severe drought which afflicted Mindanao and certain areas of the Visayas in late 1982 through early 1983. To further ease farm credit and expedite the rehabilitation of drought-stricken areas, special time deposits from the special Agricultural Rehabilitation Fund were released to rural banks.
9. To stem speculation, as well as in response to a disappointing balance of payments outcome at mid-year, the authorities allowed the peso to depreciate more markedly on 23 June, by 7.8 percent to ₱ 11 to \$1. In view of the large balance of payments deficit still obtaining as of end-September, the peso was allowed to depreciate further by 27.3 percent to ₱ 14 to \$1 on 5 October, at which rate it was de facto fixed with the suspension of trading in the foreign exchange market. The import surcharge was raised from 3.0 to 5.0 percent, and the margin deposit requirement was increased from 50.0 to 100.0 percent.
10. Central to these further adjustment measures was a 90-day moratorium on principal repayments on maturing obligations owed to foreign banks and financial institutions (excluding trade-related credits) beginning 17 October 1983. The moratorium was sought preparatory to the rescheduling of certain foreign obligations. On 4 November 1983, a system of direct exchange controls was announced. In particular, all banks were required to sell their foreign exchange receipts to the CB for placement in a pool for the purpose of meeting payments in accordance with a priority system.

1984

1. In April 1984, the reserve requirement against traditional deposit and deposit-substitute liabilities of all types of banks was raised by 1 percentage point, thus bringing required reserves for short-term deposit liabilities of commercial banks and thrift banks to 24 and 14 percent, respectively. The interest rate on deposit balances with the CB was raised from 3 percent to 4 percent in June 1984.
2. Open market trading was enhanced by the introduction of CB bills and trading in Treasury bills at market competitive rates which influenced the general level of interest rates in the market.

3. The CB also extended financial assistance in the form of emergency advances to certain banks which experienced temporary liquidity problems.
4. Primarily, on account of the scarcity of loanable funds in the market, special time deposit funds were released to rural banks in 1984 to ease farm credit. The Integrated Rural Financing Program (IRF) was implemented during the year to provide adequate credit resources for small- and medium-scale farm projects. Close supervision and monitoring of credit operations and ongoing projects/programs of rural banks were maintained to promote proper allocation and utilization of available credit and ensure continued production during the year. Stricter penalties were likewise imposed on rural banks which failed to remit unused special time deposits and collections from loans funded by the Virginia and Burley Tobacco Financing Program within prescribed dates.
5. To neutralize the additional liquidity arising from the non-payment of maturing foreign obligations as a result of the debt moratorium, the CB implemented a peso-deposit scheme whereby entities with foreign obligations in arrears but not subject to re-scheduling were required to deposit the peso equivalent of the outstanding arrears into a blocked account with the CB.
6. For foreign exchange arrears on principal payments on suppliers' credit and service payments, the CB adopted a scheme whereby it would sell U.S. dollar-denominated CB Certificates of Indebtedness (CBCIs) for pesos to settle the foreign exchange arrears.
7. On 15 October, no new forward cover arrangement was extended by the CB for oil and other importations. Foreign exchange differentials arising from renewal of swap contracts continued to be withheld in a blocked account with the CB to neutralize the liquidity effect of these transactions on domestic liquidity.
8. The pooling system continued, under which local commercial banks were required to sell all their foreign exchange receipts to the CB to ensure the orderly servicing of priority payments in the face of severely limited foreign exchange resources. Eventually, the surrender requirement was reduced to 80 percent in June 1984, thereby enabling banks to resume foreign exchange trading. This resulted in a one-day depreciation of the exchange rate by 28.6

percent, from ₱ 14.002 to ₱ 18.002 per U.S. dollar. The reopening of the foreign exchange market was accompanied by the imposition of various taxes and surcharges on certain foreign exchange transactions.

9. Thus, on 15 October 1984, the system of exchange controls was finally abandoned and the exchange rate was unified and left to the determination of market forces. Interbank trading of foreign exchange was allowed freely. At the same time, appropriate monetary policies, which effectively curtailed excess domestic demand, were pursued to control exchange rate fluctuations. Moreover, on 13 December, the interbank guiding rate was abolished and the Bankers Association of the Philippines' (BAP) reference rate was established as the official indicator of the international exchange value of the peso, in line with the liberalization of foreign exchange trading.
10. Effective 15 October 1984, the foreign exchange surrender requirement was abolished and commercial banks were allowed to retain foreign exchange in amounts significantly higher than allowed them before the crisis. With this development, foreign exchange controls on invisibles were subsequently removed.

1985

1. The reserve requirement against short-term deposit liabilities of commercial and thrift banks, including the Land Bank of the Philippines and the Philippines Amanah Bank was reduced from 24 to 23 percent effective 30 September 1985.
2. The rediscount system was further rationalized and simplified under Circular No. 1086 dated 29 November 1985. Specifically, the circular: (a) eliminated the ceiling bank spreads; (b) changed the methodology for computing the base rate; and, (c) simplified the rediscount structure from six categories to only one category. From a floating MRR-based rate, the rediscount rate has been set on the basis of interest rates on borrowing instruments of both the commercial banks and the CB. The ceilings on bank spreads were likewise eliminated to allow banks greater flexibility in charging varying interest rates based on risk factors, and to enhance market competition. The regular monitoring of market rates and bank spreads would be undertaken to detect unreasonably high spreads.

Medium- and long-term papers as well as paper generated from special time deposits have been rendered ineligible for rediscounting.

3. To augment the volume of credit funds to the agricultural sector, the CB in coordination with the World Bank instituted Agricultural Loan Financing (ALF) Program through Circular No. 1075 dated 15 August 1985. The ALF Program, which provides deserving and eligible borrowers with short-medium or long-term credit to finance their eligible agricultural and agri-business projects, was also aimed at encouraging the greater participation of the banking system in agricultural financing. Loans under the ALF facility are subject to market rates to encourage maximum efficiency in funds utilization/allocation.
4. During the year, limits on foreign exchange holdings of commercial banks were gradually eased, culminating in their complete removal on 14 August 1985. The lifting of the ceilings together with the further relaxation of other exchange regulations resulted in a more independent float of the peso.

1986

1. One of the measures taken to ease credit restraint was the gradual reduction in the reserve requirement on banks' deposit liabilities. The reserve requirement on short-term deposit instruments of banks was reduced by a total of 2 percentage points from 23 percent to 21 percent in May and August 1986. The reserve requirement on long-term deposit instruments was likewise reduced from 6 percent to 5 percent on 1 December 1986.
2. In line with the policy of credit ease and the market orientation of CB rates, the rediscount rate was reduced from 12.75 percent in November 1985 to 11.75 percent in September 1986 and 10.0 percent in December 1986, or a cumulative reduction of 2.75 percentage points during the year.
3. The interest rate on loans under the ALF, a source of medium- and long-term financing for the agricultural sector, which was opened in August 1985, was likewise adjusted during the year. From an average of 16.7 percent during the fourth quarter of 1985, the ALF rate was reduced gradually to 12.8 percent in the

third quarter and eventually to 11.3 percent in the fourth quarter in 1986. The downtrend in the ALF rate reflected the decline in market rates, particularly the average borrowing cost of banks.

4. As a means of enhancing further the market orientation of interest rates, the auction system of selling government securities (Treasury bills and Treasury notes) was resumed starting 24 October 1986. Previous to this, government securities were sold on a negotiated basis whereby rates were unilaterally determined by the monetary authorities. As a complementary move, the sale of CB bills was phased out starting 20 October 20 of the same year.

1987

1. During the year, efforts to strengthen the financial system included principally the pursuit of a divestment program of government-acquired banks and the reform of government financial institutions (GFIs). The rehabilitation of GFIs began with the revision of their respective charters and the installation of new management teams in two major government banks and was completed with the restructuring of their balance sheets which involved the transfer of accounts generally classified as non-performing to the National Government.
2. Rules governing officer interlocks were amended to avoid conflict of interest transactions between banks/quasi-banks and their DOSRI (directors, officers, stockholders and other related interests) accounts and the amendment of existing rules and regulations on financial audits of banks, including their trust operations to strengthen internal control of banks/quasi-banks.
3. A rural bank rehabilitation program, involving options that included a capital build-up and conversion scheme and/or plan of payment for rural banks experiencing financial difficulties, was launched in April 1987 to strengthen the rural banking system and placed them in a more viable position to adequately service the banking requirements of the rural sector.

1988

1. Efforts to strengthen the financial system continued with the full-scale implementation of the divestment program for the six gov-

ernment-owned/ controlled banks, which resulted in the sale of four government banks to the private sector. Negotiations for the sale of the two remaining banks are still ongoing. The privatization program of government banks, which is primarily intended to reduce the scope and size of government exposure in banking, continued to be pursued.

2. Meanwhile, the rehabilitation program from rural banks, which began in late 1987 through a capital build-up program and conversion scheme and/ or plan of payment for rural banks experiencing financial difficulties, was also carried out. As of end-1988, 500 rural banks were approved for rehabilitation. To increase depositor protection and further strengthen the financial system, substantial increases in capital were also infused into the commercial banking system.
3. To foster freer competition in the banking industry, the requirement to purchase special five-year government securities as condition in the opening of new branches was lifted effective 28 October 1988. The lifting of such requirement was also expected to provide banks with greater flexibility to channel more funds for initial operations and other credit purposes which otherwise would have been tied up in long-term investments on government securities.

1989

1. Within a span of less than five months, from 23 June to 5 November 1989, the reserve requirement on deposits and deposit substitutes with original maturities of more than 730 days was gradually increased by 15 percentage points, from 5 percent to 20 percent.
On the other hand, on 1 September and 5 October 1989, the reserve requirement on deposits and deposit substitutes with original maturities of 730 days or less was reduced by 0.5 percentage point from 21 percent to 20 percent. The policy move also had achieved a more standardized reserve structure across bank types and deposit types, thus reducing the implicit subsidies related to a differentiated rate structure.
2. Consistent with the policy thrust of market-oriented interest rates, the rediscount rate was raised from 10.0 percent to 12.0 percent in June 1989.

3. During the year, measures to strengthen the financial system continued with the increase in the required capital accounts of expanded commercial banks and commercial banks, including those already in operation as well as those to be established, to ₦ 1 billion and ₦ 0.5 billion, respectively.
4. Efforts to promote larger and stronger commercial banks during the year were reflected in the conversion of two commercial banks into universal banks (unibanks), bringing to eleven the total number of unibanks in operation. The year also saw two mergers involving five thrift banks and three rural banks.
5. The divestment and rehabilitation programs of government-owned and controlled banks continued to be pursued. Likewise, the rehabilitation program for rural banks also continued to be implemented.
6. Measures were also adopted in 1989 to enhance competition in the banking sector. These included the removal of all restrictions on the opening of new branches in priority rural areas categorized as service areas. Reporting requirements from banks were also streamlined and submission deadlines were revised to enhance accuracy of reports.

1990

1. The CB's rediscount rate on eligible paper on agricultural production, cottage and small industries term credits was raised by 1 percentage point to 13 percent effective February 1990, in line with market interest rate movements.
2. Effective 26 March 1990, the reserve requirement on all types of deposits of commercial banks and non-bank financial intermediaries and on demand deposit, long-term time deposit and deposit-substitute liabilities of thrift banks was raised from 20 percent to 21 percent. The reserve requirement on savings deposit and short-term time deposit liabilities of thrift banks was similarly raised from 14 percent to 15 percent, and by 1 percentage point every month thereafter to reach 21 percent.
3. On 6 April 1990, banks were allowed to enter into without recourse transactions involving commercial papers of any maturity

provided that these commercial papers are registered with the SEC.

4. On 27 April 1990, the number of non-allied activities in which expanded commercial banks may invest was increased.
5. The accreditation criteria for government securities dealership was revised in April 1990. Notable revisions included the increase in the current number of accredited dealers from 18 members to 24, or more as may be approved by the Governor as well as the provision of a minimum paid-up capital or capital accounts amounting to ₱ 1 billion for universal banks, ₱ 500 million for commercial banks, ₱ 50 million for investment houses with quasi-banking license and ₱ 20 million for investment houses without banking license and for thrift banks in Metro Manila area.
6. In May 1990, commercial banks and expanded commercial banks were allowed to invest in "companies engaged in stock brokerage/securities dealer/ broker".
7. Effective 28 May 1990, the required reserves against savings deposits and time deposits with original maturities of 730 days or less of thrift banks shall be temporarily kept at 17 percent.
8. Thrift banks with a minimum paid-in capital of ₱ 20 million were allowed to issue Negotiable Order of Withdrawal. Moreover, thrift banks with a minimum paid-up capital of ₱ 50 million were also allowed to accept foreign currency deposits, provided that those which cannot qualify under this scheme may apply as foreign exchange agents.
9. The CB's rediscounting window, which for some time had provided credit assistance exclusively to exporters and agricultural producers, was also opened to the rediscounting of credits extended by commercial as well as thrift banks to small-scale and cottage industries.

Chapter 8

FINANCIAL LIBERALIZATION AND MONETARY POLICY IN SINGAPORE DURING THE 1980s¹

I. Introduction

In the early 1980s, Singapore moved away from reliance on traditional monetary instruments in the conduct of its monetary policy. The inflationary impact of adverse external shocks made it clear that it was inadequate for a small and highly open economy like Singapore to rely on domestic monetary instruments to control domestic prices. On the other hand, imported goods play such a large role in the Singapore economy that their prices have a strong influence on domestic prices. Accordingly, the conduct of monetary policy in Singapore now hinges on the management of the exchange rate as an instrument of domestic price-control, complemented with domestic money market operations to ensure an appropriate level of liquidity in the banking system.

This paper examines the economic and financial sector developments in the 1980s, including the determinants of monetary policy during the decade, the effectiveness of an exchange rate-oriented monetary policy, Singapore's money demand function and the relationship between money and prices in Singapore.

II. Economic and Financial Developments

2.1 Economic Environment in the 1980s

The experience of an inflationary external environment in the aftermath of the 2 oil shocks in the early 1970s and 1980s has had significant influence on policy design and implementation. The second oil shock in 1979, in particular, was one of the principal reasons for Singapore's high CPI inflation of 8.5 per cent in 1980 and 8.2 per cent

1. Prepared by Wong Keng Siong and Zubir Abdullah, Senior Economist and Economist, respectively, and supervised by Dr. Lim Ewe Ghee, Assistant Director (Financial Studies Division) and Tharman Shanmugaratnam, Deputy Director, of the Economics Department of the Monetary Authority of Singapore.

in 1981. Another factor in the 1980-1981 inflation was the high rate of nominal wage increase that began in 1979 (and was to last until the recession in 1985). The Government had a 'high wage policy' in 1979-1981, with the objective of shifting the economy towards more capital- and skill-intensive activities. Although the high wage policy ended in 1981, wage costs continued to increase rapidly, caused mainly by increased rates of CPF contribution, keen competition for workers in a tight labor market and optimistic growth expectations. However, productivity increases failed to match wage cost increases, and unit labor cost rose, averaging 10 per cent from 1980 to 1984.

With world inflation falling in the first half of the 1980s, Singapore's sources of inflation during this period were of a domestic nature. In fact, the move to a strong exchange rate policy in 1981, which led to an appreciation of the nominal effective exchange rate (NEER), was motivated by the need to keep imported inflation low. This offset to some extent domestic cost pressures, although the inflationary pressures arising from a rapidly rising unit labor cost remained strong. Although inflation was below that in OECD countries in the early 1980s, Singapore suffered a significant loss of competitiveness in the first half of the 1980s. The substantial increase in unit labour costs, combined with the appreciation of the NEER, led to a sharp rise in the real effective exchange rate (REER). The loss of international competitiveness was one of the main causes of the 1985 recession, when GDP fell by 1.6 per cent.

In addition, the slowdown in growth of the ASEAN economies in the early 1980s as a result of weak commodity and oil prices, and cyclical developments like the collapse of the domestic construction boom and sharp downturn in the electronics and computer peripherals sector also contributed significantly to the sharpness of the economic downturn in 1985. In response, the Government introduced a series of cost and tax cutting measures from mid-1985 onward to reduce business operating costs. The most important of these was a 15 percentage-point reduction on the employers' contribution to CPF, from 25 per cent to 10 per cent of employees' wages with effect from 1 April 1986. Together with a wage restraint policy, this led to a sharp reduction in unit labor costs. Other cost and tax cutting measures also brought prices down.

From the end of 1985, the worldwide decline in oil and commodity prices further reduced imported inflation, allowing the Monetary Au-

thority of Singapore (MAS) more room to allow a depreciation in the NEER. Inflation fell to -1.4 per cent in 1986. The substantial decline in the REER in 1986-1987 laid the foundation for a strong recovery, in the midst of continued favorable OECD growth. In this period, unit labor cost increases also were below those of Singapore's major competitors abroad such as Hong Kong, South Korea and Taiwan.

2.2 Growth and Development of the Financial Sector

The 1980s saw continued progress in the development of Singapore as a financial centre. The number of financial institutions operating in Singapore rose substantially over the last decade (see Table 8.1), while their assets/liabilities increased by up to 11 times the level of end-1979 (see Table 8.2). There has also been a significant increase in the availability and efficiency of ancillary services for the financial sector, especially telecommunications, transportation, legal, publishing and accounting services. This has supported the development of a more efficient banking system, and a broader range of financial services (see Appendix 8.1 for a chronology of important innovations and reforms in the domestic banking system).

Automation of financial transactions gathered momentum during the 1980s. In 1982, the Automated Cheque Clearing House started operations. Two years later, the Singapore Clearing House Association launched the Interbank Giro System which facilitates paperless transfer of funds between customers of participating banks by direct debiting and crediting of customer accounts with these banks. The first Automated Teller Machines (ATM) had been introduced in Singapore in 1979. By the end of the decade, ATMs had become an expected convenience in housing estates, shopping centres, transportation terminals, hospitals and other public places.

The popularity of ATMs has been enhanced by two major developments. First, since 1986 ATM cardholders have been able to effect payments through Electronics Funds Transfer at Point of Sale (EFTPOS) facilities. These facilities enable a customer to pay for purchases using an ATM card to effect immediate transfer of funds from his bank account to the retailer. The second development was the launching of the shared ATM network by the big four local banks in 1988. The network enables each bank's account holders to use the ATMs of any of the four banks.

Table 8.1**NUMBER OF FINANCIAL INSTITUTIONS IN SINGAPORE**

Institutions	End of Period	
	March 1980	March 1990
1. Commercial Banks	92	141
Local	13	13
Foreign	79	128
Full banks	24	22
Restricted banks	13	14
Offshore banks	42	92
(Banking offices including head offices and main offices)	(294)	(422)
2. Merchant Banks	36	68
3. Asian Currency Units (ACUs)	108	199
Banks	77	131
Merchant banks	30	67
Others	1	1
4. Finance Companies	34	28
(Finance companies offices, including head offices)	(96)	(137)
5. POSB branches	101	142
6. Discount Houses	4	-
7. Insurance Companies	71	124
8. International Money Brokers	7	8

Table 8.2**ASSETS/LIABILITIES OF FINANCIAL INSTITUTIONS**
(S\$ Million)

Institutions	End of Period	
	1979	1989
1. Commercial Banks (Excluding ACUs)	26748	127202
2. Merchant Banks (Domestic Operations)	715	7631
3. Asian Currency Units (ACUs)	38163	336582
4. Finance Companies	2473	10137
5. Insurance Companies	1366	7026

Source: MAS Annual Reports, various issues.

In 1987, Singapore's capital market was further enhanced with the introduction of the revamped Singapore Government Securities Market (SGSM). The market, characterized by scripless trading and market-determined yields, offers an additional instrument for investors seeking liquidity and a steady stream of income. The regular supply of securities also encouraged the development of an active market in repurchase agreements (repos), which can be used to influence liquidity conditions in the financial system.

2.2.1 Prudential Regulations

With the introduction of the SGSM, the liquidity requirements of banks and finance companies were revised in May 1987. Banks' liquid assets requirements were simplified with the removal of the distinction between primary and secondary liquid assets.² The required minimum liquid asset ratio was also reduced from 20 per cent to 18 per cent of the liabilities base.³ Banks' deposits with discount houses, which previously qualified as primary liquid assets, were no longer eligible as liquid assets. Holdings of Singapore government securities, which had been constrained by maturity and the two-tiered liquid assets system (see footnote 80), were now only subject to a minimum of 10 per cent of the liabilities base. In addition, government securities held by banks under overnight repurchase agreements with financial institutions were now eligible as liquid assets, subject to a maximum of 5 per cent of their liabilities base.

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2. Primary liquid assets, comprising holdings of cash and excess balances with the MAS, money at call, Singapore Treasury bills and Singapore government securities of less than one year to maturity, had previously been subject to a minimum of 10 per cent of the liabilities base. Net interbank balances could be set off against the total liabilities base. Secondary liquid assets, also subject to a minimum of 10 per cent of the liabilities base, comprised any excess primary assets, Singapore government securities of more than one year to maturity and bills of exchange payable in Singapore.
 3. The eligible liabilities base for banks comprises all types of non-bank customer's deposit, net S\$ NCDs issued, net interbank balances and net deposits in foreign currencies placed by non-residents. Following the revamp of the SGSM in 1987, the list of eligible liabilities has been extended to include also borrowings from MAS, net borrowings from finance companies and funds raised through repurchase agreements in government securities and through the sale or rediscounting of bills of exchange with customers other than a financial institution.

The minimum liquid asset ratio for finance companies has remained unchanged at 10 per cent of their liabilities base since March 1973.⁴ With the restructuring in May 1987, net balances with banks and net money at call with discount houses no longer qualify as liquid assets. Holdings of Singapore government securities, previously subjected to a maximum of 5 per cent of deposit liabilities, now faced no restrictions. Government securities held under overnight repurchase agreements with financial institutions became eligible as liquid assets, subject to the condition that the aggregate of such securities and Singapore dollar bills of exchange payable within three months do not exceed 5 per cent of the liabilities base. Minimum cash balances (mcb) have to be set against all eligible liabilities of both banks and finance companies. This mcb ratio (the required reserve ratio) has remained unchanged at 6 per cent of their respective liabilities bases since mid-1975.⁵

III. Role and Implementation of Monetary Policy⁶

3.1 Determinants of Monetary Policy in the 1980s

From Section 2.1, we see that the external environment exerts considerable influence on the formulation and implementation of

4. The liabilities base of finance companies consists of all types of deposits. The base has been extended in 1987 to include net borrowings from banks and other finance companies, and funds raised through repurchase agreements in government securities and through the sale or rediscounting of bills of exchanges with customers other than a financial institution.

5. The manner in which the minimum cash balance (mcb) is computed has undergone some changes. Prior to September 1982, the mcb for banks was computed on the basis of the net eligible liabilities base as at the last day of each month and applied to a one-month period beginning the 16th day of the following month. The lag in this lagged reserve accounting system thus varied from a fortnight to a month. Since September 1982, the basis for computing the mcb has been revised to one of taking the average of daily eligible liabilities for a two-week computational period beginning on a Thursday and ending on a Wednesday. The maintenance period for the required reserves thus calculated is two weeks, with an interval of only a fortnight between the last day of the computational period and the first day of the maintenance period. The mcb for finance companies had been computed and applied in the same manner as for banks previously. However, from May 1987, the current system of reserve accounting for banks has been applied to all financial companies.

6. This section borrows heavily from a lecture delivered by Dr. Teh Kok Peng, Deputy Managing Director (Economics), Monetary Authority of Singapore, at the 17th SEANZA Central Banking Course held in Sydney on 9 November 1988.

Singapore's monetary and exchange rate policies. The following factors are prudent considerations in the formulation of policies:

3.1.1 Open Economy

Singapore is the classic small, open economy. It is a price taker. The high import content of domestic expenditures means that changes in world prices or in the exchange rate have a powerful influence on domestic prices. The high import content of Singapore's exports also means that the effective export subsidy of a given exchange rate depreciation is low, as it translates into higher costs of imported inputs. Hence, the exchange rate is not a very powerful instrument for achieving sustained export competitiveness, but has an important role to play in maintaining domestic price stability.

3.1.2 Constraints on Monetary Policy

Domestic interest rates are largely determined by foreign rates. This reflects Singapore's openness to capital flows, its small economic base, the large stock of private international cross-country asset holdings and the sensitivity of such capital flows to interest rate differentials. While the MAS could set interest rates over short periods, it cannot easily have a sustained influence on domestic interest rates. Thus, the scope for interest rate targeting is limited.

3.1.3 Price and Wage Flexibility

Prices and wages in Singapore have been fairly, though not perfectly, flexible. Since the 1985 recession, there have been efforts to increase wage flexibility by reducing the size of the fixed wage increment and making bonuses an even more important part of annual wages. The reasonable flexibility of prices and wages in Singapore once again reduces the need for MAS to divert its attentions to demand management. Because of the constraints on domestic demand management in an open economy, it would be more effective to influence economic activity through supply-side measures which alter its competitiveness.

3.2 The Exchange Rate as Monetary Policy Instrument

Price stability remains the cornerstone of Singapore's monetary policy. The prime objective is to maintain a low and stable rate of

inflation. The shift in the monetary policy strategy in 1981, away from interest rate and/or money supply targets, was predicated on the view that the exchange rate is a relatively more important anti-inflation instrument in the context of the small and open Singapore economy. Foreign prices and exchange rates play dominant roles in setting domestic price levels. Managing the exchange rate is thus the easiest and surest way of maintaining domestic price stability.

The Singapore dollar exchange rate is managed against a trade-weighted basket of currencies of its major trading partners. The trade-weighted Singapore dollar is allowed to float within a target band. The MAS keeps the trade-weighted dollar within the band through foreign exchange interventions. The U.S. dollar is the currency of intervention. The target path for the Singapore dollar is determined by expected world inflation and the desired rate of domestic inflation. Generally, the aim is to keep imported inflation low by gradually appreciating the trade-weighted Singapore dollar.

Domestic money market operations are undertaken in the main to complement exchange rate policy. They are tactical in nature, to add to or mop up temporary liquidity to offset seasonal or technical factors, or to smooth out short-term interest rate movements with a minimum of impact on the exchange rate. These operations are carried out primarily through foreign exchange currency swap transactions, and through short-term borrowing and lending in the interbank market. With the development of a secondary market for Singapore government securities in May 1987, MAS has also begun to enter into overnight repurchase agreements in government securities (repos). To date, however, open market operations in government securities have not been used as an instrument of monetary policy.

3.3 Effectiveness of Monetary Policy

In Section 2.1, it was argued that the exchange rate has been an effective instrument in combating inflation. Since the move to a strong exchange rate policy in 1981, imported inflation has been kept under reasonable control despite high foreign inflation in the early 1980s. In subsequent years, when imported inflation declined and the exchange rate strengthened, overall inflation was kept moderate despite inflationary pressures from domestic sources. As a result, inflation in Singapore averaged only 4.9 per cent in the first half of the 1980s and fell to 0.7

per cent in the second half. This compares with 7.8 per cent and 3.5 per cent respectively for the industrial countries, and 10.8 per cent and 3.8 per cent respectively for the other three Asian Newly Industrializing Economies on average (i.e., Hong Kong, South Korea and Taiwan).

IV. The Money Demand Function, Money Multipliers and the Relationship Between Money and Prices

In countries which practice monetary policies centering on domestic monetary aggregates, it is normally assumed that a reasonably stable demand for money function exists, and that money has a significant and stable relationship with domestic prices. While the focus of Singapore's monetary policy is on the exchange rate, research on these issues cannot be neglected.

4.1 Demand for Money

A basic partial-adjustment model of money demand was estimated in the form as follows:

$$\ln(m^d/P_t) = \beta_0 + \beta_1 \ln Y + \beta_2 R + (1-\alpha) \ln(m^d/P)_{t-1} + \mu_t \dots\dots\dots (1)$$

where, m^d_t is money stock, P_t price level, Y real income and R rate of interest of alternative financial assets. This specification of the money demand function assumes that individuals adjust their actual money holdings to their desired levels via a real-adjustment mechanism. Nominal money holdings adjust instantaneously with respect to prices, but with a lag with respect to real income and interest rates. An alternative adjustment mechanism is discussed in Appendix 8.2.

The coefficient of adjustment (α), which measures the speed with which money demand adjusts to its desired level, is equal to one minus the coefficient of the lagged dependent variable. The coefficients b_1 and b_2 are the respective short-run elasticities of Y and R ; dividing them by the coefficient of adjustment would give the respective long run elasticities of the explanatory variables.

Estimated using quarterly data over 1981-1990, the estimated money demand functions for M1, M2 and M3 had a reasonably good fit, with high R^2 and low standard errors (see Table 8.3). The Durbin h-statistic

for M2 and M3 suggest that there is no positive first-order autocorrelation (h-statistic for M1 is not computable).

