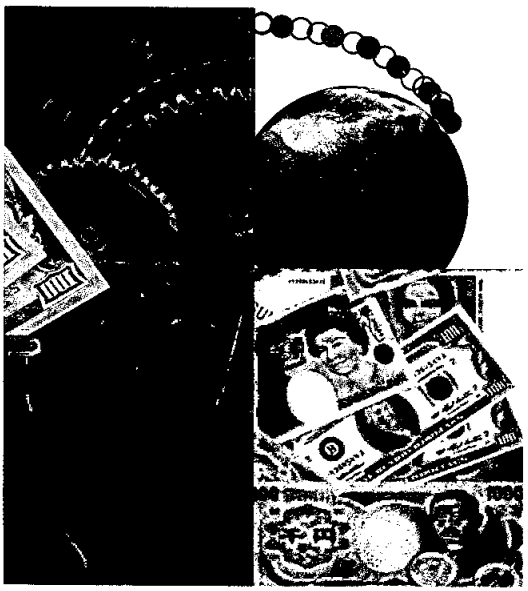
FINANCIAL REFORMS AND TRANSMISSION MECHANISM OF MONETARY POLICY IN THE SEACEN COUNTRIES

by
Mulyana Soekarni



The South East Asian Central Banks (SEACEN)
Research and Training Centre
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The SEACEN Centre takes this opportunity to express its sincere gratitude to the departments of research of the member central banks and monetary authorities for their prompt and detailed responses to our questionnaires. Special thanks are also due to their senior officers for making time to discuss with Mr. Mulyana Soekarni the preliminary findings of the study.

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

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

Kuala Lumpur
October 1995

FOREWORD

As the SEACEN region moved into a faster growth track in the last decade, the pressure to liberalise the financial sector has intensified. In several countries, growth in this sector could not keep pace with the real sector as the existing structure gave rise to distortions, particularly in allocating financial resources. In addition, with the unprecedented ease of international capital flows, the countries are no longer able to conduct policy independently, thereby exposing their financial sectors to the volatile external developments. At the same time, the countries are increasingly urged to open up their financial markets to the much bigger, wider network and more experienced international financial institutions. All these factors point to one policy prescription - that the domestic financial sector must be made more competitive. To achieve this goal, the countries have implemented significant financial liberalisation and reforms that inevitably affect the conduct of monetary policy.

In the previous context, the ultimate goals of output and price are affected through an intermediate target, normally represented by some form of monetary aggregates. This practice is based on two crucial factors: (i) money has a stable relationship with output and prices, and (ii) money has a high degree of controllability. However, with the financial liberalisation, it is increasingly questioned whether these conditions may still be true. In fact, several countries have already moved away from targeting monetary aggregates to either interest rate or exchange rate. Some even target price directly.

Given that some of the SEACEN countries have reformed their financial sector long enough to allow empirical investigation into this very important issue, it is timely for The SEACEN Centre to undertake this in-house study. Basing on information and data obtained from the member central banks as well as in-house database and using the Vector Auto Regression (VAR) approach, the study focuses on examining the information content of traditional monetary tools in revealing future movements of output and prices. It is believed that even if the tools in question could no longer serve as a single policy indicator, such property would still render them useful at least as leading indicators in the formulation of monetary policy.

This project was carried out by Mr. Mulyana Soekarni, Senior Economist seconded from Bank Indonesia. At various stages of the

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was also found that the relationship between monetary and real variables were changed which has strong implications on the effectiveness of monetary policy.

The empirical part of this study focuses mainly on the investigation of the information content of money with respect to the future movements of price and real income stability as goals of monetary policy. The methodology is based on the recent approach and a new interpretation of the Vector Auto Regression model which has been used by Friedman and Kuttner (1992) and by Hamann (1993). The use of the Vector Auto Regression (VAR) model in this study is unlike Hamann(1993) which covered the periods both before and after financial reforms. The sample period of this study covers only the period after the financial reforms.

The results indicated as reflected in the F-statistics values that M2 is still the "best" intermediate target in the case of the Philippines and M1 in the case of Malaysia and Sri Lanka. Credit has the highest F-statistics followed by M2 in the case of Korea, and M1 in the case of Indonesia. In Indonesia, since credit is no longer controllable after 1983, M1 seems to be the appropriate intermediate target. In Korea, M2 is the ideal intermediate as it is more controllable than credit. On the other hand, since monetary aggregates and interest rates are uncontrollable in the case of Singapore, the exchange rate seems to be the "best" intermediate target.

EXECUTIVE SUMMARY

This in-house project studied the financial reforms in connection with the transmission mechanism of monetary policy in the SEACEN countries. In order to serve this purpose, the study uses both qualitative and quantitative approaches. Insofar as interest rate liberalisation is concerned, some member countries followed a drastic approach like in the case of Indonesia, Malaysia, the Philippines and Singapore. However, some member banks implemented the reforms gradually such as in Sri Lanka, Thailand, Nepal, Korea, Taiwan and Myanmar. The speed with which the interest rates were liberalised was also reflected in the behaviour of interest rates in some countries. In the case of Indonesia, for example, the interest rates moved up sharply right after the interest rates liberalisation of 1983 and this was followed by increases in both the ratio of quasi money and M2 to the gross domestic product. However, in the countries which implemented the reforms gradually, the interest rates generally did not fluctuate very much.

With regard to the transmission mechanism of monetary policy, after the interest rates reforms, almost all member banks relied on the interest rates as the main transmission channel. This is in contrast to the pre-reform era where almost all member countries conducted monetary policy through direct instruments such as credit ceiling or selective credit policy. In terms of monetary policy instruments, in addition to open market operations, all central banks use other instruments, for example, discount facilities, central bank lending, reserve requirement ratio, and moral suasion. In the case of Singapore, to complement its exchange rate policy, the Monetary Authority of Singapore conducts money market operations. The instruments used are mainly foreign exchange swaps and bank loans/borrowings.

The member banks also experienced certain complications and difficulties in managing monetary policy as a consequence of financial reforms. Almost all member banks have problems controlling capital movements after exchange control liberalisation. When the domestic financial market is more attractive, large capital inflows emerge making it difficult to control money. Some countries have also experienced the unsymmetrical movement of interest rates, meaning that lending rates tended to increase as soon as deposit rates increased but not as rapidly lowered when deposit rates decreased. After the financial reforms, it

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Chapter 1

INTRODUCTION

The financial sector of most of the free-market economies, including most of the SEACEN countries, has undergone a period of pervasive adjustments and reforms at an amazing speed during the last two decades. The proliferation of new and more sophisticated financial instruments and institutions bears a testimony to this development. In addition, the distinct functions and role of commercial banks, especially in relation to the conduct of monetary policy, has also been weakened by the liberalisation of the sector.

Reforms do not only bring about innovations in financial instruments, they may also alter the way in which monetary policy is conducted. Previously, control of commercial banks' credit was commonly used as the major instrument to transmit monetary policy partly because interest rates are mostly regulated. However, with the removal of functional distinctions between the commercial banks and other financial institutions together with increasing capital mobility, controlling domestic credit has become increasingly difficult. Interest rate, on the other hand, is seen to be a more effective instrument in affecting the behaviour of both the savers and investors as its changes are felt more immediately in all sectors. For an open economy, the exchange rate could also be used to affect the desired monetary policy.

As the SEACEN countries have undertaken measures to reform their financial sectors, some as early as the late 1970s, there are sufficient data and information to use time series analysis to investigate the impact of financial reforms on the transmission mechanism of monetary policy. This is the main purpose of this research project.

I. Objectives of the Research Project

The primary objectives of this study are:[1]

(a) to review the salient features of financial reforms and their background in the SEACEN countries;

1. Research Division, The SEACEN Centre, ***SEACEN CORPLAN 1995/1996,*** On-going Research Projects, p. 23.

(b) to examine the impact of financial reforms on traditional intermediate targets and effectiveness of monetary policy in the SEACEN countries; and,

(c) to explore alternative intermediate targets for effective monetary policy.

II. Scope of the study

The period of the study differs from one SEACEN member country to another depending on the commencement of the major financial reforms which have strong implications on the transmission mechanism of monetary policy of that country.

The study focusses on the role of monetary aggregates, interest rates and exchange rates as important transmission channels in the period following the financial reforms by relating them to other key policy variables such as income and prices.

On the descriptive part, the study will cover ten SEACEN member countries, namely, Indonesia, Korea, Malaysia, Myanmar, Nepal, the Philippines, Singapore, Sri Lanka, Taiwan and Thailand. For the empirical study, however, the recent implementation of financial reforms in Nepal, Myanmar, Taiwan and Thailand necessitates the exclusion of these countries as the respective sample period is too short to render meaningful statistical results.

III. Research Design and Methodology

This study was approved as an in-house research project. Data and information were gathered from The SEACEN Centre and the member banks' responses to the questionnaires. There were also field visits to certain member banks to clarify and discuss the preliminary findings regarding the implementation of monetary policy in the respective countries.

The study uses both qualitative and quantitative analysis. In the qualitative part, the financial reforms especially those related to interest rates, foreign exchange control, exchange rate regime and degrees of

openness of the capital market are discussed. Subsequently, the descriptive analysis of the transmission channels, monetary instruments and ultimate target of monetary policy for each SEACEN member country are presented.

On the economic theory, the transmission mechanism of monetary policy could be represented broadly either by the Keynesian structural model or by the Monetarists' reduced form model.

> The Keynesian model describes the transmission mechanism of monetary policy as follows: Money supply (M) affects interest rates (i), which in turn affect investment spending (I), which in turn affects aggregate output or aggregate spending (Y). Monetarists, on the other hand, do not describe specific ways by which money supply affects aggregate spending. Instead, they examine the effect of money on economic activity by looking at whether movements in Y are tightly linked to (have correlation with) movements in M. Using the reduced form evidence, monetarists analyse the effect of M on Y as if the economy were a black box in which its working cannot be seen.
>
> Frederic S. Mishkin
>
> *The Economics of Money, Banking, and Financial Markets, 1992, p. 635.*

The new interpretation of the Vector Auto Regression (VAR) model especially when money is used in this model [see Friedman and Kuttner (1992) and Hamann (1993)] could be interpreted as a reduced form model of transmission mechanism in the above monetarist views. This VAR model could be used to investigate the information content of money to forecast the future movements of price and real income which are the final targets of monetary policy. Moreover, in Friedman and Kuttner (1992) when money was replaced by interest rates, the VAR model also captured part of the Keynesian transmission mechanism.

For most central banks, economic activity which is usually represented among others by price and real income, is considered as an ultimate target of their monetary policy. On the other hand, money and interest rates are treated as intermediate targets.[2] In the quantitative part of this study therefore, the emphasis will be on the testing of the relationship between monetary aggregates or interest rates with vari-

2. See also Mishkin (1992), p. 445.

ables representative of economic activity. Moreover, for countries with a small and open economy, the exchange rate is also considered as a very important intermediate target. The VAR model in this study is used as an alternative approach to the structural model applied in the earlier SEACEN study on "The Relationship of Money and Credit to Economic Activity" (1981).

Chapter 2

FINANCIAL REFORMS AND TRANSMISSION MECHANISM OF MONETARY POLICY IN THE SEACEN COUNTRIES

This chapter reviews the chronology of financial reforms which have been undertaken by the SEACEN countries. These reforms are confined to those which have strong implications on the transmission mechanism of monetary policy such as the liberalisation of interest rates and exchange control, the change in exchange rate regime and the development of the capital market. In addition, the transmission channels of monetary policy in the SEACEN countries, monetary instruments as well as the ultimate target of their monetary policy will also be discussed in this chapter.[3]

Among the SEACEN countries, Singapore was the first country to introduce major financial reforms starting with the establishment of the Asian Currency Units (ACUs) in 1968. Singapore was also the first SEACEN country to liberalise interest rates (1975), followed by Sri Lanka (1977), Malaysia (1978), the Philippines (1981) and Indonesia (1983). For the other SEACEN countries the control of interest rates was gradually relaxed until they were completely liberalised during the mid-1980s and even early 1990s.

Regarding the transmission channels of monetary policy, almost all SEACEN countries originally relied on credit as their channel. However, after interest rate liberalisation most SEACEN countries switched to targetting the interest rate, except for Singapore which used the exchange rate, Indonesia which depended on reserve money and Myanmar which continued to rely on credit as the most important channel.

A detailed description of the financial reforms, the implementation of monetary policy especially after reforms and some broad overview of the developments, particularly movements of monetary aggregate both before and after financial reforms will be discussed as follows.

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3. Sources: Replies to the *SEACEN Financial Reforms Project Survey Questionnaires* of seven member banks; field survey visits to The Bank of Korea, Monetary Authority of Singapore and Bank of Thailand in 1994; and, some additional references which are available at The SEACEN Centre's Library.

1. INDONESIA

1.1 Chronology of Financial Reforms

In June 1983, all banks in Indonesia were allowed to set their own deposit and lending rates. This market determined interest rates resulted in making the rates more attractive to depositors and reflected a true cost of fund for borrowers. One year later, Bank Indonesia (BI) lifted the credit ceiling which was previously used as an instrument of monetary control. In its place, indirect instruments in the form of Bank Indonesia Certificate (SBI) and Money Market Securities (SBPU) were used.

In October 1988, the Government implemented the most important deregulation package which fundamentally changed the face of Indonesian banking. To promote competition, the restriction on the entry and expansion of branch network of private banks which had been in effect since 1971 was removed. Foreign banks were also allowed to operate through a joint-venture with foreign domestic banks as long as the foreign banks' share did not exceed 85 percent. Foreign banks already present in Jakarta were allowed to open new branches in six major provincial cities. To reduce the banks' cost, the reserve requirement was lowered from 15 percent to 2 percent while the maturity of Bank Indonesia's currency swap facility was extended from six months to three years. Meanwhile, the prudential mechanism was enhanced by imposing the legal lending limits which among others, restrict a bank's aggregate amount of loans and advances to 20 percent of bank capital for a single customer, and to 50 percent of bank capital for any one group of companies with common ownership. These limits would help stop banks from becoming overexposed to a small-client base, and to force large business to seek market-based financing from the financial institutions.

In March 1989, Bank Indonesia removed ceilings on foreign borrowings by banks. Banks are allowed to hold overnight foreign exchange positions equal to a maximum of 25 percent of banks' capital. This measure was intended to limit currency speculation against the rupiah and provided strong encouragement for banks to increase capital. In January 1990, liquidity credits from Bank Indonesia were streamlined to direct at three priority areas, namely food procurement, cooperatives and investment.

In February 1991, Bank Indonesia introduced a new set of measures designed to further promote a sound development of the banking system. These measures consisted, among others, the introduction of capital adequacy requirements, and encouraging banks to improve the quality of their management strategy and operation systems. To ensure a sound external debt management, in September 1991, the Government formed a committee to coordinate the management of foreign commercial borrowing (PKLN). This committee was responsible for keeping the amount of foreign commercial borrowings within the nation's capacity to repay.

The New Banking Act was introduced in March 1992 to provide a legal framework for responsible banking management, including the rights and obligations of the affected parties. Pursuant to this new Act, a series of government regulations were issued concerning the operation of commercial banks, rural credit banks and profit sharing banks.

Measures to promote the effective conduct of monetary policy were also adopted, especially by improving the open market operation system, by replaying the Cut-Off Rate (COR) system and introducing Stop-Out Rate (SOR) system in the auctioning of SBI, effective 1 June 1993. The monetary authority also issued licences to the brokerage firms to reduce segmentation in the rupiah and foreign exchange markets.

Finally, in June 1994 Bank Indonesia widened its bid-offer spread in the foreign exchange market. This allows more flexibility in the exchange rate changes to absorb the impact of the strong inflows of foreign capital.

1.2 Implementation of Monetary Policy

With regard to transmission channels of monetary policy, the transmission channel of monetary policy before financial reforms was money supply (M1 and M2) through credits while after the major financial reforms, reserve money has been used as transmission channel.

As far as monetary instruments are concerned, before the major financial reforms of 1974 to 1983, the Government conducted a direct monetary policy through the implementation of monetary instruments. These instruments comprised ceilings on bank credits, the

determination of interest rates of state banks, and the provision of liquidity credits (subsidised interest rates) to priority sectors.

Ceilings on bank credits were the most important instrument in controlling the liquidity expansion in line with the absorptive capacity of the economy. The ceilings on bank credits were allocated to the banking system on the basis of their performance in the preceding year. In the later stage of the implementation of this policy, the allocation of bank credits also took into account the development priorities in the form of programmed credits which were mostly implemented by the state-owned banks.

In addition, Bank Indonesia provided liquidity credits, a form of subsidised credits which were channelled through the banking system, mainly the state-owned banks. Another form of indirect subsidies was the stipulated interest rate ceiling on deposits to lower the banks' cost of fund and encourage investment. This policy, however, led to negative real interest rates which discouraged savings.

After the major financial reforms, the Government discontinued the use of credit ceilings and interest rate controls and limited the use of liquidity credits. Instead, the authorities adopted indirect monetary instruments, namely open market operations, discount facilities and moral suasion.

The reliance on open market operations, however, is limited by the unavailability of government debt instruments arising from the adherence of a balanced budget policy in Indonesia. Therefore, BI began to sell BI Certificates (SBI) and buy Money Market Securities (SBPU). At present, open market operations are carried out daily on the basis of the current monetary situation and guided by the monetary programme which sets the targets for monetary aggregates over a certain time period consistent with the final objectives.

The central bank also provides discount facilities to assist the banking sector in time of need for the smooth functioning of open market operations. Although, moral suasion is seldom used by the central bank currently, the high degree of paternalism in Indonesia makes it a potent instrument. Meanwhile, the main ultimate target of monetary policy of Bank Indonesia is price stability.

1.3 Impact of Reforms on Financial Variables

As can be seen in Table 2.1, the major financial reforms in 1983 and 1988 had a dramatic effect on savings mobilisation as well as deepening the financial sector. After reforms in 1983, interest rate jumped from 6 percent to 16 percent in 1984. This resulted in an increase in quasi-money as the ratio of quasi-money to gross domestic product (GDP) rose from 6.8 percent in 1982 to 11.35 percent in 1983 and from 22.18 in 1988 to 26.72 percent in 1989. The increase of quasi-money, in turn enhanced financial deepening indicated by the increase of the ratio of M2 to GDP from 19.05 percent in 1982 to 23.48 percent in 1984 and from 33.71 in 1988 to 41.19 percent in 1989. As for the impact on M1, the 1983 reform did not result in a similar increase in the ratio of M1/GDP. In fact, the ratio of M1/GDP continued its downward trend until 1988. After the second major financial reform in 1988, there was a proliferation of new banks and bank branches. The ensuing monetisation caused a jump in the ratio from 11.53 percent in 1988 to 14.47 percent in 1989, before tapering off to 13.04 percent in 1994.

2. KOREA

2.1 Chronology of Financial Reforms[4]

Financial reforms in Korea have been gradually implemented on an on-going basis since the early 1980s to enhance the efficiency of the financial industry, which has been lagging behind the real sector. The reforms emphasised on interest rate deregulation, foreign exchange and capital account liberalisation and the opening up of the domestic capital market.

With regard to interest rate deregulation, the first step was the introduction of commercial paper at unregulated rates in June 1981. In June 1982, yields on corporate bonds were allowed to fluctuate within a band of 1 percentage point of banks' basic loan rates while the preferential rates on priority loans at commercial banks were abolished.

4. Research Department, The Bank of Korea, ***Financial Liberalization and Internationalization in Korea,*** May 1994, pp. 3-5, 20-25 and 26-32.

Table 2.1

INDONESIA
Financial Variables

Year	Deposit Rate1/ (Percent)	Exchange Rate (Rp./US$)	Currency/ GDP	Demand Dep./GDP	M1/GDP	QM/GDP	M2/GDP
1980	6.00	627.0	6.77	8.87	15.65	8.42	24.07
1981	6.00	631.8	5.60	8.64	14.25	7.11	21.36
1982	6.00	661.4	5.05	7.20	12.25	6.80	19.05
1983	6.00	909.3	5.35	6.78	12.13	11.35	23.48
1984	16.00	1025.9	4.78	6.27	11.05	12.05	23.11
1985	18.00	1110.6	4.96	6.30	11.26	14.52	25.79
1986	15.39	1282.6	5.56	6.56	12.12	16.65	28.77
1987	16.78	1643.8	5.65	6.72	12.37	20.65	33.02
1988	17.72	1685.7	5.00	6.53	11.53	22.18	33.71
1989	18.63	1770.1	5.56	8.90	14.47	26.72	41.19
1990	17.30	1842.8	5.44	8.81	14.25	36.37	50.62
1991	23.27	1950.3	4.75	8.81	13.56	36.93	50.48
1992	20.37	2029.9	5.05	7.63	12.68	39.74	52.42
1993	16.07	2087.1	4.76	7.48	12.25	35.96	48.21
1994	16.37	2160.7	5.32	7.72	13.04	36.81	49.86

1/ Refers to 6-month time deposits at mid-point range.

Sources: ***International Financial Statistics,*** Yearbook 1994, International Monetary Fund.
International Financial Statistics, December 1994, International Monetary Fund.
Economic Outlook for Indonesia, 1994-1995, No. 13, December 1994.
Indonesian Financial Statistics, Bank Indonesia, April 1995.

A band system of loan rates, under which banks were to charge different rates according to the borrowers' credit-worthiness, was introduced in January 1984. Subsequently, the band system of loan rates was expanded while the ceilings on interbank call rates and issue rates of unguaranteed corporate bonds were removed. In addition, the issue rates on guaranteed corporate bonds, financial debentures and negotiable certificates of deposit (CDs) were allowed to be set freely in March 1986, and the issue rates of Monetary Stabilisation Bonds (MSBs) were linked to market interest rates in June of that year.

In spite of the above-mentioned interest rate deregulation efforts, most interest rates still remained effectively regulated by window guidance. In the latter half of the 1980s, improvements in macroeconomic fundamentals, particularly price stability and a current account surplus enabled the Korean economy to proceed further along the road to interest rate liberalisation.

A major deregulation of the interest rates of banks and non-banks took place in December 1988, with the lifting of controls on a wide range of loans and deposits. Unfortunately, however, the timing for this move proved somewhat inopportune; economic conditions promptly deteriorated from early 1989, and this led to the reintroduction of de-facto controls on liberalised interest rates through the back door, such as window guidance and moral suasion. The adverse impact of the reforms sparked a debate on how interest rate deregulation should proceed. The authority finally announced a new four-stage deregulation plan in August 1991, the first of which was put into effect on 21 November 1991.

In the first stage, most of the short-term lending rates, such as overdraft loans, commercial bill discounts and trade bill discounts were liberalised. Banks were free to set interest on deposits with maturities of more than three years. At the same time, interest rates on various money and capital market instruments including corporate bonds with maturities of over two years were also freed. The successful completion of the first phase of interest rate deregulation laid a firm basis for the more extensive second stage of the deregulation on 1 November 1993. This freed up all lending rates of bank and non-banks institutions excluding loans financed by the Government or by The Bank of Korea's rediscounts, rates on long-term deposits with maturities of two years or more, and issue rates of all bonds including financial debentures.

Regarding the foreign exchange and capital account liberalisation, since Korea accepted the obligations of Article VIII of the IMF Agreement in November 1988, there has been considerable relaxation of foreign exchange controls. These included among others, market-average foreign exchange rate system in March 1990 and the adoption in September 1992 of a negative-list system which allowed all foreign exchange transactions unless specifically prohibited.

The adjustment in the foreign exchange regime was necessary because the multiple-basket pegged system adopted in February 1980 had shown serious limitations, particularly in regard to its inability to take fully into account economic fundamentals and the market forces of supply and demand. To overcome this problem, the market-average exchange rate system was adopted in March 1990.

Under the new system, the daily exchange rate of the Korean won against the US dollar, the market-average exchange rate, is determined by the weighted average of won-dollar transactions conducted on the previous business day among foreign exchange banks. The daily fluctuation band of the market-average exchange rate was widened from the previous 0.4 percent above or below the prevailing rate to 0.6 percent in September 1991 in order to allow the exchange rate to reflect the market force and to boost market transactions. This band was further enlarged to 0.8 percent in July 1982 and 1.0 percent in October 1993.

The foreign exchange position requirement of foreign exchange banks, which was introduced in April 1981 to prevent speculation and to control domestic liquidity, has been significantly relaxed since the latter half of the 1980s. In September 1989, the composite overbought position ceiling of foreign exchange banks was raised and unified to the greater of $20 million or 200 percent of the average outstanding of bills bought in the previous month. The compulsory overbought position in spot transactions was set at 2 percent of the average outstanding of bills bought in the previous month. In addition, foreign exchange banks were allowed to take oversold positions in forward transactions within a $5-million limit.

The compulsory overbought position in spot transactions was lowered in July 1991, from the previous 2 percent to 1 percent of the average outstanding of bills bought in the previous month, before

eventually being abolished in January 1992. This modification was primarily aimed at reducing the liquidity burden of foreign exchange banks as well as increasing the efficiency of foreign exchange operations. The overbought position ceiling was effectively raised in September 1992 because amounts used for hedging the foreign exchange risks on operating funds or the capital of foreign exchange banks were no longer regarded as a constraining part of overbought position.

In September 1992, the composite oversold position ceiling of foreign exchange banks was raised from $5 million to the greater of $10 million or 20 percent of the average outstanding of bills bought in the previous month. In addition, they were initially permitted to take oversold spot positions at the greater of $2 million or 2 percent of the average outstanding of bills bought in the previous month. In July 1993, the ceiling on the composite oversold position was raised to the greater of $20 million or 30 percent of bills bought, whereas the limit on oversold position in spot transactions remained unaltered.

In October 1993, foreign exchange position management was shifted by taking into account either net worth or the volume of bills bought. Accordingly, the ceiling on overbought position was set at either 10 percent of a foreign exchange bank's net worth or 200 percent of the average outstanding of bills bought. The ceiling on oversold position was determined at either 10 percent of net worth or 30 percent of the average outstanding of bills bought, while the oversold position in spot transactions was limited to the greater of 1 percent of net worth or, alternatively, either $2 million or 2 percent of the average outstanding of bills bought in the previous month.

To reduce foreign exchange risk and to foster the development of the foreign exchange market, the Government has eased the requirement that foreign exchange transactions be supported by underlying real demand. In July 1991, residents whose preceding year's current transactions exceeded $10 million were allowed to purchase and deposit foreign currencies without documentary proof with foreign exchange banks up to the lesser of $100 million or an amount equivalent to 10 percent of their current transactions record on an annual basis. Previously, residents with a current transaction record of more than $100 million had been allowed to deposit foreign currencies freely up to $10 million on an annual accumulation basis.

In July 1991, foreign exchange banks were also allowed to confirm real demand for foreign currencies by accepting an application form for foreign currency funds transfer without the original documents in the case of spot transactions between the won and foreign currencies. And for spot transactions linked with forward transactions between foreign currencies, the requirement of underlying real demand was waived.

In September 1992, the category of documentary proof exemption to purchase and deposit foreign currencies with foreign exchange banks was widened to cover all residents having a record of external transactions. In addition, the standard for appraisal of the foreign currency ceiling was shifted from an accumulation basis to an outstanding basis. The maximum amount for which documentary proof of foreign exchange transactions could be provided after conclusion of the contract was also enlarged from $1 million to $3 million. For forward transactions involving less than $3 million, banks were allowed to review the underlying real demand by obtaining the required documents after the contract had been entered into.

At the turn of 1993, the documentary proof requirements were further relaxed. The ceiling for purchase and deposit of foreign currency without presentation of documentary proof was raised to the larger of $200 million dollars or 20 percent of the exchange transaction recorded in April 1993, and it was again raised to the larger of $300 million or 30 percent of the transaction recorded in July 1993, before finally being abolished in October 1993. In the case of all forward transactions based on underlying exchange transactions, foreign exchange banks were allowed, from April 1993, to review the supporting documentation after the contract had been entered into. In October 1993, the requirement of documentary proof in forward transactions between the Korean won and foreign currencies was relaxed. Besides this, the limit for turning in the underlying document was extended in July 1993 from the previous 30 days to 45 days.

In addition, in March 1990, the Government loosened the foreign exchange concentration system, permitting the overseas holding of foreign currencies by general trading companies within a limit of $5 million and the purchase of foreign exchange within a limit of $10 million on a yearly basis by enterprises with a record of performance of external transactions in excess of $100 million. Foreign-invested firms engaged in high-tech manufacturing have been allowed to borrow from abroad

on a short-term basis since January 1993 and those in high-tech services industries since July 1993. The period for deferred payment for imports was also lengthened from 90 days to 120 days in April 1993.

As part of the process of internationalising the Korean won, import or export trade settlements in Korean won of up to $100,000 per transactions were, in October 1993, permitted and non-residents were authorised to open won account without restriction. A foreign currency call market was established in December 1989 in order to boost the foreign exchange market. Initially dealing in US dollar only, the market was expanded to include Japanese yen call transactions in March 1991 and Deutschemark in September 1992.

Foreign exchange transactions, which usually result from international trade and capital transactions, are implemented through foreign exchange banks which act as market makers, intermediating between the demand and supply of foreign exchange. Thus, foreign exchange banks carry out the most important role in the foreign exchange market. Foreign exchange banks deal among themselves mainly to dispose of open positions resulting from transactions with non-bank customers. They also deal with foreign banks in major international exchange markets for the same purpose. Customers, mostly corporations engaging in export and import, participate in the market as end-users and/or suppliers of foreign exchange. They are involved in the purchase and sale of foreign exchange against domestic currencies, the management of foreign exchange risk, and the acquisition of credit facilities to be furnished through the market.

In the area of capital market, the internationalisation of the Korean securities market had its beginning in the Government's 1981 announcement of a long-term blueprint for capital market opening. As a first step, two open-end type investment trusts for foreigners were set up in December 1981. The Korea Fund, a close-end international investment vehicle primarily for Korean stocks was subsequently established in May 1984. Another similar fund, the Korea Europe Fund, was set up in March 1987. As of the end of 1993, the paid-in capital of the Korea Fund was $250 million and that of the Korea Europe Fund was $110 million. Authorisation was given, in July 1990, for the establishment of the Korea Asia Fund with a paid-in capital of 100 million dollars. In addition, three matching funds, which raise funds from

domestic and foreign sources for investment in domestic and foreign securities, were open in June 1990 with the size of each fund being $100 million.

Domestic firms were permitted to issue convertible bonds (CBs) to foreigners in December 1985, bonds with warrants (BWs) in March 1987 and depository receipts (DRs) in December 1990. Since Samsung Electronics Co. first issued overseas CBs in December 1985, various firms have issued overseas CBs, BWs and DRs, raising a total of $3,100 million as of the end of 1993. In a parallel development, the Government allowed foreign securities companies to own up to 10 percent of the paid-in capital of large Korean securities companies, subject to a proviso that the total stake of foreign securities companies in any one Korean securities company might not exceed 40 percent. Three foreign securities companies subscribed capital to two domestic securities companies in June 1985.

With the start of the Bilateral Financial Policy Talks between Korea and the U.S. in February 1990, the internationalisation of the Korean securities was furthered deepened. In November 1990, foreign securities companies were permitted to establish branches and joint-venture securities companies. There were ten branches and 26 representative offices of foreign securities companies and two joint-venture securities company in Korea as of the end of 1993.

From June 1991, foreign securities companies' branches were allowed to become members of the Korea Stock Exchange. In January 1992, the green light was given for non-residents' direct investment in Korean stocks, subject to a limit of 3 percent of any one company's total outstanding shares to a single non-resident and 10 percent on all non-residents. The ceiling on foreign portfolio investment was lifted from August 1993 for companies whose non-residents already hold more than 50 percent of the equity of a company through direct investment.

Foreign financial institutions in Korea was accorded similar treatment as domestic ones regarding their investment in Korea stocks in July 1992. Furthermore, in September 1992, foreign securities companies were allowed to engage in forward foreign exchange transactions as a means of hedging against possible foreign exchange risk to their operating funds.

The securities investment trust business was opened to foreigners in January 1993. Specifically, foreigners who handle securities investment trust business can set up representative offices in Korea and own the shares of domestic investment trust companies within a 10-percent overall limit and 3 percent on any individual foreigner. Foreigners are also able to invest in domestic investment advisory companies, subject to a 10-percent limit and 5 percent on any individual foreigner. Foreign investment advisory firms are allowed to set up representative offices in Korea.

To match the opening of domestic capital markets, domestic securities companies have been authorised to conduct the underwriting and sale of overseas securities since July 1983. Taking the opportunity provided by the balance of payments surplus in the latter half of the 1980s, the Government allowed domestic securities companies to handle brokerage business in overseas markets from December 1988. In addition, various domestic institutional investors, namely securities companies, investment trust companies, and insurance companies, were allowed to make overseas portfolio investments of up to $30 million each, in June 1988. These ceilings were gradually raised, to $100~$200 million at the end of October 1993, and were eventually abolished in March 1994. Such investment was also opened in April 1993 to investment and finance companies, and to pension funds, initially for up to $50 million. The ceiling was subsequently raised to $100 million in March 1994. As of the end of 1993, institutional investors led by securities companies have invested a total of $494 million in overseas securities.

In April 1993, residents were allowed to invest in overseas securities indirectly through beneficiary certificates which raised funds exclusively from the domestic markets. The bond market has also started to open for foreigners. Foreigners can currently trade bonds only through the exchange market. However, foreign financial institutions operating in the domestic market have been able to undertake bond transactions in the over-the-counter market since July 1992.

2.2 Implementation of Monetary Policy[5]

In carrying out monetary policy, The Bank of Korea sets and operates various forms of intermediate targets to effectively achieve

5. See The Bank of Korea (1995), pp. 4-17.

their final policy objectives. In general, The Bank of Korea favoured monetary aggregate to interest rate as an intermediate target since 1957 when it implemented the two-stage monetary control procedure to grapple with the persistent high inflation which accompanied rapid economic growth. From 1979 onwards, the Bank used M2 as the main intermediate target of its monetary policy, as this indicator has empirically proven to have a stable relationship between M2 and the final macroeconomic targets such as nominal income and price level. In addition, M2 has been found to be superior to other monetary aggregates in terms of predictability and controllability. Other monetary aggregates, however, such as M1 and M3, are used as supplementary monetary indicators.

With regard to monetary management, throughout the 1960s and 1970s, the Bank relied mainly on direct credit controls and reserve requirement to control money supply. The heavy reliance on direct measures reflected the Bank's limited capacity for conducting monetary policy at that time, when its rediscount window was almost completely directed towards servicing industrial policy as other market-based operations were not feasible. With the shift of the current account into surplus in 1986, however, the foreign sector, which had long been draining domestic liquidity, began to supply a large volume of money, making extremely difficult the control of monetary aggregates by domestic credit control alone.

In response to these changes in the source of money creation, the monetary authorities made strenuous efforts to keep liquidity at an appropriate level. In addition to tighter control over the extension of bank credit to large firms and substantial reduction in policy-based loans for export financing, they restricted the inflow of foreign capital while encouraging overseas investments and early repayment of foreign debts. In addition, The Bank of Korea mopped the excess liquidity by issuing a large volume of Monetary Stabilisation Bonds (MSBs) which are special negotiable obligations of the Bank.

The Bank of Korea also strongly urged the Government to share the burden of monetary control, resulting in the increased issuance of Treasury bills (TBs) and Foreign Exchange Stabilisation Fund Bonds to further absorb the excess domestic liquidity.

In December 1988, The Bank of Korea attempted to replace direct credit controls with an indirect system whereby money stock is con-

trolled through the orthodox policy instruments, repurchase agreement and reserves involving government bonds. At the same time, the Bank raised the minimum reserve requirement ratio from 7 percent to 10 percent in December 1988 and imposed marginal reserve requirements in May 1989 to cope with the increasing pressure of monetary expansion. In February 1990, when marginal reserve requirements were lifted, the bank again raised the basic reserve requirement ratio to 11.5 percent in order to absorb the additional liquidity that might be released from the abolition of marginal reserve requirements.

As far as monetary instruments are concerned, The Bank of Korea is currently trying to keep money supply within a target range through indirect monetary control instruments, especially open market operations which are considered more suitable for the day-to-day operation because they are more flexible in time and magnitude.

The Bank of Korea is authorised to deal with both securities representing both the government obligations and other securities fully guaranteed by the government and Monetary Stabilisation Bonds (MSBs) in the open market. MSBs are issued under terms and conditions determined by the Monetary Board and may be repurchased before maturity depending on the domestic monetary and credit conditions.

At present, the MSB is the principal instrument used in open market operations. To a certain degree, however, operations involving this instrument cannot be regarded as fully market-based. Treasury bills and Foreign Exchange Stabilisation Funds Bonds have also been used in open market operations, but their share in the Banks's overall open market operations has been insignificant.

The Bank of Korea, like most central banks, employs discount and lending policies to control the availability of banking institutions' funds in order to affect overall monetary and credit conditions. Until recently, however, a significant proportion of loans through the discount window is in the form of automatic rediscount facilities in support of policy-based and quasi-policy-based loans. This has decreased to some extent the effectiveness of discount policies in controlling the availability of credit.

The Bank of Korea is also empowered to fix and alter minimum reserve requirements against the banking institutions' deposits liabilities subject to a maximum ratio of 50 percent. However, in a period of

Table 2.2

KOREA
Financial Variables

Year	Deposit Rate1/ (Percent)	Exchange Rate (Won/US$)	Currency/ GDP	Demand Dep./GDP	M1/GDP	QM/GDP	M2/GDP
1978	18.6	484.00	5.61	5.55	11.16	21.44	32.59
1979	18.6	484.00	5.12	5.33	10.46	21.08	31.54
1980	19.5	607.43	4.88	5.13	10.01	22.94	32.95
1981	16.2	681.03	4.26	4.12	8.39	24.62	33.00
1982	8.0	731.08	4.73	5.92	10.65	25.91	36.56
1983	8.0	775.75	4.50	6.12	10.63	25.31	35.93
1984	9.0	805.98	4.28	5.11	9.39	24.62	34.01
1985	10.0	870.02	4.06	5.28	9.35	25.98	35.33
1986	10.0	881.45	3.94	5.49	9.43	26.78	36.21
1987	10.0	822.57	4.10	5.22	9.32	27.83	37.15
1988	10.0	731.47	4.01	5.49	9.50	28.75	38.24
1989	10.0	671.46	4.29	5.73	10.02	30.99	41.00
1990	10.0	707.76	4.06	5.15	9.21	30.57	39.78
1991	10.0	733.35	3.80	6.65	10.45	29.78	40.22
1992	10.0	780.65	3.70	6.91	10.61	30.93	41.54
1993	8.5	802.67	4.50	6.50	10.94	31.32	42.26

1/ Refers to 1- to 2-year time deposit rates at Deposit Money Banks.

Sources: ***International Financial Statistics,*** Yearbook 1994, International Monetary Fund.
International Financial Statistics, December 1994, International Monetary Fund.

extremely pronounced monetary expansion, the Bank is authorised to impose marginal reserve requirements of up to 100 percent of any increase in deposits. When the bank's reserves fall short of the legal reserves which are computed on a semi-monthly basis prescribed by the Monetary Board, the Bank can impose a penalty of 1 percent of the amount of the average deficiency during that half-month period.

2.3 Impact of Reforms on Financial Variables

As can be seen from Table 2.2, interest rates in Korea tend to move as step functions rather than continuously, reflecting the fact that interest rate reforms were done gradually. This resulted in an absence of drastic increases in the ratios of both M2 and quasi money to GDP which showed a steadily increasing trend from 32.59 percent and 21.44 percent in 1978 to 42.26 percent and 31.32 percent in 1993 respectively. It is noted, however, that these increasing trends could be attributable, among other factors, to the high per capita income of Korea during this period [Weerasekera (1993)]. In terms of the exchange rate, until the 1970s, the Korean exchange rate vis-a-vis the US dollar had been maintained within narrow margins and in fact had been depreciating over time to offset the rise in domestic prices and the deficits in the balance of payments. In February 1980, however, the system was changed to a multiple-basket pegged system, under which the exchange rate better reflected market forces. In 1990, the Government adopted a market average foreign exchange rate system, making a big stride towards the introduction of a full-fledged floating rate system.

3. MALAYSIA

3.1 Chronology of Financial Reforms

The first step to deregulate interest rates was taken in 1971 when fixed deposits placed with the commercial banks for maturities exceeding four years carried market-determined rates. In January 1972, interest rate ceilings for all commercial bank deposits with maturity exceeding one year were lifted. From 1 August 1973, interest rates for deposits placed with finance companies were freed and from 20 August, discount rates for Treasury bills were determined by open tender in the money market.