The coefficient of the lagged dependent variable in each equation indicates that actual real cash balances would adjust to their desired values within a year. The speed of adjustment, measured by one minus coefficient of lagged dependent variable, is fastest for M3 ($\alpha=0.265$) and slows considerably for M1 (see Table 8.3).

Interest rate variables are included as measures of the rate of return on alternative financial assets. The weighted average bank deposit rate measures money's "own" rate of return, and SIBOR+EXRMA4 is intended to capture the rate of return on a competing asset. The results indicate that foreign assets are more appropriate measures of alternative financial investments for Singapore. This is not a surprising finding given the openness of the economy and the lack of impediments against capital flows. Although the size of their coefficients are not large, the SIBOR+EXRMA4⁷ variables are significant and possess negative signs. At the same time, deposit rates' negative relationship with M1 and positive relationship with M2 and M3 are upheld, even though the variables are insignificant. The coefficients on the inflation variable are less than unity for the estimated functions, and significant. These results indicate that the adjustment of prices is non-instantaneous.⁸

In addition to the usual explanatory variables, the impact of the stock market on money demand in Singapore has also been tested. A rise in the real value of stock market turnover may be expected to increase money demanded to facilitate transactions.⁹ In the estimated regressions, the coefficients on the real value of stock market turnover are highly significant for broader measures of money, and less significant for M1. This indicates that stock market investments have greater

-
7. EXRMA4 is used as a proxy for expectations of the movements of the Singapore dollar exchange rate.
 8. In countries where real financial assets such as equities are not available, physical commodities have been found to be appropriate substitutes for holding real cash balances. The return on real assets is proxied by the inflation rate, with an increase in inflation resulting in the lowering of demand for money balances.
 9. For an interesting discussion, refer to: Friedman, Milton, "Money and the Stock Market", *Journal of Political Economy*, 1988, Vol. 96, No. 2, pp. 221-225

Table 8.3

ESTIMATES OF MONEY DEMAND FUNCTIONS
(1981/Q1 - 1990/Q4)

	M1	M2	M3
1. Lagged Real Money Stock	0.80237 (4.734)	0.77474 (9.074)	0.73464 (9.949)
2. Real GDP	0.15913 (1.100)	0.29128 (2.346)	0.32944 (3.206)
3. Weighted Average Bank Deposit Rate	-0.00076 (0.177)	0.00220 (0.793)	0.00198 (0.843)
4. SIBOR+EXRMA4	-	-0.00245 (1.876)	-0.00233 (2.229)
5. Inflation Rate	-0.00293 (1.689)	-0.00343 (2.605)	-0.00407 (3.784)
6. Real Stockmarket Turnover	0.01485 (1.273)	0.02795 (3.396)	0.02424 (3.720)
7. Constant	-0.70632 (1.067)	1.66350 (2.352)	1.68035 (3.108)
8. SEASON_3	0.02578 (2.045)	-	-
9. SEASON_4	0.05807 (3.694)	0.03943 (4.309)	0.03483 (4.490)
Std. Error	0.0278	0.0214	0.0176
R Bar Sq.	0.9802	0.9955	0.9965
Durbin h-statistic	-	1.9212	1.5995
Adjustment Coefficient, a	0.1976	0.2253	0.2654

Notes:

1. M1 = Currency in Circulation + Demand Deposits
2. M2 = M1 + S\$NCDs + Savings, Fixed and Other Deposits with Banks
3. M3 = M2 + Net Deposits with Non-Bank Financial Institutions
4. Figures in parenthesis denotes the t-statistics of the corresponding variables
5. EXRMA4 = 4-quarter moving average of the annualized changes in the Singapore-U.S. dollar exchange rate
6. SEASON_3 and SEASON_4 denote dummy variables for the third and fourth quarters, respectively.

impact on transactional balances held as quasi and broad money than narrow money. However, the estimated elasticities for the regressions were much smaller than expected (see Table 8.4).

The significant income elasticities for each of the estimated functions indicates a high degree of transactional demand for real cash balances. In the short run, income elasticities for all monetary measures are less than one. A 1-per cent increase in real income would only lead to 0.16 per cent, 0.29-per cent and 0.33-per cent increases in the demand for M1, M2 and M3 respectively (see Table 8.3). In the long run, income elasticities for M2 and M3 are more than unity, and less than unity in the case of M1 (see Table 8.4).

Despite the significance of each variable, it is essential to examine whether the estimated money demand functions are stable over time. In this respect, the Chow Test¹⁰ was used to check for structural change over the sample period. The test involves running each estimated equation over two sub-sample periods, in our case 1981/Q1-1985/Q4 and 1986/Q1-1990/Q4. The computed F-statistics for the three money demand functions, shown in Table 8.5, suggests that structural change between the two periods is significant.¹¹ It can be seen that the esti-

10. Chow, Gregory C., "Tests of Equality Between Sets of Coefficients in Two Linear Regressions", *Econometrica*, Vol. 28, No. 3, 1960, pp. 591-605.

11. The F-statistic is calculated as follows:

$$F_{(K, N_1 + N_2 - 2K)} = \frac{S_3/K}{S_4/(N_1 + N_2 - 2K)}$$

- where, S_1 = Residual sum of squares for whole period (1981/Q1-1990/Q1)
 S_2 = Residual sum of squares for first period (1981/Q1-1985/Q2)
 S_3 = Residual sum of squares for second period (1985/Q3-1990/Q1)
 $S_4 = S_2 + S_3$
 $S_5 = S_1 - S_4$
 K = Number of parameters estimated
 N_1 = Number of observation in first period
 N_2 = Number of observation in second period

Comparing each computed F-statistics with the F-statistics at the 5-percent level of significance would determine the stability of the respective estimated equations. If $F_{(K, N_1 + N_2 - 2K)} < F_{0.05}$, then we accept the hypothesis that there is no structural change in the estimated functions over the two sub-sample periods.

Table 8.4**LONG-RUN ELASTICITIES**

	M1	M2	M3
1. Real Income	0.8052	1.2931	1.2415
2. Inflation	-0.0148	-0.0152	-0.0153
3. Weighted Average Deposit Rate	-0.0038	0.0098	0.0075
4. SIBOR	-	-0.0109	-0.0088
5. Real Stockmarket Turnover	0.0751	0.1241	0.0914
7. SEASON_3	0.1304	-	-
8. SEASON_4	0.2938	0.1750	0.1313

Table 8.5**CHOW'S TEST OF STABILITY FOR ESTIMATED EQUATIONS**

Computed F-Statistics	M1	M2	M3
	2.4291	3.2781	4.4377
Comparison F-Statistics $F_{8,24,0.05} = 2.36$			

mated equations are unstable when tested at the 5-per cent level. This confirmed our expectations that technological advances, such as ATMs and EFTPOS, had impacted significantly on money demand since their introduction in the mid-1980s.

4.2 Calculation of Multiplier

The money multiplier defines the relationship between the stock of money and the monetary base (see Appendix 8.3). The values of Singapore's monetary base, the various multipliers and their parameters are given in Table 8.6. In general, while the multipliers for M2 and M3 have been rising in recent years, the M1 multiplier has declined since the early 1980s (see items 2-4 in Table 8.6). These trends are consistent with Singapore's financial deepening during these years, and may reflect a number of identifiable factors.

The introduction of interest bearing checking (Autosave) accounts in 1980, and the computation of daily interest on savings accounts since 1983 have increased the attractiveness of holding savings accounts. This development has been complemented by the trend towards more cashless transactions due to increased automation, as discussed in Section 2.2. It is now possible for individuals to hold less cash and current account holdings and more savings deposits because of the ease of withdrawing cash from strategically sited automated teller machines (ATMs). The increasing convenience and attractiveness of holding savings deposits have resulted in a steady decline in the ratio of currency to overall deposits (see column 9, Table 8.6), and increases in the proportion of funds held in the form of quasi-money (see column 6, Table 8.6).

4.3 Impact of Money on Prices

Basic relationships between inflation and money growth for Singapore, using quarterly data from 1979 to 1990/Q4, were also estimated (Table 8.7). The study does not directly address itself to questions of causality - i.e., whether money growth causes inflation or vice-versa, or whether money growth is exogenous. With the significant import component in the consumer price index, a priori belief of a strong link running from money to prices would be low.

The regression shows that even after a six-year lag, a 1-per cent increase in the money stock would result only in a 0.73-per cent in-

Table 8.6

MONEY BASE, MULTIPLIERS AND PARAMETERS
(End of Year Data)

Year	H (S\$ m) (1)	mm1 (2)	mm2 (3)	mm3 (4)	c (5)	q (6)	n (7)	c+r(b+f)+e (8)	Overall Currency Dep.Ratio (9)
1979	3838	1.487	3.361	4.337	1.064	2.602	1.355	1.388	0.2146
1980	4340	1.414	3.702	4.731	1.047	3.313	1.490	1.448	0.1803
1981	4809	1.506	4.091	5.197	0.876	3.220	1.378	1.246	0.1565
1982	5690	1.434	4.008	5.216	0.960	3.520	1.652	1.368	0.1556
1983	6220	1.384	4.104	5.425	1.015	3.960	1.923	1.456	0.1474
1984	6656	1.332	4.075	5.417	1.088	4.298	2.103	1.567	0.1470
1985	6944	1.265	4.054	5.332	1.171	4.786	2.195	1.716	0.1468
1986	7319	1.342	4.229	5.491	1.051	4.414	1.928	1.529	0.1432
1987	7910	1.395	4.689	5.961	0.973	4.661	1.799	1.415	0.1304
1988	8932	1.339	4.712	5.914	1.006	5.055	1.801	1.498	0.1281
1989	10316	1.332	4.997	6.205	0.926	5.298	1.747	1.446	0.1152

Note:

$$\text{Overall Currency Deposit Ratio} = \frac{C}{D+Q+N}$$

where, C is currency in circulation, D is demand deposits of banks, Q is quasi-money, and N is net deposits with non-bank financial institutions.

crease in consumer prices. The statistical significance of the equation, which is expressed in differences in logarithms (dlog) to represent growth rates, is also difficult to interpret. The R^2 (0.1883) is not a satisfactory indicator of goodness of fit because of the growth rate specification. Likewise the low standard error (0.0083) is not meaningful because one period errors can accumulate.

A dynamic simulation of the equation was thus performed to circumvent these problems, and the results of simulation were restored to level form. Chart 8.1 shows actual rates of change of CPI and inflation predicted by the equation. The results are not impressive, although performance seems to have improved in recent years. This suggests that monetary growth has not been a very reliable guide to future inflation in Singapore, which is consistent with our earlier discussion on the determinants of inflation.

V. Summary

Price stability is the prime objective of monetary policy in Singapore. This goal is achieved by the MAS through its management of the exchange rate as the main instrument of monetary policy. This policy emphasis on the exchange rate stems from consideration of Singapore's openness and other institutional factors. The exchange rate is a more effective instrument for achieving price stability than any other instrument, as imports form a high proportion of Singapore's domestic expenditure. Although this takes the focus away from monetary aggregates, useful information might be obtained from empirical studies on money demand, and the relationship between money and prices.

Our estimates indicate that the real demand for the various monetary aggregates in Singapore can be explained by real income levels, the returns on alternative financial assets, the rate of inflation and the real value of financial transactions. The estimates also suggest that the long run income elasticities for M2 and M3 are greater than unity and less than unity for M1. The findings revealed the divergent trends in the money multipliers. The M1 multiplier has declined since the early 1980s, while the multipliers for M2 and M3 have been rising in recent years. The more rapid development of the broader aggregates appears to reflect, among other things, financial innovations such as the introduction of interest-bearing checking accounts and of daily interest on

Table 8.7

ESTIMATE OF MONEY-PRICE EQUATION

(Sample Period: 1981/Q1 - 1990/Q4)

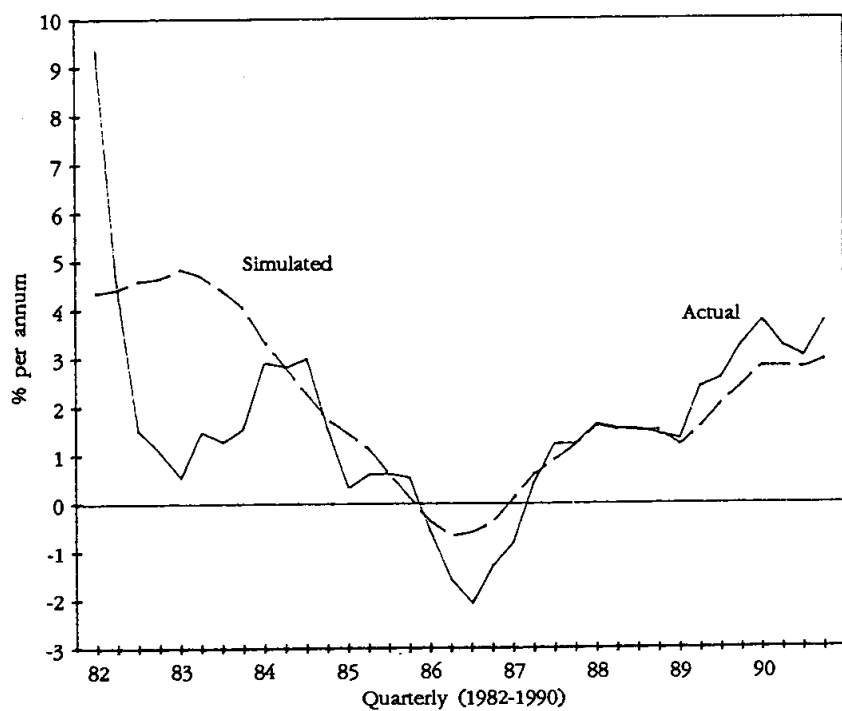
$$\begin{aligned} \text{Estimated Equation: } d\log(\text{CPI}) = & -0.01237 + \sum_{i=0}^{32} m_i d\log(M1)_t \\ & (2.13151) \\ & + 0.0640 \text{ Season}_3 \dots \dots \dots (2) \\ & (1.98825) \end{aligned}$$

with degree 2 polynomial distributed lag, and far point constrained to zero,

where, $\sum_{i=0}^{23} m_i$ is

	Coeff.	t		Coeff.	t
m0	0.05843	2.39537	m12	0.02939	2.14541
m1	0.05602	2.60149	m13	0.02696	1.97645
m2	0.05362	2.80868	m14	0.02452	1.82557
m3	0.05120	2.99771	m15	0.02208	1.69167
m4	0.04879	3.21436	m16	0.01963	1.57306
m5	0.04637	3.21436	m17	0.01719	1.46792
m6	0.04396	3.19863	m18	0.01474	1.37449
m7	0.04154	3.09878	m19	0.01229	1.29121
m8	0.03911	2.93648	m20	0.00984	1.21669
m9	0.03669	2.73984	m21	0.00738	1.14976
m10	0.03426	2.53303	m22	0.00492	1.08940
m11	0.03183	2.33206	m23	0.00246	1.03476
$\sum m_i = 0.73322$					
$\bar{R}^2 = 0.1883 \quad \text{S.E.} = 0.0083 \quad \text{D.W.} = 1.2132$					

Chart 8.1
Dynamic Simulation of CPI Inflation



savings accounts. It has also reflected the development of cashless transactions through automation and the ease of accessing savings deposits through ATMs. Our estimates also confirmed the conclusion that domestic monetary growth alone does not adequately explain price inflation in Singapore. The results indicate the absence of unitary elasticity of prices with respect to money.

Appendix 8.1

CHRONOLOGY OF IMPORTANT INNOVATIONS AND REFORMS IN SINGAPORE'S DOMESTIC BANKING SYSTEM (1975-1990)

- May 1975 - Selected banks are given approval to issue Singapore dollar negotiable certificates of deposit (S\$NCD).
- July 1975 - The cartel system of determining interest rates is abolished. Banks are free to quote their own rates of interest.
- June 1978 - Exchange control is completely liberalised. Residents are free to borrow and lend in all currencies as well as deal freely in foreign exchange.
- October 1979- The Chartered Bank introduces Singapore's first Automated Teller Machine (ATM).
- January 1980- The Development Bank of Singapore (DBS Bank) introduces a new facility called Autosave which allows all funds in the current account to be transferred and kept in an interest-earning savings account.
- December 1981- The first ATM of Associated Data Processing Pte. Ltd. (ADP) is commissioned. The ADP Autoteller will accept ATM cards of any of its five shareholder banks, namely Asia Commercial Bank, Far Eastern Bank, Industrial and Commercial Bank, Overseas Union Bank and Tat Lee Bank.
- August 1982 - The Automated Cheque Clearing House starts operations.
- January 1983- The Association of Banks in Singapore (ABS) agrees to allow members to calculate interest on savings accounts on a daily basis.
- April 1983- Abolition of stamp duty on all cheques, including travellers cheques.

- April 1984- The Singapore Clearing House Association launches the Interbank-Giro System which facilitates paperless transfer of funds between customers of participating banks by direct debiting and crediting of customers' accounts with these banks.
- February 1985- ABS member banks are free to determine the commissions and fees they charge for banking transactions and services.
- January 1986- Electronic Funds Transfer at Point of Sale (EFTPOS) is launched. The facility, called NETS, enables a customer to pay for purchases using an ATM card to effect an immediate transfer of funds from his bank account to that of a retailer.
- May 1987 - The Monetary Authority of Singapore launches the revamped Singapore Government Securities (SGS) Market which is characterized by scripless trading and market-determined yields. Five approved primary dealers and three approved registered dealers (all upgraded to primary dealer status in August 1988) replaced the four discount houses in an enhanced role as market makers in government securities. All applications in the primary auction of government securities have to be submitted through the primary dealers, and all primary and registered dealers are obliged to quote two-way prices under all market conditions.

The reserve and liquidity requirements of banks and finance companies are revised in line with the Government's plan to develop and active market in SGS.

For banks, the minimum liquid assets is reduced from 20 percent to 18 percent. Banks' deposits with discount houses are no longer qualified as liquid assets. Holdings of SGS, which had been constrained by maturity and the former two-tier liquid asset system, are now only subject to a minimum of 10 per cent of the liabilities base. SGS held under the overnight repurchase agreements with financial institutions are now eligible as liquid assets, subject to a maximum of 5 percent of their liabilities base.

For finance companies, reserve and liquidity requirements are also brought in line with those of commercial banks.

November 1988- The Big Four local banks (DBS Bank, Oversea-Chinese Banking Corporation, Overseas Union Bank and United Overseas Bank) and their subsidiary launched their shared ATM network called ATM NETS.

Appendix 8.2

1. The alternative money demand function presented in Appendix Table 1 is of the form:

$$\ln(m^d/P_t) = b_0 + b_1 \ln Y + b_2 R + (1-\alpha) \ln(M_{t-1}^d/P) + \mu_t \dots\dots (1)$$

This assumes a nominal-adjustment mechanism which allows individuals to adjust their nominal money holdings to price level changes with a lag.

Appendix Table 1			
	M1	M2	M3
1. Lagged Money Stock	0.80496 (4.740)	0.77335 (9.039)	0.73347 (9.901)
2. Real GDP	0.15721 (1.085)	0.29342 (2.3359)	0.33122 (3.213)
3. Weighted Average Bank Deposit Rate	-0.00075 (0.174)	0.00216 (0.779)	0.00194 (0.823)
4. SIBOR+EXRMA4	-	-0.00246 (1.879)	-0.00234 (2.228)
5. Inflation Rate	-0.00101 (0.596)	-0.00157 (1.196)	-0.00231 (2.120)
6. Real Stockmarket Turnover	0.01481 (1.269)	0.02801 (3.395)	0.02428 (3.712)
7. Constant	-0.70003 (1.057)	1.67585 (2.365)	1.68989 (3.116)
8. SEASON_3	0.02563 (2.032)	-	-
9. SEASON_4	0.05831 (3.704)	0.03941 (4.295)	0.03481 (4.471)
Std. Error	0.0278	0.0215	0.0177
R Bar Sq.	0.9802	0.9954	0.9965
Durbin-Watson Statistic	2.0679	1.4180	1.5194
Adjustment Coefficient, α	0.1950	0.2267	0.2665

2. The results obtained from using the nominal-adjustment mechanism do not seem to differ too much from the real-adjustment model. The long-run elasticities of the various determinants of money demand also appear to be stable, regardless of the assumption regarding the adjustment mechanism used (compare Table 4 with Appendix Table 2).

Appendix Table 2
LONG-RUN ELASTICITIES

	M1	M2	M3
1. Real Income	0.8060	1.2946	1.2427
2. Inflation	-0.0052	-0.0069	-0.0087
3. Weighted Average Dep. Rate	-0.0038	0.0095	0.0073
4. SIBOR	-	-0.0109	-0.0088
5. Real Stockmarket Turnover	0.0759	0.1236	0.0911
7. SEASON_3	0.1314	-	-
8. SEASON_4	0.2990	0.1739	0.1306

CALCULATION OF MONETARY MULTIPLIER

1. Generally, a money multiplier model may be stated as:

$$M = mm.H$$

where, M is any given measure of money supply, mm the corresponding money multiplier, and H the monetary base. The monetary base may be defined in terms of its components:

$$\begin{aligned} H &= C + R \\ &= C + RR + E \\ &= C + r.LB + E \\ &= C + r.(B + F) + E \\ &= \frac{C}{D} + r \frac{(B+F)}{D} + \frac{E}{D} \quad D \\ &= [c + r(b + f) + e] D \end{aligned}$$

where, C is currency in active circulation, R reserves of banks and finance companies, RR required reserves of banks and finance companies, E excess reserves of banks and finance companies, r the minimum cash balance ratio, LB liabilities base of banks and finance companies, B liabilities base of banks, F liabilities base of finance companies, and D demand deposits. The lower case letters, other than r, refers to the corresponding component's ratio to demand deposits.¹²

12. The minimum cash balance ratio (r) is similar for banks and finance companies, and has remained unchanged since mid-1975. See the section on Prudential Regulations for a related discussion on the minimum cash balance of banks and finance companies.

2. The various monetary measures in Singapore can then be restated as:

$$M1 = \text{Demand Deposits (D) + Currency in Circulation (C)}$$

$$= D + C$$

$$= (1+c)D$$

$$= \left[\frac{1+c}{c+r(b+f)+e} \right] H = mm1.H$$

$$M2 = M1 + \text{Quasi-money (Q)}$$

$$= (1+c+q)D$$

$$= \left[\frac{1+c+q}{c+r(b+f)+e} \right] H = mm2.H$$

$$M3 = M2 + \text{Net Deposits with Non-Bank Financial Institutions (N)}$$

$$= (1+c+q+n)D$$

$$= \left[\frac{1+c+q+n}{c+r(b+f)+e} \right] H = mm3.H$$

where, mm1, mm2 and mm3 are the multipliers for M1, M2 and M3, respectively.

Chapter 9

MONETARY POLICY IN SRI LANKA: AN UPDATE

by

A. G. Karunasena

I. Introduction

After gaining independence in 1948, Sri Lanka has travelled almost a full circle with respect to economic policy regimes. In the 1950s the country followed a pre-enterprise liberal framework with little direct government involvement in economic activities and with minimum intervention in foreign trade and exchange controls. Soon, however, the country was to witness a period of increased government intervention and controls in economic activities. Consequently, Sri Lanka was basically a semi-planned mixed economy in the 1960s with expanding government direct participation in economic activities, becoming a highly regulated and controlled economy by early 1970s. Subsequently, there was a complete turnaround in the economic policy of the country during 1977 with the introduction of a market-oriented economic policy package by deregulating market activities and reducing direct government participation in economic activities. In the financial sector, the Government actively encouraged more competition by removing entry barriers to foreign banks, allowing the domestic private sector to establish new financial institutions, permitting the issue of new financial instruments and establishing specialized financial institutions.

Politically, the country has experienced different levels of mixed policies in the last four decades even as socially it has gone through fundamental structural changes following such international developments as the increasing integration of economic activities (i.e., globalization) and technological advances which have made financial activities more comprehensive and efficient in the recent past. Responding to these domestic and external developments, the monetary policy of the country also evolved over time. The present study analyzes the monetary policy experiences in Sri Lanka during the post-1978 period, a sequel to a previous study on the same topic covering the period from 1950 to 1978. This update will be very useful because the country has experienced significant changes since the first study while

monetary policy also went through some significant changes during the last decade. Section II discusses the economic and financial sector developments of the country, while Section III presents the role and implementation of monetary policy. The effectiveness of monetary policy and impact of financial reforms are presented in Section IV. Section V is devoted to discuss constraints on monetary policy. A summary and the conclusions of the study are given in Section VI.

II. Economic and Financial Developments

2.1 Economic Environment

Following independence in 1948, Sri Lanka experienced moderate growth rates of 2-3 per cent per annum during the 1950s and 1960s, while the population grew at a high rate of around 2 per cent annually. In response to domestic and external changes, the country began to move more towards a non-market-oriented economic policy regime in the 1960s as also did most of the developing countries. Consequently, government intervention in economic activities increased with the expansion of direct government participation in production and distribution activities of goods and services, introducing new regulations and controls over market activities during the 1960s and 1970s. During this period, the inward-looking policy package was given special emphasis in the area of external trade, while the import substitution policy was followed as the major strategy in the industrialization program of the country. As the domestic private sector was not strong enough to undertake large-scale investments especially in some import substituting industries, the Government directly undertook production activities by establishing public corporations and/or public enterprises. Accordingly, public enterprises/corporations were established in various production sectors in the 1960s. The large-scale private plantation sector was transformed into two public sector corporations by 1975 under the second step of the land reform program which was introduced in 1973. Generally, domestic producers were provided a highly protected market with various incentives and producer subsidies. In the case of domestic trade, more emphasis was given to a quota/ration system in the distribution of goods, while steps were taken to establish and expand the activities of the public sector trading enterprises.

On the external trade side, import quantity controls, high tariff protection and a multiple fixed exchange rate system were major policies

pursued during the 1960s and 1970s. Meanwhile, the Government continued expansion of various welfare schemes introduced after independence. Accordingly, basic economic requirements such as food, health, education and transport services were provided at subsidized prices under these welfare schemes. Thus, by the middle of the 1970s, the economy had become highly controlled and regulated by the Government as public sector participation grew significant in various production and distribution sectors. The Government supported health, education and food subsidy schemes and other social services. This raised life expectancy, literacy rates and health indicators of the country improving them to levels comparable with those in developed countries. However, this progress in welfare was not matched by a comparable economic growth.

Under the non-market-oriented policy regime, resource allocation was extremely distorted and black-market activities developed in various sectors of the economy in parallel to the official markets. The overall economic policy environment was not conducive to improve efficiency and productivity in the economy. As a result of the welfare-oriented and non-market-oriented policy stance and unfavorable external developments, the growth rate of the economy decelerated as external and internal macro-imbalances worsened during the pre-1977 period. Observed savings and investment levels were not sufficient to sustain high economic growth. Growth of private sector economic activities and their efficiency were discouraged by the extensive controls and regulations imposed by the authorities. Nationalization and extensive government intervention policies were not conducive to expanding domestic private investments and inflow of foreign private capital to the country. Domestic inflation was maintained at a single-digit level with an extensive price control system, while licensing and quota restriction policies were directed to prevent deterioration in the external imbalance of the country. Domestic captive financial sources were mainly utilized as the major means to mobilize non-inflationary resources for the government deficit financing.

Following international trends, Sri Lanka also undertook a major reorientation of economic policies in 1977, with a move from a regulated and controlled policy regime to a more market-oriented policy regime. The major features of this change were a reduction or removal of government intervention in market activities by deregulating most direct and indirect controls, liberalization of external trade and pay-

ments system, a movement away from the inward-looking policy to an outward-looking policy, replacement of a fixed multiple exchange rate system with a managed floating single exchange rate system, reduction of direct government participation in economic activities by limiting its role mainly to provide infrastructure facilities and the creation of a conducive policy environment for a more dynamic private sector in the economy. The Government initiated action to reduce inefficiency and/or losses in the public enterprises/corporations by reforming their management or by ultimately privatizing some of them. Domestic private sector investors as well as foreign private investors were encouraged by providing new facilities and incentives.

In response, the growth rate of the economy increased from a range of 2-4 per cent in 1970-1977 to 5-8 per cent during the period immediately after 1978 (Table 9.1). Meanwhile, investment increased to a high level partly due to large investment projects undertaken by the Government with foreign assistance. A large part of the government deficit was financed through foreign grants and concessional external borrowings. However, except during the export boom period of 1984, the Government resorted to inflationary domestic borrowing sources for deficit financing due to the limitations in resource availability from domestic non-banking sources.