The major phase of reform commenced in October 1978, whereby the Central Bank allowed the commercial banks to determine deposit and lending rates. (Previously, the minimum lending rates and the ceiling on deposit rates of deposits with maturities at less than one year of the commercial banks were determined periodically by the Association of Banks in consultation with the Central Bank.) On 1 November 1983, the Central Bank introduced the base lending rate (BLR). Every bank's and finance company's lending rates (except those charged to priority sectors) were anchored to its declared BLR, which was based on the cost of funds, and taking into account the cost of statutory reserves, liquid assets requirements and overhead cost.

The free market interest rate determination was suspended during the tight liquidity period from October 1985 to January 1987. To restrain the unhealthy bidding up of interest rates, the Central Bank directed the commercial banks and finance companies to peg their interest rates for deposits of up to one-year maturities to the deposit rate of the two lead domestic banks, effective 21 October 1985. When the economy recovered and liquidity eased, the pegged interest rate arrangement was dismantled in February 1987. However, to overcome the sluggish response of lending rates to the decline in deposit rates, the Central Bank issued guidelines on 1 September 1987 restricting the BLR of the commercial banks and finance companies to be not more than 0.5 percentage point of the BLR of the two lead banks.

With effect from 1 February 1991, the BLR of the banking institutions was completely freed from the administrative control of the Central Bank. Each commercial bank and finance company was free to declare its own BLR on the basis of its own cost of funds, including the cost of holding statutory reserves and meeting the liquid assets requirement, as well as administrative and overhead costs but excludes the cost of provision for bad and doubtful debts.

Malaysia's exchange control regulations have always been very liberal. Before 1973, when Malaysia was in the Sterling Area, all settlements of capital transactions were freely allowed. In 1973, exchange control regulations ceased to discriminate between countries in and outside of the Sterling Area. Following the 1973 reforms, Malaysia had relatively free exchange control system. On 1 January 1987, new measures were implemented to further liberalise the system. These measures were intended to reduce the formalities with which businessmen have to comply when exporting their goods and provided

investors with greater access to credit to expand productive capacity. In addition, the public was permitted to deal freely in gold.

On 28 October 1994, the Minister of Finance announced measures to further liberalise the exchange control regime and hence reduce the cost of compliance and increase the efficiency of the cross-border transactions of residents. The most important change is the move to allow exporters to retain a portion of their export proceeds in foreign currency, without the need to first convert such proceeds into ringgit.

In terms of exchange rates regime, before June 1972, the Malaysian ringgit was pegged to the pound sterling. With the floating of the sterling and the dismantling of the Sterling Area, Malaysia decided to replace the sterling with the US dollar as the intervention currency. Effective June 1973, the Malaysian ringgit was allowed to float against the US dollar. In September 1975, a new regime was adopted where the value of the ringgit was determined in terms of a basket of currencies of Malaysia's major trading partners and major currencies used in international settlements.

In the early 1980s, the policy of the Central Bank was to keep the ringgit relatively stable against the Singapore dollar. This policy then was considered desirable to sustain confidence in a fundamentally weak economy. Since the US dollar was the intervention currency, and there has always been a close positive correlation between the movements of the US and Singapore dollars, intervention through the US dollar resulted in keeping the ringgit relatively strong vis-a-vis the Singapore dollar. The unsustainability of an appreciating real effective exchange rate in the face of a fundamentally weak economy, combined with speculative attacks on the ringgit led to a shift in policy in late 1984, whereby the ringgit was allowed to move freely against the US and Singapore dollars.

The Central Bank played an important role in developing the capital market in Malaysia during the 1980s, particularly a secondary market in Malaysian Government Securities (MGS). Measures were taken to increase the role of the market in providing liquidity for MGS, reduce the scope of captive markets and move toward a market-based pricing of primary issues of MGS. These included adjustments to statutory and liquidity requirements, allowing well-capitalised finance companies to participate in the interbank money market and establishing

the Interbank Funds Transfer System, the Scripless Securities Trading System, the Kuala Lumpur Automated Clearing House and Day-One Settlement System.

Following that, several major reforms were taken in January 1989:

(a) Appointment of Principal Dealers: A panel of 23 principal dealers 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.

(b) Issues 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.

(c) Central Bank's Open Market Operations: The Central Bank's open market operations are now conducted through the principal dealers only. 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.

(d) Freeing of Discount Houses 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 ten years, where previously they were limited to papers with maturities of five years or less.

In addition, since the mid-1980s, the Central Bank has also played a key role in developing the corporate bond market. Measures introduced included the setting up of the National Mortgage Corporation in 1986 to issue mortgage bonds; putting in place the legal and administrative framework; and, the establishment of the first credit rating agency (Rating Agency Malaysia) in November 1990. There have been concerted efforts on the part of both the Government and the Kuala Lumpur Stock Exchange (KLSE) to transform the KLSE into a better organised and more efficient organisation. Major measures include the introduction of the corporatisation of the stock-broking industry in early

1987, the installation of a real-time share price reporting system called MASA for brokers in 1987 to provide up-to-the-minute information on the movement of share prices, the launching of a Second Board in November 1988 to enable small companies with good growth prospects to have access to the capital market and the introduction of the KLSE Main Board All Share Index (EMAS Index), comprising all shares listed on the Main Board on 17 October 1991.

To further develop the capital market, the Securities Commission which began operations on 1 March 1993 was established to strengthen and streamline the regulatory framework in order to promote an efficient and orderly growth of the capital market. As part of the Government's plan to transform the KLSE into a world-class stock exchange, the first phase of the Central Depository System to facilitate a securities trading system was launched in November 1992 and has so far evolved into its second phase which was launched in March 1993. The introduction of financial futures and options in Malaysia is imminent with the enactment of the Futures Industry Act, 1992, which came into force on 1 March 1993. Two markets, namely, the Kuala Lumpur Futures Market and the Kuala Lumpur Options and Financial Futures Exchange (KLOFFE) are expected to begin operations soon.

3.2 Implementation of Monetary Policy

From the above-mentioned financial reforms, the most significant single policy measure which has affected the transmission mechanism of monetary policy is the deregulation of interest rate determination. The deregulation of interest rates also removed one of the Central Bank's power to influence directly the interest rates. As a result, the Central Bank now depends on open market and money market operations to achieve its monetary policy objectives.

For operational purposes, the Central Bank uses money supply as an intermediate target, through which it seeks to influence the major macroeconomic variables. Originally, the emphasis was on the narrow monetary aggregate, M1, since it had been empirically tested to have a stable and consistent relationship with aggregate income. However, changes in the liquidity preference of the public and persistently high interest rates in the 1980s led to a structural change in the demand for money. Increasing sophistication in the financial system and the demand for money by the public resulted in savers becoming increasingly

sensitive to interest rate movements. Consequently, the traditional relationship of M1 to aggregate income was compromised, and the focus inevitably shifted to the broader monetary aggregates of M2 and subsequently M3, which were less affected by interest-induced fluctuations.[6]

M2, however, was found to be inappropriate, with its movements distorted by the disintermediation of deposits from the commercial banks to the other non-bank financial institutions, particularly the finance companies. In 1984, the Central bank, therefore, selected M3 as the target, since the aggregate encompassed the commercial banks, finance companies, merchant banks, discount houses and the Islamic Bank. In practice, the Central Bank does not merely conduct monetary policy based on any single aggregate. The Bank also takes into consideration a broad range of indicators to ascertain the state of the financial system in particular, and the economy in general, and to evaluate the impact of monetary measures.[7]

During the early 1980s, the monetary policy stance was restricted in measures such as allowing a gradual increase in interest rates and discouraging the extension of credit by the banking system for non-productive and speculative activities. During 1983-1986, the Central Bank shifted to an expansionary monetary policy as the conditions in the money market were extremely tight.[8]

In 1986, however, the Central Bank was confronted with the conflicting objectives of maintaining exchange rate stability and reducing interest rate. Measures implemented included open market operations, foreign exchange swap facilities, recycling of Government deposits and reduction of the Statutory Reserve Ratio (SRR). Since then, monetary policy became rather neutral in 1987-1988 as the liquidity conditions in the system improved significantly amidst price stability.

The period 1989-1994 was characterised by six years of prolonged and rapid economic growth since the recovery in 1987. The increase in money supply raised domestic demand amidst higher income, in a near full employment economy, and imposed tremendous pressures on prices. However, the inflation experience in this period was somewhat

6. Latifah Merican, et. al., *Monetary Policy and Inflation,* ***Bank Negara Discussion Papers No. 30,*** p. 18, March 1994, Economic Department, Bank Negara Malaysia.

7. Ibid., p. 18.

8. Bank Negara Malaysia, ***Annual Report,*** 1993, pp. 87-90.

different from earlier periods as the monetary expansion could be traced to large capital inflows during 1992-1994. The inflows, which were substantial and volatile in nature, were encouraged by the sound economic fundamentals , large interest rate differentials in favor of Malaysia, buoyant activities in the local stock market and expectations of further appreciation of the ringgit. Therefore, since 1989, the Central Bank adopted a tight monetary policy stance to reduce excess demand in order to contain inflationary pressures. These monetary measures included: six upward revision in the SRR; limit on non-trade-related swap transactions with foreign customers; centralisation of Government and EPF funds with the Central Bank; open market operations; issue of Bank Negara Bills; and, guidelines on hire purchase and credit cards.

While the above measures were effective in controling inflation, their positive effects were continuously offset by capital inflows. From 1992, expansionary monetary policies in other countries led to large capital inflows to take advantage of the high interest rates in Malaysia. Furthermore, the bouyant local stock-market and expectations of the ringgit appreciation attracted speculative funds. The swap limits imposed earlier were not sufficient to curb these inflows as a relatively liberal exchange control enabled speculative funds, which were not covered under swap limits, to enter Malaysia. Obviously, these inflows would have destabilising effect both on the domestic and external fronts.

Consequently, the Central Bank then had to resort to stronger measures. For the first time, a series of measures, directed at curbing speculative activities by foreigners, especially banking institutions outside Malaysia were imposed. The eligible liabilities base was redefined to capture all inflows of funds from abroad with effect from the base period 16-31 January 1994. This implied that funds sourced from abroad were subject to the Central bank's statutory reserve and liquidity requirements. In addition, effective 17 January 1994, the net external liabilities position of each banking institution, after adjustment for trade-related and genuine investment, was subject to ceilings. Moreover, with effect from 24 January 1994, all residents were prohibited from selling short-term monetary instruments to non-residents. Finally, commercial banks were also required to place with the Central Bank in non-interest-bearing current account the ringgit funds with banks outside Malaysia which are held in non-interest vostro accounts. Effective from the base period 16 February 1994, these funds were also counted as part of liabilities base and subject to statutory reserve and liquidity requirements.

On the whole, these measures helped to sterilise the substantial capital inflows. Short-term speculative funds would either be repatriated or converted into long-term investments. In either case, it would over time moderate growth in M3. However, during this period, the implementation of monetary policy was complicated by several factors. The objective to completely sterilise the inflow of funds was thwarted somewhat by the consideration of preventing an excessive rise in domestic interest rates as this would dampen investment while further attracting new capital inflows.

Accordingly, the conflicting objectives of monetary policy and exchange rate stability reduced the effective implementation of monetary policy. Although the ringgit exchange rate was determined by supply and demand factors, the large capital inflows created wide fluctuations in the ringgit rate. Hence, the central bank had to intervene and the consequent liquidity that was thus injected needed to be mopped up through other monetary instruments. Another limitation was that the tight monetary policy was successful only in influencing the interest-sensitive type of consumption expenditure. At the same time, the effective implementation of monetary policy was continuously made difficult by the adverse external influences, notably the expansionary policies in other countries which led to capital inflows into Malaysia.

3.3 Impact of Reforms on Financial Variables

Interest rate liberalisation which was introduced in Malaysia in 1978, as shown in Table 2.3, did not lead to wide fluctuations in interest rates. This could be partly due to the gradual approach used. After liberalising its interest rates in 1978, Malaysia re-regulated the interest rates in 1983 through the implementation of the base lending rate of the lead banks before finally fully liberalising it in 1992. The ratio of M2 to GDP increased from 45.47 percent in 1976 to 88.36 percent in 1993. Hence, the gradual approach of the interest rate reform has helped financial deepening in Malaysia. The ratio of M1 to GDP also increased from 18.72 percent in 1976 to 28.99 percent in 1993 due to the increasing utilisation of demand deposits from 9.36 percent of GDP in 1976 to 17.56 percent in 1993. With regard to the exchange rate, although Malaysia has adopted a managed float regime after June 1973, the rate of the ringgit vis-a-vis the US dollar, has been quite stable since 1976.

Table 2.3

MALAYSIA
Financial Variables

Year	Deposit Rate1/ (Percent)	Exchange Rate (RM/US$)	Currency/ GDP	Demand Dep./GDP	M1/GDP	QM/GDP	M2/GDP
1976	5.50	2.5416	9.36	9.36	18.72	26.75	45.47
1977	5.21	2.4613	9.62	9.32	18.95	27.01	45.95
1978	5.13	2.3160	9.44	9.67	19.12	27.13	46.25
1979	5.50	2.1884	8.82	9.46	18.28	28.55	46.83
1980	6.23	2.1769	8.93	9.38	18.30	33.16	51.47
1981	9.67	2.3041	8.85	10.27	19.12	37.01	56.13
1982	9.75	2.3354	9.15	10.79	19.94	40.17	60.11
1983	8.02	2.3213	8.61	10.59	19.20	39.65	58.85
1984	9.54	2.3436	7.51	9.28	16.79	40.86	57.65
1985	8.81	2.4830	8.73	9.49	18.22	44.86	63.08
1986	7.17	2.5814	9.98	10.30	20.29	55.56	75.85
1987	3.00	2.5196	10.00	10.56	20.57	50.21	70.77
1988	3.30	2.6188	9.94	10.67	20.61	45.57	66.18
1989	4.60	2.7088	9.66	11.78	21.43	46.15	67.58
1990	5.90	2.7049	9.71	12.27	21.98	44.35	66.33
1991	7.18	2.7501	9.31	12.23	21.54	47.57	69.11
1992	7.90	2.5474	8.26	15.96	24.22	54.63	78.84
1993	6.45	2.5741	8.14	17.56	28.99	59.37	88.36

1/ Refers to 3-month time deposit (mode) rates.

Sources: ***International Financial Statistics,*** Yearbook 1994, International Monetary Fund.
International Financial Statistics, December 1994, International Monetary Fund.

4. MYANMAR

4.1 Chronology of Financial Reforms

Various reform measures have been initiated in the financial sector in harmony with the market-oriented economic system introduced in late 1988. The chronological list of financial reforms is as follows:

In July 1990, with a view to developing the financial system and improving efficiency of financial activities in conformity with the new economic policy, the Central Bank of Myanmar Law, the Financial Institutions of Myanmar Law and the Myanma Agricultural and Rural Development Bank Law were enacted, and rules and regulations to the said laws had been prescribed. The new legislation enables the Central Bank to strengthen its capacity in the supervision and regulation of banks and other financial institutions, both state and privately owned.

With regard to institutional changes, the Myanma Investment and Commercial Bank, established in September 1989 as a subsidiary of the Myanma Economic Bank to provide both domestic and foreign banking services particularly for the convenience of foreign investors, became an independent entity in September 1990 under the Financial Institutions of Myanmar Law. In August 1992, under the Financial Institutions of Myanmar Law, the Small Loans Department was separated from the Myanma Economic Bank and was created as a finance company, namely the Myanma Small Loans Enterprise.

In accordance with the new banking laws, the Central Bank of Myanmar began granting operating licenses to domestic financial institutions in May 1992, and as of end-October 1994, 13 domestic private banks have been granted operating licenses. All of them are already opened and they are operating domestic commercial banking activities. Four banks out of these private banks have been allowed to deal in foreign exchange business since 1 April 1994.

Regarding the relaxation on entry of foreign banks, up to end-October 1994, 17 foreign banks have been granted permission to open representative offices in Myanmar. Out of those foreign banks, the Thai Military Bank Ltd., Development Bank of Singapore Ltd., Siam City Bank Public Company Ltd. and Overseas Chinese Banking Corporation Ltd. have already opened their representative offices in Yangon.

In order to promote domestic savings, interest rates on fixed deposits were raised in 1989; the new Savings Bank Law was enacted in June 1992; interest rates on savings deposits and savings certificates were raised in July 1992; Myanma Insurance Law was enacted in July 1993; and, the Rural Savings Mobilisation Scheme was introduced by the Myanma Agricultural and Rural Development Bank in October 1993. More savings branches and savings offices have been opened, and savings services have been improved.

In terms of new financial instruments, with a view to giving an opportunity for the public and private enterprises to save and as part of the effort to develop a capital market, the Central Bank of Myanmar on behalf of the Government has issued three-year and five-year Government treasury bonds starting from 1 December 1993. The issuance of government treasury bonds is expected to set the initial step for the preparation of open market operations and ease the monetary expansion of the banking sector.

For savings promotion and efficient allocation of financial resources, interest rates on both savings and lending rates were raised across the board in July 1992.

Credit policies in recent years have not imposed an undue constraint on the private sector's economic activities as the banks have been encouraged to expand their credit activities in the private sector and credit decisions are being made on the basis of the credit-worthiness of the borrowers and the financial viability of the projects being financed.

The new banking laws which came into force in 1990 includes the following minimum prudential requirements:

(a) Statutory reserve requirement to be maintained by the commercial banks is set at 10 percent of demand deposits and 5 percent of time deposits;

(b) The commercial banks are also obliged to maintain a 10 percent of capital and reserves to risk weighted-assets ratio;

(c) Lending limit of the commercial banks to a single individual and enterprise or an economic group was initially set at 10 percent of

their capital plus reserves. But it was raised to 20 percent effective from 21 June 1994; and,

(d) Commercial banks are free to fix interest rates on fixed and savings deposit not lower than 3 percent of the central bank rate and to charge lending rates not higher than 6 percent of the central bank rate which is 11 percent at present.

As far as foreign exchange liberalisation is concerned, citizens are allowed to open foreign currency accounts and private exporters are allowed to retain 100 percent of export earnings in their foreign currency accounts. Seventy-five percent of private services receipts and transfers is allowed to be deposited in foreign currency accounts. Foreign companies operating in Myanmar are permitted to pay wages and salaries to their employees in foreign exchange. For the convenience of tourists in particular and foreign exchange account holders in general, Foreign Exchange Certificates (FECs) have been issued by the Central Bank of Myanmar since February 1993. In addition, account transfers of foreign exchange between different currency account holders are permitted.

From the above reform measures, promulgation of new banking laws, institutional changes and emergence of domestic private banks have consequences for the transmission channels of monetary policy while savings promotion measures and introduction of new financial instruments have influenced the option for monetary policy instruments.

4.2 Implementation of Monetary Policy

Direct controls such as credit ceilings, selective credit controls and directed credit were transmission channels of monetary policy before the financial reform. Changes in reserve requirements, and interest rates and credit policies are transmission channels of monetary policy after the financial reform.

Before the major financial reform, during the centrally planned period of 1963-1988, the main instruments of monetary policy in Myanmar were the "cash plan" and the "credit plan" which sought to control the increase in money supply and to allocate credit in accordance with the priority system of the annual economic plan. Interest rates played only

a limited role in regulating and allocating credit but were important in mobilising savings. After the major financial reform, quantitative credit controls, interest rate policies and reserve requirements have been the main instruments of monetary control in recent years. At present, the main objectives of monetary policy are to control monetary expansion in support of the objectives of combating inflation and to promote domestic savings.

4.3 Impact of Reforms on Financial Variables

Since Myanmar did not liberalise interest rates until the 1990s, interest rates remained fixed during the 1980s as shown in Table 2.4. The ratio of M2 to Gross Domestic Product (GDP) increased from 25.76 percent in 1980 to 27.89 percent in 1990. However, the ratio for 1990 still represented the lowest ratio in comparison with those of other SEACEN countries. This is a reflection of the slower pace of financial reforms and financial deepening in this country. The ratio of demand deposit to GDP decreased from 1.58 percent in 1980 to 0.91 percent in 1990. The people seem to depend mainly on currency as a medium of exchange. As for the exchange rate, Myanmar's kyat has been pegged to the SDR at K. 8.50847 per SDR since 1975. In terms of US dollar, however, the kyat value fluctuated somewhat according to the movement against this currency. The kyat continues to be pegged to the SDR even after the financial reform in 1988.

5. NEPAL

5.1 Chronology of Financial Reforms

The Nepalese banking system consisted of only two commercial banks (the Nepal Bank Ltd. and the Rastriya Banijya Bank established respectively in 1937 and 1966) which are either fully or mainly owned by the Government and Nepal Rastra Bank (the Central Bank which was established in 1956) until 1984 when the private sector was allowed to open banks.

Nepal Rastra Bank (NRB) was established as the Central Bank of the country in 1956 with the objectives of promoting and regulating financial development besides conducting traditional central banking functions. In the initial period, it succeeded in the abolition of the then

Table 2.4

MYANMAR
Financial Variables

Year	Deposit Rate1/ (Percent)	Exchange Rate (Kyat/US$)	Currency/ GDP	Demand Dep./GDP	M1/GDP	QM/GDP	M2/GDP
1980	1.50	6.5983	18.88	1.58	20.46	5.30	25.76
1981	1.50	7.2807	19.61	1.64	21.25	6.68	27.93
1982	1.50	7.7903	19.32	1.62	20.94	8.02	28.96
1983	1.50	8.0355	20.40	1.81	22.21	9.24	31.45
1984	1.50	8.3855	21.96	1.88	23.84	10.56	34.40
1985	1.50	7.4749	18.76	1.87	20.63	11.71	32.34
1986	1.50	7.3304	25.63	2.05	27.68	12.62	40.29
1987	1.50	6.6535	12.08	1.71	13.79	12.29	26.09
1988	1.50	6.3945	19.23	1.32	20.55	9.99	30.54
1989	1.50	6.7049	15.98	1.12	17.10	7.59	24.69
1990	5.80	6.3386	19.23	0.91	20.13	7.76	27.89
1991	-	6.2837	n.a.	n.a.	n.a.	n.a.	n.a.
1992	-	6.1045	n.a.	n.a.	n.a.	n.a.	n.a.
1993	9.00	6.1570	n.a.	n.a.	n.a.	n.a.	n.a.

1/ Refers to 6-month time deposit rate.

Sources: ***International Financial Statistics,*** Yearbook 1994, International Monetary Fund.
International Financial Statistics, December 1994, International Monetary Fund.

existing dual currency system and in stabilising the exchange rate of the Nepalese rupee against the Indian currency.

In 1966, NRB began to use monetary policy instruments including minimum reserve requirements, margin rates, interest and refinance rates and liquidity requirement. Up until the first half of the 1980s, the role of NRB was mainly confined to issuing directives to the commercial banks and other financial institutions regarding interest rates, opening of bank branches in the rural areas, providing credit to productive and priority sectors, investing on government bonds and bills, etc. During this period, the banking system was highly regulated and tended to serve social functions rather than for purely commercial purpose.

As the trend of economic policy in the global setting began to shift towards more liberalisation in the first half of the 1980s, Nepal also began to gradually liberalise its economy. In 1984, the private sector was allowed to open commercial banks with up to 50 percent partnership with foreign banks. This measure which was aimed at promoting competition and efficiency in the banking system brought about a number of joint-venture banks such as the Nepal Arab Bank Ltd. (1984) and the Nepal Indosuez Bank Ltd. (1986), the Nepal Grindlays Bank Ltd. (1987), the Himalayan Bank Ltd. (1993), the SBI Bank Ltd. (1993), the Nepal Bangladesh Bank Ltd. (1994) and the Everest Bank Ltd. (1994) and raised the number of commercial banks including the two state-owned banks to nine. Similarly, NRB in the financial year 1984/1985 has also given permission to allow the opening of certain branches of the Agricultural Development Bank, which was established in 1968, with a view to providing agricultural credit to farmers to carry out commercial banking transactions so as to channel savings generated in the urban areas towards meeting the agricultural credit needed in the rural sector.

To encourage the private sector's participation in the development of the financial sector, the "Finance Company Act 1985" was enacted in 1985. This generated strong enthusiasm as reflected in the large number of applications to NRB seeking the approval of opening finance companies. Until October 1994, eleven of them have been approved, seven of which have already come into operation while the remaining four are going to start operation soon.

In addition, specialised financial institutions such as the Nepal Industrial Development Corporation, Agricultural Development Bank, Cooperative Bank, National Insurance Corporation, Employees' Provident Fund, Credit Guarantee Corporation and Security Exchange Centre were established at the initiative of the Government and NRB during the 1960s and 1970s to serve the specific needs of the respective sector.

To ensure that the rural poor are not denied access to credit in the environment of privatisation, two rural development banks (Far Western Rural Development Bank and Eastern Rural Development Bank) have been established and commenced operation in 1993 with the initiative of the Government, NRB and the commercial banks. Similarly, two more rural development banks (Western Rural Development Bank and Mid-Western Rural Development Bank) have been registered in 1994 and are expected to be operating soon. At the same time, financial services have been expanded. Similarly, the Citizen Investment Fund as well as insurance companies and cooperatives were allowed to be set up, and the number of representative offices of the foreign banks has increased to three with the opening of the Banque Del' Union European in July 1991 (Standard Chartered Bank and Citibank each earlier on had opened their representative offices in Nepal).

The proliferation of commercial banks which means keener competition necessitated the establishment of the Credit Information Bureau in 1988/1989 to provide information on loan defaulters to the commercial banks at the initiation of NRB as well as the domestic commercial banks. Likewise, in keeping with the requirement of dynamic capital markets after the adoption of the liberal economic policy, the then existing Security Exchange Centre was reorganised as a full-fledged Stock Exchange in 1992. A separate Stock Exchange Board has also been established with a view to providing essential policy directions to security exchange.

In terms of monetary policy management, NRB used to control interest rates and influence credit allocation during 1966-1989. The era of interest rate liberalisation started in Nepal in 1984 when commercial banks were allowed to fix interest rates over and above the rates fixed by NRB which were 1.5 percentage points higher in the case of savings deposits and 1.0 percentage point higher in the case of fixed deposits. Interest rates were further liberalised in 1986 when banks and financial institutions were allowed to determine their own rates as long as they

are above the minimum rates set by NRB. This practice encompassed lending rates except for the priority sectors, the maximum of which was set at 15 percent. The partial liberalisation of interest rates had a positive impact on savings mobilisation as some commercial banks offered savings rates as high as 9.5 percent (against 8.5 percent minimum rates fixed by NRB). As such, NRB completely liberalised interest rates effective from 31 August 1989, with a view to creating a more competitive environment in the financial system to enhance domestic resource mobilisation and efficiently allocate financial resources.

The liberalisation was also expanded to include the phasing out of the captive market for government securities. This was done by reducing the Statutory Liquidity Ratio (SLR) by 2 percentage points to 22 percent effective December 1992 and completely eliminated effective mid-July 1993. Similarly, the banks were also free to determine the margin rates on import letters of credit effective 9 August 1992.

Due to the historical and geographical closeness with India, Nepal's foreign exchange policy has to be analysed from two perspective: one with India and another with the rest of the world. All payments with India are settled in Indian rupee. Even though the Indian rupee is not a convertible currency, in practice it is fully convertible into Nepalese rupee. This facility of full convertibility accorded to Indian rupee reflected the economic and social integration between Nepal and India. Until the early 1970s, more than 90 percent of Nepal's foreign trade was with India only as most of the Nepalese industry's raw materials came from India. Besides, there is an open and long border with India. Because of all these factors, the approach towards the Indian rupee, both in the exchange control as well as exchange rate determination, has been rather liberal and open.

In the area of exchange control, there is essentially no restriction on the purchase of Indian rupee from commercial banks, apart from statistical monitoring purposes. NRB is obliged to supply the required amount of Indian rupee to the Nepalese importers of goods and services. Although transactions in the capital account are restricted, in practice it is very difficult to monitor and enforce.

In contrast, the policy towards other foreign currencies was a tightly controlled regime. This has gradually changed as the Nepalese economy became more liberalised. In March 1992, the system of

partial convertibility was introduced. Under this system two tiers of exchange rate were prescribed. One tier was fixed by NRB while the other was determined by the commercial banks on the basis of demand and supply in the market. Sixty-five percent of the foreign exchange earned by the exporter of goods and services were required to be converted to market rate while the remaining 35 percent at the official rate as fixed by NRB. Under this regime, some essential imports such as petroleum products, fertilisers, essential drugs, and industrial machinery could be converted at official exchange rates. The market rate would be applied to all other items.

In terms of foreign exchange control, full convertibility in the current account was implemented in February 1993. This implies the abolition of the dual exchange rates system. Exporters can now convert their export proceeds at market rates. In addition, the proportion of foreign currency earnings which the earners could retain was raised to 100 percent.

The liberalisation of the foreign exchange regime to that of full convertibility of the Nepalese rupee in the current account and market determination of the exchange rate is likely to result in the exchange rate being used as the intermediate target for monetary policy. This is because the exchange rate will have a significant bearing on domestic prices (through import prices) and balance of payments (mainly through the trade account) and if the ultimate goal of monetary policy is to bring about price and balance of payments stability, the need for maintaining the exchange rate at a desired level is pertinent. Before the reform, since the exchange rate was fixed, monetary expansion could directly affect price and balance of payments while the effect of exchange rates on balance of payments was through the money supply as the exchange rates could not absorb any monetary shocks. But with more flexible exchange rate regime, the direct effect of money supply on the ultimate goals and also the feedback from the balance of payments to money supply is likely to dampen.

5.2 Implementation of Monetary Policy

Regarding financial reform and the option for monetary policy instruments, the deregulation of interest rate and abolishing credit ceiling as a credit control instrument have been the crucial reforms which have led the authorities to the adoption of indirect instruments like the bank

rate, open market operation and cash reserve requirement. With financial reforms, open market operation has emerged as the most important policy instrument in lieu of credit ceiling and lending rate revisions.

Although the financial reform is expected to result in the money demand function being a little unstable which would weaken the transmission process, it does not impact the basic transmission process. At the same time, the adoption of a more flexible exchange rate regime is likely to dampen the direct effect of monetary expansion on the balance of payments as the exchange rate is also likely to absorb part of the monetary shocks. However, as the exchange rate between Nepalese and Indian rupee is fixed and the exchange rate of Nepalese rupee vis-à-vis other convertible currencies is being affected by such a fixed exchange rate regime, full flexibility in the exchange rate regime cannot be expected. In such a situation, the transmission process of monetary policy cannot be expected to take a drastically different turn.

Interest rates, statutory cash reserves and liquidity ratios, margin rates, bank rates, open market operations, etc., are the major instruments of monetary policy. In the regulated regime or prior to financial reforms, NRB used to apply direct instruments of monetary policy such as administered interest rates, margin rates, direct credit ceiling, etc. However, after the deregulation of interest rates, its power to exercise monetary policy through interest rates has been eliminated. Similarly, NRB's power to control credit by imposing credit ceiling has been limited as it has been improper and unacceptable to the commercial banks in the changed environment. NRB is influencing credit creation and its allocation through cash reserve ratios. This measure has also not been enough for NRB to conduct its policy effectively. Against this background, NRB is trying to pursue its monetary policy through indirect instruments such as open market operation and bank rate. For the effective implementation of open market operation, NRB started issuing NRB bonds as a new monetary instrument since 1992 which so far has been successful in mopping up a part of the excess liquidity in the economy.

Stability (both internal and external) is the ultimate target of monetary policy in Nepal during the deregulated regime. However, due consideration is also given to the GDP growth. As excess monetary expansion is generally reflected in prices and balance of payments position of the country, the focus of monetary policy is to bring about stability in these areas.

Table 2.5

NEPAL
Financial Variables

Year	Deposit Rate1/ (Percent)	Exchange Rate (Rs./US$)	Currency/ GDP	Demand Dep./GDP	M1/GDP	QM/GDP	M2/GDP
1980	4.00	12.000	7.77	4.50	12.26	11.40	23.66
1981	4.00	12.336	7.86	3.87	11.74	12.36	24.10
1982	4.29	13.244	7.77	4.19	11.96	13.82	25.77
1983	4.50	14.545	8.24	4.69	12.93	15.49	28.42
1984	4.50	16.459	8.38	4.16	12.55	14.98	27.52
1985	4.50	18.246	8.55	4.10	12.64	16.66	29.30
1986	7.17	21.230	9.49	4.22	13.71	17.11	30.82
1987	8.50	21.819	9.84	4.82	14.65	17.46	32.11
1988	8.50	23.289	9.69	4.58	14.27	19.45	33.72
1989	8.50	27.189	10.20	4.92	15.12	21.13	36.25
1990	8.50	29.369	10.81	4.83	15.64	21.03	36.67
1991	n.a.	37.255	11.84	4.89	16.73	22.07	38.80
1992	n.a.	42.718	10.87	4.76	15.63	22.11	37.74
1993	n.a.	48.607	10.56	4.02	15.38	22.00	37.38

1/ Refers to minimum rates offered by commercial banks on 3-month to 12-month time deposits.

Sources: ***International Financial Statistics,*** Yearbook 1994, International Monetary Fund.
International Financial Statistics, December 1994, International Monetary Fund.

5.3 Impact of Reforms on Financial Variables

As interest rates have been gradually liberalised as can be seen in Table 2.5, they have fluctuated in a discrete way. After interest rates were fully liberalised in 1986, the ratio of M2 to gross domestic product (GDP) increased substantially. In March 1978, the dual exchange rate system against the US dollar was introduced. Under this system, two exchange rates were quoted against the US dollar, namely (i) the basic exchange rate, and (ii) the second rate. The basic rate was quoted at Rs. 12 per US dollar and applied for international debt settlements and for the imports of essential and development goods. A second rate was maintained with India in which the Indian rupee was fully convertible into Nepalese rupee. This facility of full convertibility accorded to Indian rupee is a reflection of the economic and social integration between India and Nepal. This dual exchange rate system was abolished in February 1993 when full convertibility in the current account was adopted. This means that all export proceeds could be purchased at market rates, indirect taxes on export proceeds were abolished and the proportion of foreign currency earnings that could be retained in Nepal was raised to 100 percent.

6. PHILIPPINES

6.1 Chronology of Financial Reforms

Before the onset of the 1980s, 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, inefficient allocation of resources, and high intermediation costs. The state of the financial system was characterised with 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 programme of financial reforms beginning in 1980 which sought fundamentally to expand on the 1970 financial sector reforms.

The first important measure of the reform programme was the introduction of a modified concept of universal banking which took effect in July 1980. The universal banking thrust aimed at reducing the

functional distinctions among financial institutions through the removal of legislated specialisation and by allowing financial firms to engage in a wider range of services. Under this system, a bank with a minimum capitalisation of 500 million Philippines pesos could be authorised 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 specialised sectors were also rationalised to give more flexibility to these financial institutions.

The second move towards deregulation was the freeing of interest rate ceilings in July 1981 on all types of deposits and loans, except short-term loans. Subsequently, in October 1981, the ceilings on rates of loan transactions with maturities of over one to two years were lifted, and completed in January 1983 with the removal of remaining ceiling on short-term loans.

In the Philippines, the foreign exchange market had been under strict regulation since 1949. The onset of 1990s, however, witnessed a definitive shift towards a more liberal environment. It was also decided that implementing reforms should be timed in phases to observe any adverse impact of the move on macroeconomic indicators such as inflation, domestic interest rates, the exchange rate and the level of international reserves. Therefore, partial liberalisation was initially implemented in December 1991, followed by a further deepening of the foreign exchange market in September 1992 and finally the full liberalisation of the current accounts in March 1993. This led the Philippines to eventually adopt the obligations of Article VIII of the International Monetary Fund Articles of Agreement on 8 September 1995 (IMF Survey, 9 October 1995, p.307).

Follow-up measures to the financial deregulation moves initiated in 1991 aimed at improving the mobilisation of capital resources as well as enhancing allocative efficiency of economy were continuously undertaken in 1993 and 1994. In 1993, this was capped with the passage of Republic Act (RA) No. 7653 or the new Central Bank Act of 3 July, empowering Bangko Sentral ng Pilipinas (BSP) with greater flexibility and independence in the conduct of monetary policy and a more effective supervision of the financial system. Important provisions in RA 7653 included the constitution of the new Monetary Board with

larger private sector representation and the transfer of certain assets and liabilities from the old Central Bank (CB) to the new BSP, to allow the latter greater flexibility in the conduct of monetary policy.

Other important measures adopted during the year among others included:

(a) the reduction in the reserve requirement on deposit and deposit-substitute liabilities of banks and non-banks in stages by 3 percentage points from 25 percent at end-1992 to 24 percent effective end-January 1993 to 23 percent effective end-April 1993 and to 22 percent effective July 1993. The reserve requirement was further reduced effective 15 August 1994 to 19 percent, inclusive of the 2-percent allowance for the required reserves to be invested in market yielding government securities. The successive reductions in reserve requirement were translated into lower intermediation cost and ultimately helped reduce the general level of interest rates;

(b) the imposition of a 10-percent reserve requirement on peso-denominated common trust funds for a more effective supervision of the banking system; and,

(c) commercial banks were allowed to invest 2 percent of their combined deposit and deposit-substitute liabilities in market-based securities purchased directly from BSP which gave banks greater income on their reserves, thereby reducing intermediation cost.

In 1994, financial reforms culminated with the signing of RA 7721 on 18 May, allowing the entry of foreign banks and expanding the scope of their operations in the country. The law is intended to attract the entry of reputable foreign banks with large capital base and established track record which will contribute to a stronger and efficient banking system and stimulate further trade flows and foreign investments in the country. In particular, the entry of foreign banks is expected to improve financial intermediation over time as banks compete with each other for market share through improved quality and broader scope of services, lower interest rates on loans and introduction of technological innovations that can further enhance productivity, risk management and competence in the banking system.

In line with the aforementioned objectives, the other significant reforms undertaken during the year were as follows:

(a) the liberalisation in the computation of banks' net open foreign exchange position limits to give banks an option to exclude from its foreign exchange assets, its foreign exchange holdings, resulting from original investments in new money bonds in an effort to improve the banks' oversold or overbought position;

(b) the lifting of the prohibition of banks to pay interest on demand deposits of deposit money banks to promote savings;

(c) the expansion of the "open application policy" for the accreditation of government securities dealers so as to include financial institutions other than banks, financial intermediaries with quasi-banking functions and investment houses, a move which will further level the playing field in interest rate determination; and,

(d) the relaxation of rules governing rural banks' compliance with the required loans-to-deposits ratio.

From the above reforms, the gradual reductions in reserve requirements in 1993 and 1994, the "open application policy" and the liberalisation of foreign exchange rules and regulations initiated since 1991 had influenced transmission channels of monetary policy. The reductions in reserve requirements tended to reduce the intermediation cost of banks and consequently domestic interest rates which should encourage investments and raise GNP growth. Meanwhile, due to "open application policy", the Treasury bill rates became more competitive and market-determined, this in turn influenced other domestic interest rate which would also affect investment behaviour and the performance of GNP. The liberalisation of foreign exchange brought about the net inflow of foreign exchange remittances, portfolio investments and other capital inflow especially in 1993 and 1994.

In addition, the major financial reform which had influenced the option for monetary policy instruments was the passage of RA 7653, creating Bangko Sentral ng Pilipinas (BSP). With the creation of BSP, certain assets and liabilities of the old Central Bank had to be retained for liquidation and the rest with BSP to make it operational.

With a clean balance sheet, BSP has been given the flexibility and autonomy in managing domestic liquidity/money supply to attain stable prices. One of the first things it did was to reduce reserve requirements. Open market operations through overnight reverse repurchase agreements and the sale of BSP-held Treasury bills have also been widely used.

6.2 Implementation of Monetary Policy

The conduct of monetary policy involves a delicate balancing act between the mandate to control inflation and to influence interest rates to a level conducive for the promotion of business activity, although price stability itself is strongly believed to promote more sustainable growth. Of late, the task has been complicated by the need to design monetary policy in the context of financial and trade liberalisation to ensure stability in the foreign exchange market and to maintain confidence in the economy.

There are three traditional instruments of monetary policy used by the former Central Bank of the Philippines (CBP)/Bangko Sentral ng Pilipinas (BSP), namely:

(a) Rediscounting of loans and advances which was initially established to influence the levels and distribution of liquidity and credit flows to financial institutions at subsidised rates. Interest rates on rediscounted loans have of late been rationalised to reflect the current market rates while the volume of rediscounting funds is still periodically determined by the Central Bank, and is mainly intended to benefit exporters-borrowers with 85 per cent of the $10-billion budget in 1993 channelled to export credits of commercial banks.

(b) The imposition of a reserve requirement which was employed for a dual purpose, i.e., to afford protection to depositors by ensuring the liquidity or solvency of banks so that they are able to meet withdrawals of depositors, and as a monetary tool to control liquidity on a permanent or long-term basis.