The period after 1977 can be divided into two sub-periods: the first sub-period from 1977 to 1982, and the second sub-period from 1983 to 1990. Major developments during the first sub-period were acceleration of economic growth, high level of investments, employment expansion by reducing unemployment to some extent, improvement in external earnings due to expansion of exports and tourism, increases in budget deficit due to large investment projects and a high inflationary situation of the country. However, some of these favorable developments changed during the second sub-period largely due to a deterioration in the civil conditions and some unfavorable developments in the international markets. The increased civil unrest not only resulted in unexpected government expenditure but also led to production and investment activities being disrupted significantly. The large investment projects undertaken by the public sector reduced the availability of resources to the private sector, although many restrictions and regulations which were impediments to private sector expansion were removed after 1977. Continued operation of inefficient public sector institutions not only distorted the resource allocation in the economy but also aggravated the pressure for government expenditure.

2.2 Financial Developments

The financial system in Sri Lanka was at a very early state of development at the time of the establishment of the Central Bank of Sri Lanka in 1950. It comprised only 10 commercial banks, largely branch offices of foreign banks and a limited number of non-bank financial institutions such as savings banks and long-term lending institutions, which were few in number and were at a rather early stage of their development. Thus, at the inception of the Central Bank, the institutional infrastructure of both the monetary sector and the non-monetary sector was woefully inadequate in relation to the aspirations of an independent developing nation. In this context, an important function of the Government and the Central Bank of Sri Lanka, as in other developing countries, was to promote the development of the financial system in the country.

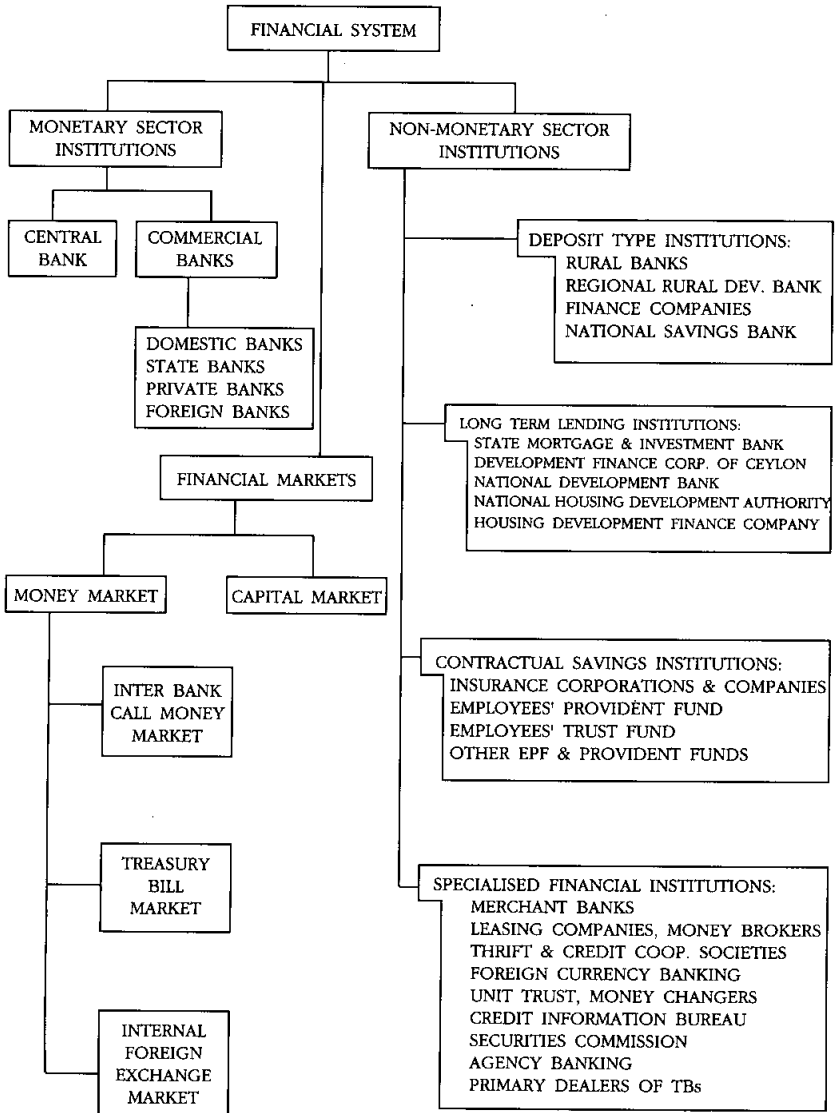
The major emphasis during the 1960s and the early 1970s was to localize and expand the financial system into remote areas with state support and participation. The Government intervened in the financial sector activities by establishing new public sector financial institutions and introducing new regulations and controls over financial sector activities. Consequently, the banking sector which was dominated by expatriate banks serving largely the financial requirements of foreign trade and short-term credit facilities of the plantation sector underwent a radical change as local state banks gained the dominant position in the financial system. The state banks continuously increased their relative share in the banking sector by expanding their services to new economic sectors and into the remote areas of the country. On the other hand, there was little or no development of private-sector-initiated financial institutions during this period. Thus, the financial sector tended to be repressed in terms of developments and new initiatives.

Period After 1977

The financial sector was highly controlled and regulated, dominated by public sector institutions which retarded efficient transmission of financial resources, when the new liberalized economic policies were introduced in 1977/1978. The spread of government controls over the financial system reduced its dynamism and efficiency in resource allocation. The new economic policies which placed more emphasis on market forces for economic decisions and on the private sector in

Chart 9.1

COMPOSITION OF THE FINANCIAL SYSTEM IN SRI LANKA



development activities necessitated compatible changes in the financial system. At the same time, technological development improved the integration of financial markets and introduced more sophisticated new financial instruments diluting the effectiveness of traditional non-market-oriented monetary policy measures. Such technological developments in the financial sector activities increased the necessity of monetary and financial reforms in the late 1970s in Sri Lanka.

The objective of the financial reform was to create an efficient financial system in the country with the necessary degree of dynamism, taking into account the financial sector developments in the rest of the world. In summary, the main features of the financial sector reforms undertaken after 1977 were deregulation of financial sector activities, placing greater reliance on market-oriented measures in the implementation of monetary policies. These reforms were observed in such areas as indicated below.

- Deregulation;
- Institutional reforms;
- Instrumental reforms;
- Interest rate determination;
- Credit allocation;
- Reduction in the financial intermediation cost;
- Strengthening of the legal, accounting and regulatory frame works of financial institutions and improving their management; and,
- Emphasis on market-oriented policy measures in monetary management.

Under the new policy regime, the Government removed barriers to the development of the financial system as well as provided incentives to develop the financial system without directly participating in the financial sector activities.

Under the financial institutional developments, barriers to entry and expansion were removed allowing existing institutions to expand and new institutions to enter, thereby creating a competitive environment in the financial system. A salient development in commercial banking in Sri Lanka in the late 1970s was the departure from the hitherto practiced policy of not encouraging foreign banks to open branches in the country. Accordingly, foreign banks of good repute were allowed

to open branches in Sri Lanka after more than two decades because it was considered necessary to improve the competition in the financial system by introducing new developments in financial services and to have efficient well reputed foreign banks attract foreign private investments under the new liberalized economic policies. During the period 1979-1982, 14 new foreign banks established branches in the country. Moreover, two new domestic private banks were established in the 1980s, based on successful share issues. The presence of these new banks helped in creating a competitive environment in the banking sector and introducing innovative techniques and practices in the banking business. The foreign banks were also allowed to open branches in the outstations. However, bank branches in the country expanded continuously as a result of the opening of new branches by domestic banks during the period. Consequently, the population coverage per bank branch improved from 30,000 in 1980 to 23,000 by 1990.

With a view to improving banking facilities in the outstation areas, the Central Bank proceeded to set up its regional offices, beginning in 1981. So far, three such regional offices have been established and they coordinate banking services, refinance facilities, and regional clearing facilities and undertake promotional and extension services to strengthen the credit delivery system specially in the rural sector.

In recognizing the inadequate facilities for long-term credit availability under the existing financial system, the Central Bank has made special efforts, directly and indirectly, to develop the long-term financial institutional structure of the country. As a result, steps were taken to reorganize existing long-term lending institutions by reducing their organizational weaknesses and providing required financial resources to them, in addition to introducing new institutions.

Belatedly, the two oldest long-term lending institutions, the State Mortgage Bank (SMB) and the Agriculture and Industrial Credit Corporation (AICC) were amalgamated in 1979 to establish the State Mortgage and Investment Bank (SMIB) with wider powers and enhanced authorized capital. It was considered that the amalgamation would provide a pooling of resources, both financial and human, enabling the medium- and long-term credit needs of the economy to be met more effectively than could be done by two institutions operating separately. After the amalgamation, the expansion of lending activities of the SMIB accelerated. The Development Finance Corporation (DFC) which was

established to assist expansion and modernization of private industrial, agricultural and commercial enterprises in Sri Lanka and to encourage the participation of private capital, both local and foreign in such enterprises, was expanded by increasing its authorized capital from Rs. 24 million to Rs. 300 million in 1982 and by making available to it financial resources mainly from foreign sources such as the ADB and the IDA.

As a response to long-term credit requirements which were greatly expanding subsequent to the liberalized economic policies introduced in 1977/1978, the National Development Bank (NDB) was established in 1979 to promote the development of industrial, agricultural, commercial and other sectors of the economy. In order to achieve the objective, the NDB was allowed to provide direct project finance, refinance and equity funding to private and public enterprises. In addition, the NDB was empowered to undertake development projects and provide technical and consultancy services, etc., in order to achieve its purposes. The NDB expanded its financial facilities keeping pace with the expansion of the economy during the 1980s. In 1984, the NDB took the initiative to set up the Ceylon Development and Investment Corporation (CDIC) to make equity investments in developmental and commercial projects. Financial facilities available for housing construction were likewise expanded by establishing the National Housing Development Authority (NHDA) in 1979 and the Housing Development Finance Corporation (HDFC) in 1984.

Provident/pension funds and insurance firms were major institutions for contractual savings in the financial system. These institutions were key investors in long-term financial assets. By recognizing their role as mobilizers of long-term savings in the economy and as a way of providing social security services to the public, the authorities have made efforts to expand and improve the institutional system of contractual savings during the period. In the contractual savings sector, the major change was the demonopolization of the insurance business after about two decades. The National Insurance Corporation (NIC) was established in 1979 to pursue the government policy of demonopolizing insurance business and encouraging healthy competition through the establishment of parallel services. Subsequently, as a part of the Government's new policies insurance business was opened to the local private sector in 1985, abolishing the public sector monopoly after more than two decades. Consequently, three private insurance companies

have been established by groups of leading private companies. At present, all of them offer all types of insurance facilities, competing with the two public insurance corporations. With the idea of promoting and diversifying the country's export trade, in 1979 the Government established the Sri Lanka Export Credit Insurance Corporation (SLECIC) to provide cover to exporters against commercial and non-commercial risks as well as to guarantee export refinance facilities obtained by exporters from banks.

The Employees' Provident Fund (EPF), the largest contractual savings fund in the country enhanced its activities as a multifaceted and multipurpose scheme. In addition to its services as a social security scheme and long-term savings mobilizer, it has served as a source of non-expansionary deficit financing in government deficit financing. Furthermore, in 1988 a new scheme was introduced under the EPF to provide guarantee facilities for housing loans to its members. In 1982, the Employees' Trust Fund (ETF) was created to provide meaningful retirement benefits to employees in the private sector including public corporations and to promote employees participation in the ownership of enterprises in the private sector. Thus, it is a form of Units Trust. At present, the ETF has shares in more than 29 companies.

In the context of liberalized economic policies, there was a need for the emergence of an active and modern financial system with specialized financial institutions. The requisites of specialized financial services such as portfolio management, business and financial services, etc., emerged with new investment activities. Responding to these requirements, the financial system of the country expanded and became more sophisticated during the period under review with the establishment of modern types of financial institutions. The two largest commercial banks established two merchant banks in the 1980s as their subsidiaries to provide specialized financial services. With the establishment of three leasing companies in the 1980s, leasing activities expanded in the country during the recent past.

In 1979, commercial banks were permitted to establish Foreign Currency Banking Units (FCBUs) to provide offshore banking facilities in Sri Lanka. The FCBUs were established as separate units of commercial banks to provide offshore banking facilities, specially for enterprises in export promotion zones, to support the development of an international money market in the country and to facilitate inflow of

foreign capital into the country. At present 23 commercial banks out of 24 have active FCBUs. After 1979, permission was granted to establish money brokers with a view to improving and expanding money market activities. At present, seven money brokers, which are subsidiaries of leading mercantile companies, are operating in the country, mainly providing services in the call money market, treasury bill markets, internal foreign exchange market and the offshore market.

The scheme of rural banks (RBs), which was introduced in 1964 as an avenue for mobilizing rural savings and channelling credit to the rural sector, expanded its activities in the 1980s. Furthermore, RBs undertake the business of pawn-broking and assist in integrating credit programs with production and marketing activities. Supply of banking facilities to rural areas were further extended in 1985 with the establishment of Regional Rural Development Banks (RRDBs) based on the barefoot banking concept to satisfy the shortage of rural credit largely for agriculture and small industries. At present, 11 RRDBs with a branch net work of 89 are operating in various districts of the country. The National Savings Bank (NSB), which has been established to coordinate and develop savings in the country, was allowed to decide its deposit rates in 1984 and permission was given to issue some new savings instruments. The NSB has taken the initiative to diversify its portfolio by entering into special credit schemes such as rural lending and participating as a credit distribution institution under the Small and Medium Industrial (SMI) Scheme, though its relative share in total credit remains small. As a response to demand for financial services resulting from new economic policies, the activities of the finance companies increased and expanded during the period under study. The number of finance companies registered increased from 56 in 1980 to 72 at the end of 1989. These provided hire-purchase loans, bridging finance, leasing, land and housing finance and granted loans to high risk clients.

Taking into consideration the requirement of training facilities for the financial sector, the Central Bank established its Rural Banking and Staff Training College (RB & STC) in 1981 to train the Central Bank's staff and personnel from other banking institution. The RB & STC organizes a large number of seminars and training courses annually.

For a long time, the cheque clearing system of the country continued to be a manual system with considerable delays in clearing particularly cheques outside the Colombo area. In the context of a

sharp expansion in the number of banks and banking and economic activities after 1978, the manual clearing system came under considerable strain. Consequently, the Sri Lanka Automated Clearing House (ACH) was established in 1988. This has greatly improved and speeded up the cheque clearing facility in the country. Lack of information about the credit-worthiness of borrowers and the resulting high default rates were two major problems faced by the financial institutions in Sri Lanka. As a solution to these, a Credit Information Bureau was set up in 1990 by the Central Bank in association with commercial banks and other financial institutions with a view to centralizing and exchanging information on borrowing activities.

In the way of financial instrument reforms, financial institutions were allowed to reform existing instruments and introduce new instruments according to emerging new requirements in the economy and following technological developments taking place in the world. Commercial banks, finance companies and the NSB reformed their deposit instruments - improving their attractiveness to depositors and introduced new deposit instruments - expanding available financial instruments for savers. As a result, different types of fixed deposits, checkable savings accounts, certificate of deposits (CDs), money market deposits, credit cards and teller card facilities were introduced. The freely negotiable CDs became the most attractive money market instruments due to their anonymity, specially for non-institutionalized and hoarded money. Meanwhile, the insurance institutions expanded their insurance policy packages. The Government also introduced different maturity periods into Treasury bills and new borrowing instruments such as Defence Bonds, Treasury CDs and medium-term government securities were made available.

2.2.1 Improvement in Legal Framework

The legal framework of the financial system of the country improved significantly during the period under review. In Sri Lanka, the Central Bank was established and functioned according to guidelines specified in the Monetary Law Act (MLA). However, there was no separate law governing the establishment or the operation of commercial banks and/or finance companies before 1977. The relevant regulations were found in laws such as the Monetary Law Act, Companies Ordinance, Bills of Exchange Ordinance, Bank of Ceylon Ordinance and People's Bank Act. Although there were legal provisions relating

to financial institutions, they were somewhat loose and piecemeal in nature. Therefore, the Banking Act was enacted in 1988 by consolidating all these legal guidelines with regard to the commercial banking sector. The objective of the Act is to ensure that prudent standards are high and that banking activities should progress in a systematic manner. Already, a number of steps have been taken in implementing the Act by introducing a licensing system, minimum liquidity ratio, capital adequacy ratio, single borrower limits, limits on share ownerships and guidelines on lending to directors with respect to activities of commercial banks.

The necessity for controlling/and regulating the finance companies arose during the late 1970s for several reasons including a high rate of expansion of finance company activities and their considerable impact on the financial system of the country and the need to ensure liquidity and solvency of these companies to protect the interest of depositors. As a result, the Control of Finance Companies Act of 1979 was enacted giving powers to the Central Bank to regulate and control finance company activities. Accordingly, a liquidity requirement was imposed on finance companies in 1982 and supervision of their activities was initiated by the Central Bank in 1983. Despite these regulations and supervision activities, a number of finance companies faced severe liquidity problems after 1986. As the existing laws were found inadequate to deal with these complex problems of finance companies, a comprehensive new legislation referred to as the Finance Company Act 1988 was enacted in 1988 by enhancing the powers of the Central Bank. The Central Bank established a new department for supervision of non-bank financial institutions in the same year to regulate and supervise finance companies under the new Act. In addition, the required legal enactments were completed with respect to the establishment of a credit information bureau and unit trusts and to speed up debt recovery activities during the period of 1989 to 1990.

2.2.2 Money Market

Following the economic reforms in 1977, the money market in Sri Lanka underwent rapid changes. As the new economic policies placed more emphasis on the private sector in economic activities, improvements in the money market became necessary. As an initial step, measures were taken to improve the financial environment required for an improved money market by introducing new instruments and per-

mitting the establishment of new institutions as well as allowing the reform of existing instruments and institutions. New sub-markets were accordingly allowed to evolve in the money market as the existing sub-markets were encouraged to expand their activities. The major sub-markets in the money market of Sri Lanka are the interbank call money market, the primary and secondary treasury bill markets, internal foreign exchange market and offshore foreign exchange market. Prior to 1977, the money market activities were largely confined to the activities in the interbank call money market. As a result, the unorganized sector of the money market was highly active. However, the development in money market activities accelerated after 1977 due to new measures taken by the authorities and improvements in the financial system.

The opening of new foreign banks after 1977 and the developments that took place in the financial environment of the country led to a substantial increase in the activities of the interbank call money market. The foreign banks, whose deposit base was relatively narrow compared with their substantially high credit supply, resorted to borrowing funds at times of liquidity constraints from the banks which were operating with large deposit bases. The commencement of operations by money brokers during the early 1980s both expanded the money market activities and improved the efficiency of money market transactions. At present, the interbank call money market very often provides the liquidity requirements of commercial banks by way of call and term loans through money brokers. The interest rate in this market is decided by market forces and it has shown severe fluctuations in the recent past in response to external shocks.

As a result of more market-oriented monetary policy measures implemented during the period under study, the Primary Treasury Bill Market (PTBM), which is the main mechanism for raising short-term funds for the government budgetary requirement, developed continuously. A regular weekly auctioning system in the PTBM was introduced in 1986 while interest rates on Treasury bills (TBs) were allowed to be determined according to market forces with minimum intervention of the authorities. The attractiveness of the TBs got enhanced in 1989 with the introduction of bills with different maturities of 6 and 12 months in addition to a continuation of 3-month bills. Investment facilities in TBs were extended to outstations through the "tap system" introduced in 1986 under which allocations are made from the following auction at the weighted average rate of the current auction. The "tap

system" was extended to Colombo in 1989 to reduce the inconvenience that existed under the auction system in the PTBM. The introduction of a secondary market for Treasury bills in 1981 was an important step towards the development of a money market in Sri Lanka. The Secondary Treasury Bill Market (STBM) provided investment opportunities to short-term investors as well as enhanced the attractiveness of the Treasury bills by improving their degree of liquidity. After 1987, selling and buying rates (i.e., discount rate and rediscount rate) in the STBM were decided on market tendencies.

The treasury bill market has served a number of useful purposes. Firstly, it helped to contain the expansion of the monetary base, reducing thereby the expansion of monetary aggregates. Secondly, it provided a convenient short-term investment outlet for financial institutions with excess liquidity, inducing them to continue their deposit mobilization efforts unabated. Thirdly, it developed a market-oriented borrowings source for the Government. The Central Bank Security Market (CBSM) operated as a part of the money market during the period 1984 to 1988. The Central Bank issued its own securities in 1984 to absorb excess liquidity resulting from the tea export boom. Unlike in past issues, these securities were offered under an auction system allowing market forces to influence the interest rate applicable to them. However, as the treasury bill market expanded, the activities in the CBSM were gradually reduced and were removed completely at the end of 1988. Another innovative instrument was the certificates of deposits (CDs) introduced by commercial banks, finance companies and the Treasury with a view to bringing "black money" into the institutional system. As the CD is a negotiable instrument with anonymity, it provided an important market-oriented instrument to the money market. Moreover, CDs enhanced the deposit base of commercial banks and finance companies.

2.2.3 Foreign Exchange Market

Before the exchange rate policy reforms implemented in 1977, the operations of the Foreign Exchange Entitlement Certificates (FEECs) Scheme and the Convertible Rupee Account (CRA) Scheme were major components of the multiple exchange rate system followed in Sri Lanka. In 1977, these schemes were abandoned with the introduction of an unified exchange rate system under the managed floating exchange rate policy. Major changes in the exchange rate reforms in 1977 were:

- (i) a unification of the exchange rate;
- (ii) abolition of both the foreign exchange quota and prior licensing requirements for some imports;
- (iii) liberalization of invisible payments abroad; and,
- (iv) removal of a wide range of import and distribution monopolies.

One of the objectives of this reform was to create a more commercially oriented foreign exchange market in Sri Lanka required for the smooth functioning of the open economic policies introduced in 1977. The unification of the exchange rate system was accompanied by a significant depreciation of the Sri Lanka rupee (by 46 per cent in terms of the official rate and by 11 per cent in terms of FEEC rate). After 1977, the exchange rate has remained as a key policy element in the balance of payments (BOP) adjustment process and the depreciation of the rupee against several major currencies had a depressing effect on the demand for imports. The value of the rupee continued to be determined in terms of a weighted index calculated on the basis of the value of a basket of currencies monitoring the real effective exchange rate value. Initially, the commercial banks were allowed to decide their rates around the exchange rate announced by the Central Bank. This system has been changed over time to improve market-orientation in the determination of the exchange rate. Thus, in the new system commercial banks are allowed to deal in foreign exchange transactions without prior approval of the Central Bank and market developments incorporated in the determination of exchange rates. The permission granted to establish money brokers and FCBUs enhanced activities in the internal foreign exchange market during the period under review.

2.2.4 Capital Market

Various incentives were provided after 1978 to promote capital market activities. The Securities Council was established in 1989 as the authority responsible for the development of capital market activities in the country. Private sector investors were encouraged to mobilize required financial resources through the share market, especially by offering tax incentives. Shares in some privatized public corporations/enterprises were offered to the public on the share market. Certain restrictions on share transactions by foreigners in the Sri Lankan capital markets were removed. For instance, in November 1989, the 100-per cent tax on transfer of equity shares between foreigners was eliminated

and in June 1990, a similar tax on transfers of equity between Sri Lankans and foreigners was removed for firms with up to a maximum foreign ownership of 40 per cent.

III. Role and Implementation of Monetary Policy

3.1 Identification of Objectives

The objectives of monetary policy, as laid down in the Monetary Law Act (MLA) can be classified under the following two broad headings:

- (i) the stabilization objective; and,
- (ii) the development objective.

The stabilization objective includes the stabilization of the domestic value and the external value of the Sri Lankan rupee. It implies the necessity for monetary policy maintaining reasonable domestic price stability and reasonable stability in the exchange rate. The development objective requires promoting and maintaining a high level of production, employment and real income in Sri Lanka on the one hand; and, on the other encouraging a full development of the productive resources of the country. As is well known, these two objectives are in conflict with each other to some extent, in the sense that the policy measures necessary to achieve the two objectives require monetary/credit variables to move in opposite directions. The stabilization objective requires monetary policy measures curtailing the expansion of money and credit, while the development objective requires very linear policy measures to make available a large amount of credit at a low cost. With a growth in real economic activities, the money/credit supply has to be expanded in order to ensure a smooth functioning of the monetary economic system. The necessity of this requirement increases as the monetization of economic activities expands. In the case of Sri Lanka, the degree of monetization of the economy expanded continuously even in the 1970s and 1980s with the expansion of financial facilities to remote areas of the country and due to the emphasis given to a more market-oriented policy stance after 1978.

However, if money supply grows over and above these requirements of the economy, such excess money supply will create additional

liquidity in the economic system, eventually exerting inflationary pressures in the economy. Furthermore, it leads to an external deficit, depending on the import-income elasticity in the balance of payments and requiring some adjustments in the external value of the domestic currency, i.e., a depreciation in the exchange rate. Accordingly, whenever domestic price stability and/or the stability of the exchange rate are threatened by excessive growth of money/credit, contractionary monetary policy measures have to be implemented to stabilize the situation. On the other hand, as already mentioned, bank credit plays a vital role in monetized economic activities. Therefore, the restrictive monetary policy measures required to reduce credit expansion in the economy with a view to achieving stabilization objectives create difficulties for the expansion of the economy since credit is required for output expansion to provide short-term working capital requirements for producers/suppliers and consumption credits for consumers, as well as long-term financial facilities for fixed capital investment requirements.

Thus, the monetary policy measures required to achieve stability and development objectives conflict with each other. Hence, it is necessary to reach a compromise between these two basic objectives as demanded by the prevailing economic conditions and within the given overall economic policy package of the country. Generally, if the economy is threatened by inflationary tendencies, the priority for the monetary policy measures would be given to the stabilization objective. On the other hand, if the situation is a general economic recession coupled with a high rate of unemployment, the priority in monetary policy measures would be given to the development objective. In a normal economic situation, it is desirable to maintain an appropriate balance between these two objectives in selecting the policy measures.

The Central Bank of Sri Lanka made an attempt to identify the existing economic situation and to select its monetary policy objectives accordingly within the overall economic policy regimes which changed over time. The selection of objective was done with a very close correspondence to the type of overall economic policies adopted under different economic regimes that prevailed in the country by taking into account existing situation of the economy. Accordingly, when the economic policies were geared to achieving broad macroeconomic objectives, monetary policy plays a conducive role in stabilizing the domestic economy, while during the periods of development-oriented policy regimes monetary policy measures were used as complementary

policy measures to mobilize high domestic resource requirements. In the analysis of the Sri Lankan experience in selection of monetary policy objectives, three sub-periods can be identified for analytical convenience as follows:

- (i) the period from 1950-1959;
- (ii) the period from 1960-1977; and,
- (iii) the period after 1977.

During the 1950s, monetary policy was mainly used for stabilization purposes. The macroeconomic situation in this period was characterized by a reasonable economic growth coupled with a fair degree of price stability, while the overall economic policy placed emphasis on a mixed economic system. The Korean War boom of the early 1950s resulted in a considerable accumulation of external assets, the monetization of which would have inevitably led to an excessive monetary expansion causing severe inflationary pressures and threatening the external stability of the Sri Lankan rupee. Therefore, the major thrust of the monetary policy during the early 1950s was placed on policies to prevent the inevitable overheating that may plague the economy.

In the context of the worsening balance of payments situation and changes in overall economic policies, the major emphasis of monetary policy was changed after 1960. Under the controlled and regulated policy regime that prevailed during the period 1960-1977, the major components of the overall economic policy package were a strict exchange control and import control system, inward-looking policies with a greater emphasis on import substitution industries, a gradual expansion of government participation in economic activities, direct controls and restrictive non-market monetary policy measures rather than market-oriented measures and reliance as far as possible on domestic resources. During this period, the monetary policy graduated from being a mere stabilization measure into a wider scope to cover development issues as well. Accordingly, while the monetary policy was basically directed at preserving monetary stability and protecting balance of payments, a number of policy measures were implemented to facilitate the flow of financial resources to selected vital sectors of the economy.

In 1977, Sri Lanka elected to adopt a market-oriented new economic policy package moving significantly away from the closed and

regulatory economic policies pursued for over two decades. The main features of the new policy included a greater reliance on market forces in resource allocation, gradual dismantling of the import and exchange controls, establishment of an outward-oriented economic policy especially in industrial development, removal of price controls and quota system in the distribution of goods, placement of emphasis on the private sector in economic development with a gradual reduction of direct government participation in economic activities and harnessing foreign investment to supplement domestic resource mobilization. In this context monetary policy was assured a place of particular significance not only for maintaining stability in the economy but also for creating an appropriate financial climate for realizing the goals of the new economic strategy. However, during this period, monetary policy also had to cope with the continuing pressure that emanated from a sharp expansion in fiscal operation on macro-balances of the economy. Thus, the balancing between stabilization and development objectives by taking into consideration specific short-term developments was the major feature in monetary policy objectives during the period after 1978.

3.2 Identification of Targets

Under the identification of targets in the implementation of monetary policy two sub-groups can be seen as: (i) intermediary targets, i.e., monetary variables; and, (ii) ultimate targets, i.e., primary economic variables. Ultimate targets have to be selected according to the objectives of the monetary policies, depending on the prevailing situation in the economy. Similarly, in the selection of intermediary targets, the relationship between ultimate targets and monetary variables and the controllability of the latter by the authorities are important factors.

As usual, final targets are the broad macro variables such as the aggregate price level, gross domestic production, total employment, etc. Depending on the objective, the appropriate macro variables have to be selected as ultimate targets. As mentioned earlier, the domestic price level was the ultimate objective in the 1950s as the major emphasis was on the stability of the economy. As a result of developments in the economy and changes in the overall policy regimes, the major final target in the 1960s and the early 1970s was economic growth. However, continuous attention was given to the price stability and price controls and quota systems were used as inflation control measures. During the period after 1978, the emphasis has been on the economic

growth as the ultimate target but priority has been given to price stability in the short-term whenever the liquidity situation expanded, threatening the price stability in the country.

The most significant change in monetary targeting during the recent past was the redefinition of monetary aggregates used for policy purposes to be in line with recent developments in the financial system. The narrow money supply (M1), which constituted of currency and demand deposits held by the public as defined in the MLA in 1949 was the monetary aggregate used for target settings in the implementation of monetary policy until 1980. This definition adequately covered the money supply at the time the Central Bank was established and possibly the following two decades. However, a number of innovations and improvements that took place in the banking system during the late 1960s and 1970s made it a too narrow monetary aggregate for practical policy purposes. In the case of savings accounts, major changes were relaxation, in practice, of restrictions on the withdrawal from accounts, automatic transfer facilities combining current accounts with savings accounts, introduction of checkable savings accounts and the installation of Automatic Teller Machines (ATMs) which increased the liquidity of savings deposits. On the other hand with regard to time deposits, facilities for premature withdrawals and easy borrowing against them were introduced, increasing their liquidity. The introduction of Certificates of Deposit (CDs) made available a deposit instrument with characteristics close to those of currency. Consequently, time and savings deposits became as liquid as demand deposits reducing the traditional distinction in the degree of liquidity observed between these two classes of deposits.

As a result of these facilities, with the high interest rate policy adopted after 1977 the depositors switched to interest bearing deposits from holding currency and demand deposits. The relative share of interest earning deposits in total deposits and currency held by the public increased from 37 per cent in 1970 to 53 per cent in 1980, and further to 61 per cent in 1989. Consequently, the narrow money supply definition alone was not sufficient to explain the variation in the liquidity situation and consequent price changes in the economy. Therefore, in order to adopt a realistic monetary aggregate for policy purposes, it was decided in 1980 to define a new broad monetary aggregate, namely broad money supply (M2) by including the time and savings deposits held by the public with commercial banks.

Furthermore, the identification of implementation targets was improved by defining new monetary policy indicators such as the monetary base and the money multiplier over which the monetary authority has more control and which can be monitored very closely. Accordingly, a detailed monetary base table with information covering the use side as well as the source side of high-powered money and money multiplier values was introduced as a basic data table for policy purposes. After the reliance on open market operation as the main monetary policy measure in 1986, the monetary authority began to monitor and evaluate monetary movements weekly based on treasury bill market and call money market activities and the central bank balance sheet information. Under this program, the monetary base especially central bank credit to the Government has become the primary target.

3.3 Identification of Instruments

Monetary policy instruments available to the Central Bank can be divided into two groups, namely, quantitative measures controlling the volume of monetary/credit variables and selective or qualitative measures controlling the directional flow of credits in the economy. Open market operation (OMO), bank rates, reserve requirements and direct controls are major instruments under quantity control policies while cash margin against letters of credit, minimum ratios of capital and surplus to assets, ceiling on loans by banks, refinance facilities and moral suasion are major instruments under the selective credit control instruments.

All these instruments available to the Central Bank are expected to affect money supply via two channels. First, some measures affect money supply through the monetary base while the others influence through the money multiplier. OMO and bank rate affect through the monetary base, while the reserve requirement (RR) operates through the money multiplier. This impact process is considered to yield the desired results by influencing the cost and availability of liquidity of the banking system and hence form a market-related indirect control method. Second, the direct controls and moral suasion policies are directed to restrict the final output of banks through non-market-oriented methods. Hence, they cannot be used on a permanent basis without a resulting distortion in the financial system.

Bank rate, which is expected to influence the volume of monetary base in an indirect manner and gives a signal to the market of the

direction in which the interest should move, was used as a major monetary policy instrument in the 1960s. However, its effectiveness as an effective policy instrument has been diluted in the 1970s and 1980s in Sri Lanka due to the following reasons. First, the effectiveness of the bank rate is negatively related to the excess liquidity position of the commercial banks, which increased in the 1970s and the early 1980s due to liquidity created by government borrowings from the Central Bank and contractionary credit control measures coupled with high interest rate policies. Second, due to the expansion of various refinance facilities from the Central Bank, commercial banks had reduced recourse to borrowing under bank rate creating a wide divergence between the published bank rate and the selective weighted average rate for commercial bank borrowings from the Central Bank. Consequently, the bank rate policy was modified in 1977 by implementing a penal rate as given in Table 9.8. In 1977 when bank rate was raised from 6.5 per cent to 10 per cent, a penal rate of 15 per cent was introduced for borrowings over the specified level. In 1979, the penal rate was changed to a range of 15-35 per cent; and, thereafter, it was revised simultaneously with the revisions of bank rate in 1980, 1981 and 1983 in the same direction. The bank rate became a non-effective measure in 1983 with the discontinuation of central bank facilities to commercial banks except under special circumstances. Thus, at present, the bank rate is used mainly to indicate the direction of interest rate changes expected by the authorities.

The statutory reserve ratio could be used to absorb a part of commercial bank deposits to the Central Bank, reducing their credit creation capacity. According to the MLA, the reserve ratio to be imposed should be within the range of 5-20 per cent in the case of time and savings deposits while with regard to demand deposits, it should be within the range of 10-40 per cent. However, the Central Bank is empowered to impose a reserve ratio up to 100 per cent on any increase in deposits of commercial bank over a level that prevailed on a predetermined date if severe inflation is experienced or anticipated. The reserve ratio has been used in the past as an effective monetary policy instrument in Sri Lanka (Table 9.9). Except for the reduction in 1953 of reserve requirements against time and savings deposits, the reserve requirements were revised upward from time to time during the period 1950 to 1978. The reserve ratio against demand deposits increased from 10 per cent to 12 per cent in 1960 and remained at that level till 1981 while the reserve ratio against time and savings deposits

remained at the 5-per cent level (introduced in 1950) during the same period. Special reserve requirements were imposed in 1960 and 1961 while the effectiveness of reserve requirements was manipulated by allowing commercial banks to maintain a part of their required reserve in the form of till cash during the period 1961 to 1977.

After 1978, the reserve requirement has become a regular policy measure. In 1981, the reserve requirements were raised as a part of the contractionary policy package implemented to overcome the accelerated inflationary situation in the country. Accordingly, after about 20 years, reserve requirements were revised upward in 1981 and further in 1983. The contractionary policy stance was strengthened in 1983 by introducing a special reserve ratio on unutilised overdraft balances and new deposits accumulated in commercial banks. The reserve requirements against demand deposits was raised to a record high level of 18 per cent in 1985. For the first time in Sri Lanka, different reserve ratios different maturity periods of time and saving deposits were specified in 1985. However, the major change in the 1980s was the unification of the reserve requirements in 1987 with a downward adjustment of the reserve ratios. Reduction of the liquidity differences between the two types of deposit categories was the major reason for the unification of reserve ratios.

Furthermore, the reserve requirements were modified in the 1980s by allowing the commercial banks to maintain a part of their required reserves in the form of interest-earning assets other than deposits with the Central Bank. With two upward revisions of reserve ratios taking place in 1988, the commercial banks were allowed to keep the increased amount of reserve due to revisions in the form of government treasury bills. This was allowed with a view to reducing the impact of the contractionary policies on the already high cost of funds in commercial banks and to popularizing the treasury bill investments among financial institutions. From 1988, the commercial banks have also been permitted to maintain a portion of their reserve requirements in the form of investments in DFCC debentures as an incentive for them to invest in these debentures.

The salient feature in the 1980s was that the importance of the reserve ratio as an effective monetary policy instrument was weakened due to the following reasons. First, with the unification of reserve ratio in 1987, the ability of the monetary authority to manipulate reserve

requirements has been narrowed since such unified ratio should be within the range of 10 to 20 per cent of total deposit liabilities of banks according to the prevailing guidelines in the MLA. Second, the effectiveness of the reserve ratio has been reduced due to the practice of allowing commercial banks to maintain part of their required reserves in the form of some interest-bearing assets. Third, on account of the rapid growth of commercial banks and the facilities provided by them, the preference of the public to hold currency as against deposits has been falling continuously exerting an expansionary impact on the money multiplier. For instance, the ratio of currency to deposits decreased from 0.64 in the 1960s to 0.34 in 1989. This trend will continue in the 1990s. Therefore, to offset the resultant increases in the money multiplier, the Central Bank was compelled to raise the reserve ratios continuously. However, such increases are possible only subject to the present specified ceilings on the reserve ratio policy. Furthermore, even if it is possible, it may not be advisable, since high reserve ratios add to the cost of funds in the banking system thereby acting against intermediation, i.e., encouraging disintermediation. Hence, in the recent past, the Central Bank has shifted its emphasis from reserve requirements as an effective policy measure to more effective and market-oriented instruments such as OMO.

Under the OMO policy, the Central Bank is allowed to purchase and sell government or government-guaranteed securities or to issue its own securities. Thus, this policy instrument makes available the facilities to maintain the monetary base at the desired level and consequently the money supply within the target level. Moreover, through its impact over interest rates, the Central Bank can influence the movements in the market interest rates. Thus, unlike bank rates and the reserve requirements, OMO directly affects high-powered money facilitating the authority to use the base money as a monetary policy indicator showing the direction of monetary policy clearly in monetary management. During the initial period, the Central Bank implemented OMO by buying and selling government securities so as to stabilize the money supply and to give support to the prices of government securities. However, the Central Bank tended gradually to reduce its dependency on this measure in regular monetary management until the 1980s, though this measure was used occasionally with issues of central bank securities to reduce the inflationary impact of export booms experienced by the country from time to time. The Central Bank issued its own securities in 1953/1954 and 1956/1957 to mop up the excess liquidity resulting

from the favorable rubber export price and tea export prices, respectively (Table 9.10). This was used again in 1964 to absorb the excess liquidity. In addition to liquidity management, it was expected to develop the security market by providing an attractive security especially for the non-bank sector. However, the practice of issuing central bank securities was not continued and by the end of 1966 all outstanding securities were redeemed.

The economy was unusually liquid in 1984/1985 due to the tea export (price) boom and restrictive credit policies implemented as a part of demand management policies. Thus, the Central Bank began to issue its own securities again in 1984 to mop up the excess liquidity in the economy and to provide investment opportunities to banks experiencing excess liquidity. Thus, OMO became a strong policy measure as the central bank securities successfully absorbed a significant portion of the liquidity from the financial system. One of the major reasons for the success of issue of central bank securities in 1984 was the market-oriented method followed in the sales of these securities. In all previous issues, the central bank securities were issued at a fixed coupon rate decided by the authority. However, in 1984, the Central Bank introduced an auction system in issuing securities where the investors can improve their yield over the coupon rate by bidding lower prices than the face value.

However, after 1986, the Central Bank gradually reduced its emphasis on its own securities in the implementation of OMO by moving the emphasis to Treasury bills as a short-term money market instrument. This was done due to a number of reasons. Firstly, since the Central Bank had acquired a large volume of government short-term debt papers in its credit operation with the Government, it was felt that it might be more advantageous for the Central Bank to divest such paper as a part of its OMO rather than issuing its own securities. Secondly, it also allowed the Central Bank to develop an orderly and stable market for government short-term borrowing instruments. Thirdly, it facilitated determination of interest rates on government borrowings according to market forces, which was more compatible with the new liberalized economic policy. It is not necessary to emphasize that the existence of a developed money market in the country is a prerequisite for the success of OMO. As in most other developing countries, the underdeveloped money market situation in Sri Lanka hindered the use of OMO as an effective major monetary policy instrument, despite it

being considered to be superior to other policy instruments in many respects. However, the situation in the money market of the country has improved significantly after 1980 as a result of the financial sector development programs undertaken in the recent past.

A number of steps were taken to develop the treasury bill market in the 1980s. As a major step, the treasury bill rate was increased from 9 per cent to 13 per cent in 1980, making Treasury bills more attractive for short-term investors. The Central Bank introduced a secondary market for the Treasury bill in 1981 by allowing commercial banks to invest their short-term liquid funds and increasing the liquidity of the Treasury bills. In 1986, the Central Bank introduced a regular weekly primary treasury bill auction system allowing the treasury bill rate to be determined with minimum intervention of the authority. This auction system provided a regular investment outlet for short-term funds and a short-term market-oriented interest rate indicator in the financial system. Commercial banks were encouraged to hold Treasury bills by allowing them to hold a part of their reserve requirement in the form of Treasury bills, while Treasury bills were included as a liquid asset when the liquid assets ratio was imposed on finance companies in 1987. The introduction of Treasury bills with maturity periods of 6-month and 12-month in addition to 3-month bills enhanced their attractiveness for investors. To facilitate outstation investors, a "tap facility" in which Treasury bills are allocated from the following auction at the weighted average rate of the current week's auction was introduced through the Central Bank regional branches. Subsequently, in 1989 the "tap facility" was extended to Colombo by allowing money brokers and commercial banks to operate as tap agents to reduce some inconveniences in the auction system especially for small and non-institutional investors. The NSB was allowed to increase its portfolio allocation of Treasury bills by removing the ceiling on the NSB's investment in Treasury bills. Government corporations and enterprises were encouraged to hold their short-term liquid funds in the form of treasury bill investment rather than in the form of cash or bank balances.

Consequently, the holding of Treasury bills by the non-central bank sector increased continuously from Rs. 2 billion at the end of 1985 to Rs. 20 billion at the end of 1989 and further to Rs.25 billion at the end 1990. Accordingly, the share of the Central Bank in total treasury bill holdings declined continuously in spite of an increasing overall outstanding level of Treasury bills. The share of the central bank holdings

in total treasury bill outstanding declined from 95 per cent in 1985 to 44 per cent at the end of 1990, reducing the expansionary impact of government domestic borrowings. Thus, the treasury bill market has been developed as a major sub-money market in Sri Lanka, providing the Central Bank the required money market facilities to implement OMO as an effective policy instrument.

Even though the adverse impacts of direct control monetary policy measures were well known, the Sri Lankan authority had to resort to them from time to time in the past when ever the conventional market-oriented policy measures failed to arrest an expansionary monetary situation.. However, the Central Bank has made attempts to shift back to the market-oriented policy measures as soon as the situation improved to a satisfactory level. The following are direct control measures used by the Central Bank to regulate money and credit aggregates in the economy. The Central Bank has resorted to using a credit ceiling as a monetary policy on a number of occasions, but it was always introduced as a selective credit control policy by excluding some priority sectors from the ceiling (Table 9.11). Thus, the credit ceiling policy was used mostly as a selective credit control measure rather than a quantity credit control measure during the period under study.

As the quantitative monetary policy measures affect all the sectors of the economy without any discrimination, selective credit controls (SCC) can be used to achieve some specific objectives, such as discouraging consumption, speculative type of imports and/or to encourage credit allocation to priority sectors such as agriculture, industry and export. Accordingly, since 1961, the Central Bank has been using SSC at very frequent intervals in order to restrict bank credit for non-priority activities of the economy and to make available more credit for the priority sectors. This was used in 1963, 1965, 1968 and 1974 as a contractionary policy measure. In 1975, the credit ceiling imposed in 1974 was withdrawn with the introduction of a number of other contractionary measures such as the restriction of central bank accommodation to commercial banks and the progressive withdrawal of the till cash concession with respect to the statutory reserves. However, the credit ceiling measure was reintroduced in 1976 and 1989 as an SCC measure.

Fixing of cash margins against letters of credit is an effective policy instrument to reduce an imbalance in the balance of payments. Under

this, very often the authorities selected luxury or non-essential items when specifying such cash margin requirements to minimize the adverse impact of the policy on the cost of essential imported commodities and imports for production purposes. This was used in 1960 and 1969, but with the tightening of import control regulations in the 1970s, the margin requirements were allowed to lapse. When the external asset position deteriorated seriously due to continuous civil disturbances and export prices unfavorable to the country were experienced in 1989, a 100-per cent cash margin requirement was introduced on non-essential imports in June 1989.

From time to time, the Central Bank has requested the commercial banks to exercise caution in their lendings, especially for non-priority activities such as speculative activities mainly to fall in line with the broad economic development objectives. The existing cordial and harmonious relationship between the Central Bank and commercial banks gives an opportunity for the former to persuade courteously the latter to attempt to follow a credit allocation policy which is compatible with the overall economic policies. One of the effective areas where the Central Bank used this policy measure was through the implementation of a national credit plan (NCP) introduced in 1981, under which the annual monetary program of the authority was combined with a diversion of commercial bank credit to predetermined priority areas. Although NCP target credit allocations are not imposed over commercial banks' credit allocation, the program provides an opportunity for the Central Bank to indicate its desired credit allocation while providing forum for the commercial banks to present their expected credit distributions and resource plans to the monetary authority. Even though the Central Bank has been empowered to use a minimum rate of capital and surplus to assets and control over commercial bank interest rates, so far these policy measures have not been used.

3.4 Implementation and Conduct of Monetary Policy

In Sri Lanka, the responsibilities for formulation and implementation of an appropriate national monetary policy so as to maintain the stability of the national currency (i.e., Sri Lanka rupee) while pursuing the development objectives has been vested with the Central Bank. Accordingly, the required authority to influence the cost and availability of money has been given to the Central Bank by the MLA. The Central Bank prepares its monetary policy package by taking into account the

prevailing and emerging economic situation, government policies and budgetary operations. Short-term economic developments, especially monetary and price developments, are continuously monitored by the Central Bank and the monetary policy measures are designed accordingly within the given framework in the MLA. In terms of the MLA, the Central Bank has to submit a report to the Minister covering the required corrective measures and adopt such policies whenever the monetary stability of the country is threatened or abnormal movements in the money supply or in the price level are endangering such stability. According to the Act, these abnormal movements are defined as a change of more than 15 per cent in the money supply and a change of more than 10 per cent in the price index. In such circumstances, the Economic Research Department would prepare a detailed report indicating: (i) causal factors for such changes, (ii) probable effect on the economy; and, (iii) alternative policy packages to correct the situation. Similarly, by taking into account the special developments in the economy, the Central Bank reforms existing monetary policy or introduces new policy as corrective or complementary policy measures. Once policy actions are taken, the Central Bank follows the situation and evaluates their effectiveness until the situation improves to a satisfactory level.

A number of improvements have taken place in the implementation of monetary policy during the period under review compared with the period prior to 1978. First, as mentioned above, a new money supply aggregate was introduced by taking into account changes in the financial system. Second, the entire strategy on monetary policy was refined by identifying new monetary indicators such as monetary base and the money multiplier. Third, action was taken to develop the necessary prerequisites, by promoting the country's money market, to implement market-oriented monetary policy measures keeping the compatibility with the overall new economic policy orientation. Fourth, an annual monetary program was prepared by taking into account economic growth, expected inflation, budgetary operation and BOP situation and steps were taken to cross check the compatibility of the monetary program with commercial banks' credit programs during the discussions under the National Credit Plan.

The most salient feature in the implementation of monetary policy during the period was the movement towards more market-oriented policy measures while reducing reliance on non-market-oriented policy

measures under new economic policies. The new economic policy stance introduced after 1977 included a greater reliance on market forces for resources allocation, establishment of an outward-oriented growth strategy removing bottlenecks on foreign investors and harnessing foreign capital to supplement domestic resource flows. Accordingly, monetary policy had to be reoriented to facilitate the working of the new economic strategy-direct controls giving way to a move towards market-oriented indirect policies. The implementation of a low interest rate policy with a view to maintain a low inflation rate and encourage investments played a central role in the monetary policy package pursued during the pre-1978 period. Under the new policy package, the interest rates were allowed to move freely in the market according to market forces and consequently, the entire interest rate structure moved to a higher plateau raising the real interest rates, thereby encouraging financial savings and discouraging wasteful expenditure.

The Central Bank had to face two major challenges when formulating appropriate monetary policy measures during this period. The first challenge was the expansionary pressure exerted continuously on the money supply during this period by both the government and the external sectors. The government sector, which depended heavily on the banking sector for additional financial requirements continuously, had recourse to bank borrowings, especially from the Central Bank in deficit financing which increased largely due to expenditure requirements of large-scale investments programs in the early 1980s and later due to heavy defense expenditure resulting from the continuation of civil unrest in the country. These monetary expansions were reinforced by the improvements in the external assets due to the receipts of a large volume of concessionary foreign aid and favorable export prices in 1984/1985. However, during the latter part of the 1980s, the Net Foreign Assets (NFA) declined in most of years, resulting in a contractionary impact on the money supply. Both these sectoral developments were beyond the direct control of the Central Bank and hence had to be neutralized by extremely carefully selected monetary policy measures.

The second challenge was a more difficult one where the Central Bank had to neutralize these expansionary impacts without disturbing the growth objectives of the open market economic policies and creating an appropriate financial climate compatible with new market-oriented economic policies. In this context, the Central Bank resorted

to a wide range of contractionary policies in order to curb the excessive expansion of money/credit in the economy while reducing some of its adverse impact with selective credit policies. At the beginning, the emphasis was placed on the conventional instruments such as bank rate, the statutory reserve ratio and credit ceilings. However, with the realization of the limitations of these instruments the emphasis was placed on OMO from around mid-1984. In June 1984, the Central Bank commenced to issue its own securities with a market-oriented auction system to mop up the excess liquidity in the economy, which had resulted mainly from high export tea prices in 1984 and the excessive government expenditure financed from central bank borrowings. The net cumulative absorption by the central bank securities rose from Rs. 139 million in June 1984 to Rs. 1280 million in 1985, increasing its share to about 8 per cent in the monetary base by the end of 1985. Consequently, the inflation rate declined to 1.5 per cent in 1985 under the favorable domestic supply conditions for major consumer items.

After 1984, the heavy government borrowings from the Central Bank became one of the major destabilizing forces in the economy. Net credit to the Government (NCG) by the Central Bank increased by Rs. 2.2 billion in 1985, Rs. 4.5 billion in 1987 and further by Rs. 9.1 billion in 1988, mainly in the form of holdings of Treasury bills. Thus, it was clear that the Central Bank holdings of Treasury bills had to be divested to the non-bank sector through OMO in order to moderate the expansionary impact exerted by government borrowings. The selection of the Treasury bill as an OMO policy instrument was supported by two other factors. First, it gave an opportunity to develop the money market in the country. Second, it provided a market-oriented borrowing source to the Government.

Accordingly, a conscious effort was made by the Central Bank to develop the primary and secondary treasury bill markets by improving the availability of bills and offering a market-oriented treasury bill rate. In the primary market, the treasury bill rate increased from 11 per cent at the end of 1986 to 19.2 per cent at the end of 1988, and it prevailed at a comparatively high level thereafter (Table 9.12). As a response to these changes the non-central bank treasury bill holdings increased from Rs.6 billion at the end of 1987 to Rs. 16 billion at the end of 1989. Continuing this trend further, the corresponding value reached to Rs. 23 billion at the end of 1990. Thus, in spite of continuous increases in overall outstanding Treasury bills the central bank share declined

from 88 per cent in January 1988 to 57 per cent in December 1989 and further to 44 per cent at the end of 1990. The successful impact of this OMO could be gauged from the slow growth in the monetary base and the marginal increases in government borrowings from the banking system in 1989.

Thus, the policy instruments selected for the stabilization program undertaken by the monetary authority changed over time during the period under review. At the beginning, the Central Bank placed more emphasis on traditional measures such as reserve requirements, bank rate and credit ceiling to achieve monetary stabilization. As these measures were not strong enough to counter the monetary expansion that resulted from improving foreign assets in 1984/1985, the Central Bank selected the OMO policy measure of issuing its own securities. Implementation of this measure was successful enough and brought down the monetary expansion from 16 per cent in 1984 to 8 per cent in 1985, reducing the inflation rate from 12 per cent to 2 per cent during the same period. However, as government borrowings became the major destabilization factor, the authorities selected Treasury bills as the major instrument for its OMO activities. This reduced the monetary expansion from 16 per cent in 1988 to 9 per cent in 1989, contributing to the deceleration of the inflation rate from 15 to 12 per cent during the same period. Continuation of this policy measure mitigated to some extent the monetary expansion that resulted from improving external assets and government borrowings in 1990.

IV. Effectiveness of Monetary Policy and Impact of Financial Reforms

4.1 Demand for Money and Stability

The demand for money in Sri Lanka was estimated with both definitions of money, i.e., narrow money supply (M1) and broad money supply (M2), by selecting the usual explanatory variables, i.e., real national income, short-term interest rate and expected inflation rate. All estimated equations for M1 indicate an income elasticity of around 0.78 and it is statistically highly significant (at 5-per cent level) when the equation has been estimated without the lagged dependent variable as an explanatory variable (Tables 9.13 and 9.14). However, the other two variables, interest rate and the inflation rate are not statistically

significant though they have the correct signs. Estimated elasticities of these two variables are negligible. Estimated results for M2 are given in Table 9.14. The income variable is statistically significant again and it indicates an elasticity of about 0.85. Interest rate and inflation rate have the expected signs but they are not significant except in one case where the 12-month fixed deposit rate is significant at the 5-per cent level. The maximum interest elasticity indicated by these results is only 0.04. Estimates for sub-periods and comparison of these results with the findings of previous studies indicate a stable money demand function in Sri Lanka.

4.2 Calculation of Multiplier and Velocity

Money multipliers corresponding to both M1 and M2 indicate some fluctuations during the period under review. The money multiplier in respect of M1 (MUL1) recorded a declining trend from 1978 to 1985, decreasing from 1.40 to 1.08 and an upward trend thereafter recording 1.31 at the end of 1989. However, the money multiplier (MUL2) in respect of M2 recorded a different behavior pattern by increasing from 2.46 in 1978 to 3.66 in 1982 and declining thereafter with some fluctuation to 2.96 at the end of 1989. Thus, the multiplier with respect to M1 was within the range of 1.08 to 1.49 during this period, while the value of MUL2 was in the range of 2.46 to 3.67. Similarly, the velocity with respect to M1 (VEL1) also fluctuated but it (VEL2) was fairly stable in the case of M2. The velocity of M1 fluctuated within the range of 5.66 to 9.24, while it was in the range of 2.97 to 3.41 with respect to M2 (VEL 2). Thus, both money multipliers and velocity indicators show that the broad money supply variable recorded more stable values than the narrow money supply. Hence, there is no doubt that the shift of policy-making targets from M1 to M2 improved the monetary management during the period under study.

4.3 Impact of Money on Prices

The impact of money on prices can be indirectly derived by rearranging the money demand equation since the growth of price is an explanatory variable in the equation. However, there are some other factors significantly influencing the fluctuation of prices, especially in the short run, such as import prices and administrative price changes. Therefore, it is desirable to estimate an alternative price equation with at least some of these variables as explanatory variables. Accordingly,

a price equation has been estimated with money supply, real income and imported price as explanatory variables for the period 1979 to 1989. These results were given in Table 9.15.

All three explanatory variables have the expected signs but the real income is not statistically significant when the price equation is estimated with M1. However, in the equation with M2, all three variables have the expected signs and statistically significant coefficients. The estimated money elasticity in the price equation is around 0.37 while the real income variable, which is a proxy variable for the supply side, has an elasticity of -0.62. The highest value recorded for import price elasticity is about 0.67. These results indicate that M2 is more appropriate than M1 in explaining the variation of the price level. This behavior is compatible with our previous finding where the demand for money function for M2 is more stable than it is for M1. Thus, the money demand equation, multiplier and velocity values and aggregate price determination equation for the period under review suggest that it is more desirable to select the broad money supply as the major monetary target than the narrow money supply in the case of Sri Lanka for the post-1977 period.