(c) Open market operations which involve the outright purchase or sale of securities by BSP in the open market. The instruments used in the Philippines are Treasury securities (mainly T-bills) and paper issued by the former CBP, called Central Bank (CB) bills.

The transactions with respect to CB bills are straightforward, and involve only an outright sale or purchase. Operations with respect to T-bills involved three forms:

(a) Repurchase agreements (RPs) under which the CBP agrees to buy T-bills from banks with a commitment to sell the same securities after a stipulated period, charging a certain interest rate;

(b) Reverse repurchase agreements (RRPs) which involve transactions whereby the CBP borrows funds from banks using the CBP's holdings of T-bills as a collateral with an agreement to repay the loans at specified rates and within a certain period of time; and,

(c) Outright contracts which involve transfers of ownership of T-bills after the purchase or sale, as the case may be. A major thrust of the open market operations of the CBP had been contractionary since 1986 with a net sale of CB bills.

Theoretically, the choice of which monetary tool should be employed by the Central Bank depends on the period of time for which a central bank measure is intended to be effective. Liquidity policy instruments of longer-run adjustment are designed to meet the banks' need for central bank money on a permanent or longer-term basis, or to limit their liquidity scope. Changes in the reserve requirement is one such instrument. Fine-tuning measures, on the other hand, are mainly used to neutralise temporary fluctuations in bank liquidity and influence money market rates in the desired direction. Instruments used for such measures are those which fall under open market operations.

Until the implementation of the financial reforms which included the restructuring of the Central Bank in 1993, the instruments available to monetary authorities for liquidity management were constrained by the precarious condition of the CBP. High interest rates, partly resulting from the financing of the CBP losses, and the absence of a broad portfolio of Treasury securities have made the CBP reluctant to mop up excess liquidity by issuing its own securities since this would further increase its operating losses. The deteriorating condition of the CBP led the National Government (NG) to issue Treasury certificates which at times were mainly for the purpose of domestic liquidity management rather than for deficit financing. When used for monetary policy purposes, the proceeds of these issues were sterilised as NG deposits with the CBP.

With reserve requirements reaching the legal limit of 25 percent in 1990, and its open market operations in the form of Treasury security sales virtually precluded by the small stock of Treasury securities on the CBP balance sheet, the CBP had to rely on reverse repurchase agreements in its liquidity management.

The establishment of a new monetary authority, BSP, equipped with a broad portfolio of government securities in its balance sheet restored the use of open market operations as the primary monetary policy instrument for fine-tuning. The use of the reserve requirement as a monetary tool was also resorted to in the effort to drive down interest rates.

The financial reforms did not affect the two transmission channels of monetary policy, namely, interest rates and exchange rate. Monetary aggregates are kept consistent with the targets under the financial and economic programme. Stabilisation measures were often pursued in the early 1990s, hence reserve requirements were relatively high. This tended to raise domestic interest rates which are led likewise by the Treasury bill rates.

The intermediate target of monetary policy is domestic liquidity, M3, while the operating target is the reserve money which is generally controllable by BSP. Control of these aggregates would indirectly influence domestic interest rates.[8]

The main objective of BSP under a deregulated regime is price stability. This is achieved through the conduct of an appropriate monetary policy in consideration of the country's real and financial sectors as well as its external payments position. In the Philippines, BSP looks at monetary aggregates in the conduct of its monetary policy to ensure that the amount of liquidity in the system commensurates with growth. In addition, BSP supervises financial institutions to ensure the health and stability of the market system and in the process, encourage greater productive activities.

8. Guinigundo, Diwa C., ***Monetary Management in the Philippines,*** Paper presented at the International Conference on Monetary Management, Bali, Indonesia, December 1994.

Table 2.6

PHILIPPINES
Financial Variables

Year	Deposit Rate1/ (Percent)	Exchange Rate (Peso/US$)	Currency/ GDP	Demand Dep./GDP	M1/GDP	QM/GDP	M2/GDP
1975	–	7.248	4.14	4.85	8.99	9.42	18.40
1976	8.50	7.440	4.18	4.75	8.92	9.57	18.49
1977	8.50	7.403	4.36	5.32	9.69	11.41	21.10
1978	8.50	7.366	4.58	4.96	9.54	13.17	22.71
1979	8.67	7.378	4.22	4.44	8.66	12.22	26.66
1980	12.25	7.511	4.18	5.07	9.25	19.80	29.05
1981	13.72	7.900	4.13	4.22	8.35	21.41	29.77
1982	13.74	8.540	4.01	3.41	7.41	24.60	32.01
1983	13.58	11.113	5.31	3.78	9.09	24.62	33.71
1984	21.17	16.699	4.15	2.42	6.57	21.26	27.82
1985	18.91	18.607	4.20	2.23	6.43	21.56	27.99
1986	11.25	20.386	4.80	2.28	7.09	19.64	26.73
1987	8.20	20.568	5.18	2.70	7.88	19.15	27.03
1988	11.32	21.095	5.09	2.57	7.66	21.13	28.79
1989	14.13	21.737	5.72	3.06	8.78	23.57	32.35
1990	19.54	24.311	5.77	2.89	8.66	25.53	34.19
1991	18.80	27.479	5.58	3.08	8.65	25.93	34.58
1992	14.28	25.512	5.52	3.21	8.73	27.60	36.33
1993	9.61	27.120	5.73	3.35	9.80	32.57	42.37

1/ Refers to 61- to 90-day time deposit rates.

Sources: ***International Financial Statistics,*** Yearbook 1994, International Monetary Fund.
International Financial Statistics, December 1994, International Monetary Fund.

6.3 Impact of Reforms on Financial Variables

According to Table 2.6 interest rates in the Philippines remained fixed until 1978. This may be due to the imposition of interest rate ceilings. The ratio of M2 to Gross Domestic Product (GDP) increased from 18.40 percent in 1975 to 32.01 percent in 1982 and finally to 42.37 percent in 1993 as a result of the interest rate liberalisation in the early 1980s. As for the exchange rate, the Philippines has followed a managed float regime since February 1970 and the exchange rate behaviour vis-a-vis the US dollar was, therefore, no longer fixed.

7. SINGAPORE

7.1 Chronology of Financial Reforms

Major financial reforms which were undertaken in Singapore mainly consist of the introduction of the Asian Currency Unit, the exchange control liberalisation and abolishing the system of interest rates fixing through a cartel arrangement. Below is the chronology of these reforms.

The Asian Currency Unit (ACU) was introduced in 1968 with the initial impetus for making Singapore a regional banking capital. In the mid-1960s, the Bank of America wanted to expand its Asian operations in order to accommodate customers who were showing increasing interest in Asia. Trying to do so by moving funds from North America into and out of the region would have been administratively clumsy. Not only would it have been expensive and met little appreciation in the head office for local customs and commercial practices, but the time-zone difference would have been awkward to contend with. It thus seemed worthwhile to explore the possibility of establishing an on-the-scene banking facility, capable of servicing both international and local customers.

Three cities seemed the most likely candidates - Tokyo, because of the size and strength of the Japanese economy, and Hong Kong and Singapore because of their relative sophistication and experience in financing the entrepot trade. Tokyo was ruled out almost immediately because at that time the Japanese government tightly constrained the activities of foreign banks there. The Bank of America therefore ap-

proached the governments of both Hong Kong and Singapore with the idea that they should make tax and regulatory concessions to attract this business. The authorities in Hong Kong, apparently, evinced no interest in the idea. The Singapore Government, on the contrary, realised the potential benefits of the proposal. In late 1968, the Government decided to take the plunge and licensed the first Asian Currency Unit to the Bank of America. The idea immediately caught on, both with foreign banks and with Singapore-incorporated banks. By year-end 1969, nine banks had established ACUs, and by the end of 1970, the number had grown to 14.

Naturally, the ACUs that were initially established were not exactly like the ACUs of today. The early tax concessions and regulations have undergone a process of evolutionary change as Government and banks have interacted to their mutual benefit. For example, the early ACUs were granted tax concessions with respect to foreign residents, but not with respect to bank profits, whereas now profits earned by ACUs are granted a concessionary rate. Or, to take another example, the early ACUs were obliged to observe the same liquid asset ratio that banks generally had to meet, a requirement that made little sense when applied to an ACU, and which has since been eliminated.

The ACU is an accounting unit. It is a legal entity that is part of a financial institution. Since it is a legal entity, separately licensed, it is obliged to keep separate accounting records, even though it is an integral part of a bank or merchant bank. Its purpose is to deal in the Asian Dollar Market. At the end of March 1993, there were 195 institutions with approval to operate ACUs, comprising 118 banks and 77 merchant banks

Meanwhile, the exchange control liberalisation was undertaken progressively. Exchange control originally existed in Singapore when the country was still a colony of Great Britain. Hence, when exchange control was introduced in the United Kingdom, the same laws were applied to Singapore as part of the Sterling Area countries or Scheduled Territories. For Singapore, these controls were regulated by the government under Finance Regulations. This system was replaced in 1953 by the Exchange Control Ordinance, which was subsequently changed to the Exchange Control Act in 1970. The administration of the Exchange Control Act was entrusted to the Monetary Authority of Singapore.

In June 1972, the United Kingdom Government decided to let its currency float following intensive speculative activity and massive flight out of sterling. At the same time, the authorities in the United Kingdom redefined the Scheduled Territories to cover only the United Kingdom, Channels Islands, Isle of Man, Republic of Ireland and Gibraltar. This action was tantamount to an imposition of exchange control against all other former Scheduled Territories. Singapore had to reconsider its position on exchange control. There were three alternative courses of action it could take, namely, to retain the status quo, to completely liberalise exchange control or to follow the United Kingdom in redefining the Scheduled Territories and restrict it to Singapore. Singapore decided to adopt the first approach and hence retained the concept of the Scheduled Territories. A more restrictive approach was considered inappropriate in view of Singapore's position as a financial centre, while a completely liberal system was felt to be premature. The policy was therefore to continue to allow complete freedom for payment and capital flows within the Scheduled Territories. For payments and capital remittance to countries outside the Scheduled Territories, the objective was to liberalise exchange control in progressive stages.

In 1973, investments by residents in specified currencies including deposits with Asian Currency Unit were permitted, subject to a ceiling of $100,000 for individuals and $3 million for companies. Approved unit trusts, mutual funds and investment trusts were permitted to invest up to $5 million or 15 percent of their funds. The limits for investments by residents were raised in 1976 to $250,000 for individuals and $5 million for companies. The limit for individuals was further increased to $500,000 in 1977.

Another step in the liberalisation of exchange control was taken in 1976. Apart from increasing the investment limits, the types of currencies in which investments were permitted were extended to all currencies of countries outside the Scheduled Territories instead of being restricted to specified currencies only. The definition of the Scheduled Territories was also extended to include the other ASEAN countries which were not already in the Scheduled Territories. This made it possible for Singapore residents to freely invest and make payments to these countries and was done in the spirit of ASEAN cooperation. The various limits for current payments requiring exchange control formalities were also standardised to a uniform $50,000. More types of current payments were also delegated to banks for approval. In addition, exchange control formalities were minimised and simplified.

In the light of the continued favourable performance of the Singapore economy and strong balance of payments, Singapore took the final step to remove exchange controls completely in June 1978. This made it possible for all Singapore residents including corporations to make payments in all currencies and to invest in any country outside Singapore without any restrictions. A freer flow of funds between Singapore and the rest of the world has therefore been facilitated. Any foreign investments in Singapore and their repatriation from Singapore may also be freely made without any exchange control formalities.

As a result of the complete freedom given to Singapore residents to make foreign investments, the Asian Currency Unit Terms and Conditions of Operation were also revised. The revision gave Asian Currency Unit greater access to the domestic market. Henceforth, they are able to collect deposits in foreign currencies from Singapore residents without prior exchange control approval. Asian Currency Unit may therefore deal in all foreign currencies with Singapore residents instead of limiting themselves to non-residents only.

With regard to interest rate reforms, the Monetary Authority in consultation with the Association of Banks in Singapore abolished the system of interest rates fixing through a cartel arrangement. In view of the easy money conditions and downward movement in interest rates, the replacement of the cartel system by a freely and open competitive system of interest rates quotation by individual banks had a salutary effect on interest rates movement. In a period of tight money, the same action could have triggered off an interest rates spiral as banks competed for funds. With the freeing of interest rates quotation, greater sensitivity to money market conditions has been apparent.

7.2 Implementation of Monetary Policy

The conduct of monetary policy in Singapore has been influenced by major financial reforms and by the openness of the economy and its vast network of international financial linkages, which result in a high degree of capital mobility and a close relationship between domestic and foreign rates. In addition, Singapore has to import food while the import content of its export is quite high. For that reason, the policy emphasis, particularly in the 1980s, has been on the exchange rate, rather than on the domestic money supply or interest rates.

To complement its exchange rate policy, the Monetary Authority of Singapore conducts money market operations to ensure there is an appropriate level of liquidity in the banking system. The instruments used are mainly foreign exchange swaps and bank loans/borrowings. The MAS can also influence liquidity and interest rates by varying the net amount of Treasury bills auctioned weekly. A larger issue may be introduced to mop up excess liquidity and, conversely, a smaller issue will be introduced when an easier monetary policy is desired. With the issue of government securities at market rates and the development of a more active secondary market in government securities in May 1987, MAS now has additional instrument with which to conduct monetary policy.

In addition, commercial banks are required to maintain accounts with the MAS to meet their statutory minimum cash requirements and for the clearing of cheques among banks. Currently, all banks in Singapore are required to maintain minimum cash balances with MAS of not less than 6 percent of the liabilities base. On a day-to-day basis, however, these balances may vary within a 1-percent band, i.e., between 5 percent and 7 percent. Any shortfall must be made good, and any excess above 6 percent must be utilised within a 2-week maintenance period.

All banks in Singapore are also required to hold minimum liquid assets of not less than 18 percent of their liabilities base. The liquid assets comprise of: any balance with the Authority in excess of the minimum cash balance of 6 percent; notes and coins which are legal tender in Singapore; Singapore government securities, subject to a minimum of 10 percent of the liabilities base; Singapore government securities held under overnight repurchase agreements (repos), subject to a maximum of 5 percent of the liabilities base; and, bills of exchange in Singapore dollars, which arise from genuine trade transactions and are payable within 3 months, subject to a maximum of 4 percent of the liabilities base.

7.3 Impact of Reforms on Financial Variables

According to Table 2.7, Singapore is a most sophisticated financial centre as reflected in the ratios of quasi-money and M2 to gross domestic product which are relatively high compared to those of other member SEACEN countries with the exception of Taiwan. Although

Table 2.7

SINGAPORE
Financial Variables

Year	Deposit Rate1/ (Percent)	Exchange Rate (S$/US$)	Currency/ GDP	Demand Dep./GDP	M1/GDP	QM/GDP	M2/GDP
1975	-	2.3713	12.25	13.71	25.96	35.09	61.05
1976	-	2.4708	13.29	14.01	27.30	35.51	62.81
1977	4.06	2.4394	13.98	13.52	27.51	33.63	61.14
1978	4.75	2.2740	14.49	13.14	27.63	33.29	60.92
1979	6.20	2.1746	14.33	13.52	27.85	35.00	62.85
1980	9.37	2.1412	12.50	11.95	24.45	39.58	64.03
1981	10.71	2.1127	11.53	13.16	24.68	42.36	67.05
1982	7.22	2.1400	12.23	12.74	24.97	44.83	69.80
1983	6.31	2.1131	11.80	11.63	23.43	46.06	69.49
1984	6.98	2.1331	11.53	10.60	22.14	45.58	67.72
1985	4.99	2.2002	12.18	10.39	22.57	49.75	72.32
1986	3.91	2.1774	13.02	12.38	25.40	54.66	80.06
1987	2.89	2.1060	12.76	13.11	25.87	61.12	86.99
1988	2.74	2.0124	11.99	11.92	23.92	60.26	84.18
1989	3.21	1.9503	11.63	12.55	24.18	66.50	90.68
1990	4.67	1.8125	11.21	12.85	24.06	73.43	97.49
1991	4.63	1.7276	10.79	12.86	23.66	76.47	100.13
1992	2.86	1.6290	11.04	13.65	24.69	76.31	101.00
1993	2.30	1.6158	10.05	15.66	25.71	66.57	92.27

1/ Refers to 3-month time deposit rate quoted by 10 leading banks.

Sources: ***International Financial Statistics,*** Yearbook 1994, International Monetary Fund.
International Financial Statistics, December 1994, International Monetary Fund.

the interest rates are relatively lower compared to other SEACEN countries, the ratio of M2 to GDP is still high as Singapore has high income per capita and low rates of inflation. The ratio of demand deposits to GDP was also quite high compared to other member countries reflecting the high monetisation in this city-state. Surprisingly, however, the ratio of currency to GDP has also remained high and close to that of Nepal. This may be due to the high demand for currency by tourists. As for the exchange rate, a managed floating regime was adopted by Singapore in June 1973. A basket pegging system within margins which has been in place since September 1975 implies that the Singapore dollar is determined by a trade-weighted basket of currencies of its major trading partners. The trade-weighted Singapore dollar is allowed to float within a target band, while the US dollar is the currency of intervention.

8. SRI LANKA

8.1 Chronology of Financial Reforms

The main features of the financial sector reforms undertaken since 1977 were the expansion of foreign banks and domestic private banks, liberalisation of interest rates, relaxation of exchange controls, restructuring of state banks, setting up of foreign currency banking units, removal of selective credit restrictions, strengthening of the legal, accounting and regulatory framework of financial institutions and a greater emphasis on market-based policy instruments in conducting monetary policy. The process of financial reform implementation in Sri Lanka was gradual and the chronology of these reforms which have strong implications on the transmission mechanism of monetary policy is given below.

In 1977, the National Savings Bank (NSB) which is the government-owned savings institutions raised its deposit rates sharply. Subsequently, commercial bank deposit and lending rates were also revised upward. With regard to exchange controls, commercial banks were entrusted with some authority with respect to selected current account transactions. In addition, enhanced exchange entitlements for travel, business, medical treatment, education and emigration was introduced. In 1978, selective credit ceilings on commercial bank credit to non-bank financial institutions engaged in lending and hire purchase

were relaxed. Moreover, exporters were permitted to borrow from foreign currency banking units (FCBUs) for financing inputs to execute export orders.

In 1979, selective credit ceilings on commercial banks credit to government corporations and statutory boards were withdrawn and exchange controls were further liberalised as the control procedure simplified and more exchange control functions were delegated to commercial banks. In 1980, interest rates (bank rate, Treasury bill rate, government securities rate, deposit rates of NSB and commercial banks) were revised upward. There was also an introduction of the Resident Non-National Foreign Currency (RNFC) Account Scheme. In the same year, the definition of monetary aggregate used for monetary policy purposes was changed to M2, to take into account the broadened scope of the banking system.

In 1982, selective credit ceilings on bank credit to residents or companies registered in Sri Lanka for the purchase of estates or immovables were withdrawn. In 1983, the overall credit ceiling was removed. With regard to monetary policy, the main emphasis in 1984 was placed on indirect monetary policy instruments such as open market operations. In 1987, interest rates in the primary Treasury bill market were allowed to be determined by market conditions as against the previous practice of administratively determined rates. In 1989 the minimum liquid asset ratio and single borrower limit in commercial banks were imposed.

In 1990, the major financial reform focused on facilitation of capital market development. The country and regional funds, corporate bodies incorporated outside Sri Lanka and non resident individuals were allowed to invest up to 40 percent of the issued share capital in shares of listed companies without having to pay the 100-percent transfer tax as before. A scheme of Share Investment External Rupee Accounts (SIERA) was introduced through authorised dealers to facilitate and monitor such investments.

The measure taken in 1990 was enhanced in 1992 as the investment listed companies was raised up to 100 percent of the issued share capital, subject to conditions set by the Controller of Exchange. In 1993, foreign exchange control was further liberalised as the repatriation and surrender requirement in respect of export proceeds were

abolished. Export proceeds were permitted to be retained in foreign currency account either in Sri Lanka or abroad. In 1994, all the remaining restriction on current account international transactions were removed as Sri Lanka accepted obligations under article VIII of the IMF charter.

8.2 Implementation of Monetary Policy

During the pre-reform period, the money and capital markets were thin while interest rates were re-regulated in Sri Lanka. Thus, the traditional transmission mechanism of monetary policy of money supply through prices and interest rates which in turn affect investments, employment and income was somewhat ineffective. In terms of credit allocation, credit rationing ceilings policies were pursued. In this context credit control could generally be regarded as one of the main instruments of monetary policy during the pre-reform period.