4.4 Impact of Monetary Policy on Overall Economic Objective

As has been already indicated, monetary policy can be used to achieve the stability objective as well as to achieve economic development to some extent. However, clearly stability is a prerequisite for a sustainable economic growth. The analysis of monetary policy implementation and econometric estimations indicate that monetary policy can play a significant role in the stabilization program in the case of Sri Lanka. The Sri Lankan experiences also indicate that the selection of an appropriate policy should be a more dynamic process by taking into account the changes in the economy and overall economic policy stance to achieve better results from monetary management. However, our experiences during the period under study indicate that, in some cases, it takes time to adjust policy measures according to developments in the economy.

During the period, monetary policy was successful in preventing excessive monetary expansion to some extent and consequently, the inflationary tendency was controlled on a number of occasions with market-oriented policy measures. However, sometimes direct controls,

i.e., non-market-oriented policy measures were necessitated whenever the situation was beyond the control of market-oriented measures. The Central Bank has used selective credit allocation policy measures such as refinance facilities and exemption of priority sectors from credit ceilings whenever ceilings were imposed to reduce the unfavorable impact of contractionary policy measures on the priority sectors such as agriculture, industry and exports. Furthermore, the Central Bank has directly contributed funds to development banking institutions and provided credit guarantee facilities for lending to selected areas. Even though these measures can be used to achieve some short-term objectives, their impact on competitiveness in resource allocation and the long-term possibility for developing a subsidiary-refinance syndrome cannot be underestimated. Therefore, the Central Bank has already initiated to rationalize its refinance schemes and reform them, incorporating more market-oriented features.

4.5 Interaction between Monetary and Exchange Rate Policies

Since Sri Lanka is a heavily trade dependent country ((import + export)/GNP = 0.64 in 1989), the interactions between monetary and exchange rate policies are significant under a managed flexible exchange rate system. It has been already seen that the import price elasticity in the aggregate price level is about 0.67 per cent. This may be higher if indirect impacts are also accounted for properly. Thus, the exchange rate depreciation which became a regular adjustment under the new economic policies was a major contributor to the high inflation trends recorded after 1978. On the other hand, the domestic inflation has become a strong factor in Sri Lanka's deteriorating export competitiveness through an overvalued real effective exchange rate, requiring high depreciations in the exchange rate.

Some of the monetary policies pursued during this period such as margin requirements against letters of credit (LCs) and credit restrictions on import activities can be considered as short-term complementary policies with exchange rate policies aimed at the improvement of the balance of payments situation of the country. Similarly, the refinance facilities provided for exporters to improve their export competitiveness by lowering cost of funds reduced the required exchange rate adjustments under the export promotion policy package implemented after 1974. Meanwhile, the market-oriented interest rate policy pursued during the period encouraged the inflow of foreign funds, reducing the re-

quired degree of devaluation to achieve adjustments in balance of payments. Similarly, market-oriented monetary policies were used to absorb excess liquidity in the economy by reducing required adjustments in the exchange rate, especially during short-term export boom periods.

4.6 Relative Effectiveness of Direct and Indirect Methods of Monetary Control

As has been already discussed, the monetary authority resorted to some direct monetary controls during the period under review even though the overall tendency was to move more towards market-oriented policy measures. When the monetary and credit expansion accelerated during the early years of the 1980s, more direct monetary control measures were used for stabilization purposes. However, the emphasis was on market-oriented policy measures over time due to limitations in use of more direct monetary controls as long-term stabilization policy measures. For instance, the direct policy measures used during the period 1978 to 1983 were not appropriate to sterilize the impact that resulted from the tea export boom in 1984/1985 due to the following reasons. The volume to be sterilized and the speed of the sterilization process have to be decided by the authority under direct control measures and they are not easy to estimate accurately in the case of Sri Lanka, since credit requirements of the Government and public corporations from the banking system are negatively related with the required volume of sterilization through direct controls due to endogenous stabilization processes in the system. However, under the indirect or market-oriented measures these values are decided by the market forces. In this context, the indirect measures were used successfully in 1984/1985 to sterilize the impact of the export boom by absorbing the excess liquidity that resulted from high tea export prices through OMO by issuing central bank securities. Unlike previous experiences on this issue, the applicable interest rate was allowed to be determined according to market forces under an auction system.

However, in the latter half of the 1980s, the monetary measures were used to sterilize the impact of excessive government borrowings from the banking system. Again the monetary authority placed the emphasis on indirect measures but with a different instrument, i.e., Treasury bills. With the twin objectives of sterilization of the impact of excessive government bank borrowings and the development of a market-

oriented system for government short-term borrowings, the Central Bank improved treasury bill market activities as part of open market operations after 1986. However, the authority resorted to more direct monetary controls as short-term supplementary policy measures whenever the objective of the stabilization policy was to prevent a deterioration in the balance of payments situation and/or the market-oriented policy measures were inadequate in achieving the objectives given the circumstances of the financial system.

V. Constraints on Monetary Policy

5.1 Internal Constraints

One of the internal constraints on monetary policy was the expansionary impact resulting from excessive government borrowings during the period under review. The institutional system of the country and day-to-day policy decision-taking arrangements are conducive to maintain the consistency in the selection of monetary policy and fiscal policy. However, as has been discussed earlier, the expansion of government deficits resulted in an additional burden on the monetary policies by creating excess liquidity in the economy. Thus, in the recent past a major emphasis of the monetary policy has been to reduce the inflationary impact of excessive government borrowings from the banking system.

An efficient intermediation is a prerequisite for an efficient financial management. However, some fiscal measures such as taxes on financial instruments that prevailed during the period were not conducive to an efficient intermediary system. Nevertheless, most direct controls and regulations of the financial sector were removed during the period under review, thus allowing an improvement in the efficiency of the intermediation through competition in financial activities. Very often the Government placed a special emphasis on selected priority sectors of the economy by taking into account their contribution to economic growth, employment generation and equalization of income distribution. However, it is difficult for the monetary authority to provide sector specific financial facilities through market-oriented general monetary policies. Hence, it has to resort to selective credit policy measures such as refinance facilities and partial credit controls as short-term policy measures.

The underdeveloped financial system is a crucial constraint on monetary policy in Sri Lanka as in any other developing country. It not only reduces the effectiveness of the monetary policy but also limits the number of market-oriented policy instruments available for monetary management. The financial system in Sri Lanka is still not highly sophisticated, although it has improved to a certain extent in the recent past. The interdependence among financial markets and institutions is still low, limiting the distribution of monetary policy effectiveness over the financial system. Furthermore, the limited relationship between the financial sector and the real sector both delays the effectiveness of monetary policies and reduces the size of their impact. With the development of new facilities in the financial system, the effectiveness of some of the traditional monetary policy measures has been reduced. For example, availability of new deposit instruments and facilities for fast and easy transfer of funds among bank accounts reduced the effectiveness of different reserve ratio requirements over different deposit categories.

5.2 External Constraints

The impact of improvement in international capital mobility became more evident in the Sri Lankan economy after the implementation of a flexible exchange rate system and liberalization of the external payments system. This situation has improved further in the recent past due to expansion of foreign participation in share market activities in the country in response to removals of some constraints that prevailed over foreign investors. However, the Sri Lankan capital account is still not completely open. Hence, the impact of developments in international capital mobility on the country is limited to some extent.

5.3 Problems of Monetary Control Arising from Financial Reforms

Some new problems emerged as a result of financial reforms. One such impact was that the effectiveness of traditional monetary policy was reduced, compelling the authority to search for market-oriented new policy measures. However, the availability and effectiveness of market-oriented policy measures were limited due to insufficient development in the financial system and the authority had to experiment with alternative measures. For instance, in 1981 the Central Bank placed emphasis on the treasury bill market in OMO, but the response was limited. Therefore, to face the excess liquidity situation in 1984/1985,

the authority resorted to issuing central bank securities as an open market operation instrument. When government borrowings became a major expansionary factor during the latter part of the 1980s, the Treasury bill appeared as the more appropriate instrument for the OMO activities. Thereafter, the open market operation policy has been implemented successfully with treasury bill markets to control the excess liquidity situation in the economy in the recent past. However, during the transitional period, the authority had to rely on both types of policy measures, direct and indirect measures. Since it takes time to develop the money market to a required level to implement indirect policy measures effectively, the authority had to resort to direct controls during the transitory period to deal with short-term problems in the liquidity situation of the country.

The movement towards a market-oriented interest rate system was the major change out of the financial reforms. Accordingly, the interest rates initially increased significantly from the very low controlled levels to the prevailing high levels. However, the Sri Lankan experience indicates that the interest rate adjustments are not symmetric under the financial reforms. For instance, at the beginning of the reform period, deposit rates and lending rates increased consistently. However, when the inflation rate decelerated in the middle of the 1980s, the commercial banks reduced their deposit rates significantly but their lending rates were adjusted only marginally with long time lags. Thus, different speeds and flexibilities of adjustments in deposit rates and lending rates resulted in some difficulties during the period of financial reform. A large part of the government domestic debt was in short-term form and it was continued on a roll-over basis. Therefore, the interest burden in the government budget increased significantly as the interest rate was allowed to increase under the financial reforms. Already, the share of interest expenditure in the government recurrent expenditure is as high as about one third. Thus, a proper public debt management is necessary to prevent possible development of an interest-payment-borrowing syndrome in fiscal operations.

VI. Summary and Conclusions

Sri Lanka has gone through almost a complete circle in economic policy regimes with the policy changes that took place in 1977 -- by moving from a regulated and controlled policy regime to a more market-

oriented policy regime. Accordingly, government intervention in market activities was reduced by removing most direct and indirect controls, while the trade regime liberalization and replacement of a multiple exchange rate system with a managed floating exchange rate system were major changes on the external side. Under the new policy regime, the emphasis was placed on the private sector in economic development. In the financial sector, competition was encouraged by inviting new foreign banks to enter the domestic market, allowing the private sector to establish new financial institutions and demonopolizing some state-owned financial sector activities. Meanwhile, interest rates were allowed to increase reflecting market conditions and steps were taken to develop the financial system of the country by stabilizing specialized financial institutions, and deregulating financial market activities. In particular, barriers hindering foreigners' participation in the Sri Lanka share market activities were removed or relaxed in the recent past.

The response of the economy was favorable in terms of economic growth and employment generation to a certain extent, even though some of these favorable developments slowed down after 1983, mainly due to a worsening civil unrest in the country. Meanwhile, the internal and external macro-imbalances of the country deteriorated largely due to excessive government deficit financing and slow growth recorded in the export sector. Externally, the international integration of financial sector activities and technological improvement in financial services continued. Furthermore, the successful development process observed in NICs as well as international trends in deregulation with a movement toward more market-oriented policy regimes made the policy-makers reconsider their non-market-oriented policy measures adopted during the 1960s and the early part of the 1970s.

In this context, the monetary policy in Sri Lanka has gone through significant changes, especially during the last decade. The salient feature in the monetary policy development of the country was a gradual movement towards more market-oriented measures, although the authorities resorted to non-market-oriented policy measures during the transitional period to deal with unexpected developments in the economy. Gradually, OMO through the treasury bill market has become the major monetary policy measure, while the authorities have reduced their reliance on traditional policy measures such as bank rate and reserve requirement. The introduction of new monetary aggre-

gates, preparation of monetary programs and estimation of new monetary parameters were developed to improve the monetary management of the country in response to changes in the economy. The major challenge faced by the monetary authority was to move towards more market-oriented policy measures compatible with new economic policies. Some difficulties resulted from excessive fiscal operations, reducing direct controllability of inflow and outflow of financial assets while other short-term difficulties resulted from financial reforms. However, the monetary policy was successful enough to maintain stability in the economy, providing the required assistance to achieve the broad objectives of new economic policies even under the constraints enforced by expansionary fiscal activities, financial reforms and adverse developments in the international financial system and domestic civil situation. Thus, the Sri Lankan experience indicates that the monetary policy should be a dynamic policy consistent with the contemporaneous overall economic policy package to achieve more desirable results.

Although Sri Lanka's financial system has become more competitive and comprehensive in recent years, there are still some issues hindering further development. The expansion in money market activities and capital market developments were slow largely due to unfavorable developments in the civil situation of the country. As soon as the civil situation of the country improves to a satisfactory level, the development of money markets and capital markets should be accelerated to provide a conducive environment for a market-oriented monetary policy regime. Market-oriented trends followed in the recent past, with regard to the determination of interest rates have to be continued by removing gradually prevailing concessions to some sectors to improve the resource allocation efficiency. As has already been experienced, a market-oriented interest rates policy discourages capital outflow from the country as well as encourages inflow of financial resources, easing the balance of payments problems of the country.

High intermediation cost and financial resource allocation inefficiency have been identified as major issues requiring solutions for future development of the financial system. Already, the Central Bank has initiated steps to implement the new Banking Act which will improve the stability and prudent supervision of commercial banks. Similarly, the implementation of the Finance Company Act 1988 is in progress. Already, the authority has taken steps to rationalize the institutional structure of finance companies and to supervise their activities regu-

larly. There is no doubt that the establishment of the credit information center and enactment of new debt recovery legislations will help to reduce the bad debt burden in the financial system. The recent movement of the Government to issue more market-oriented debt instruments is encouraging. It will reduce the strain on monetary policy in correcting the adverse impact of excessive government borrowings. The improvement recorded in share market activities and removal/relaxation of restrictions on foreigners engaging in the Sri Lankan share transaction activities indicate a movement towards the development of a market-oriented resource base for long-term investments. Already, preliminary legal requirements have been completed to establish unit trusts in the country. However, the available long-term financial resources to the private sector are still limited, largely due to the fact that major long-term resource mobilization programs such as the EPF and life insurance activities remain the captive sources for government deficit financing. The removal and relaxation of controls/regulations on the financial sector and the improvement of the financial sector activities have to be continued further to resolve most of the existing constraints in the financial system with a view to creating a conducive financial environment for a better monetary management in Sri Lanka with market-oriented policy measures.

Table 9.1

MACROECONOMIC TRENDS (1950-1989) : SRI LANKA

	1950-60	1960-77	1977-89	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
A. Growth Rates: % p.a.															
GDP	3.6	3.3	4.7	8.2	6.3	5.8	5.8	5.1	5.0	5.0	5.0	2.1	1.5	2.7	2.3
Implicit Price Index				7.8	15.8	18.2	20.6	10.2	16.1	19.4	1.7	5.5	8.0	10.6	9.8
Consumer Price Index	0.7	4.1	12.4	12.2	10.8	26.1	18.0	10.8	14.0	16.6	1.4	8.0	10.2	15.0	15.1
Money Supply	4.9	12.5	19.8	25.0	38.2	31.9	23.1	24.8	22.1	16.6	11.5	5.1	14.7	16.5	12.5
Domestic Credit	18.3	11.2	22.7	21.6	40.3	72.3	31.6	24.8	16.3	1.3	18.6	8.2	17.9	28.1	5.6
Net Credit to Govt.	22.0	10.1	23.1	-37.7	56.7	207.3	42.5	34.1	2.2	-17.0	39.8	10.8	20.0	33.3	0.1
Credit to Private Sector	13.5	15.6	22.5	52.3	36.8	39.7	25.8	-16.7	25.8	11.4	9.9	6.9	16.7	25.3	8.9
Net Foreign Assets	-8.0	10.4	2.1	50.8	21.8	-46.7	-19.0	19.2	28.8	215.4	-7.7	...	1.2	-24.0	-33.0
Exchange Rates Rs./SDR	...	8.5	7.7	87.9	2.8	6.9	5.3	1.4	9.5	3.7	3.7	19.1	15.8	12.2	8.0
				1.8	2.0	1.8	1.7	1.7	1.7	1.5	1.2	1.8	1.5	1.4	1.3
B. As a Ratio of GDP: %															
Gross Investment	1950	1960	1977												
	9.5	14.1	14.4	20.0	25.8	33.8	27.8	30.6	28.8	25.8	24.9	23.7	23.3	23.1	21.6
Domestic Savings			17.4	14.7	13.3	13.4	11.7	11.9	13.8	19.9	11.9	12.0	12.8	12.0	12.1
Budget Deficit	-0.3		-8.4	-16.8	-16.8	-24.5	-17.5	-22.2	-17.8	-10.3	-15.8	-15.6	-13.9	-19.5	-13.7
Foreign Borrowing	...		4.9	-10.4	-8.1	-10.1	-9.7	-8.9	-9.0	-7.3	-7.5	-8.8	-7.7	-8.5	-7.2
Domestic Borrowing	0.3		3.5	-6.4	-8.7	-14.4	-7.8	-13.3	-8.8	-3.0	-8.3	-6.8	-6.2	-10.0	-6.5
Domestic Bank Borrowing			2.2	-0.4	-1.3	-10.7	-4.6	-4.0	-1.0	1.7	-4.6	-1.3	-1.7	-5.1	-0.4
Current A/c with Grants		-0.70	0.30	-2.40	-6.80	-16.40	-10.00	-11.90	-9.10	-0.87	-6.97	-6.67	-5.12	-5.59	-5.14
Current A/c without Grants		-0.90	0.20	-4.50	-11.10	-19.80	-14.60	-17.50	-14.40	-4.23	-9.90	-9.47	-7.81	-8.54	-7.59

Source: Central Bank of Sri Lanka.

Table 9.2

RELATIVE COMPOSITION OF FINANCIAL SYSTEM: SRI LANKA

Institutions	Total Assets (Rs. mil.)			Percentage		
	1950	1980	1989	1950	1980	1989
I. Monetary Sector	1445	49433	169123	84	78	66
1.1 Central Bank	587	22832	62771	34	36	25
1.2 Commercial Banks	858	26601	106352	50	42	41
II. Non-Monetary Sector	280	14416	85703	16	22	34
2.1 Deposit-Type Institutions	249	6300	31837	14	10	12
2.1.1 NSB	249	5329	20905	-	8	8
2.1.2 Rural Banks		335	2212	-	1	1
2.1.3 Finance Companies		636	8213	-	1	3
2.1.4 RRDBs			507			
2.2 Long-Term Lending Institutions	31	405	10612	2	1	4
2.2.1 SMIB	31	127	2620	-	-	1
2.2.2 DFCC		278	2566	-	-	1
2.2.3 NDB			4271	-	1	2
2.2.4 HDFC			197			
2.3 Contractual Savings Institutions		7711	42098	-	12	17
2.3.1 Insurance		2660	6054	-	4	2
2.3.2 EPF		5051	34027	-	8	13
2.3.3 ETF			3617	-	-	2
2.4 Special Financial Services			1156			
2.4.1 Merchant Banks			356			
2.4.2 Leasing Companies			800			
Total	1725	63849	254826	100	100	100
Total (at 1952 prices)						
Real	1782	20065	30695			

Source: Central Bank of Sri Lanka.

Table 9.3

MONETARY SURVEY: SRI LANKA
(Rs. Million)

Year	M2 (1)	M1 (2)	NFA (3)	DC (4)	NCG (5)	CPS (6)	CGC (7)	CCO (8)	COP (9)	OIN (10)
1950	965	897	744	263	130	137	...	...	137	46
1960	1554	1197	323	1435	947	488	...	...	488	204
1970	3115	1997	-599	4175	2559	1616	297	295	1024	461
1975	4757	3088	-362	6233	2810	3423	1013	550	1860	1094
1977	8717	5366	3706	8775	2989	5786	1670	1231	2884	3764
1978	10892	5936	5590	10675	1863	8812	2363	1675	4774	5373
	25.0%	10.6%	50.8%	21.7%	-37.7%	52.3%	41.5%	36.1%	65.5%	42.7%
1979	15058	7669	6808	14972	2920	12052	3347	1908	6797	6722
	38.2%	29.2%	21.8%	40.3%	56.7%	36.8%	41.6%	13.9%	42.4%	25.1%
1980	19860	9428	3631	25804	8972	16832	4123	1368	11341	9574
	31.9%	22.9%	-46.7%	72.3%	207.3%	39.7%	23.2%	-28.3%	66.9%	42.4%
1981	24447	10024	2940	33967	12789	21178	4488	1294	15396	12460
	23.1%	6.3%	-19.0%	31.6%	42.5%	25.8%	8.9%	-5.4%	35.8%	30.1%
1982	30510	11760	2450	42398	17150	25248	4677	1188	19382	14377
	24.8%	17.3%	-16.7%	24.8%	34.1%	19.2%	4.2%	-8.2%	25.9%	15.4%
1983	37257	14748	3155	49293	17533	31760	4385	1823	25552	15191
	22.1%	25.4%	28.8%	16.3%	2.2%	25.8%	-6.2%	53.5%	31.8%	5.7%
1984	43427	16824	9951	49926	14554	35372	4148	1568	29656	16450
	16.6%	14.1%	215.4%	1.3%	-17.0%	11.4%	-5.4%	-14.0%	16.1%	8.3%
1985	48409	18761	9183	59226	20438	38878	4438	1304	33136	20000
	11.5%	11.5%	-7.7%	18.6%	40.4%	9.9%	7.0%	-16.8%	11.7%	21.6%
1986	50860	21179	9180	64109	22546	41563	4739	1425	35400	22429
	5.1%	12.9%	-0.0%	8.2%	10.3%	6.9%	6.8%	9.3%	6.8%	12.1%
1987	58335	25038	9291	75566	27048	48518	7366	1123	40029	26522
	14.7%	18.2%	1.2%	17.9%	20.0%	16.7%	55.4%	-21.2%	13.1%	18.2%
1988	67946	32379	7059	96867	36065	60802	10787	1319	48697	35980
	16.5%	29.3%	-24.0%	28.2%	33.3%	25.3%	46.4%	17.5%	21.7%	35.7%
1989	76434	35338	4732	102321	36119	66202	13862	1178	51163	30620
	12.5%	9.1%	-33.0%	5.6%	0.1%	8.9%	28.5%	-10.7%	5.1%	-14.9%

Source: Central Bank of Sri Lanka.

M1 - Narrow Money Supply
M2 - Broad Money Supply
NFA - Net Foreign Asset
DC - Total Domestic Credit
NCG - Net Credit to Government

CPS - Credit to Private Sector
CGC - Credit to Govt. Corporations
CCO - Credit to Corporate Sector
COP - Credit to Other Private Sector
OIN - Other items net

Table 9.4

INTEREST RATES: SRI LANKA
(Percentage Per Annum)

Year	Bank Rate	Penal Rate	Treasury Bill Rate	Commercial Banks			Savings Fixed	12-Month Fixed	Inflation Rate
				Savings	12-Month	Lending			
				(CS)	Fixed (CF)	(CL)			
	(BR)	(PR)	(TB)	(CS)	(CF)	(CL)	(NS)	(SF)	(IN)
1965	5.0	-	3.0	2-3	2.5-3.25	6-9	-		0.3
1970	6.5	-	4.8	4.5	4.5-4.75	8.5-12	-		5.9
1975	6.5	-	5.0	5.5	7.5	8.5-13	7.2	7.5	6.7
1977	10.0	15.0	5.0	7.5	15.0	13-19	8.4	15.0	1.2
1978	10.0	15.0	5.0	7.5	14-15	13-19	8.4	15.0	12.1
1979	10.0	15-25	9.0	7.5	14-15	13-20	8.4	15.0	10.8
1980	12.0	20-30	13.0	10-14	20	15-28	12.0	20.0	26.1
1981	14.0	21-30	13.0	10-14	20-22	15-28	12.0	20.0	18.0
1982	14.0	21-30	13.5	10-14.5	15-22	16-30	12.0	20.0	10.8
1983	13.0	20.0	12.0	10-15	16-25	13-30	12.0	18.0	14.0
1984	13.0	-	14.0	10-15	14-22	13-30	12.0	18.0	16.6
1985	11.0	-	11.5	10-13.5	12-18	13-28	12.0	15.0	1.5
1986	11.0	-	11.0	6-12	8.5-14	12-30	12.0	13.0	9.6
1987	10.0	-	11.0	6-11	8.5-14	14-30	12.0	13.0	7.7
1988	10.0	-	19.2	5-11	9-15.5	10-28	12.0	13.0	14.0
1989	14.0	-	19.4	5-14	11-20.5	9.8-30	14.0	15.0	11.6

Source: Central Bank of Sri Lanka.

Table 9.5**RESERVE POSITION: SRI LANKA**

(Rs. Million)

Year	Commercial Banks		Deposits with Cen- tral Bank (3)	(2)/(1) %	(3)/(1) %
	Total Deposits (1)	Required Reserves (2)			
1960	1022.0	97.0	140.0	9.49	13.70
1965	1512.0	171.0	140.0	11.31	9.26
1970	2365.0	319.0	225.0	13.49	9.51
1975	3511.0	299.0	243.0	8.52	6.92
1978	8541.0	682.0	738.0	7.99	8.64
1979	12031.0	926.0	966.0	7.70	8.03
1980	16391.0	1221.0	1264.0	7.45	7.71
1981	20817.0	1695.0	1846.0	8.14	8.87
1982	25748.0	2067.0	2244.0	8.03	8.72
1983	30640.0	3244.0	3413.0	10.59	11.14
1984	36325.0	3793.0	4026.0	10.44	11.09
1985	41127.0	5737.0	5490.0	13.95	13.35
1986	42703.0	5380.0	5045.0	12.60	11.81
1987	45943.0	4594.0	4047.0	10.00	8.81
1988	51550.0	7733.0	5034.0	15.00	9.77
1989	57462.0	8619.0	5597.0	15.00	9.74

Source: Central Bank of Sri Lanka.

Table 9.6

MONETARY BASE, MONEY MULTIPLIER AND VELOCITY: SRI LANKA

Year	Monetary	Net	Net	Loans to	Other	Multiplier		Velocity	
	Base (Rs.Mn.)	Foreign Assets (Rs.Mn.)	Credit to Govt. (Rs.Mn.)	Commercial Banks (Rs.Mn.)	Items Net (Rs.Mn.)	M2 (MUL2)	M1 (MUL1)	M2 (VEL2)	M1 (VEL1)
1950	526	556	15	-	45	1.83	1.71	4.26	4.59
1960	780	240	704	21	185	1.99	1.53	4.27	5.55
1970	1381	-722	2109	204	210	2.26	1.45	4.09	6.38
1975	2202	-1030	2390	594	248	2.16	1.40	4.97	7.65
1977	3698	1871	2823	771	1767	2.16	1.33	3.59	5.82
1978	4262 15.3%	4354 132.7%	1690 -40.1%	1180 53.0%	2962 67.6%	2.72	1.38	3.37	6.62
1979	5299 24.3%	5201 19.5%	2816 66.6%	920 -22.0%	3638 22.8%	3.12	1.44	3.16	6.84
1980	6286 18.6%	2074 -60.1%	8449 200.0%	1350 46.7%	5587 53.6%	3.39	1.49	3.16	7.20
1981	7505 19.4%	889 -57.1%	12299 45.6%	1386 2.7%	7069 26.5%	3.40	1.33	3.31	8.50
1982	9119 21.5%	-136 -115.3%	16763 36.3%	1180 -14.9%	8688 22.9%	3.51	1.28	3.13	8.59
1983	11642 27.7%	-135 -0.7%	16971 1.2%	3051 158.6%	8245 -5.1%	3.33	1.25	3.12	8.29
1984	13710 17.8%	6875 -5207.4%	13702 -19.3%	2147 -29.6%	9034 9.6%	3.28	1.21	3.33	8.97
1985	16896 23.2%	7315 6.1%	20640 50.6%	2137 -0.5%	13196 46.1%	3.00	1.11	3.19	8.67
1986	18031 6.7%	7076 -3.3%	23135 12.1%	3152 47.5%	15332 16.2%	2.93	1.17	3.39	8.49
1987	19273 6.9%	6455 -8.8%	24604 6.3%	3496 10.9%	15282 -0.3%	3.16	1.29	3.21	7.87
1988	25564 32.6%	4326 -33.0%	32925 33.8%	3854 10.2%	15541 1.7%	2.74	1.26	3.16	6.89
1989	26791 4.8%	1678 -61.2%	33976 3.2%	4313 11.9%	13176 -15.2%	2.96	1.31	3.15	7.13

Table 9.7**REFINANCE FACILITIES FROM THE CENTRAL BANK**
(Rs. Million)

Year	Short-Term	Long-Term (MCLF)	Total
1971	168.5	60.1	228.6
1972	95.5	57.6	153.1
1973	208.0	53.7	261.7
1974	654.5	47.4	701.9
1975	526.9	47.3	574.2
1976	333.5	55.0	388.5
1977	829.8	54.7	884.5
1978	1012.1	63.8	1075.9
1979	556.8	91.4	648.2
1980	913.7	210.1	1123.8
1981	996.9	411.3	1408.2
1982	792.6	603.2	1395.8
1983	2321.1	623.4	2944.5
1984	1662.3	649.9	2312.2
1985	1444.5	692.5	2137.0
1986	2403.8	748.5	3152.3
1987	2493.3	1005.9	3499.2
1988	2705.9	1147.8	3853.7
1989	2740.3	1572.1	4312.4
1990	4784.8	2545.3	7330.1

Source: Central Bank of Sri Lanka.

Table 9.8**BANK RATE POLICY: SRI LANKA**

Year	Bank Rate (%)	Penal Rate (%)	
1950	2.5	-	
1953	3.0	-	
1959	2.5	-	
1960	4.0	-	
1965	5.0	-	
1968	5.5	-	
1970	6.5	-	
1977	10.0	15.0	(Only a limited amount is allowed at the bank rate)
1979	10.0	15.0 - 25.0	
1980	12.0	20.0 - 30.0	
1981	14.0	21.0 - 30.0	(Discount facility reduced)
Mar. 1983	13.0	20.0	
Nov. 1983	13.0	-	(Discontinued borrowing at penal rate)
1985	11.0	-	
1987	10.0	-	
1989	14.0	-	
1990	15.0	-	

Source: Central Bank of Sri Lanka.

Table 9.9

RESERVE REQUIREMENT POLICY: SRI LANKA

A. Limits Specified in the MLA			
		Minimum	Maximum
(i)	Demand Deposit	10%	40%
(ii)	Time & Savings Deposits	5%	10%
(iii)	For Additional Deposits of All Types After Any Specified Date	up to 100%	

B. Changes in Reserve Requirements (RR)			
Year	RR for Demand Deposits	RR for Time & Savings Deposits	Special Reserve Requirements
1950	10%	5%	-
1950	14%	5%	-
1953	10%	5%	-
1960	12%	5%	10%
1961	12%	5%	38% (for demand deposit)
1975	A proportion was allowed to keep in the form of till cash		
1976	12%	5%	-
1981	12%	5%	-
	(Till cash facility was removed gradually)		
1983	14%	6%	-
1984	Special reserve in respect of incremental deposits were introduced with a reserve tranche system (0% - 15%)		
1985	16%	8%	16% (for unused OD balances)
1986	18%	10-14%	16% (for OD balances & tranche system)
	Savings & Fixed over 90 days: 10%		
	Savings & Fixed less than 90 days: 14%		
1986	16%	10-14%	16% (for OD balances)
	Tranche system was removed		
1987	10%	10%	-
1988	13%	13%	-
	(3% is allowed in the form of TB)		
1988	15%	15%	-
	(5% is allowed in the form of TB)		

Source: Central Bank of Sri Lanka.

Table 9.10

OPEN MARKET OPERATION POLICY: SRI LANKA

A. Issue of Central Bank Securities (CBSs)

- 1956 CBSs were issued with maturity period of one and two years at 1.25% and 1.75% p.a., respectively, to remove excess liquidity resulted by high tea export prices.
- 1957 CBSs were issued with maturity periods of 6-month and 18-month at 1% and 1.5% p.a., respectively.
- 1964 CBSs were issued
- 1966 Redeemed all outstanding CBSs.
- 1984 CBSs were issued with a maturity period of 6 months at a coupon rate 14% p.a., and investors were allowed to bid under an auction system.
- 1987 CBSs were issued with a maturity period of 1 year at a coupon rate of 11% p.a. and investors were allowed to bid under an auction system.
- 1989 Redeemed the last matured CBSs.

B. Treasury Bill Market

- 1981 The Central Bank began rediscounting of Treasury bills from its portfolio by introducing a Secondary Market for Treasury Bills.
- 1983 Interest rates in the primary market were allowed to fluctuate within a margin.
- 1986 The weekly primary treasury bill auction system was introduced.
- 1987 The interest rates in the primary treasury bill market were allowed to be market determined with minor interventions by the authorities.
- 1988 The "Tap System" was introduced to give facilities to outstation investors on Treasury bills.
- 1988 A repurchase market was introduced.
- 1989 The "Tap System" extended into Colombo district to reduce some of inconveniences under the auction system for non-institutional investors.

Source: Central Bank of Sri Lanka.

Table 9.11

CREDIT CEILING POLICY: SRI LANKA

1963	Commercial Bank Credit to purchase estates was limited to 1/3 of the price.
1965	Commercial bank credit to the private sector was subjected to a ceiling for a period of 12 months.
1968	Expansion of credit to the private sector was limited to a 8 & over the level of August 1968.
1978	Selective credit ceilings on commercial bank credit to non-bank companies engaged in lending and hire purchase were taxed. Selective credit ceilings on commercial bank credit to government corporations and statutory boards.
1979	Selective credit ceilings to commercial bank credit to government corporations and statutory boards were withdrawn.
1981	Overall credit ceilings were imposed on commercial banks in May but they were removed in June 1981.
1982	Selective credit ceilings on companies to purchase estates were removed.
1983	Overall credit ceilings were imposed on commercial banks.
1984	Selective credit ceilings were introduced to the private sector excluding exports and agriculture. Selective credit ceilings were introduced on credit for non-essential imports.
1985	Selective credit ceilings on credit for non-essential imports extended to finance companies.
1986	Selective credit ceilings were amended by excluding credit to industry from the ceiling.
1989	Selective credit ceilings were introduced on commercial banks credit to the private sector excluding credits for agriculture, industry and exports.
1989	100% deposit margin requirement was imposed against letters of credits for non-essential imports.

Source: Central Bank of Sri Lanka.

Table 9.12

OWNERSHIP OF TREASURY BILLS: SRI LANKA

	1970 Dec.	1980 Dec.	1985 Dec.	1986 Dec.	1987 Dec.	1988 Dec.	1989 Dec.	1990 Dec.
A. Total Value of TB (Rs. Mn.) (Face Value)	1950	9800	22280	26173	29850	43700	57246	67968
B. Total Value of TB (Rs. Mn.) (Book Value)	1926	9482	21612	25453	29029	41651	50738	61175
I. Holdings of TB (Rs. Mn.)								
1.1 By Central Bank	1834	9338	18452	20221	20888	30217	29119	27031
1.2 By Commercial Banks	67	9	963	1171	3850	4857	6113	9743
1.3 By Others, i.e. Non-Bank Sector	25	136	2107	4061	4291	6577	15506	24402
II. Relative Shares of TB Holdings (%)								
2.1 By Central Bank	96%	98%	86%	79%	72%	72%	57%	44%
2.2 By Commercial Banks	3%	0%	4%	5%	13%	12%	12%	16%
2.3 By Others, i.e. Non-Bank Sector	1%	2%	10%	16%	15%	16%	31%	40%
III. TB Rates								
3.1 Primary Market Rate (%) (Max.)	4.8	13.0	11.5	11.0	11.0	19.2	19.4	18.4
3.2 Secondary Market Rate (%)								
3.2.1 Discount	-	-	11.3	10.0	7.3	18.0	15.5	15.0
3.2.2 Rediscount	-	-	11.5	11.0	11.3	23.0	20.5	20.0
Comm. Bank 12-Month Fixed Deposit (%):								
Minimum	4.5	20.0	12.0	8.5	9.0	11.0	11.0	11.0
Maximum	4.8	20.0	18.0	14.0	15.5	20.5	20.5	20.5
Inflation Rate (%) (CPPI)	5.9	26.1	1.5	9.6	7.7	14.0	11.6	21.5
Central Bank Securities Outstanding (Rs. Mn.)	-	-	1168.0	2604.0	20.0	19.0	-	-

Source: Central Bank of Sri Lanka.

Table 9.13

$$\text{LM1SR} = a_0 + a_1\text{LOYR} - a_2\text{LR3A} - a_3\text{AINF} + a_4\text{LM1SR}(-1)$$

Constant	0.413853 (0.18)	0.4891214 (0.22)	0.228152 (0.53)	0.899444 (1.53)	0.550523 (1.27)
LOYR	0.78131 (3.86)	0.769296 (3.86)	0.134651 (1.91)	0.116463 (1.90)	0.094796 (2.30)
LR3A	-	-	-0.040522 (1.19)	-	-
LR 12A	-0.020912 (-0.30)	-	-	-0.070224 (-1.77)	-0.056453 (-1.72)
AINF	-	-	-0.000408 (-0.34)	-0.00435 (-0.39)	-
AINF(-1)	-0.00028 (-0.27)	-0.000349 (-0.39)	-	-	-0.000005 (-0.01)
LM1SR(-1)	-	-	0.82127 (10.96)	0.778667 (9.73)	0.839785 (13.12)
$\bar{R}^2$	0.95	0.95	0.94	0.94	0.95
S.E.	0.0343	0.0339	0.037	0.036	0.035
D.W.	2.27	2.24	2.48	2.44	1.84
RH0	0.946 (14.13)	0.944 (15.48)	-	-	-0.365 (-2.19)

Period: 1979Q1 - 1989Q4

Method: OLS with TSP

Table 9.14

$$\text{LM2SR} = a_0 + a_1\text{LOYR} \pm a_2\text{LR3A} - a_3\text{AINF} + a_4\text{LM2SR}(-1)$$

	Eq. 1	Eq. 2	Eq. 3	Eq. 4	Eq. 5	Eq. 6
Constant	0.552509 (1.25)	0.346546 (0.59)	0.711407 (1.52)	0.342211 (1.27)	0.344689 (0.95)	0.449343 (1.16)
LOYR	0.837477 (21.58)	0.857090 (17.72)	0.831256 (19.82)	0.666146 (8.20)	0.854947 (26.47)	0.854233 (24.34)
LR3A	0.036270 (1.48)	-	-	0.044683 (2.59)	0.040179 (1.54)	-
LR12A	-	0.028708 (0.98)	-	-	-	-
AINF	-0.000955 (-1.08)	-0.000778 (-0.85)	-0.000930 (-1.03)	-0.000701 (-1.03)	-	-
AINF(-1)	-	-	-	-	-0.000484 (-0.69)	-0.000182 (-0.27)
LM2SR(-1)	-	-	-	0.210476	-	-
$\bar{R}^2$	0.98	0.98	0.98	0.98	0.98	0.98
S.E.	0.021	0.021	0.021	0.23	0.21	0.22
D.W.	1.88	1.91	1.97	1.68	1.93	1.95
RHO	0.403 (3.80)	0.427 (4.12)	0.452 (4.83)	- (2.64)	0.405 (3.50)	0.443 (4.17)

Period: 1979Q1 - 1989Q4

Method: OLS with TSP Programme

Table 9.15

ESTIMATION OF PRICE EQUATION: SRI LANKA

$$(LCPI = a_0 + a_1 LM_1 - a_2 LOYR + a_3 LIMP)$$

	Eq. 1	Eq. 2	Eq. 3	Eq. 4
Constant	-2.310175 (-0.98)	-1.435992 (-1.21)	0.656637 (0.31)	10.145695 (11.07)
LM1	0.258227 (3.64)	-	-	0.032428 (1.37)
LM1 (-1)	-	-	-	0.039529 (1.69)
LM2	-	0.877316 (9.51)	0.368922 (3.78)	-
LOYR	-0.293185 (-1.72)	-0.663355 (-4.180)	-0.624891 (-4.27)	-0.896651 (-17.01)
LIMP	0.811974 (5.39)	0.043071 (0.44)	0.667183 (4.29)	0.158241 (2.70)
$\bar{R}^2$	0.99	0.99	0.99	0.99
S.E.	0.025	0.030	0.023	0.008
D.W.	1.61	1.23	1.60	0.85
RHO	0.923 (18.23)	-	0.946 (27.22)	0.967 (228.12)

Period: 1979Q1 - 1989Q4

Method: OLS with TSP programme

Table 9.16

Period	MUL1	MUL2	VEL1	VEL2
1978.1	1.400	2.458	5.567	3.170
1978.2	1.425	2.599	6.026	3.305
1978.3	1.449	2.734	6.433	3.409
1978.4	1.383	2.720	6.624	3.368
1979.1	1.415	2.877	6.295	3.096
1979.2	1.398	2.957	6.851	3.239
1979.3	1.454	3.117	6.933	3.233
1979.4	1.442	3.123	6.842	3.159
1980.1	1.446	3.032	6.718	3.204
1980.2	1.435	3.079	7.240	3.374
1980.3	1.372	3.284	7.842	3.276
1980.4	1.485	3.389	7.203	3.156
1981.1	1.468	3.281	7.099	3.176
1981.2	1.340	3.295	8.445	3.435
1981.3	1.331	3.558	8.546	3.197
1981.4	1.326	3.402	8.497	3.311
1982.1	1.376	3.534	7.636	2.974
1982.2	1.308	3.657	8.599	3.075
1982.3	1.253	3.590	8.674	3.028
1982.4	1.280	3.511	8.590	3.132
1983.1	1.255	3.378	8.190	3.044
1983.2	1.254	3.440	8.870	3.234
1983.3	1.241	3.403	8.840	3.223
1983.4	1.253	3.326	8.287	3.123
1984.1	1.220	3.312	8.376	3.084
1984.2	1.175	3.362	9.244	3.230
1984.3	1.204	3.331	9.240	3.341
1984.4	1.214	3.276	8.972	3.326
1985.1	1.143	3.135	8.952	3.264
1985.2	1.178	3.279	9.050	3.252
1985.3	1.076	3.103	9.119	3.162
1985.4	1.105	2.998	8.665	3.192
1986.1	1.167	2.968	8.158	3.207
1986.2	1.151	2.943	8.574	3.354
1986.3	1.181	2.958	8.595	3.432
1986.4	1.167	2.928	8.490	3.385
1987.1	1.176	2.952	8.189	3.262
1987.2	1.173	3.014	8.554	3.327
1987.3	1.241	3.177	8.400	3.281
1987.4	1.292	3.163	7.866	3.214
1988.1	1.207	2.882	7.642	3.201
1988.2	1.266	3.010	7.580	3.189
1988.3	1.251	2.930	7.612	3.251
1988.4	1.258	2.739	6.887	3.163
1989.1	1.249	2.807	7.052	3.139
1989.2	1.282	2.913	7.415	3.262
1989.3	1.274	2.814	7.080	3.206
1989.4	1.310	2.960	7.129	3.154

Source: Central Bank of Sri Lanka.

REFERENCES FOR VARIABLES

A. Variables in Tables 13 - 15

LCPI	-	Natural log values of Consumer Price Index
LIMP	-	Natural log values of imported price index
LM1	-	Natural log values of narrow money supply
LM2	-	Natural log values of broad money supply
LM1SR	-	Natural log values of narrow real money supply
LM2SR	-	Natural log values of broad real money supply
LOYR	-	Natural log values of real GNP
LR3A	-	Natural log values of 3-month fixed deposit rates in commercial banks
LR12A	-	Natural log values of 12-month fixed deposit rates in commercial banks
AINF	-	Annual inflation rate on point-to-point basis according to consumer price index
$\bar{R}^2$	-	R-Squared adjusted
S.E.	-	Standard error of the regression
D.W.	-	Durbin-Watson Statistics
RHO	-	First order autocorrelation

Values in parenthesis are t-values

B. Variables in Table 16

MUL 1	-	Multiplier with respect to M_1
MUL 2	-	Multiplier with respect to M_2
VEL 1	-	Velocity of M_1
VEL 2	-	Velocity of M_2

Chapter 10

MONETARY POLICY IN THAILAND: AN UPDATE

by

Mathee Supapongae and Rungsun Hataiseree

I. Introduction

The decade 1980s represents a difficult period for economic management in Thailand. To maintain growth with stability and achieve other long-term development objectives, Thai authorities have to introduce various adjustment policies to cope with unfavorable world economic environment. During the first half of the decade, the pressing issue confronting the country was economic instability, particularly in the external balance. The emphasis of the monetary policy was to correct instability, while maintaining adequate growth. By mid-1980s, economic stability was restored due to various adjustment efforts as well as some improvement in world conditions. The emphasis of the policy shifted toward supporting sustained growth; and, at the same time, sought to further improve the flexibility of financial policy instruments as well as that of the financial system as a whole.

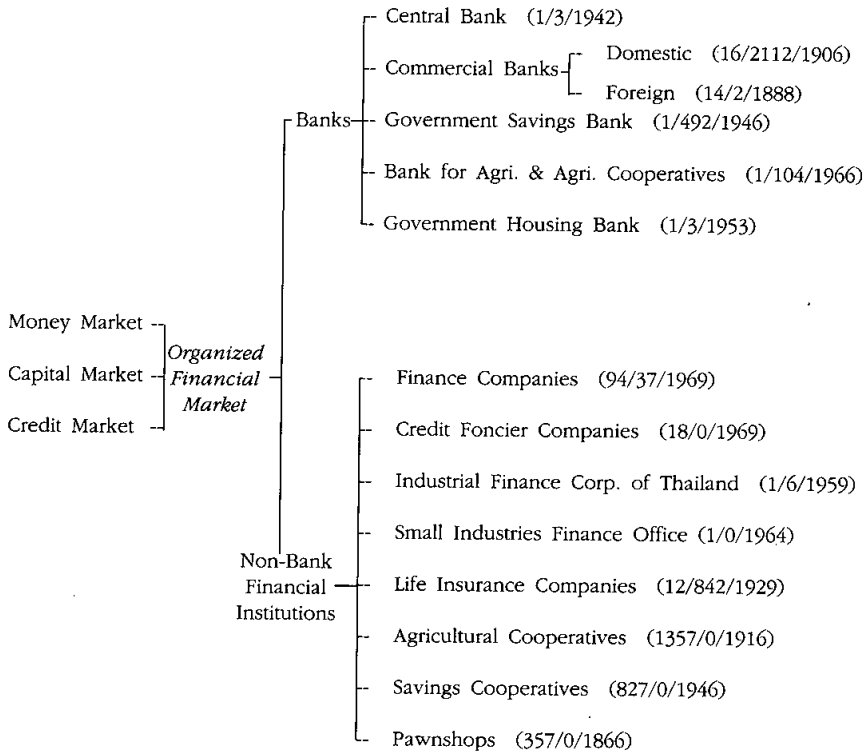
The purpose of this paper is to document and analyze the operation of monetary policy in Thailand from 1979 to 1989. The emphasis will be given to the decade when the primary policy goal changed from maintaining stability to stimulating higher growth. Adjustments in monetary policy must be understood within the context of the changes in financial circumstances. Thus, the second section of the paper provides a brief description of financial sector development. The next section describes the framework and procedures of monetary control. The conduct of monetary policy during the 1980s is also documented and analyzed in this section. The fourth section examines the effectiveness of monetary policy, while some issues which may affect the conduct of monetary policy in Thailand are also discussed in the following section. The final section contains summary and conclusions.

II. Financial Structure and Development

The financial system of Thailand comprises fairly diversified financial institutions and markets, most of which are private-owned institutions as shown in Chart 10.1. In Thailand, the commercial banks have

Chart 10.1

STRUCTURE OF THE ORGANIZED FINANCIAL SYSTEM IN THAILAND¹
(As at End-1989)



1/ Figures in parentheses are numbers of institutions, number of branches, and the years in which they began operations in Thailand.

long played the important role in the financial system, in terms of both financial resource mobilization and credit extension. Deposits mobilized and credits extended by the banks in 1989 accounted for 81 per cent and 77 per cent extended by the whole financial system, respectively.

Prior to 1980, a number of money market instruments already existed in Thailand. Among the most important were call money in the interbank market and treasury bills. Banker's acceptances, promissory notes and other commercial papers were also traded but only on a limited basis. Trading in money market was passive due to the small number of participants in the markets and the limitation of secondary markets for commercial bills. In addition, the interbank lendings and borrowings were done in an oligopolistic manner and mainly through personal contacts between lending and borrowing institutions. In this regard, the monetary authorities on many occasions encountered difficulty in controlling money market liquidity.

An important step toward the improvement in the functioning of the money market was the establishment of the repurchase market in 1979. Prior to the settlement of R/P market, the interbank lendings and borrowings performed as an oligopolistic market and mainly through personal contacts between lending and borrowing institutions. Furthermore, borrowing and lending were normally confined to certain groups, i.e., a few large Thai banks being permanent lenders and the other group, i.e., foreign banks being permanent borrowers. Owing to this oligopolistic character, both borrowing and lending rates failed, for the most part, to respond to market conditions and the Bank's policy. Furthermore, borrowing and lending among Thai banks were relatively minimal since the deficit Thai banks did not want to reveal their positions to their competitors. This, coupled with the fact that a secondary market for government securities did not practically exist, made it necessary for the deficit banks in balancing their short position to rely mainly on borrowing through the loan window of the Central Bank. The repurchase market, through the guidance of the Central Bank, would facilitate the flow of funds in the domestic money market without the borrowing institutions having to expose their financial position to other competing institutions. The repurchase market provides an additional instrument for financial institutions to manage their assets and liabilities more efficiently and serve as a vehicle for the Central Bank to conduct monetary policy.

As for the development in the foreign exchange market, a new exchange rate regime was implemented in November 1984 when the baht was devalued by 14.8 per cent. The exchange rate is now rendered more flexible by being aligned with a basket of currencies of Thailand's major trading partners.

Interest rate in Thailand was geared towards a liberal regime since the early 1980. Firstly, in 1980, lending rates of financial institutions were freed from the 15.0-per cent limit imposed since 1924 and ceiling rates on both deposits and loans were raised by a record margin of 3.0 percentage points to facilitate liability management of commercial banks in light of volatile liquidity conditions of the financial system. In June 1989, the authorities announced the lifting of the ceiling of deposit rate for deposits of more than one year to encourage more long-term deposit mobilization and to enable commercial banks to gradually adjust themselves to a more flexible interest rate system. The change in interest rate policy stance proved beneficial for financial savings mobilization, as evidenced by the high growth rate in commercial bank deposits of around 24.0 per cent per annum on average since 1980. Flexibility in interest rate movement thus served to reduce both the savings-investment imbalances and the impact of external shocks.

Over the last decade, the financial system of Thailand has witnessed many developments, although the pace of changes has been relatively slow compared with those occurring in many developed countries. During this period, new markets have evolved and new services have been introduced by existing institutions. The financial innovation process is getting pervasive. However, the varieties of financial services and instruments are quite limited and the sophistication of the financial system has yet to match the stage of development in real economic sector. In the following, the process of financial innovation in Thailand is reviewed in detail.

Financial innovations prevailing in the Thai financial markets probably have their origins in the early 1980s. The innovations implemented so far can be generally divided into four types as shown in Table 10.1:

- (i) Introduction of modern technology in banking operations;
- (ii) Introduction of new money market instruments;
- (iii) New forms of international financial products; and,
- (iv) Recent innovations in banking practice.

Table 10.1
ASSETS AND LIABILITIES OF COMMERCIAL BANKS 1/

End of Period	1980 Dec.	1981 Dec.	1982 Dec.	1983 Dec.	1984 Dec.	1985 Dec.	1986 Dec.	1987 Dec.	1988 Dec.	1989 Dec.	1990 Dec.
A. Assets											
1. Cash & Claims on Bank of Thailand:	10431.3	11807.2	12760.6	14955.6	14607.3	21172.3	22109.6	25745.9	32358.1	33797.9	51563.4
2. Cash in hand	4535.8	4524.9	5246.8	5905.4	6483.0	8309.3	8125.0	9680.2	11693.1	14759.1	16739.7
3. Balances at BOT	5895.5	7282.3	7513.8	9050.2	8124.3	12863.0	13984.6	16065.7	20560.0	19038.8	26838.7
4. BOT bonds	-	-	-	-	-	-	-	-	105.0	-	7985.0
5. Claims on Commercial Banks:	6181.3	4982.8	8134.6	12982.4	11733.2	13124.2	9181.0	22987.3	17653.9	19705.4	17015.1
6. Deposits	795.9	1315.0	1106.9	2667.8	4874.6	4655.8	3886.2	4112.8	4337.0	4266.3	4906.4
7. Advance & bills	5385.4	3667.8	7027.7	10314.6	6858.6	8468.4	5294.8	18874.5	13316.9	15439.1	12108.6
8. Claims on Other Financial Institutions:	9864.5	9391.4	9654.3	9497.2	10063.9	32516.9	36304.3	51660.9	52848.9	60448.6	68993.0
9. Deposits	19575.2	18049.7	21034.8	25098.7	33954.0	10942.3	11295.4	12637.3	14377.4	14827.7	14905.3
10. Advance & bills	8772.3	6760.8	9380.8	13581.4	21634.5	20071.4	24127.9	37607.9	36277.1	42193.3	50812.7
11. Securities	938.4	1897.5	1999.7	2020.1	2255.6	1503.2	881.0	1415.7	2194.4	3427.6	3275.0
12. Foreign Assets: 2/	15621.2	24979.2	26377.0	24582.7	30791.3	33655.3	41952.2	38553.0	44989.3	70212.6	56365.6
13. Claims on non-resident banks	8250.7	15169.3	18579.8	16419.5	19560.0	22740.5	29551.0	23356.9	25293.4	45003.3	29467.1
14. Deposits & cash in hand	7042.7	12050.5	16906.4	12521.3	16994.5	18473.9	25433.8	19654.4	21364.5	41468.9	23822.6
15. Advances & bills	448.5	2142.4	578.6	2657.1	1065.5	2759.5	2554.6	3702.5	3928.9	3534.4	5644.5
16. Capital funds allocated	759.5	976.4	1094.8	1241.1	1500.0	1507.1	1562.6	-	-	-	-
17. Claims on other non-residents -	6494.7	7914.6	7107.2	7592.8	9989.0	10281.9	11060.3	14052.3	18353.2	22549.4	23458.4
18. Advances & bills	4.5	12.5	15.7	8.4	59.7	81.1	71.2	181.6	174.9	378.8	541.5
19. Export bills	6477.8	7645.6	6768.9	7233.1	9539.8	9440.6	10111.5	13283.5	17604.5	21588.7	22045.3
20. Securities	12.4	256.5	322.6	351.3	389.5	760.2	877.6	587.2	573.8	581.9	871.6
21. Other foreign assets	875.8	1895.3	690.0	570.4	1242.3	632.9	1340.9	1143.8	1342.7	2659.9	3440.2
22. Claims on Government:	29218.9	38863.1	54064.9	53146.2	80591.2	77741.6	104779.1	115603.4	124288.1	123282.6	110672.9
23. Advances & bills	301.2	529.3	542.5	375.2	699.0	759.2	571.8	671.4	1159.1	2044.6	1416.7
24. Bonds	28587	35004.6	51331.7	51858.8	74640.9	76947.8	102356.7	114932.0	123129.0	121238.0	109256.2
25. Treasury bills	330.0	3329.2	2190.7	912.2	5251.3	34.6	1850.6	-	-	-	-
26. Claims on Non-Fin. Public Enterprises:	10392.8	10142.7	12874.0	11958.8	13027.4	13585.8	14601.5	14889.8	14641.9	16102.9	18194.1
27. Advances & bills	9392.8	9142.7	11874.0	10958.8	11770.3	11206.8	10349.8	9988.2	9511.5	9728.7	10647.5
28. Securities	1000.0	1000.0	1000.0	1000.0	1257.1	2379.0	4251.7	4901.6	5130.4	6374.2	7546.6

Table 10.1 (cont'd)
ASSETS AND LIABILITIES OF COMMERCIAL BANKS 1/

End of Period	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
	Dec.	Dec.	Dec.	Dec.	Dec.	Dec.	Dec.	Dec.	Dec.	Dec.	Dec.
29. Claims on Bus. & Household Sector:	195323.3	230971.9	273224.6	371652.2	433475.0	481234.0	501480.4	614754.6	795980.1	1045198.0	1408799.3
30. Advances	146208.2	171242.1	204618.8	275441.2	322073.2	357685.5	369400.3	440313.5	571692.9	764579.3	1048328.6
31. Bills -	47325.9	57767.0	66472.3	93813.5	108730.7	119993.5	127242.0	168496.6	214654.6	268302.2	346674.7
32. Domestic bills	33613.0	42432.3	51339.5	74596.6	85425.0	95321.9	101279.4	135982.0	163448.2	205114.5	265017.1
33. Import bills	2984.3	4021.9	3984.2	5091.2	6249.0	7344.8	8886.8	8019.5	10759.1	13225.9	15949.6
34. Trust receipts	10728.6	11312.8	11148.6	14125.7	17056.7	17326.8	17075.8	24495.1	40447.3	49961.9	65708.0
35. Securities	1789.2	1962.8	2133.5	2397.5	2671.1	3555.0	4838.1	5944.5	9632.6	12316.5	13796.0
36. Other Assets	18650.0	18512.5	22934.6	25671.9	31179.7	40574.1	46283.1	59144.5	61885.6	57922.2	74960.3
37. TOTAL ASSETS	305394.0	358309.1	431405.1	540048.5	649359.1	713604.2	776691.2	943339.4	1144645.9	1426670.2	1806563.7
B. Liabilities											
38. Credit from Bank of Thailand	16710.5	20156.8	20919.1	23366.8	24275.5	26103.3	33631.9	42030.7	57573.5	41220.6	42340.2
39. Liabilities to Commercial Banks: r/	6271.7	4461.6	8073.7	12965.1	12217.4	12790.7	8934.0	23246.7	18183.5	20050.3	18573.5
40. Deposits r/	871.7	740.5	1017.8	2655.7	5420.5	4782.1	4071.8	4055.7	4234.1	4284.8	4884.4
41. Borrowings	5400.0	3721.1	7055.9	10309.4	6796.9	8008.6	4862.2	19191.0	13949.4	15765.5	13689.1
42. Borrowings from Other Fin. Institutions:	1074.6	1596.8	2679.1	2664.1	2148.4	4764.7	3167.9	1824.8	7303.9	14903.3	15386.9
43. Total Deposits of Non-Govt. Sector: 3/r/	205453.7	244586.3	309026.2	390013.6	473633.5	528727.0	599822.0	720654.7	855708.8	1086262.6	1388684.6
44. Demand deposits r/	25133.1	25603.7	24152.4	22528.5	24517.6	21096.7	30475.8	44466.0	48075.4	53866.5	54983.4
45. Savings deposits	152321.2	36733.0	59960.1	92907.7	101604.9	110795.2	157705.7	226526.8	273499.0	347938.9	380977.0
46. Time deposits	27095.3	180972.4	223590.2	273320.6	346256.6	395503.2	409663.5	446320.3	531276.1	679968.3	949919.9
47. Foreign currency deposits	568.1	844.7	1025.2	848.0	899.1	1052.6	1689.3	2938.4	2435.0	3425.3	1769.1
48. Marginal Deposits	336.0	432.5	298.3	408.8	355.3	279.3	287.7	403.2	423.3	1063.6	1035.2
49. Foreign Liabilities:	28439.9	33619.9	29341.5	42883.8	50917.3	45891.4	31749.5	37155.6	61674.4	85272.4	109757.8
50. Banks abroad -	26659.9	31063.8	27298.4	39437.8	47682.1	41168.6	26992.2	31058.9	54986.6	74219.7	100190.4
51. Deposits	1014.4	999.5	1563.5	898.7	1022.1	1435.8	1005.7	1790.1	2152.6	4428.6	3764.3
52. Borrowings	25645.5	30064.3	25734.9	38539.1	46660.0	39732.8	25987.0	29268.8	52834.0	69791.1	96426.0

Table 10.1 (cont'd)
ASSETS AND LIABILITIES OF COMMERCIAL BANKS 1/

End of Period	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
	Dec.	Dec.	Dec.	Dec.	Dec.	Dec.	Dec.	Dec.	Dec.	Dec.	Dec.
53. Other non-resident	1078.3	1242.4	1228.1	1808.4	2508.2	3008.5	3878.0	4606.6	5077.6	9295.3	8710.4
54. Other foreign liabilities	701.7	1313.7	815.0	1637.6	727.0	1714.3	878.8	1490.1	1610.2	1757.4	857.1
55. Government Deposits 4/	7762.7	11403.9	10768.6	12657.5	16539.3	19699.9	20929.1	23578.4	28390.1	32694.6	35620.3
56. Capital Accounts	19487.7	21472.4	24596.2	28056.1	36291.0	42444.9	44096.5	57469.4	68329.1	83112.1	111307.9
57. Other Liabilities	20193.2	21011.4	26000.7	27441.5	33336.7	33182.3	34360.3	37379.1	47482.6	63154.3	84892.5
58. TOTAL LIABILITIES	305394.0	358309.1	431405.1	540048.5	649359.1	713604.2	776691.2	943339.4	1144645.9	1426670.2	1806563.7

1/ Including interbank transactions.