Interest rates play a greater role in transmitting the effects of monetary policy in a liberalised market environment. Against this background of high fiscal deposits, interest rates tend to be high as a result of restrictive monetary policy measures implemented through aggressive open market operations and high statutory reserve requirement. If consumption and investment are interest-elastic, tight monetary policy could be felt quickly in slowing domestic demand of the private sector.

The financial structure in Sri Lanka prior to economic reforms in 1977 was characterised by a limited number of institutions predominantly controlled by the public sector. Therefore, the choice of monetary policy instruments at that time was rather limited to credit restrictions and interest rate ceilings. As an example, during 1970-1976, the bank rate was raised only once, by 1 percentage point to 6.5 percent, while the statutory reserve requirement remained unchanged. This major emphasis was placed on credit ceilings during the pre-reform period which reflected a preoccupation of the monetary authorities to contain monetary expansion. However, the financial reforms not only saw the deregulation of interest rates and the elimination of directed credit but also led to the development of active money and securities markets. This provided a new and more effective monetary policy framework which places greater reliance on market-based policy instruments. At present, the Central Bank of Sri Lanka (CBSL) relies entirely on open market operations and the statutory reserve ratio for the conduct of monetary policy.

Table 2.8

SRI LANKA
Financial Variables

Year	Deposit Rate1/ (Percent)	Exchange Rate (Rs/US$)	Currency/ GDP	Demand Dep./GDP	M1/GDP	QM/GDP	M2/GDP
1975	-	7.007	6.06	5.47	11.53	6.42	17.95
1976	-	8.412	6.89	6.79	13.68	7.24	20.92
1977	-	8.873	7.67	6.98	14.65	9.59	24.24
1978	8.50	15.611	7.07	6.75	13.82	13.36	27.17
1979	8.50	15.572	7.20	7.39	14.59	17.00	31.59
1980	14.50	16.534	6.28	7.74	14.03	17.99	32.02
1981	17.88	19.246	5.67	6.03	11.70	18.34	30.04
1982	17.50	20.812	6.03	5.73	11.76	20.50	32.26
1983	18.25	23.529	5.92	6.08	12.00	19.84	31.84
1984	19.79	25.438	5.57	5.26	10.83	18.38	29.21
1985	17.33	27.163	6.05	5.45	11.49	19.70	31.20
1986	12.21	28.017	6.45	5.28	11.73	17.69	29.42
1987	11.50	29.445	6.86	5.80	12.66	18.33	30.98
1988	13.23	31.807	8.33	6.16	14.49	17.05	31.54
1989	16.43	36.047	7.80	6.13	13.93	17.55	31.48
1990	19.42	40.063	6.87	5.43	12.31	16.13	28.44
1991	18.54	41.372	6.67	5.84	12.51	17.67	30.18
1992	18.33	43.830	6.44	5.38	11.83	19.10	30.93
1993	18.42	48.322	6.47	5.47	11.96	20.51	32.47

1/ Refers to maximum rates offered by commercial banks on 12-month time deposits.

Sources: ***International Financial Statistics,*** Yearbook 1994, International Monetary Fund.
International Financial Statistics, December 1994, International Monetary Fund.

As for the intermediate target, until 1980, the CBSL used M1. However, since the narrow money supply definition was not sufficient to explain the variations in the liquidity situation and the consequent price changes in the economy, M2 was used as intermediate target.[9] The main objective of monetary policy in recent years has been to maintain price stability with sustained growth in GDP and to maintain a viable balance of payments position.

8.3 Impact of Reforms on Financial Variables

As can be seen from Table 2.8, the interest rates in Sri Lanka seem to be stable until 1979 and only after 1980 did the rates fluctuate significantly. The higher rates seem to help contribute to a sharp rise in the ratio of quasi-money to gross domestic product from 13.36 percent in 1978 to 17.0 percent in the following year. Likewise the ratio of M2 to GDP rose from 27.17 percent in 1978 to 31.59 percent in 1979. These drastic increases, however, tapered off reflecting the gradual pace of financial reforms resulting in the relatively stable ratios of all financial variables to gross domestic product. As for the of exchange rate, Sri Lanka adopted a basket pegging system after May 1976. Hence, since then the exchange rate vis-a-vis US dollar was no longer fixed.

9. TAIWAN

9.1 Chronology of Financial Reforms

Financial reforms here mostly refer to the liberalisation of interest rates, foreign exchange market and exchange rate which have strong implications on the transmission mechanism of monetary policy. The chronology of the reforms is elaborated in the following.

Regarding interest rate liberalisation, The Central Bank of China (CBC) formerly stipulated three interest rates against unsecured loans, secured loans and discounts. According to the Banking Law as revised on 4 July 1975, the CBC could set the upper limits on all deposit interest rates. The CBC was also empowered to determine the interest

9. Karunasena, S.G., *Monetary Policy in Sri Lanka: An Update,* in Azizah Talib's ***Monetary Policy in the SEACEN Countries,*** pp. 443, The SEACEN Centre, 1993.

rates on loans which were proposed by the Republic of China (ROC) Bankers' Association. The latter revision was aimed at giving banks more discretion to determine the interest rate spread on loans. Initially, the CBC limited the gap between the upper and lower interest rate levels with respect to unsecured loans, secured loans and discounts to 0.25 percentage point. With regard to deposit interest rates, the upper limits on deposit interest rates offered by banks were those prescribed by the CBC.

To gradually allow banks to set their own rates, on 16 May 1979, the Central Bank broadened the gap between the upper and lower interest rate limits to 0.5 percentage point. These upper and lower interest rates were for loans of less than three months' maturity.

Similarly, in a move towards more market-determined rates, the CBC on 11 November 1980 promulgated the Essentials for Interest Rate Adjustment which aimed to increase the role of the ROC Bankers' Association in determining interest rates.

The essential features of the regulation included:

(a) Although the upper limit on deposit rates was still determined by the CBC, the Banker's Association could make recommendations to change the rates based on its observations of market conditions;

(b) Although the range of the loan interest rates continued to be proposed by the Bankers' Association and approved by the Central Bank, such range should be enlarged;

(c) Banks, credit cooperatives and the credit departments of farmers' and fishermen's associations were allowed to determine their own discount rates and the interest rate differentials in accordance with the length of maturity of these bills; and,

(d) In the case of negotiable certificates of deposit and financial securities issued by banks, the issuing banks were allowed to determine their own interest rates after considering prevailing conditions in the financial markets.

Following the implementation of the *Essentials of Interest Rate Adjustment,* the permissible gap between the upper and lower interest

rate limits of the short-term unsecured loans (one year or less), the short-term secured loans, and the long-term loans were set significantly larger than before.

To set the stage for a comprehensive interest rate liberalisation, all banks were required since 1 September 1985 to publicly display their loan interest rates. In addition, the gap between the highest and lowest interest rates in respect of medium- and long-term loans was increased to 3.25 percentage points, and that of short-term loan interest rates to 3 percentage points. (From 15 June 1981 no distinction was made between the short-term secured and unsecured loans.)

To further liberalise interest rates on deposits, beginning on 14 July 1975, the stipulated upper limits on deposit rates were imposed only on passbook deposits, passbook savings deposits, time deposits and time savings deposits of less than one year (including one year), and time deposits and time savings deposits of more than one year. However, the commercial banks were still required to publicly display the rates which must be within the upper limits. The self-determination of deposit rates with the prescribed maximum rates was meant to make the banks get accustomed to setting their own rates. From 17 July 1989, the Banking Law was further revised to free both deposit and loan rates. From then on, the commercial banks determined their own rates subject to a condition that their rates must be publicly displayed.

With regard to foreign exchange liberalisation, the large increase in foreign trade and surplus as well as the huge inflows of foreign capital, have raised the banks' holdings of foreign assets greatly. In order to lessen the impact on the money supply and maintain domestic stability, the ROC Government on 10 July 1978 announced that the New Taiwan (NT) dollar would no longer be fixed to the US dollar. Following this, the Government on 20 December 1978, promulgated a partially revised *Statute for Foreign Exchange Regulation*. On 1 February 1979, the Foreign Exchange Market was established, within the framework of a flexible exchange rate system. The range in which the NT dollar spot exchange rates could fluctuate against the US dollar was determined daily in a consensus between the authorised banks and the CBC. Later, in March 1980, the current daily exchange rate was determined by the authorised banks themselves without the participation of the Central Bank provided that it lay between the current day's range of buying and selling US dollar spot exchange rates in the foreign

exchange market. At the same time, the existing foreign exchange clearing system which required that foreign exchange income be sold to the Central Bank via authorised banks was abolished. As a result of the implementation of the *Regulations Governing the Handling by Authorised Banks of Foreign Exchange Deposits,* all foreign exchange income had to be deposited in a foreign exchange deposit account first and could only be used for purposes as guided by the regulations. They could, however, alternatively be sold in the foreign exchange market through the authorised foreign exchange banks. It was hoped that, by slowing down the process by which exporters converted their foreign exchange earnings into local currency, the impact of foreign exchange transactions on the supply of the NT dollar would be reduced.

As the foreign trade surplus continued to rise significantly and in order to respond to the needs of financial internationalisation and liberalisation, the ROC Government on 14 May 1986 again revised the *Statute for Foreign Exchange Regulation.* The basis for settling foreign exchange income and expenditure was shifted from one requiring import and export licenses to a foreign exchange reporting system. From this time on, the compilation of foreign trade statistics is no longer beared importers' and exporters' foreign exchange income and expenditure as in the Customs' records. This gave importers and exporters greater freedom in adjusting their foreign exchange funding.

The *Statute for Foreign Exchange Regulation* was further revised on 26 June 1987 to entrust the power to the Executive Yuan to suspend the articles which are concerned with foreign receipts and payments that needed to be settled with the Central Bank or with authorised foreign exchange banks where the foreign exchange reserves were significantly too large or under other relevant extreme conditions.

The Executive Yuan on 7 July 1987 resolved that, as from 15 July the general public was able to freely hold and utilise foreign exchange. However, in order to maintain domestic financial stability, the foreign exchange transactions, excluding those related to visible and invisible trade, continued to be controlled. On 13 July 1987, the CBC issued the *Regulations Governing the Settlement of Private Sector Inward Remittances and Regulations Governing the Settlement of Private Sector Outward Remittances,* stipulating that each individual (natural as well as legal person) would be able to freely apply to sell foreign exchange

up to US$ 50,000, and to buy foreign exchange up to US$ 5 million per year. Furthermore, information on how the foreign exchange was used were required for the purpose of compiling the balance of payments statistics. After the foreign exchanges had been converted, they would be submitted to the CBC. If the amount required exceed the US$ 50,000 and US$5-million limits, permission from the CBC was needed. Foreign exchange receipts and payments arising from foreign trade were not subject to these restrictions.

The foreign exchange limits on non-trade-related capital account underwent several revisions and relaxations. The most recent rule was enforced on 31 December 1993 when the maximum was raised to US$ 10 million per year for corporations and enterprises, whose establishments have been approved by the ROC Government, provided that settlement is made within one year. For other establishments which are registered with the Government and residents, the maximum amount per person per year that may be outwardly or inwardly remitted is US$ 5 million.

In terms of exchange rate liberalisation, on 27 March 1989, exchange rates were allowed to fluctuate more freely as the CBC abolished the regulation which prevented fluctuations in the exchange rate from exceeding 2.25 percent in either direction of the central rate. This central rate was based on the weighted average value of US dollar transacted in the interbank market on the previous business day. However, to protect small exporters and importers from the consequent larger fluctuations of exchange rates, the authorised foreign exchange banks are required to set at 10:00 a.m. on each business day, the exchange rates in exchange settlements involving a sum of up to US$ 30,000. In addition, the discount or premium for purchases and sales of such foreign exchange could not be more than NT$ 0.1 over or under the rate set by the authorised banks. Later in the same year, the transaction limit was lowered to US$ 10,000 to lessen the hedging risk of the authorised banks.

The above arrangement was, however, dismantled on 29 December 1990. The authorised banks can now set these rates and publicly display them according to their particular foreign exchange funding conditions. As a result, exchange rates became fully deregulated.

On the issue of the internationalisation of the NT dollar, the Executive Yuan on 26 May 1983 promulgated the *Regulations Governing*

Investment and Foreign Exchange Settlement by Overseas Chinese and Foreigners in Securities, allowing overseas Chinese and foreigners to purchase beneficiary certificates issued by local securities investment trust companies, and underwritten by foreign underwriting institutions, in order to invest in the local securities market. This procedure was subsequently simplified on 28 December 1990 when the Executive Yuan revised the above regulation, allowing foreign investors who had received permission to directly invest in local securities.

On 25 June 1994, non-residents (both natural and legal persons including financial institutions) are allowed to open NT dollar accounts with local financial institutions, without prior approval of the Ministry of Finance or the CBC. Foreign natural persons were, however, limited to opening passbook deposit accounts.

9.2 Implementation of Monetary Policy

Interest rate and exchange rate deregulation led to greater volatility in the interest rates and exchange rates, which in turn influenced the transmission channels of monetary policy.

Concerning monetary policy instruments, direct control over bank interest rates was an important monetary policy instrument in the ROC before the interest rate deregulation. The high deposit rate policy was believed to have contributed to price stabilisation and savings accumulation in the 1950s and 1960s. However, this instrument became less effective as interest rates became liberalised and with the entrance of new private banks. Similarly, the other direct instrument, namely the reserve requirements, became less effective as some new financial market instruments emerged along with the process of financial reforms and deregulation.

The changes in monetary policy will affect bank deposits, bank credit, stocks, bonds and real estate and ultimately aggregate demand. Specifically, the changes in the assets market will influence the final expenditure on products through the following channels: the interest rate effect, credit availability effect, wealth effect, Tobin Q effect, liquidity effect, and exchange rate effect. Following the deregulation of interest rates, stock prices and exchange rates, the channels of interest effect, Tobin Q effect and exchange rate effect seem to have become increasingly important.

The seven monetary policy instruments actively used by the Central Bank in the ROC, are namely, the conduct of open market operations; the issuance of Treasury bills-B, certificates of deposit and savings bonds; discount windows; reserve requirement; selective credit policy; and, adopting credit controls.

In addition to the ultimate goals of economic growth, price stability and external balances, the goals of exchange rate stability, sound financial conditions and bank operations are also included as the ultimate goals of monetary policy in the ROC. The priority of these policy goals depends on what the primary concern for the current economic and financial situations is at that time. Most of the time, price stability is considered as the most important goal.

9.3 Impact of Reforms on Financial Variables

With regard to interest rates, Table 2.9 suggests that as a consequence of gradual liberalisation in Taiwan, this variable moves rather discreetly. However, due to high per-capita income, the ratio of M2 to gross domestic product was relatively high and even higher than 100 percent after 1985, even though interest rates have been low. As for the exchange rate, prior to February 1979, Taiwan adopted a fixed exchange rate regime in which the NT dollar was pegged to the US dollar. However, after the Taipei Foreign Exchange Market was established in February 1979, a managed floating exchange rate regime was adopted instead. Subsequently, the Central Bank of China allowed the exchange rate to be determined by market forces and only intervened as and when necessary to smoothen the markets. Hence, since 1980 the exchange rate of NT dollar vis-à-vis the US dollar was no longer fixed.

10. THAILAND

10.1 Chronology of Financial Reforms

Thailand's financial reforms plan has been implemented in a gradual process. In the beginning of 1980s, the measures implemented were rather piece-meal directed at specific problems. For example, the Financial Institutions Lending Rate Act, B.E. 2523 (1980) was promulgated by the Ministry of Finance in order to remove the lending rates

Table 2.9

TAIPEI, CHINA
Financial Variables

Year	Deposit Rate1/ (Percent)	Exchange Rate (NT$/US$)	Currency/ GDP	Demand Dep./GDP	M1/GDP	QM/GDP	M2/GDP
1980	11.00	36.015	7.40	19.21	26.61	37.34	63.95
1981	11.50	36.849	7.23	18.23	25.46	38.32	63.78
1982	9.60	39.124	7.28	19.96	27.24	46.77	74.01
1983	7.50	40.065	7.60	21.59	29.19	55.46	84.65
1984	7.00	39.597	7.18	21.40	28.58	62.51	91.09
1985	6.31	39.849	7.39	22.99	30.38	76.07	106.44
1986	6.25	37.838	8.09	31.76	39.85	75.69	115.54
1987	6.25	31.74	8.84	39.81	48.66	80.88	129.54
1988	6.25	28.588	9.17	46.61	55.78	84.94	140.71
1989	9.25	26.407	6.41	46.93	53.34	92.90	146.24
1990	8.75	36.893	8.40	37.36	45.76	101.83	147.59
1991	7.53	26.815	8.24	37.79	46.03	111.97	158.00
1992	7.25	25.164	8.37	38.41	46.78	123.34	170.12
1993	7.10	26.771	8.22	41.04	49.27	129.49	178.75

1/ Refers to 6-month time deposits rate.

Source: **Key Indicators of Developing Asian and Pacific Countries,** Asian Development Bank.

ceiling of financial institutions which have been fixed at 15 percent. This enabled the Ministry of Finance and the Bank of Thailand (BOT) to be more flexible in setting ceiling interest rates in line with world interest rates and domestic money market conditions. In addition, the repurchase market was established in 1979 in a move towards open market operations. As for the development in the foreign exchange rates regime, the exchange rate system was switched from a dollar-pegging system to a managed float based on a trade-weighted basket of currencies since November 1984.

In the latter half of the 1980s, with the rapid growth of the Thai economy and the globalisation and internationalisation of financial markets, a systematic and comprehensive financial reform has been formulated. It was decided that the reform would be implemented in phases. The first phase with a duration of three years and with the aim of enhancing the competitiveness of the banking sector. This phase includes four major areas: (i) deregulation and liberalisation; (ii) development of financial instruments and facilities; (iii) strengthening the supervision and examination of the financial system; and, (iv) development of the payment system.

The second phase of the three-year financial reform plan (1993-1995) has the objectives of raising financial markets efficiency, mobilising domestic savings and developing Thailand to become a regional financial centre. These targets are consistent with the national economic policies as stated in the Seventh National Economic and Social Development Plan (1992-1996).

In terms of exchange control deregulation, though various forms of relaxation have been gradually implemented, the first concrete sign of foreign exchange liberalisation was the official acceptance of the obligation under Article VIII of the Fund's Articles of Agreement announced on 21 April 1990, along with the launching of the first phase of exchange control deregulation.

It should be noted, however, that the exchange control regulation has already conformed to the Article VIII requirements even before their official acceptance by Thailand. There were no restrictions on payments on current account transactions while a multiple currency system has never been practised. Although restrictions were imposed on certain transactions in the capital account, nevertheless on the whole

capital was allowed to move freely to a certain extent. The official acceptance of Article VIII served to reaffirm the Government's liberalisation policy which in turn resulted in greater confidence in the stability of the financial system.

The first stage of exchange control deregulation that accompanied the announcement consisted of the following components:

(a) Allowing commercial banks to engage in foreign exchange dealings for trade-related transactions, i.e., imports and exports, without prior approval from the Bank of Thailand;

(b) Raising the limit on foreign exchange allowed to be carried out by residents for travelling expenses overseas to US$ 20,000 per trip; and,

(c) Allowing commercial banks to approve outward transfers of foreign exchange in small amounts not exceeding US$ 500,000 for remittance of loans, sale of securities, or liquidation of companies.

The above revisions could be implemented immediately as the legislation and the system was ready for the most part.

The second phase was implemented almost one year later to allow time for adjustments by commercial banks and necessary legal amendments. On 1 April 1991, the Bank of Thailand announced further deregulation measures allowing greater flexibility to the private business operation and the general public to transact in foreign exchange. All exchange control forms were either abolished or simplified for commercial banks' reporting purposes only. Prior government approval was no longer required except for the outward transfer of foreign exchange for investment above a certain limit and for the acquisition of real estate and investment in the stock-market abroad. The reason behind these remaining restrictions is that domestic savings should be directed for productive use locally rather than for speculative purposes abroad. Foreign funds, on the other hand, can now move in and out rather freely. Moreover, individuals and juristic entities are now allowed to open foreign currency account in Thailand.