2/ Since September 1987 Capital funds allocated by Thai banks to their foreign branches have been excluded from foreign assets and included in other assets.

3/ Consists of business and household sector, non-financial public enterprises and other financial institutions.

4/ The figures from October 1987 onwards have been adjusted to include deposits of Rubber Replanting Aid Fund, Farmers' Aid Fund, Tourism Authority and Sports Promotion Organization in government deposits.

r/ The figures from December 1983 to July 1987 have been revised. The revised series are available upon request.

2.1 Introduction of Modern Technology in Banking Operations

In Thailand, as in other countries, the Automatic Teller Machines (ATMs) have been the first product of the new technology to be put to widespread use. This product was first introduced by a Thai commercial bank in 1983. Since then, they have been widely used in the national banking system. In particular, ATMs and credit cards have become more available since around the mid-1980s. Along with ATM development, another electronic funds transfer (EFT) service was introduced in early 1985 in order to take advantage of the existing ATM cards, i.e., an electronic funds transfer at point of sale (EFTPOS).

The growing applications of modern technology by local banks have had some impact on the services they offered to their customers. First, it has helped facilitate corporate customers in performing direct debits and credit transfers (e.g., salary payment, etc.) on their own computers. Given this opportunity, some of the large firms are now increasingly active in managing credit balance on current accounts by investing them in short-term interest-bearing assets. In other words, EFT has enabled those firms to economize on their cash holdings. To some degree, this practice may be seen as a kind of cash management techniques widely deployed in major advanced countries. Second, it has been increasingly convenient for personal customers to use cash dispensing machines to transfer and withdraw funds. Lastly, over the years, the public have been allowed to transfer funds automatically from their savings account to checking account under certain stipulated arrangement. In effect, the public seem to have been aware of the advantage of shifting balance to deposit accounts on which interest rates have been relatively attractive and of making use of credit cards. The existing evidence in this regard indicated that such innovations have had an impact on the structure of banks' deposits in that there was a shift from demand deposits to savings deposits. It seems clear that the demand deposits to total deposits ratio declined continuously from about 22 per cent in 1971 to 13 and 6 per cent in 1980 and 1988, respectively. In the corresponding period, the savings to total deposits ratio increased from about 9 per cent in 1971 to 13 and 32 per cent in 1980 and 1988, respectively. The share of time deposits remained around 65 per cent.

2.2 The Introduction of New Money Market Instruments

A second form of innovation - new financial instruments bearing relatively market rates of interest - was allowed to develop gradually since the mid-1980s. The introduction of transferable certificate of deposits (TCDs) to the Thai financial scene by a Thai commercial bank in March 1984 was an example in this respect. This instrument is equivalent to a fixed deposit with some degree of liquidity. Initially, TCDs were introduced to provide a greater flexibility for the commercial banks to attract longer-term funds. However, it was then used as part of liability management by some commercial banks which have become increasingly interest-sensitive, particularly with respect to sources of funding. Unfortunately, this instrument has become unpopular in recent years due partly to certain unattractive characteristics inherent in the instrument, i.e., lack of liquidity, registration method, and partly to the recent economic situations which have not been favorable to the development of this instrument. As a result, the outstanding TCDs have been declining considerably in recent years. Specifically, its outstanding amount reduced from B 19484 million at end-1984 to only B 239 million as of September 1989. Other types of funds-raising instruments in this regard are various kinds of notes such as Citynotes, Chasenotes, and IFCTnotes which are transferable bills of exchange issued by commercial banks and IFCT, respectively.

Aside from the above-mentioned instruments, the Bank of Thailand (BOT) bond is also viewed as one of the new financial instruments. This product was first introduced by the central bank in May 1987 with the aim of mopping up excess liquidity in the banking system at that time, and, to some extent, as part of the monetary policy instruments. The subsequent issue was carried out in February 1988. Since this instrument has produced a very limited impact on the behavior of household and corporate sectors, it is thus not reviewed in greater detail here.

2.3 New Forms of International Financial Instruments

A third group of innovations - new international financial instruments - was largely initiated by branches of foreign bank here at around the mid-1980s. The process was subsequently followed by a bulk of Thai commercial banks, particularly the big ones. New financial products with risk-diversed features include, inter alia, hedging instruments

like currency and interest rates swaps, options, forward rate agreements (FRAs). In addition to these, new financing techniques have been gradually introduced into the domestic financial markets, including the relatively new back-up facilities such as note issuance facilities (NIFs), and revolving underwriting facilities (RUFs), securitization of loans. Compared with those in major industrial countries, Thai banks have had an experience with these types of activities on a relatively small scale. As a matter of fact, Thai banks are now endeavoring to acquire the expertise in these areas and to find out the ways in which they can be utilized for the benefit of the public involved.

As commonly accepted, these types of transactions are off-balance sheet (OBS) with numerous types of risks such as credit risk, liquidity risk, interest rate risk, currency risk, settlement risk, etc. The transaction in these new banking activities is considered OBS as they normally are not recorded in the commercial banks' formal balance sheet and are not subject to the formal capital adequacy requirement. Over the course of the decade, banks tended to have increased their OBS activities such as interest rate and currency swaps. Evidence available so far indicated that the total value of OBS transactions accounted for more than 50 per cent of banks' total assets. Since the expanding OBS activities could not be monitored directly, the increasing use of these new financial products could pose a risk to the stability of the banking industry, as will be discussed later on.

On the benefit side, the introduction of these new financial products has provided a greater flexibility for market participants in Thailand to manage potential financial risks which are likely to increase over time. The growing use of these new international financial products as a device to reduce risks was probably spurred by the two main factors. One is a gradual degree of deregulation by the authorities to allow for more price flexibility and competition. An example in this regard was the change of the foreign exchange system from a fixed rate system to a more flexible exchange rate by being aligned with a basket of currencies of Thailand's major trading partners. Another is the mounting fluctuations of interest rates both at home and abroad, especially since the second oil shock in 1979. Therefore, it can be argued that such developments have forced many market participants to give more attention to financial risk management and, thus, to learn how to prevent themselves from the losses arising out of the higher fluctuations in rates of exchange and interest.

2.4 Recent Innovation in Banking Practice

There has been also innovation associated with the techniques used by commercial banks for extending credit. Traditionally, most bank lending in Thailand was in the overdraft (O/D) form which, in principle, remained the opened credit line for an indefinite period. This traditional practice of bank lending was deficient in many ways: (i) difficulty in controlling the growth of commercial banks' lendings; and, (ii) susceptibility to swings in the lending portfolio arising from a relatively large amount of unused O/D which amounted to around 36-37 per cent of total O/D facilities.

Confronted with these difficulties, most of the local banks have over the years attempted to introduce a two-tier prime rate system. Under this system, the interest rates charged for borrowings in the form of O/D are normally set above the rates charged for term lending. This practice is often referred to "MOR" for the former and "MLR" for the latter. In addition, efforts were also made to curb the uncontrolled growth of unused O/D facilities to reduce an "overhang" on bank liquidity. The BOT imposed a ceiling on O/D line of credit that a commercial bank can extend to any one customer to not more than B 50 million in May 1985. This ceiling was again reduced to B 30 million in March 1990. In effect, the share of term loan has exhibited an upward trend. It increased continuously from around 22 per cent at end-1980 to approximately 40 per cent by end-1988.

III. Formulation and Implementation of Monetary Policy

3.1 Policy Framework, Goals and Instruments

In the formulation of the Thai monetary policy, the Bank of Thailand considers economic stability, i.e., both stable domestic prices and external account balances as one of the most important objectives. Growth and development objectives are also taken into consideration to derive a proper mix of economic objectives consistent with long-run sustainable growth path. To achieve the objective of economic growth with stability, the Bank seeks to control the growth of both money and credit as intermediate objectives of monetary policy. In this connection, the Bank sets targets for the growth of M1, M2 and domestic credits consistent with annual targets for economic expansion, domestic

prices and external account position. Reserve money has also been set as the Bank's operational goal.

To control the reserve money, the Bank concentrates on controlling its lending to financial institutions particularly commercial banks. Lending to commercial banks are made through three main channels, namely, loan window or last resort lending facility, refinance facility for commercial banks' lending to priority sectors and repurchase market. The Bank sets a limit or a credit line for banks' borrowings through each of the first two channels to prevent excessive use of the Bank's fund. Meanwhile, interest rate for refinance facility is usually below market rates to help promote priority sectors. The interest rate or so-called "bank rate" for last resort lending facility is normally fixed above money market rates. The Bank has also used the alteration of the bank rate to indicate the direction of monetary policy stance.

Repurchase market, where government bonds are traded with repurchase agreement, and where participants comprise financial institutions including the Bank and a number of state enterprises, is the main channel through which the Bank adjusts its lending to financial institutions in line with the reserve money target. This is possible because the Bank operates the markets as well as assumes the role of sole dealer in the market.

The Bank also uses interest rate adjustment as a supplementary tool to control money and credit. In this connection, the Bank may adjust ceilings on deposit and lending rates of commercial banks to reinforce the effects of its operations to control reserve money. The Bank also started issuing the Bank's bonds maturing within one year for sale to commercial banks and the Government Savings Bank for the first time in 1987 to mop up excess liquidity.

3.2 Experience in the Conduct of Monetary Policy in 1980s

3.2.1 The Period of Strong Adjustments (1980-1986)

In the 1970s besides the effect of the first oil crisis on the Thai economy, the economic condition was generally healthy, with some small disturbances. However, various economic problems began to emerge and exert increasingly stronger impact towards the end of the

1970s. This adverse pressure was unfortunately reinforced by the second oil crisis in 1979 and the hike in the U.S. interest rates. As a result, the Thai economy in the first half of the 1980s was plagued with both internal and external instabilities. Nevertheless, the problem of internal instability did not seriously threaten the economy as after the inflation rate had peaked in 1980, it slowed down considerably towards the mid-1980s. The more damaging problems lay in the external sector as evidenced in the deterioration of the terms of trade, balance of trade and current account. The situation culminated in 1983 when current account deficits reach 7 per cent of GDP, with a drastic drop of international reserves to only three months worth of imports and a sharp increase in external debts outstanding. Inevitably, the prime objective of economic policies then was to restore economic stability and introduce more flexible mechanism, i.e., interest rate and exchange rate, that better coped with volatilities from various sources while still paying due attention to the growth aspect. Accordingly, discretionary restrictive fiscal and monetary policies and exchange rate management were implemented and monitored with great caution. Regarding the fiscal policy, the Government put much effort on curbing the growth of its expenditure and increase its efficiency in revenue collection. On monetary front, the high interest rate policy was adopted with an aim to achieve triple objectives: first, to induce more domestic savings; second, to slow down credit expansion; and, third, to align domestic with foreign interest rates to prevent capital outflow. In this connection, the Bank of Thailand successively adjusted interest rate ceilings and monitored credit extended to private sector, particularly for import purposes. These measures combined with other anti-inflationary measures launched by several government agents were successful to a large extent in reviving internal stability by bringing the inflation rate down from 19.7 per cent in 1980 to 3.8 per cent by 1983.

In contrast, the external problem remained unsolved. Eventually, credit control measure was imposed on commercial banks at the beginning of 1984 although it was discarded later in the year. As for the exchange rate policy, the strengthening of the U.S. dollar in the first half of the 1980s led to a subsequent devaluation of Thai baht vis-à-vis U.S. dollar. To an optimist, it created a great opportunity for authorities to look more closely into the existing exchange rate system. In 1981, the Thai baht was devalued against the U.S. dollar twice by 1.1 per cent in May and by 8.7 per cent in July; and, the daily fixing system was replaced by a fixed exchange rate between the Thai baht

and the U.S. dollar. Although the devaluation helped improve Thailand's external balances somewhat, its beneficial effects were short-lived due to the prolonged period of a strong U.S. dollar.

Shortly after the credit control scheme was revamped, the Thai baht was devalued once again by 14.8 per cent and the value of the Thai baht was then pegged to a basket of currencies. Therefore, a daily variation in the exchange rate would reflect developments in the international foreign exchange market according to the prescribed weight attached to each currency within the basket. Evidently, the new exchange rate regime contributed a great deal to the following improvement in the external balances and also facilitated the establishment of a forward market for foreign exchange.

From 1985 to 1986, after experiencing several structural adjustment measures, the Thai economy was in a so-called "recuperating state". Its growth slowed down to 3.5 and 4.9 per cent in 1985 and 1986, respectively. Nonetheless, economic stability was gradually restored with a greater development potential. Policy stance therefore shifted to focus on the growth aspect. Monetary policy was less restrictive in order to spur economic growth while fiscal policy was still under strict discipline. The Bank of Thailand played a leading role in bringing down domestic interest rates by reducing interest rate ceilings on several occasions.

3.2.2 The Period of Growth with Stability (1987-1989)

Toward the late 1980s, the economy ostensibly exhibited its growth potential, especially in the industrial and other non-agricultural sectors. In the meantime, both external and internal stabilities were well maintained. So as to boost productive capacities and pave the way for future advances, the Government has been trying to make use of favorable economic condition to increase economic efficiency and remove all existing bottlenecks. However, the prolonged period of continued economic expansion has produced a feed-back effect on demand for consumption and investment and raised inflationary pressure. The consumers' price index (CPI) has been steadily climbing up and current account deficits have also been increasing. The "overheating" state of the economy prompted Thai authorities to implement various measures. For the Bank of Thailand's part, tight monetary policy was implemented by using more market-oriented approach. The Bank has

completely abolished interest rate ceiling on time deposits and raised interest rate ceilings on saving deposits and lending. The Bank also issued its bonds to absorb liquidity from the financial system. However, the effectiveness of these measures was to some extent lessened by a large capital inflow caused mainly by a high interest rate differential between domestic and foreign interest rate, and growing confidence in the value of the baht. Fortunately, persistent Government's budget surpluses, commencing from 1988, helped substantially dampen the inflationary pressure induced by private sector.

IV. Effectiveness of Monetary Policy and Impact of Financial Reform

4.1 Money Demand: Impact of Financial Reform and Its Stability

To achieve the ultimate targets via the money supply which is used as an intermediate targets, stability in the relationship between money stock and a few key macroeconomic variables such as aggregate income and interest rate is an important issue that policy-makers have to focus on. Stability is normally analyzed in terms of the money demand function, though sometimes instability is illustrated by unexpected changes in the income velocity of money. The major factors causing demand for money to be unstable may be categorized by two sources. Firstly, the income velocity of money will change in response to fluctuations in the interest rate as well as to movements in other factors unrelated to income. Secondly, the money demand function itself may shift, reflecting unstable parameters or new developments in financial system. For instance, the process of financial innovation and deregulation may cause a reallocation of financial assets holding. This will affect the interest elasticity of different monetary aggregates.

In developing countries, the stability in demand for money related to the process of financial innovation and deregulation is a major problem in conducting monetary policy. Thailand, like other developing countries, has a very rapid development in banking system. The liberalization and deregulation have been progressing, especially the reforms associated with well-functioning markets and a competitive financial structure. Therefore, financial reforms may raise the basic questions not only about the selection of appropriate target variables but also the stability of the relationship between money stock and the final objectives.

To investigate the stability and predictability of demand for money in Thailand, the model assessing the role of financial innovation in the demand for money in developing countries specified by Arrau, Gregorio, Reinhart and Wickham is adopted.¹ The demand for money is specified in a conventional form as being mainly dependent on income, interest rate and the rate of inflation. A time trend variable is included in the function to evaluate the impact of financial innovation (or reform) on money demand. Thus, the demand for broad money could be defined as follows:

$$\log M2 = a_0 + a_1 \log GDP + a_2 RCBINF + a_3 TIME$$

where, M2	=	Broad money in nominal term
GDP	=	Gross domestic product at current price
RCBINF	=	Real interest rate defined as commercial bank rate minus inflation rate
TIME	=	Time trend

The observation period for empirical study is from 1970 to 1990. The results are shown in Table 10.2

The empirical results from equation (1) indicate that both income and financial innovation (time trend as proxy) have influences on money demand. All parameters have their expected signs and are statistically significant except for the real interest rate. The Durbin-Watson is relatively low. So the Cochrane-Orcutt method is applied to correct for the serial correlation. The result is presented in equation (2). The real interest rate is still insignificant which can be explained by changes in interest rate structure in Thailand. Before 1980, interest rate's movement was rather rigid and entirely determined by the BOT. The first phase of interest rate reform was started in early 1980 when lending rates of financial institutions were freed from the 15.0-per cent limit imposed since 1924. Subsequently, adjustments in the interest rate were frequent, making demand for money respond more to the interest rate changes. The empirical results by dividing observation period into two parts, 1970-1980 and 1981-1990 which are presented in equations (3) and (4) confirm this hypothesis. The first period empirical results indicate

1. See Patricio Arrau, Jose De Gregorio, Carmen Reinhart and Peter Wickham, "The Demand for Money in Developing Countries: Assessing the Role of Financial Innovation" in *IMF Working Paper No. WP/p1/45*, May 1991.

Table 10.2

DEMAND FOR MONEY EQUATION

(Period 1970-1990)	
Eq. 1:	$\log M2 = -118.440 + 0.253 \log GDP + 0.00054 \text{RCBINF} + 0.062 \text{TIME}$ (3.091) (0.957) (13.022)
R-Squared = 0.9992, R-Bar Squared = 0.9991, SE = 0.143, DW. = 1.237	
Autoregressive (AR1) re-estimated (Period 1971-1990)	
Eq. 2:	$\log M2 = -117.291 + 0.258 \log GDP + 0.00059 \text{RCBINF} + 0.061 \text{TIME}$ (2.402) (0.921) (9.828)
R-Squared = 0.9993, R-Bar Squared = 0.99915, SE = 0.0138, DW. = 1.759	
(Period 1971-1980)	
Eq. 3:	$\log M2 = -118.535 + 0.216 \log GDP - 0.00023 \text{RCBINF} + 0.062 \text{TIME}$ (0.592) (-0.252) (2.514)
R-Squared = 0.9989, R-Bar Squared = 0.9981, SE = 0.0101, DW. = 2.147	
(Period 1981-1990)	
Eq. 4:	$\log M2 = -106.035 + 0.398 \log GDP + 0.00579 \text{RCBINF} + 0.055 \text{TIME}$ (7.842) (7.903) (21.131)
R-Squared = 0.9994, R-Bar Squared = 0.9989, SE = 0.0072, DW. = 2.826	

Where, M2 = Broad money in nominal term
GDP = Gross domestic product at current price
RCBINF = Real interest rate
TIME = Time trend

an insignificant statistic for the real interest rate since the interest rate in this period fluctuated narrowly suggesting no response to the demand for money. The later period empirical results show a significant statistic for real interest rate and prove the response of this variable to the demand for money.

Chow test is implemented to detect the stability of demand for money during 1980-1990.

The F-value obtained from the test is 2.59 lower than F-value at 95-per cent confidence level.² Therefore, a stable behavior of money demand can be concluded.

4.2 Impact of Money Supply on Internal and External Stability

Given the openness of the Thai economy, the impact of money supply on domestic price and external balance is debatable in the context of monetary policy effectiveness. Yootlaphol and Suchart⁹³ made an effort to investigate the influence of money supply on domestic price by using the Aghevli and Khan model. The time frame for the empirical study was during 1970 and 1988.

2. F-test computed by following formula:

$$f = \frac{(e'e' - e_1'e_1)/m}{e_1'e_1/n-k}$$

$e'e'$ = Sum square of residual obtaining from equation using observations from 1981-1990

$e_1'e_1$ = Sum square of residual obtaining from equation using observations from 1981-1988

n = No. of observations in the second equation (1980-1988)

m = Additional observation for a complete equation (in this case is 2, 1989-1990)

k = No. of independent variables

3. Yootlaphol Singhaumpai and Suchart Sakkankosone, "The Public Sector and Monetary Policy in Thailand" - SEACEN's cooperative research paper.

The study⁴ concluded that inflation in Thailand is cost-determined rather than demand-pull. Money supply influences domestic price marginally in comparison to other two factors, e.g., non-oil import prices and retail prices of petroleum products. The equation shows that the elasticity of money supply in the price equation is only 0.060 whereas the elasticity of non-oil import prices and retail prices of petroleum products are 0.324 and 0.163, respectively. The strong influence of world prices is evidence of the high degree of openness of the Thai economy. Therefore, an increase in money supply should induce more importation of goods and services and current account deficit, rather than a pressure on domestic price.

4.3 Effectiveness of Monetary Control

Despite sufficient instruments to operate monetary policy, their effective operation remains deficient due to certain restrictions in the Thai financial system. The salient features of the Thai financial system affecting the effectiveness of monetary policy are summarized as follows:

First, the Thai financial market is relatively small with a few active market participants. The market's ability to absorb liquidity's fluctuation has been insufficient so far. The channels through which liquidity adjustment can be operated are quite limited and inefficient.

Second, the market for government securities has been mainly captive. There are a number of regulations requiring commercial banks and finance companies to hold government securities to satisfy certain

4. The empirical result is as follows:

$$\log P_t = 2.7512 + 0.060 \log M2 + 0.324 \log PIX2 + 0.163 \log RPPP + 0.288 \log P_{t-1}$$

(2.0)
(6.0)
(6.1)
(3.5)

$$R^2 = 0.998$$

$$SE = 0.017$$

$$DW = 2.06$$

Where, P = Consumer price index (CPI)

y = GDP deflated by CPI

$M2$ = Broad money supply

$PIX2$ = Non-oil import prices

$RPPP$ = Retail price of petroleum products

Table 10.3

**MONETARY SURVEY 2/
(Millions of Baht)**

End of period	1980		1981		1982		1983		1984		1985		1986		1987		1988		1989		1990	
	Dec.		Dec.		Dec.		Dec.		Dec.		Dec.		Dec.		Dec.		Dec.		Dec.		Dec.	
1. Foreign Assets (net)	42407.8	34328.8	38553.1	16534.0	28285.7	37863.9	80865.4	107544.8	145695.3	247496.1	307101.5											
2. Domestic Credits:	320260.9	374610.1	454801.5	568191.2	666079.0	725613.5	771962.0	903820.1	1050797.3	1298170.0	1683047.9											
3. Claims on government	89116.6	110186.0	141820.8	153800.7	176584.7	184674.5	204683.0	208091.4	171462.6	159471.3	168614.3											
4. Claims on non-fin. public enterprises	10408.1	10142.7	12874.0	11958.8	13027.4	13585.8	14601.5	15019.0	14475.3	15911.7	18148.6											
5. Claims on business & household sector	195718.9	231448.7	273794.7	372291.4	434187.6	482000.0	502269.8	615423.1	796962.7	1046199.9	1409683.6											
6. Claims on other financial institutions	25017.3	22832.7	26312.0	30140.3	42279.3	45353.2	50407.7	65286.6	67896.7	76587.1	86601.4											
7. Assets	362668.7	408938.9	493354.6	584725.2	694364.7	763477.4	852827.4	1011364.9	1196492.6	1545666.1	1990149.4											
8. Money	71480.4	73332.8	78964.6	83756.0	93341.4	85864.4	103426.8	132395.7	148492.7	174700.9	195414.3											
9. Quasi-Money	180340.4	219143.6	285835.1	368996.9	450540.1	507630.3	569346.2	676188.7	807633.4	1032396.1	1333701.2											
10. Government Deposits	14391.1	17721.3	16322.3	16951.6	20800.6	27742.9	31269.0	32596.3	43408.1	90885.2	151111.5											
11. Capital Accounts	91938.3	96461.1	104225.6	109646.3	129641.2	145746.9	161395.4	193460.5	206736.3	231727.5	283312.9											
12. Borrowings from Other Fin. Institutions	1074.6	1596.8	2679.1	2664.1	2148.4	4764.7	3167.9	1824.8	7303.9	14903.3	15386.9											
13. Other Items (net)	3443.9	683.3	5327.9	2710.3	-2107.0	-8271.8	-15777.9	-25101.1	-17081.8	1053.1	11222.6											
14. Liabilities	362668.7	408938.9	493354.6	584725.2	694364.7	763477.4	852827.4	1011364.9	1196492.6	1545666.1	1990149.4											

Source: Bank of Thailand.

1/ Notation for the sectors:

Business = Incorporates private non-financial business and financial institutions not covered in financial sector

Government = Central and local government

Household = Households, non-profit institutions and unincorporated enterprises

Other financial institutions = Financial institutions other than Bank of Thailand and commercial banks

Private sector = Households, business, non-financial public enterprises, commercial banks and other financial institutions

2/ The figure for October 1978 onwards has been adjusted to include deposits of Rubber Replanting Aid Fund, Farmers' Aid Fund, Tourism Authority and Sports Promotion Organization of Thailand in the government deposits.

conditions. This captive nature, by and large, ensures for the Government not only the amount of government securities sold each year but also a relatively cheap source of financing. Hence, the government securities are not a very attractive saving instrument to the general public and their secondary market is almost non-existent. The open market operation was thus a deficient monetary instrument.