Subsequently, on 30 April 1992, further modifications on the foreign exchange regulations were implemented. Exporters are now al-

lowed to transfer foreign currency deposits for overseas debt payment. Alternatively, they could also make payment in baht with their non-resident baht accounts. With regard to foreign currency accounts, commercial banks are free to approve the withdrawal of funds for payment overseas provided that certain conditions are met while foreign currency deposits from the Government and state enterprises are now accepted.

At present, exchange control is quite minimal and mainly for the capital transactions. Government intervention has been greatly reduced in a move towards a full integration of the domestic financial system into the global system. The deregulation measures have increased the flexibility of the system and significantly enhanced the public's conveniences, both in the local and foreign exchange transactions. In addition, they have helped to encourage foreign investment since the system is not hindered by heavy restrictions. Accordingly, exchange control deregulation has helped accelerate the development of Thailand's financial system into a regional financial centre as planned.

In conclusion, the foreign exchange system adjustments and exchange control liberalisation have been complementary in creating a more flexible financial system. In the future, there are plans to make the foreign exchange system even more flexible to an ultimate floating exchange rate regime now that the interest rate system has been fully floated.

With the removal of the 15-percent legal ceiling on the lending rate in 1980, the liberalisation measures were gradually implemented. In June 1989, the ceiling of the time deposit rates with maturity of over one year was abolished. Similarly, the ceiling on time deposit with one-year maturity was removed in March 1990. Finally, in January 1992, all remaining ceilings on bank deposits were lifted.

In order to mobilise savings, increase the effectiveness of monetary policy and allow market forces to play a larger role, new financial instruments and facilities were introduced. These include the enactment of the Securities and Exchange Act 1992 permitting the private-limited companies to issue debt instruments to mobilise funds directly from the public; the removal of the double taxation impact of financial instruments transactions; the amendment of Commercial Banking Act and the Act on the Undertaking of Finance Business, Securities Busi-

ness and Credit Foncier Business to permit banks and finance companies to issue Negotiable Certificates of Deposit (NCDs); and, the setting up of a credit rating agency, namely the Thai Rating and Information Services (TRIS) which started operations in July 1993.

To develop Thailand as a regional financial centre, in March 1993, 46 commercial banks which consist of 15 Thai commercial banks and 31 foreign banks, have been awarded licenses to operate the international banking facilities (IBF). Major activities in the IBF include out-out and out-in transactions in foreign currencies. The set-up of this funding centre marks the first of the three stages to develop Thailand as a regional financial centre.

In 1994, additional measures were taken to allow foreign financial institutions which have participated in the IBF to open branches outside Bangkok especially in the border provinces. This is to help expand the role of IBF in promoting the border trade between Thailand and its neighbouring countries and to promote economic development in rural areas.

Finally, to strengthen the foreign trade sectors especially the small exporters in the up-country, the Export-Import Bank of Thailand was established and commenced operations on 1 February 1994.

10.2 Implementation of Monetary Policy[10]

During the period of economic difficulties in the 1980s, targets on money supply, domestic credits and reserve money were rigorously set and followed. During that period, a relatively stable and predictable relationship between monetary variables and real variables was observed which helped maintain the effectiveness of monetary policy via the control of reserve money. In addition, structural adjustment measures were implemented to remove the inherent rigidities and set the stage for a sustainable long-term growth. When the economy was stabilised in the late 1980s, the need to control reserve money in such a rigorous manner became less urgent. This, coupled with the financial

10. Source: Jaturong, J., et. al., ***Monetary Management in Thailand,*** Background paper presented at the International Conference on Monetary Management, Bali, Indonesia, December 1994

globalisation and domestic financial reforms, has to some extent destabilised the behaviour of demand for money and make it less predictable. Accordingly, the quantitative targeting technique seemed to lose its efficacy.

Recently, the Bank of Thailand has shifted its emphasis to interest rate and moral suasion, while monitoring monetary aggregates as one of the informative variables. The economic condition is assessed through a composite indicator comprising various indicators such as production and investment indices, capacity utilisation, loans demand of prime customers, and money market condition.

Monetary instruments which have been actively used by the Bank of Thailand are direct control on monetary aggregate; money market and credit operation; prudential regulations; credit planning; and, moral suasion. The implementation of these instruments is described below.

Up until late 1980s, the Thai financial system was still heavily regulated. Monetary management was conducted largely through the use of direct control measures. Interest rate ceilings were imposed on loans and deposits of banks and finance companies. Selective credit policy was used to direct banks to lend a prescribed portion of deposits to the agricultural sector. Interest rates on loans to the priority sector were capped below the market rates. Credit control was used in the wake of the second oil shock, no ceilings were briefly placed on banks' credit for imports and then on their overall credit expansion. Prudential regulations had also been used as a monetary instrument. For example, a capital-to-risk asset ratio was at times modified to encourage loans to certain sectors by classifying them as non-risk assets. Even banks' net foreign exchange exposure limit was once raised temporarily in order to absorb excess domestic liquidity.

To ensure that development was financed at a low cost, interest rates on government bonds were mostly below market rates which the tender rates for Treasury bills capped. This practice was possible because of the captive nature of the market. Since 1970, the commercial banks had been required to hold government securities up to a certain ratio of their deposits (16 percent at its highest) as a precondition for opening new branches. They were, however, allowed to sell part of the mandatory bond holdings above some threshold level in the repurchase market. Variation of this threshold gave the authority

an additional tool to regulate the overall liquidity condition through the repurchase market. Meanwhile, exchange control regulations were being rather strict with the exchange rate being fixed with the US dollar throughout the period.

The above scenario changed drastically since 1989 with the drive towards financial liberalisation. Most significantly, interest rate ceilings were gradually lifted until the interest rates became completely free in 1992. The use of government bonds for branch opening condition was gradually lowered partly because of the shortage in government securities as the government operations turned to surplus and was abandoned in 1993. Likewise, the selection credit policy in favour of the agriculture sector was relaxed to the extent that it has now become virtually non-binding. Exchange control, too, was greatly relaxed through successive rounds of deregulation measures.

While the use of direct control measures have been largely abandoned, relatively the Bank of Thailand continued to conduct its money market and credit operations through the various "windows". These comprise the repurchase market, loan window, refinancing and other credit facilities and foreign exchange transactions.

The repurchase market for government bonds has been the most important window used for liquidity management purpose. It was established by the Bank of Thailand in 1979 with a view to further developing the fledgling money market, adding liquidity to government bonds, and providing the control bank with a means to monitor and, if necessary, intervene in the money market. Participants could telephone the BOT during the daily two trading sessions to place their buy or sell orders, indicating the amount, interest rate and maturity of the desired transactions. BOT would then try to match demand and supply as well as determine the single "market" repo rate for each maturity through the Dutch auction technique. If the situation warrants the BOT could take a position in the market to either absorb or inject liquidity. Such intervention could be done very discreetly, since the BOT has routinely acted as the matched-principals broker for all repurchase (R/P) transactions.

Today, the R/P market is an important component of the money market in Thailand, having a size comparable to the interbank market. It enables the BOT to influence developments in short-term liquidity

and interest rates which, in turn, serves as references for other money market transactions. However, as a monetary policy tool, the R/P market has some important shortcomings. First, the arrangement does not allow the BOT to take initiative in its open market operations; it could only exercise discretion as to whether, or to what extent, it would redress any imbalance of bids and offers in the market. In other words, the more proactive or "dynamic" operations which could be initiated by the BOT are not yet possible within the existing arrangement. Second, the preference of the market participants on short-term transactions, with over 90 percent of the volume concentrated in the 1-day to 14-day maturities, constraints the BOT's ability to influence developments in liquidity over longer time horizon. To partly overcome this shortcoming, the BOT has in the past issued its own bonds with maturities of 6 months to 1 year when the need to absorb excess liquidity arose.

The loan window embodies the traditional "lender of last resort" function of the BOT. Originally, it was made available only to commercial banks. However, since November 1994, this facility was expanded to finance companies, as the demarcation line between their activities and those of banks has become blurred. Loans are extended against the pledge of government securities at 90 percent of face value for a maximum duration of seven days. Each institution is given a quota based on the size of its deposits or borrowings (in the case of finance companies) from the public. At present the aggregate credit line amounts to some ฿ 18 million. However, since borrowing from this window is subject to a close scrutiny and questions from BOT, it is resorted to only sparingly when the liquidity situation is exceptionally tight. Of more significance in terms of policy, however, is the "bank rate" facility which stimulates the interest rate changed by the BOT to commercial banks and finance companies. Adjustment of the bank rate, which is not very frequent but carries strong announcement effect, sends strong signal to financial institutions as to the future direction of interest rates.

The BOT also provides refinancing and other credit facilities, which are generally related to its development role. As a result, these facilities at times compromised monetary management efforts. A case in point is the refinancing of commercial banks' credit to the priority sector, particularly the export sector. Each bank was allocated a quota within which it could sell eligible promissory notes to the BOT at concession-

ary interest rates. During most of the 1970s and 1980s, the amount of refinancing quota peaked at ฿ 40 billion. This hampered the effort to curb loan demand. Consequently, the BOT took an unprecedented step to restructure the schemes by cutting the refinancing ratio to one-half and thus raising the effective cost for end-users. This effectively restrained a further rise in the demand for refinanced credit. Another major change took place in February 1995 when the whole export credit refinance scheme was transferred to the EXIM bank. Although most of the funding of the EXIM bank is initially provided by the BOT, it is expected that the BOT could gradually reduce this funding responsibility over time. As regard monetary management, the refinancing window gives banks another channel to adjust their liquidity positions. When liquidity is high, banks could hold on to their eligible notes, earning interest not far off the market rates. However, when money becomes tight, banks could within the given quota unload these notes, via EXIM bank, to BOT.

The Exchange Equalisation Fund (EEF) represents another major window that banks can readily access in order to adjust their liquidity. Technically, the EEF serves as a mechanism through which the basket-pegged exchange rate policy is implemented. The EEF would daily announce the mid-rate for US$/Thai baht and stand ready from 8.30 a.m. - 12.00 noon to buy and sell US dollar in an unlimited amount with banks within a predetermined band. Since the transactions are for same-day value, banks have used this open-ended facility as a means to adjust not only their foreign exchange position but also their baht liquidity. Indeed, experience has shown that banks tend to sell dollars to the EEF when money is tight and interest rates are high and, per contra, buy dollars when liquidity is high and interest rates are low. The EEF window therefore use as a "safety valve" for banks to manage their liquidity. In recent years, net foreign exchange purchase by the EEF has been the major source of increase in monetary base, the demand for which naturally rises in tandem with the growing economy.

Major prudential regulations which have direct bearing on the ability of banks to expand money and credit are liquid asset requirement and net foreign exchange exposure limits.

Commercial banks are required to hold specified liquid assets, averaged over a fortnight period, of no less than 7 percent of their deposit base. The liquid assets comprise at least 2-percent non-interest

bearing deposit at the BOT, a maximum 2.5-percent vault cash, and making up the remainder are bonds issued by the Government, approved state enterprises, specialised financial institutions or the BOT. Although this regulation could potentially be a powerful monetary policy tool, it was seldom used since 1979. However, the range of eligible securities was widened recently due to a declining supply of government bonds in the market. The maintenance period was also lengthened (from one week previously) in order to give banks more room to adjust their reserves and thus help somewhat to limit fluctuations in the money market.

Banks also have to comply with net foreign exposure limits. Currently, banks are to run an overbought position of not more than 20 percent of their first-tier capital and 15 percent on the oversold side. The limits were lowered 5 percent each side from the beginning of November 1979, partly to contain banks' foreign borrowing which could otherwise aggravate domestic liquidity situation and fuel inflationary pressure.

With regard to credit limit planning, BOT has always attached a great deal of importance to commercial banks' credit extension, both in terms of overall growth and sectoral distribution. As direct control on bank lending has long been abandoned, the BOT is relying more instead on moral suasion. The process centres on a dialogue and discussion with banks on the growth and direction of their lending as indicated in the credit plans submitted to the BOT. This enables the BOT to better monitor and evaluate both the macro picture as well as the micro performance of each bank. So far, BOT's opinion has been well heeded by the banking community. Indeed, moral suasion is occasionally used to influence banks' behaviour in other areas of their operations as well.

The objective of monetary policy is to achieve sustainable economic growth with a reasonable level of internal and external stability, as well as a sound financial system. With respect to stability, low and stable inflation is the most important aim of the Bank of Thailand's monetary policy.

10.3 Impact of Reforms on Financial Variables

Similar to other SEACEN countries which allowed interest rates to be liberalised gradually, the interest rates moved discretely as shown

Table 2.10

THAILAND
Financial Variables

Year	Deposit Rate1/ (Percent)	Exchange Rate (Baht/US$)	Currency/ GDP	Demand Dep./GDP	M1/GDP	QM/GDP	M2/GDP
1977	7.00	20.400	7.11	4.14	11.25	26.12	37.37
1978	7.00	20.336	6.80	4.36	11.16	25.75	36.93
1979	7.00	20.419	7.30	4.06	11.36	25.42	36.80
1980	10.00	20.476	6.97	3.87	10.84	27.40	38.24
1981	11.00	21.820	6.29	3.35	9.64	28.82	38.46
1982	11.00	23.000	6.59	2.96	9.55	34.71	44.26
1983	11.00	23.000	6.55	2.44	8.99	40.17	49.16
1984	13.00	23.639	6.52	2.60	9.12	46.14	55.26
1985	13.00	27.159	6.31	2.15	8.46	50.05	58.51
1986	9.50	26.299	6.49	2.86	9.35	51.98	61.33
1987	7.00	25.723	6.92	3.65	10.56	53.96	64.52
1988	9.50	25.294	6.57	3.28	9.85	53.59	63.44
1989	9.50	25.702	6.70	3.14	9.84	58.13	67.97
1990	15.50	25.585	6.70	2.82	9.53	65.02	74.55
1991	10.50	25.517	5.96	2.79	8.88	64.26	73.13
1992	9.00	25.400	6.42	2.36	8.90	66.60	75.50
1993	7.00	25.319	n.a.	n.a.	n.a.	n.a.	n.a.

1/ Refers to maximum rate offered by commercial banks on 6-month time deposits.

Sources: ***International Financial Statistics, Yearbook*** 1994, International Monetary Fund.
International Financial Statistics, December 1994, International Monetary Fund.
Key Indicators of Developing Asian and Pacific Countries, 1994, Asian Development Bank.

in Table 2.10. However, the ratio of M2 to gross domestic product (GDP) increased substantially in 1984 due to a big jump in deposits rates from 11.0 percent in 1983 to 13.0 percent in 1984 which was in line with the increasing "bank rates" announced by the Bank of Thailand in December 1983. As for the exchange rate development, from November 1978 to July 1981 the baht was pegged to the US dollar. A fixed exchange rate regime was adopted from July 1981 until 1984 when a basket pegging regime was implemented.

Chapter 3

METHODOLOGY, ANALYTICAL FRAMEWORK AND EMPIRICAL RESULTS

In light of the main features of financial reforms discussed earlier, this Chapter proceeds to examine the impact of financial reforms on the traditional intermediate targets and the effectiveness of monetary policy as well as to explore alternative intermediate targets for effective implementation of monetary policy.[11]

Generally, three practical criteria could be used to assess the appropriateness of a choice of monetary aggregates as an intermediate target. First, the intermediate target should be closely and reliably related to economic activity. Second, movements of the target should contain information about the future movements of monetary goals. Third, the target should be at least potentially controllable by the monetary authorities.[12]

Of the above three criteria, this study mainly focuses on the investigation of the information content of money with respect to the future movements of prices and real income as goals of monetary policy. The methodology is based on the recent approach and a new interpretation of the Vector Auto Regression model which has been used by Friedman and Kuttner (1992) and by Hamann (1993).

The use of the Vector Auto Regression (VAR) model in this study is unlike Hamann (1993) which covered the periods both before and after financial reforms. The sample period of this study covers only the period after financial reforms (see Tables 3.1 to 3.12 for detailed sample periods).[13]

11. See Objectives of the Research Project on page 1.

12. See Mishkin (1992), p. 448 and The Bank of Korea (1995), p. 31.

13. For other studies which use the period before and after the financial reforms, see Valdepeñas, Vicente Jr., B., (1994), and Tseng and Corker (1991).

1. Vector Auto Regression[14]

$$\Delta p_t = \sum_{i=1}^{4} \alpha^p_i \, \Delta p_{t-i} + \sum_{i=1}^{4} \beta^p_i \, \Delta m_{t-i} + \sum_{i=1}^{4} \gamma^p_i \, \Delta y_{t-i} + \varepsilon_{pt} \qquad (1)$$

$$\Delta y_t = \sum_{i=1}^{4} \alpha^y_i \, \Delta p_{t-i} + \sum_{i=1}^{4} \beta^y_i \, \Delta m_{t-i} + \sum_{i=1}^{4} \gamma^y_i \, \Delta y_{t-i} + \varepsilon_{yt} \qquad (2)$$

$$\Delta m_t = \sum_{i=1}^{4} \alpha^m_i \, \Delta p_{t-i} + \sum_{i=1}^{4} \beta^m_i \, \Delta m_{t-i} + \sum_{i=1}^{4} \gamma^m_i \, \Delta y_{t-i} + \varepsilon_{mt} \qquad (3)$$

where: p = Price index
y = Real income
m = Money such as currency, RM, M1, M2 or credit
ε = Error term

In the above model, the information content of money is assessed by testing the significance of the bs in equations (1) and (2).[15] Notice that what is being tested is the marginal predictive content of money; that is, not just whether some 'm' can predict the future movements in output (prices), but whether it can predict the part of the movement in output (prices) not already explained by the observed past movements in output (prices) itself (themselves). If prices and output constitute the policy goals of the monetary authorities, the money variables that prove to be significant in equations (1) and (2) contain important information which could be used by policy-makers in the formulation of their short-run policies.[16]

14. We share with Hamann (1993) that there is a lack of consensus on a rule for determining lag lengths in the multivariate VAR. In this study, therefore, the optimal 4 lag periods were used uniformly. Moreover instead of using annual data this study used quarterly data which is subject to a seasonal pattern. Hence, all variables were seasonally adjusted before the regressions were estimated in this study.

15. Unlike the application of VAR model for causality test where bidirectional test is needed, only one direction is needed for testing the information content, the significance test for equation (3) need not necessarily be carried out. See Hamann (1993), and Friedman and Kuttner (1992).

16. Since this model focusses on the predictive relationship between money and economic activity, the above VAR model can be interpreted as a reduced form which represents a transmission mechanism according to a monetarist's view, see e.g. Mishkin (1992). A study using a structural model has been conducted by The SEACEN Centre, see The SEACEN Centre (April 1981).

With the implementation of financial reforms, the roles of interest rate and exchange rates have become more important as channels to transmit monetary policy and therefore the significance of these variables also need to be investigated.

2. Empirical Results

Among the major measures of financial reforms, liberalisation of interest rates was perceived as one of the reforms which could alter the transmission mechanism of monetary policy. As mentioned earlier, the empirical test in this study is based on the period after interest rates are allowed to be determined by market conditions.

As reported in the Chapter 2, in terms of interest rates liberalisation, the SEACEN member countries can be divided into two groups. The first group consists of the member countries which liberalised interest earlier, namely, Indonesia in 1983, Malaysia in 1978, the Philippines in 1981, and Singapore in 1975. The second group comprises member countries which introduced the reforms later, namely, Korea in 1988, Myanmar in late 1988, Nepal in 1989, Sri Lanka in 1987, ROC-Taipei in 1989, and Thailand in 1992.

Based on the above information, the empirical test using a sample period of after major interest rate reforms, could only be carried out for Indonesia, Malaysia, Singapore and the Philippines. In addition, the study also includes Korea and Sri Lanka which liberalised the interest rates gradually.

This section presents empirical results of a vector auto regression for each of these six SEACEN member countries. Before introducing the variables into the VAR model, unit root tests were employed to test the stationarity of the data. Tables 3.1 to 3.6 show unit root test results while Tables 3.7 to 3.12 present the F-test results.

As are shown in Tables 3.1 to 3.6, after all the variables were converted in logarithm form and seasonally adjusted, they were found to be stationary after a first difference.

In order to investigate the predictive relationship of money aggregates, interest rates and exchange rate to economic activity, equations (1) and (2) were estimated seven times for each country, namely five

monetary aggregates (currency, reserve money, M1, M2, credit), interest rates, and exchange rate. The results of these tests are reported in Tables 3.7 through 3.12.

As shown in Table 3.7, M1, credit and interest rate are significantly related to real income in Indonesia. As for Korea, the results suggest that credit and M2 are significant in predicting prices and real income (Table 3.8).