Third, there are few financial instruments available in the market. As mentioned earlier, lending from financial institutions is still a major source of funds for business. Furthermore, there are some regulatory impediments such as the legal provision limiting types of negotiable financial instruments, the unequal tax treatment of different financial assets and restricted scope of fee-based financial services. The necessity to develop the instruments and their primary and secondary markets has always been considered; and, the matter has become more urgent recently when development in the financial sector is well behind as compared to the progress in other sectors. Another reason may be the diminishing amount of government securities due to the persistent government budget surpluses. The Bank of Thailand traditionally uses government securities as a major monetary control instrument.

When Thailand officially became a country under Article 8 of IMF Articles of Agreement and relaxed its exchange control, the currency becomes highly convertible and this means that domestic monetary policy should be in accordance with those of industrialized countries and the major trading partners if the present exchange rate arrangement is to be maintained. Otherwise, some types of restrictions might be temporarily imposed in order to pursue independent monetary policy.

4.4 Interaction Between Monetary and Exchange Rate Policies

The main objective of the exchange rate policy in Thailand has been to support the competitiveness of exports while maintaining the confidence of exchange market participants. Subsequent development of financial and economic conditions in Thailand proved that the conduct of this policy has achieved the intended objectives. First, the trends of exchange rates in Thailand have been realistic and consistent with the movement of overseas rate and served as a stabilizer at times of volatile international market conditions. Second, the market participants have become more familiar with and gained more confidence in the new regime. Third, the export sector benefited a great deal from

Table 10.4**FACTORS AFFECTING MONEY SUPPLY**

	Public			Others			
	Total	Govt.	PSE	Total	Domestic	Foreign	Others
1970	0.23	0.22	0.00	0.77	0.66	0.41	-0.30
1971	0.32	0.32	0.01	0.68	0.62	0.36	-0.30
1972	0.35	0.35	0.00	0.65	0.57	0.36	-0.28
1973	0.29	0.29	0.00	0.71	0.67	0.33	-0.29
1974	0.18	0.18	0.00	0.82	0.74	0.39	-0.31
1975	0.21	0.20	0.00	0.79	0.79	0.31	-0.31
1976	0.26	0.24	0.02	0.74	0.77	0.26	-0.29
1977	0.28	0.26	0.02	0.72	0.82	0.18	-0.28
1978	0.29	0.27	0.02	0.71	0.89	0.15	-0.33
1979	0.29	0.27	0.02	0.71	0.96	0.16	-0.41
1980	0.34	0.30	0.04	0.66	0.88	0.17	-0.39
1981	0.35	0.32	0.03	0.65	0.87	0.12	-0.34
1982	0.38	0.34	0.02	0.62	0.82	0.11	-0.31
1983	0.33	0.30	0.02	0.67	0.89	0.04	-0.26
1984	0.31	0.29	0.02	0.69	0.89	0.05	-0.25
1985	0.29	0.26	0.02	0.71	0.89	0.06	-0.24
1986	0.28	0.26	0.02	0.72	0.82	0.12	-0.22
1987	0.24	0.22	0.02	0.76	0.84	0.13	-0.21
1988	0.15	0.13	0.02	0.85	0.90	0.15	-0.20
1989	0.07	0.06	0.01	0.93	0.93	0.20	-0.20
1990	0.02	0.01	0.01	0.98	0.98	0.20	-0.20

the exchange rate policy. The adjustment in the exchange rate regime has also contributed to the expansion of manufactured goods which tend to have higher price elasticity of demand relative to that of agriculture. In particular from 1983 onwards, the share of manufactures in exports increased from merely 41.9 per cent to 62.7 and 74.9 per cent while the agricultural export share declined from 45.4 per cent in 1983 to 27.8 and 16.8 per cent in 1987 and 1990, respectively.

During 1989 and 1990, the growth in monetary aggregates in Thailand was driven almost entirely by a rapid increase in private capital inflows due to the openness of the capital account. In general, the capital account in Thailand has been quite open in recent years (especially for inflows). The degree of capital mobility is affected by a variety of other factors, in particular the degree of integration between foreign and domestic markets. Accordingly, large corporations can reportedly borrow abroad quite easily.

The Bank of Thailand has found it increasingly difficult to sterilize the impact of capital flow on the monetary aggregate. This difficulty reflected in part the limitations of the exchange rate policy as well as the monetary instruments available to the Bank of Thailand. Frequent adjustments in the exchange rate may disrupt the financial market which can have a strong repercussion on the economy. In addition, currency devaluation increases the domestic cost of servicing external debt and the cost of importation and production. In consequence, the scope for monetary policy has also been constrained by the authorities' policy of fixing the value of the baht to a basket of foreign currencies, which has in practice been reflected in a close link between the baht and the U.S. dollar. These limitations must be taken into consideration in the implementation of exchange rate policy and often the trade-offs have to be made between various economic objectives. The appropriate choice of exchange rate adjustment obviously depends on the situation and the policy concerned during the period.

4.5 Relative Effectiveness of Direct and Indirect Monetary Control

The Bank normally regards direct control as ineffective because of market distortion. Direct monetary controls were implemented in critical situations when drastic measures were unavoidable. The Bank of Thailand has taken a favorable attitude towards the development of

Table 10.5
GDP, INFLATION RATE AND EXTERNAL ACCOUNT

	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
1. GDP (billion baht)																
1.1 GDP at constant 1972 price	204.4	223.6	245.7	271.4	285.8	299.5	318.4	331.4	355.4	380.7	394.1	413.5	452.6	512.5	574.2	631.5
Agriculture	50.7	53.8	55.0	61.9	60.7	61.8	65.1	67.1	70.1	74.0	78.5	78.8	78.6	86.6	92.4	88.9
Non-agriculture	153.7	169.8	190.7	209.5	225.1	237.7	253.4	264.3	285.4	306.8	315.6	334.7	374.0	425.8	481.8	542.6
1.2 GDP at current price	303.3	346.5	403.5	488.2	558.9	658.5	760.2	820.0	910.0	973.4	1014.4	1095.4	1253.2	1507.0	1776.0	2086.8
2. Inflation Rate																
2.1 CPI (1986 = 100)	48.6	50.6	54.4	58.7	64.5	77.2	87.0	91.5	95.0	95.9	98.2	100.0	102.5	106.4	112.1	118.8
2.2 PPI (1985 = 100)	56.9	59.2	63.8	68.5	76.2	91.5	100.3	101.2	103.2	100.1	100.0	99.6	105.5	114.2	119.4	123.5
3. External Account (billion baht)																
3.1 Export	44.4	60.4	70.5	82.3	106.9	132.0	150.2	157.2	145.1	173.5	191.7	231.5	298.1	399.2	509.9	583.2
3.2 Import	64.5	71.4	96.1	110.8	153.9	190.0	216.0	193.3	234.3	242.3	253.4	245.9	341.9	501.4	649.7	837.9
3.3 Trade balance	-20.2	-11.1	-25.6	-28.5	-47.1	-58.0	-65.8	-36.1	-89.2	-68.8	-61.7	-14.4	-43.8	-102.2	-139.8	-254.7
3.4 Current account balance	-12.4	-9.0	-22.4	-23.4	-42.6	-42.4	-56.0	-23.1	-66.3	-49.5	-41.9	6.5	-9.3	-41.8	-64.4	-179.8
(as % of GDP)	(-4.1)	(-2.6)	(-5.6)	(-4.8)	(-7.6)	(-6.4)	(-7.4)	(-2.8)	(-7.3)	(-5.1)	(-4.1)	(0.6)	(-0.7)	(-2.8)	(-3.6)	(-8.6)
3.5 Net capital movement	7.8	9.3	14.0	14.9	33.8	50.7	55.1	36.4	34.7	58.4	51.4	11.4	21.6	73.2	152.2	208.4
3.5.1 Private	5.7	5.1	8.4	3.6	13.1	25.5	21.0	17.3	18.3	42.2	19.6	12.6	16.5	74.6	159.9	241.0
3.5.2 Public	2.1	4.2	5.6	11.3	20.7	25.2	34.1	21.1	16.4	16.2	31.8	-1.2	5.1	-1.4	-7.7	-32.6
3.6 Balance of payments	-2.9	-0.1	-7.5	-13.3	-7.9	5.2	2.5	3.3	-18.1	10.6	12.5	33.6	18.2	40.5	111.5	57.0
3.7 Official reserve	1.8	1.9	1.9	2.6	3.1	3.0	2.7	2.7	2.5	2.7	3.0	3.8	5.2	7.1	10.5	14.3
(of which: foreign exchange reserve as months of imports)																
3.8 Total debt service ratio (%)	12.3	10.6	11.0	17.0	15.4	15.6	16.5	18.0	20.4	20.8	22.7	20.6	17.1	12.9	10.6	9.1
Public	2.3	2.4	3.0	4.0	4.6	5.3	7.4	9.4	10.5	10.4	11.1	10.7	9.4	7.7	5.8	5.0
Private	10.0	8.2	8.0	13.0	10.8	10.3	9.1	8.6	9.9	10.4	10.6	9.9	7.7	5.2	4.8	4.1

more market-oriented monetary control. Indeed, in the past few years, we have seen the implementation of several measures involving active deregulation such as the abolition of interest rate ceilings on deposits. The Bank's policy to liberalize interest rate will from now on let market forces determine the interest rate level. The Bank, therefore, needs to employ more market-oriented approaches to influence the domestic interest rate such as an open market operation. As a result, interest rates have assumed greater importance as an element of monetary control.

In controlling the domestic interest rate via an influence on monetary base, the Bank of Thailand normally monitors the credits given to financial institutions. The Bank has comparably a limited scope in varying credits to Government since they are more or less pre-determined and under the present exchange rate regime, the Bank's foreign exchange reserves mostly depend on the balance of payments. The Bank relies upon the operations of three types of facilities, i.e., loan window, refinance facilities and repurchase market, to regulate the credits to financial institutions. However, in the last few years, the main source of monetary base has come from the Bank's foreign exchange reserves that have been rapidly accumulating. The Bank of Thailand also relies on interest rate ceilings in influencing domestic interest rates. Aside from making an adjustment in the ceilings, the Bank can also influence short-term interest rate in the money market through its bank rate and repurchase rate.

4.6 Financial Reform and the Effectiveness of Monetary Policy

In recent years, monetary control system in Thailand has been reformed and placed a greater emphasis on market-based instruments. The introduction of these more flexible arrangements for setting interest rates and the exchange rate and allocating credit are important elements in improving resource allocation, the efficiency of investment, saving mobilization and export promotion that can help attain adequate rates of economic growth.

The main objectives of financial reform are usually to develop a financial system that promotes savings and a more efficient allocation of resources while also providing a framework that allows for the implementation of effective monetary control. These characteristics are normally associated with well-functioning markets and a competitive financial structure. In a liberal and competitive system, interest rates

Table 10.6
MONETARY STATISTICS AND GOVERNMENT FINANCE
(Billion Baht)

	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
1. Monetary Statistics																
1.1 M1	35.6	41.6	45.7	54.7	63.5	71.6	73.9	78.9	83.0	88.8	85.9	103.4	132.4	148.5	174.7	195.4
1.2 M2	104.1	125.9	151.1	180.3	205.5	251.8	292.9	363.8	450.5	537.9	593.5	672.8	808.6	956.1	1207.1	1529.1
1.3 Domestic credit	103.7	129.9	166.5	213.4	257.5	305.9	357.3	437.5	549.7	643.9	697.8	740.7	871.2	1007.4	1207.3	1531.9
1.3.1 Private 1/	82.2	97.0	124.3	161.2	198.1	220.7	254.3	300.1	402.4	476.5	527.4	552.7	680.7	864.8	1122.8	1496.3
1.4 Deposits	84.2	103.5	126.2	151.0	170.2	211.7	254.6	318.1	401.5	489.4	549.0	618.9	741.3	882.5	1118.7	1426.0
2. Government Finance (fiscal year)																
2.1 Revenue	38.3	42.8	51.8	62.1	75.0	92.1	110.4	113.8	136.4	147.8	159.2	165.2	192.5	245.6	309.2	395.0
2.2 Expenditure	43.4	53.7	63.1	74.7	86.1	114.3	129.9	152.2	165.1	177.4	197.5	204.0	207.8	220.7	248.4	291.2
2.3 Cash balance	-4.4	-10.3	-11.6	-11.6	-12.3	-21.8	-17.5	-42.5	-26.7	-34.9	-34.4	-39.9	-17.8	+30.2	+59.3	+103.3
(as % of GDP)	-1.5	-3.0	-2.9	-2.4	-2.2	-3.3	-2.3	-5.2	-2.9	-3.6	-3.4	-3.6	-1.40	+2.00	+3.30	+5.0
2.4 Cash balance (GFS concept)	-6.3	-13.9	-13.1	-17.8	-20.5	-31.2	-26.8	-49.0	-38.1	-37.0	-53.9	-51.2	-27.1	+10.4	+57.1	+96.6
(as % of GDP)	-2.1	-4.0	-3.2	-3.6	-3.7	-4.7	-3.5	-6.0	-4.2	-3.8	-5.3	-4.7	-2.2	+0.7	+3.20	+4.6

1/ Include claim on public enterprises.

would be differentiated to reflect the riskiness of borrowers and the maturities of instruments, and credit would flow into those activities which yield the highest expected rates of return. When the system is competitive, transaction margins in the financial sector usually fall and new financial instruments are created to reflect the preferences of investors and borrowers, including active secondary markets which provide increased liquidity to financial instruments. The development of repurchase market and interbank market provides a framework for effective monetary control. The market-oriented monetary policy has taken on a greater emphasis as in the recent year rather than direct controls.

As mentioned earlier, the main objective of monetary policy implemented during the past two decades was sustaining high growth rate with external and internal stability. Since in the open economic setting of Thailand, domestic price is commonly influenced by world prices, long-run steady growth in the economy and maintenance of high levels of foreign exchange reserve are the evidence of the success of the policy regime pursued. The reform of interest rate in 1980 caused real domestic interest rate to increase sharply over the period 1980-1982, with notable effects on the private savings-investment balance and financial resource mobilization. Substantial decrease in the deficit on current account as percentage of GDP from 6.7 per cent during 1979-1981 to 2.7 per cent in 1982 is evidence of the positive impact of interest rate policy on the savings-investment balance. Following the exchange rate adjustment of mid-1981, a recovery of reserve position has been observed during the period after the second oil crisis. The impact of interest rate policy on internal stability is also evident. Lifting the interest rate ceiling in 1980 caused the domestic inflation rate to move down continuously from 19.7 per cent in 1980 to 0.9 per cent in 1984.

Regarding the impact of interest rate policy on economic growth, the relationship between loanable funds and investment behavior should be taken into consideration. Historical evidence indicates a sensitivity of investment to the availability of credit. The increase in real domestic interest rate has improved the availability of financial resources and dampened the negative short-term effects due to higher costs. Therefore, a high growth in private investment in 1980s has been recorded. Hence, the higher rate of investment as a result of more availability of credit, the higher rate of economic growth is likely to be.

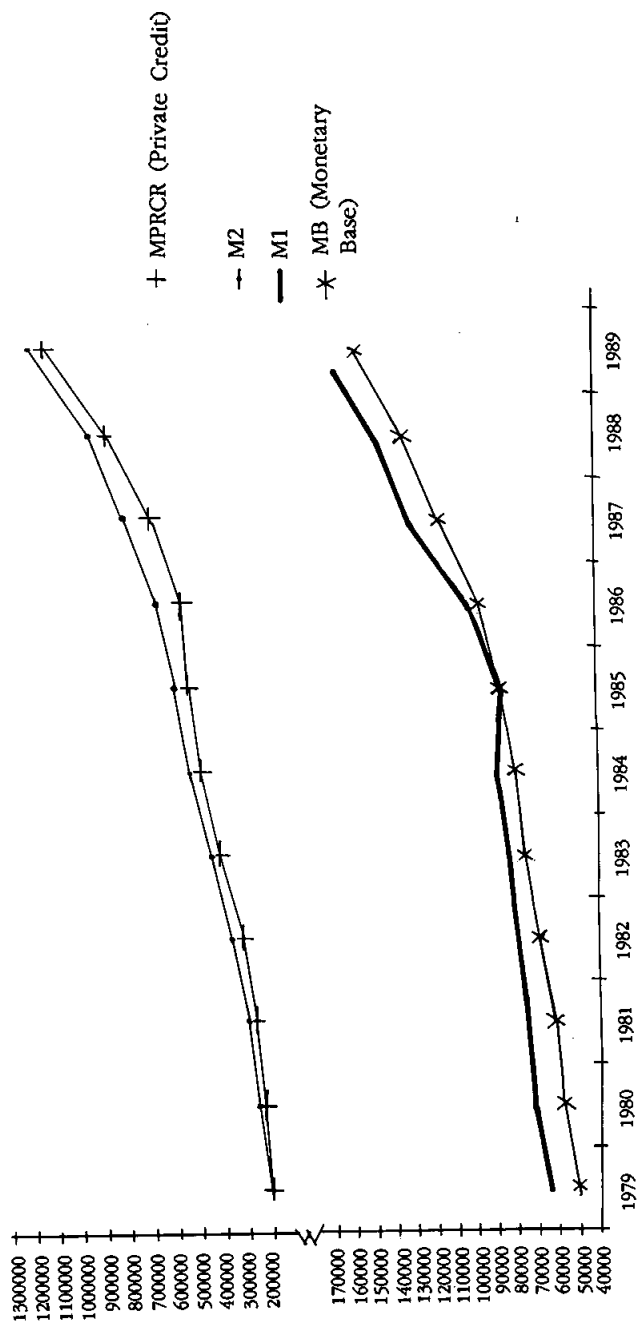
Table 10.7

INTEREST RATE STRUCTURE

End of Period	1975 Dec.	1976 Dec.	1977 Dec.	1978 Dec.	1979 Dec.	1980 Dec.	1981 Dec.	1982 Dec.	1983 Dec.	1984 Dec.	1985 Dec.	1986 Dec.	1987 Dec.	1988 Dec.	1989 Dec.	1990 Dec.
1. Domestic Interest Rate 1.1 Commercial bank rate (%)																
- Saving deposit rate	4.50	4.50	4.50	4.50	5.50	8.00	9.00	9.00	8.50	9.00	8.50	5.50	5.50	6.25-7.25	7.25	10.0-12.0
- Time deposit rate (1 year)	8.00	8.00	8.00	8.00	9.00	12.00	13.00	12.50	12.50	12.50	11.00	7.25	7.25	7.75-9.50	9.50	13.0-15.5
- Prime rate																
- MOR	n.a.	10.50	10.75	12.00	14.50	16.50	17.00	16.00	15.5-16.5	16.50	15.50	12.25	11.50	12.00	12.5-13.5	16.50
- MLR									15.5-16.5	16.50	15.50	12.00	11.50	12.00	12.50	16.25
1.2 Money Market																
- Interbank lending rates (weighted average)	10.70	7.70	9.32	12.00	14.76	16.55	14.29	11.99	14.94	10.97	15.03	6.35	6.50	10.61	12.06	13.42
- Average repurchase rates (7 days) 1/	n.a.	n.a.	n.a.	n.a.	13.97	15.09	12.11	9.37	13.96	7.69	13.11	5.98	5.41	9.23	11.73	11.63
2. Average Exchange rate (Baht / U.S. dollar)	20.00	20.00	20.00	20.00	20.40	20.60	22.98	22.98	22.98	27.07	26.64	26.20	25.20	25.13	25.72	25.17

1/ Before 17 September 1990, the average repurchase rate was three-day maturity.

Chart 10.2
Reserve Money and Movement of Monetary Aggregate
(1979 - 1989)



The market-based strategy in issuing new financial instruments provides the Bank of Thailand with more flexibility and efficiency in credit allocation and savings mobilization. However, competition between financial institutions is sufficient condition for competitiveness of market-based system. Hence, the reform of the capital market as well as non-bank financial institutions improves the competitive environment in Thai financial system. Finally, such a reform demands more prudential regulation and supervision; therefore, the supervisory infrastructure components are needed. Although a certain reform on bank regulation and supervision has been done, more adequate systems of prudential regulation and supervision have to be further developed to ensure the health of the restructured system.

V. Constraints on Monetary Policy

5.1 Internal Constraints

During the past decade, Thailand's monetary policies could not be exercised to the full extent and their effectiveness could not be totally transmitted to the intended sectors and the economy as a whole due to various internal constraints. Fiscal policy was one of the major constraints, especially in the early part of 1980s. Government revenue had been depressed throughout the first half of 1980s, except in 1983, while expenditure rose sharply in 1980 and gradually decelerated only thereafter. As a result, the Government's budget deficit was rising from 2.2 per cent of GDP in 1979 to 5.2 per cent in 1982 and slowing down somewhat to 3.4 per cent in 1985. The shortfall in government revenue was due mainly to the depressed economic conditions experienced by most countries. However, a surge in government revenue was registered in 1983 as a consequence of an increase in import tax revenue. It should be noted that import tax revenues have constituted a major part of Government's receipts. Any fluctuation in total value of imports will thereby cause corresponding changes in Government's receipts. The hike of international and domestic interest rates during that period put an increasing debt burden on Government in terms of current expenditure. The situation was worsened by the second oil shock which adversely affected the domestic oil price.

Subsequently, the oil funds were set up in order to stabilize domestic oil prices. Government, among others, had to make some

contributions to the oil funds and thus inflated its expenditure. The Government financed its deficits mostly by issuing bonds and Treasury bills; and, important sources of such financing came from the Bank of Thailand, commercial banks and the Government Saving Bank (GSB). The GSB was required by law to invest most of its mobilized funds in government securities. Similarly, commercial banks had to satisfy the branch opening condition by investing at least 16 per cent of their deposit liabilities in the form of government securities. This captive nature of the government bond market enabled Government to finance the deficits at interest rates below the prevailing market rates, while the monetary stance at that time was restrictive. The high interest rate policy was pursued so as to keep domestic interest rates in line with international interest rates and prevent capital outflows. Therefore the fiscal policy had partly dampened the effectiveness of the high interest rate policy. Moreover, the deficits were largely financed by the Bank of Thailand since financing from commercial banks and the GSB was far behind the required amounts. This caused high-powered money to expand rapidly and again countered the high interest rate policy. Nevertheless, the Government later adopted a cautious fiscal policy and implemented many austerity measures throughout the 1980s. The government cash balances had been improving and turned into surplus by the end of the last decade. The Bank of Thailand grasped this opportunity to reduce the captive nature of government bond market by relaxing the proportion of bond holdings to satisfy the branch opening condition from 16 per cent to 9.5 per cent of deposit liabilities in 1990, and this rate is expected to decline further until the condition is lifted.

Another major obstacle to the implementation of monetary policy was the rigidity of domestic interest rates caused by various factors. Therefore, the interest rate ceilings on both deposit and lending rates have remained an important measure in the exercise of interest rate policy. The main objectives of the interest rate ceilings were to prevent an excessive competition in deposit mobilization via the deposit rate and also to protect borrowers from being charged with unreasonably high lending rates. This system was considered necessary since the oligopolistic practice of a few large commercial banks might be detrimental to the general public and some small banks aggressively adopted pricing strategy on deposit mobilizations. Although the system seemed to work well in the early stage, the volatile international interest rates in the 1980s started to cast some doubt on its effectiveness as the fast changing monetary condition necessitated more frequent adjustments in

the ceiling rates that might bring about questions of how well and quickly the Bank of Thailand can assess the monetary conditions.

Besides, the policy implementation process usually takes a long time before it is put into practice. Furthermore, the oligopolistic nature of large commercial banks has been declining; thus, a competitive environment in the banking system has been more evident. Therefore, the real need for interest rate ceilings gradually faded. During 1985-1987, when the excess liquidity in the financial system was substantial, the commercial banks willingly adjusted downwards their interest rates on both deposits and lendings without pressure from the Bank of Thailand. This demonstrated a higher degree of flexibility in domestic interest rates and prompted the Bank to carry out the process of interest rate liberalization. In 1989, the ceiling rate on time deposits with maturity greater than one year was lifted and soon afterwards the ceiling rate on all types of time deposits was also abolished in March 1990. The interest rate liberalization process is expected to continue and to be completed in the medium term, though subject to new developments, internal and external, affecting the financial system.

5.2 External Constraints

Thailand's exchange rate regime between 1979-1984 closely pegged the value of the baht with that of the U.S. dollar. In the past when the U.S. dollar was widely used as international currency in trade and capital transactions, Thailand's fixed exchange rate regime served the external sector well. However, after the sharp appreciation of the U.S. dollar in the early 1980s, Thailand's external sector suffered a great deal from the trade and current account deficits. This situation culminated in 1983 when current account deficits reached 7.4 per cent of GDP and the international reserves fell to only three months worth of imports. The fixed exchange rate regime theoretically reduces the autonomy of monetary authorities in controlling money supply. During the period of fixed exchange rate, Thailand placed more emphasis on exchange rate stability and the appropriate level of domestic interest rates. Nonetheless, after the baht was devalued and the exchange rate regime switched to the pegged-to-basket of currencies system in 1984, the Bank has given more attention to monetary targets even as stability in the exchange rate and domestic interest rates still received due care. The official acceptance of IMF's Article 8 and relaxation of exchange controls in 1990 should make international capital move more freely which

probably cause unexpected fluctuations in the money supply. Therefore, it may be necessary to consider further adjustments in the exchange rate regime to cope with volatile monetary situations and a higher degree of internationalization.

5.3 Problem of Monetary Control Arising from Financial Reforms

Deregulation and liberalization of the financial system in Thailand has posed some problems on the conduct of monetary policy, especially at the end of the past decade when the deregulation and liberalization process quickened and its scope widened. For the move towards indirect control to be effective, the authorities need to have sufficient market-oriented monetary instruments. The shrinking government bond market due to the government budget surplus and the underdeveloped financial papers and their markets, both primary and secondary, have created difficulties for the Bank to achieve monetary objectives. In the meantime, the Bank issued its own bonds to temporarily alleviate the problem of monetary instrument deficiency. It should take sometime before monetary policy in Thailand can become fully market-oriented since the process of liberalization must be pursued in a cautious manner and with timely implementation.

VI. Conclusions

Rather than summarize the historical survey of Thailand's monetary experience in the 1980s, this section addresses some challenging tasks for the conduct of monetary policy in the period ahead. In the medium term, the Thai financial system is likely to undergo substantial changes in its structure, which will have far-reaching consequences on the conduct of monetary policy. Three major areas for change have been identified: the changing boundaries of financial institutions, exchange control deregulation, and the development of new financial instruments.

On the changing boundaries of financial activities, as the world financial environment is increasingly moving toward a universal type of banking system, it is likely that the Thai financial system would have to adapt to this trend. In this regard, revisions of the scope and operation of major non-bank financial institutions such as finance and securities companies are being considered. At present, finance companies are

prohibited from undertaking commercial banking activities such as foreign exchange operations and accepting demand deposits. In the future, if finance companies strengthened, they would have to be allowed a wider scope of activities. As the collection of statistics for the implementation of monetary policy in Thailand is mainly concentrated around the activities of commercial banks, when finance companies operations begin to resemble those of commercial banks, their activities would also have to be incorporated in the Central Bank's monitoring plans. In the same token, commercial banking activities are likely to be expanded into financial services formerly specialized by finance companies. This on-going trend may urge the Bank to pay more attention to a broader monetary aggregate like M3.

Regarding the recent relaxation over a number of foreign exchange restrictions, with more in the pipeline, it is inevitable that larger capital flows will follow, with greater movement in domestic interest rate levels. Furthermore, a number of statistical sources will automatically be discontinued, causing the loss of data series and a deterioration in the quality of others. As foreign capital flows is inextricably intertwined with the conduct of monetary policy, the authorities therefore need to urgently search for instruments or measures to neutralize or sterilize such volatile inflows to avoid subjecting the domestic financial system to foreign financial policies.

The issue of financial instrument development, which is part of the overall package to promote the development of the domestic financial system, is likely to have considerable impact on the effectiveness of monetary policy. It should be pointed out that the authorities are at present exploring the feasibility for the introduction of a credit-rating system, to assist investors in the analysis of portfolio investment, as well as to encourage the supply of a wider range of financial instruments. This move is indeed in line with the worldwide trend toward greater disintermediation of financing, whereby business corporations directly issue their own debt instruments to mobilize funds from savers, as an alternative to borrowing from financial institutions. The process of financial disintermediation will certainly affect the effectiveness of monetary policy that mainly concentrates on money supply targets. However, this process is unlikely to be a major concern for Thailand in the near future.

It is expected that the worldwide revolution in communications and in the transmission of financial transactions will have a further

impact on the conduct of monetary policy in an open economy. It has been said that any central bank is a creator of the system within which it operates. Thus, if the system changes, the central bank must also change to keep abreast of developments in the banking system. Major changes will inevitably involve further relaxation of exchange controls, greater flexibility in the determination of the exchange rate, and the conduct of monetary policy through active open market operations rather than direct controls on lending or on interest rates.