As for Malaysia, based on the F-statistics in Table 3.9, currency, M1, and reserve money are found to be significantly related to prices and real income while M2 is not significant at all. This is consistent with the earlier qualitative discussion that its movements are distorted by the disintermediation of deposits from commercial banks to the other non-bank financial institutions, particularly finance companies. For the Philippines, Table 3.10 suggests that all monetary aggregates are significantly related to future movements of real income, with M2 having the highest F-statistics and also significance to prices.

Surprisingly, reserve money and M1 turn out to be significant in relation to real income in the case of Singapore (Table 3.11). Meanwhile, in the case of Sri Lanka, according to Table 3.12, M1 is found to be an important variable in predicting the future behaviour of prices.

It is found that interest rates are significantly related to real income in the case of Indonesia and to price in the case of Singapore (Tables 3.7 and 3.11). However, despite this evidence, it should be remembered that interest rates in Singapore are actually uncontrollable given the small and open economy of this country. It is worth noting that in the case of Indonesia, the interest rate in relation to real income is significant only at the 10-percent level compared with the significance of M1 at the 5-percent level. For Singapore, as expected, exchange rate is significantly related to prices (Table 3.11).

Based on the magnitudes of the F-statistics, M1 turned out to be the "best" intermediate target for Malaysia and Sri Lanka, and M2 for the Philippines. Meanwhile, in the case of Korea and Indonesia, credit has the highest F-statistic followed by M2 and M1 respectively. In the case of Indonesia, after 1983, financial reform credit was no longer controlled by the Central Bank, therefore making M1 the ideal intermediate target. Similarly, M2 is also more controllable than credit in the

case of Korea, hence making M2 an appropriate intermediate target. On the other hand, since monetary aggregates and interest rates cannot be controlled in the case of Singapore, the exchange rate appears to be the "best" intermediate target for this country.

Accordingly, the empirical results suggest that there is more significant predictive relationship between monetary aggregates and prices as well as real income rather than between interest rates and these variables. It is therefore implied that, with the exception of Singapore, even after financial reforms, monetary aggregates are still ideal intermediate targets of monetary policy in most SEACEN countries.

Table 3.1

INDONESIA

Unit Root Test Results

(Period: 1983.1-1992.4)

Variable Names 1/	Level of Stationarity	D-F "t" Statistics with		
		Constant and Trend	Constant Only	No Constant and No Trend
1. Currency	1	-	-6.561004 ***	-
2. Credit	1	-	-3.036287 **	-
3. RM	1	-	-6.386272 ***	-
4. M1	1	-	-4.315613 ***	-
5. M2	1	-	-3.213779 **	-
6. Interest Rate	1	-	-	-3.781407 ***
7. Exchange Rate	1	-	-	-3.929848 ***
8. Price Index	1	-	-	-3.697259 ***
9. Real Income	1	-	-6.821862 **	-

1/ All are in logarithm form and seasonally adjusted.
*** Significant at 1% level
** Significant at 5% level
* Significant at 10% level

Table 3.2

KOREA

Unit Root Test Results

(Period: 1979.4-1993.2)

Variable Names 1/	Level of Stationarity	D-F "t" Statistics with		
		Constant and Trend	Constant Only	No Constant and No Trend
1. Currency	1	-	-6.940339 ***	-
2. Credit	1	-	-4.399976 ***	-
3. RM	1	-	-5.404574 ***	-
4. M1	1	-	-	-3.520055 ***
5. M2	1	-	-4.179209 ***	-
6. Interest Rate	1	-	-	-4.744523
7. Exchange Rate	1	-	-	-2.760871 **
8. Price Index	1	-	-6.524203 ***	-
9. Real Income	1	-	-7.677215 ***	-

1/ All are in logarithm form and seasonally adjusted.
*** Significant at 1% level
** Significant at 5% level
* Significant at 10% level

Table 3.3

MALAYSIA

Unit Root Test Results

(Period: 1978.1-1992.4)

Variable Names 1/	Level of Stationarity	D-F "t" Statistics with		
		Constant and Trend	Constant Only	No Constant and No Trend
1. Currency	1	-	-	-3.064948 ***
2. Credit	1	-	-3.546016 **	-
3. RM	1	-	-4.716621 ***	-
4. M1	1	-	-3.642199 ***	-
5. M2	1	-	-7.319312 ***	-
6. Interest Rate	1	-	-	-4.306924 ***
7. Exchange Rate	1	-	-	-5.698767 ***
8. Price Index	1	-	-	-1.978479 **
9. Real Income	1	-	-	-2.656645 ***

1/ All are in logarithm form and seasonally adjusted.

*** Significant at 1% level

** Significant at 5% level

* Significant at 10% level

Table 3.4

THE PHILIPPINES

Unit Root Test Results

(Period: 1982.1- 1993.2)

Variable Names 1/	Level of Stationarity	D-F "t" Statistics with		
		Constant and Trend	Constant Only	No Constant and No Trend
1. Currency	1	-	-5.360157 ***	-
2. Credit	1	-	-	-2.569816 *
3. RM	1	-	-5.939559 ***	-
4. M1	1	-	-4.986249 ***	-
5. M2	1	-	-4.581186 ***	-
6. Interest Rate	1	-	-	-3.127505 ***
7. Exchange Rate	1	-	-	-2.709423 ***
8. Price Index	1	-	-	-8.927519 ***
9. Real Income	1	-	-5.765889 ***	-

1/ All are in logarithm form and seasonally adjusted.
*** Significant at 1% level
** Significant at 5% level
* Significant at 10% level

Table 3.5

SINGAPORE

Unit Root Test Results
(Period: 1975.1-1993.2)

Variable Names 1/	Level of Stationarity	D-F "t" Statistics with		
		Constant and Trend	Constant Only	No Constant and No Trend
1. Currency	1	-	-4.144509 ***	-
2. Credit	1	-	-6.147472 ***	-
3. RM	1	-	-5.532696 ***	-
4. M1	1	-	-5.816773 ***	-
5. M2	1	-	-4.940955 ***	-
6. Interest Rate	1	-	-	-5.709650 ***
7. Exchange Rate	1	-	-6.745690 ***	-
8. Price Index	1	-	-3.570794 ***	-
9. Real Income	1	-	-6.147472 ***	-

1/ All are in logarithm form and seasonally adjusted.
*** Significant at 1% level
** Significant at 5% level
* Significant at 10% level

Table 3.6

SRI LANKA

Unit Root Test Results

(Period: 1978.4-1992.4)

Variable Names 1/	Level of Stationarity	D-F "t" Statistics with		
		Constant and Trend	Constant Only	No Constant and No Trend
1. Currency	1	-5.748003 ***	-	-
2. Credit	1	-	-4.202589 ***	-
3. RM	1	-	-6.042027 ***	-
4. M1	1	-	-6.830588 ***	-
5. M2	1	-	-4.181679 ***	-
6. Interest Rate	1	-	-	-4.801823 ***
7. Exchange Rate	1	-	-	-2.881572 ***
8. Price Index	1	-	-3.777003 ***	-
9. Real Income	1	-	-	-4.268945 ***

1/ All are in logarithm form and seasonally adjusted.
*** Significant at 1% level
** Significant at 5% level
* Significant at 10% level

Table 3.7

INDONESIA

F-Statistics for Financial Variables
(Period: 1984:2-1992:4)

Variable Name 1/	F-Statistics	
	Price 1/	Real Income 1/
A. Three-Variable System (Financial Variable, Price Index, Real Income)		
1. Currency	0.88	0.53
2. Credit	1.17	3.73 **
3. RM	2.13	0.43
4. M1	0.78	3.41 **
5. M2	0.32	1.56
6. Interest Rate	0.72	2.24 *
7. Exchange Rate	1.54	2.09

1/ All are in logarithm form and seasonally adjusted.
*** Significant at 1% level
** Significant at 5% level
* Significant at 10% level

Table 3.8

KOREA

F-Statistics for Financial Variables
(Period: 1981:1-1993:2)

Variable Name 1/	F-Statistics	
	Price 1/	Real Income 1/
A. Three-Variable System (Financial Variable, Price Index, Real Income)		
1. Currency	0.21	1.05
2. Credit	4.29 ***	2.28 *
3. RM	0.33	0.65
4. M1	1.04	1.10
5. M2	3.13 **	2.31 *
6. Interest Rate	0.81	0.55
7. Exchange Rate	0.65	1.46

1/ All are in logarithm form and seasonally adjusted.
*** Significant at 1% level
** Significant at 5% level
* Significant at 10% level

Table 3.9

MALAYSIA

F-Statistics for Financial Variables
(Period: 1979:2-1992:4)

Variable Name 1/	F-Statistics	
	Price 1/	Real Income 1/
A. Three-Variable System (Financial Variable, Price Index, Real Income)		
1. Currency	2.77 **	2.58 **
2. Credit	2.98 **	0.75
3. RM	2.84 **	2.97 **
4. M1	3.98 ***	3.18 **
5. M2	1.44	0.87
6. Interest Rate	0.90	0.34
7. Exchange Rate	0.53	0.77

1/ All are in logarithm form and seasonally adjusted.
*** Significant at 1% level
** Significant at 5% level
* Significant at 10% level

Table 3.10

THE PHILIPPINES

F-Statistics for Financial Variables
(Period: 1983:2-1993:2)

Variable Name 1/	F-Statistics	
	Price 1/	Real Income 1/
A. Three-Variable System (Financial Variable, Price Index, Real Income)		
1. Currency	0.22	2.63 **
2. Credit	0.51	0.49 **
3. RM	1.15	4.61 ***
4. M1	0.66	3.16 **
5. M2	3.97 ***	10.85 ***
6. Interest Rate	0.93	1.18
7. Exchange Rate	1.20	1.00

1/ All are in logarithm form and seasonally adjusted.
*** Significant at 1% level
** Significant at 5% level
* Significant at 10% level

Table 3.11

SINGAPORE

F-Statistics for Financial Variables
(Period: 1976:2-1993:2)

Variable Name 1/	F-Statistics	
	Price 1/	Real Income 1/
A. Three-Variable System (Financial Variable, Price Index, Real Income)		
1. Currency	1.53	1.91
2. Credit	0.52	0.43
3. RM	0.54	2.09 *
4. M1	0.77	2.93 **
5. M2	1.56	1.49
6. Interest Rate	2.79 **	0.98
7. Exchange Rate	2.36 *	1.59

1/ All are in logarithm form and seasonally adjusted.
*** Significant at 1% level
** Significant at 5% level
* Significant at 10% level

Table 3.12

SRI LANKA

F-Statistics for Financial Variables
(Period: 1980:1-1992:4)

Variable Name 1/	F-Statistics	
	Price 1/	Real Income 1/
A. Three-Variable System (Financial Variable, Price Index, Real Income)		
1. Currency	0.99	1.55
2. Credit	0.80	0.96
3. RM	0.83	1.52
4. M1	2.22 *	1.41
5. M2	1.26	0.34
6. Interest Rate	0.97	1.27
7. Exchange Rate	1.84	0.87

1/ All are in logarithm form and seasonally adjusted.
*** Significant at 1% level
** Significant at 5% level
* Significant at 10% level

Chapter 4

PROBLEMS AND ISSUES IN IMPLEMENTING MONETARY POLICY

Financial reforms especially in terms of interest rate liberalisation which have been undertaken by SEACEN countries were generally successful in mobilising funds and in improving the efficiency of resource allocation. The success in fund mobilisation is reflected in the relatively high ratio of M2 to GDP after the reforms. However, the reforms have also brought about some problems in the implemention of monetary policy. This chapter presents some of the problems and issues which have been faced by some member banks of SEACEN countries in implementing their monetary policy after the financial reforms. While some of the problems are commonly experienced in most SEACEN countries, such as the effectiveness in controlling capital inflows, other problems are more country-specific as discussed below.[17]

1. Indonesia

The problems faced by Indonesia's monetary authority include downward rigidity in interest rates; underdevelopment of money market; volatility in the relationships between monetary and real variables; difficulty in effectively implementing monetary policy due to the openness of the capital account; and, some transitory problems relating to the implementation of prudential regulations.

With regard to downward rigidity in interest rates, elimination of controls on interest rates has led to a situation where there is a long lag period before the interest rates could go down and the monetary authority has to act in order to reduce the general level of interest rates. On the other hand, banks are quick to raise interest rates when signals are received from the monetary authority. This asymmetric response by the banks has been a source of concern for the monetary authority. A crucial question is whether the banks' response is motivated by profit maximisation or it is due to some sort of structure rigidities in the financial market.

17. Sources: Replies to the *SEACEN Financial Reforms and Transmission Mechanism Project Survey Questionnaires* from seven member banks, and field survey visits to The Bank of Korea, the Monetary Authority of Singapore and the Bank of Thailand in 1994.

The development of the money market represents a very important element in the conduct of market-based monetary policy. However, the development of the money market in Indonesia has been rather slow because of tardy institution building and the limited range of financial instruments. This could be partly due to the segmented nature of the Indonesian banking system, wherein the size of national private banks varies from extremely large banks to extremely small ones. The heterogeneity in sizes induces a compartmentalised banking sector for banks to serve specific groups of customers.

The effectiveness in the conduct of indirect monetary policy is also largely dependent on the stability of the relationship between the monetary and real sector variables, and also the relationship between M2 and reserve money. Therefore, changes in the behavioural relationship among these variables may adversely impact the effectiveness of these policies.

In addition, the effectiveness of monetary policy will be lessened if the degree of capital mobility is high. This is what Indonesia experienced, with the liberalisation of the foreign exchange system that resulted in the increased mobility of capital. When monetary policy is tight, an increase in the interest rates will induce an inflow of capital. On the other hand, an easy monetary policy will tend to result in the outflow of capital.

Finally, the implementation of more stringent prudential regulations in Indonesia has also brought about temporary problems. The rigorous prudential regulations, while being beneficial in increasing the soundness of the financial system, have retarded the growth of monetary aggregates. This situation will prevail for some time before all banks get used to the new environment.

2. Korea

The major issue in financial reforms in Korea relates to the harmonisation of monetary, exchange rate and interest rate policies.[18]

18. Source: Research Department, The Bank of Korea (1994), ***Financial Liberalization and Internationalization in Korea.***

As liberalisation and internationalisation of the financial sector progress, the relationship between monetary aggregates and other price variables, namely, interest rates and exchange rates will become more pronounced. Thus, domestic monetary policy will be dependent on the policies of other countries which will eventually necessitate the proper coordination of a monetary-cum-exchange rate policy. This is because of the increasing interaction between interest rates and the exchange rate. The influence of overseas interest rate fluctuation on domestic interest rate is becoming increasingly unavoidable as Korea opens up its financial market. This has significant implications especially in view of the shallow financial markets, the volatile exchange rate fluctuations, the volatile movements of total domestic liquidity caused by foreign capital flows. In particular, as the capital account becomes more open, speculative activities will become more prevalent, causing the real exchange rate to deviate from the level that best reflects economic fundamentals.

An adjustment of domestic short-term interest rates coupled with the central bank's intervention in the foreign exchange market would moderate exchange rate volatility, but this would be at the cost of a loss of freedom in monetary policy initiatives.

The channels for the transmission of monetary policy will also be different as the policy impact would work not only through availability effects (credit control) but also through the price effects (movement of interest rates and exchange rate). As such, emphasis now needs to be given to interest rates and exchange rate in formulating and implementing monetary policy.

Under these circumstances, the monetary authority faces the important but difficult tasks of controlling money supply at an appropriate level and harmonising monetary, interest rates, and foreign exchange policies. Thus, a new framework to design the most appropriate policy-mix should be developed.

In this respect, the orthodox policy instruments should be reviewed and supplemented with additional instruments so that indirect monetary control procedures can be established. In particular, the issuance of Monetary Stabilisation Bonds should be reduced and open market operations be introduced. The government and public bond markets should be actively used as the main vehicle for open market

operations as a principal monetary policy instrument. Reserve requirement ratios will be lowered in accordance with the contraction of automatic rediscount facilities, and the reserve asset system should be studied and introduced.

Finally, greater flexibility will also be possible in the operation of the target range of the leading monetary aggregate. In addition, the conduct of monetary policy must take into consideration the impact on interest rates and the exchange rate. In addition, in line with the rapidly changing financial environment, the appropriateness of the money supply indicator is being reviewed and the indicator will be revised so as to better reflect market liquidity.

3. Malaysia

The Malaysian experience in moving towards a market-based system of monetary control is not without adjustment problems. It has led to an increase in the degree of substitutability among financial instruments. As a result, monetary policy is complicated by structural changes in the demand for money. The underlying relationship of monetary aggregates with economic activity also became less stable and therefore less predictable. In addition, recent developments in the large short-term capital inflows have distorted the meaningfulness and reliability of monetary data as a monetary indicator for monetary policy.

4. Myanmar

In the case of Myanmar, where financial reforms have only been implemented very recently, it is reported that the establishment of a capital market and open market operation is needed.

5. Nepal

As far Nepal is concerned, the power of NRB to pursue its monetary policy through direct measures has been limited following the financial reforms. Consequently, it became imperative for NRB to resort to indirect instruments such as the open market operations, bank rate, etc. Effective implementation of these instruments calls for a developed bond market which is lacking in Nepal even after the initiation of the financial reforms. NRB, in an effort to develop such a market, started auctioning Treasury bills as well as NRB bonds since

1988 and 1992 respectively, as a means of mopping up the excess liquidity of commercial banks. Similarly, in view of the importance of secondary markets of these securities, NRB also opened a secondary window for the transaction of these securities from the current fiscal year 1994/1995. Despite all these efforts, the securities market has yet to be developed as required if monetary policies were to be conducted effectively.

Cash reserve ratio (CRR) is another option available to NRB to influence the credit creation capacity of the commercial banks. NRB raised the CRR to 12 percent (4 percent as cash in vault and 8 percent as balances with NRB) effective July 1991 from 9 percent earlier. Therefore, it is not logical for NRB to raise the CRR further in view of the intermediation cost of the commercial banking system.

Net foreign assets has been the major expansionary factor of money supply during the period. The average growth rates of narrow money (M1) and broad money (M2) during the last five years have been 19.8 percent and 21.6 percent respectively. The highest growth rates of 22.5 percent and 27.7 percent were recorded respectively for these two monetary aggregates in the financial year 1992/1993. During the same period, the growth rate of net foreign assets and domestic credit averaged at 43.4 and 16.6 percent respectively. Such an extraordinary high expansion of net foreign assets was due mainly to the favourable balance of payments situation which, in turn, resulted from the adoption of various economic and exchange rate measures, including the Structural Adjustment Programme of the late 1980s. Although the monetary authority can to some extent sterilise the effect of foreign assets, its effectiveness was hampered by the lack of a developed capital market.

Claims on Government have also been one of the structural problems in the implementation of monetary policy in Nepal. NRB is mandatorily required to provide such a facility even if the monetary policy calls for a tightening of the domestic credit. In this context, even though His Majesty's Government is also aware of the situation in the recent years and therefore tries to borrow as little as possible from the Bank, this problem cannot be overcome easily especially in the short run unless the fiscal situation improves and/or the Bank becomes fully autonomous in its operations.

The interest rates deregulation which was introduced to increase competition and enhance the efficiency of the banking system also results in the reduction in the degree of direct control by NRB. In addition, in many instances, the desired objective has not been achieved as the banks lowered deposit rates rendering real interest rates negative due to a higher rate of inflation. The NRB bank rate, which is supposed to guide the market rates, has not been effective because commercial banks are not resorting to central bank borrowing as they are flushed with funds.

There are also problems related to credit allocation. Although interest on banks' credit has been deregulated, NRB has not completely dismantled the sectoral allocation of banks' credit. The commercial banks are required to invest at least 40 percent (including 12 percent to the priority sector) of their total loans and advances on the productive sector of the economy. Similarly, the NRB's directives for commercial banks to provide credit to the rural women, intensive banking programme, etc., remain intact. These credit programmes are incompatible with other liberalisation measures. However, given the present circumstances where the rural sector which employs the majority of the population who are still finding difficulties in obtaining credit, NRB may not be willing to withdraw these programmes, at least for the time being, considering that if such programmes are withdrawn, agriculture, cottage industry and other activities related to rural development would be unable to get institutional credit. However, the policy of both the Government and the Bank is directed at developing rural-based financial institutions and gradually phasing out such credit programmes in the context of financial liberalisation.

6. Philippines

In the case of the Philippines, the problems and issues are mostly related to the appreciation of the peso; the high BSP operating expenses; and, the conflict between the objectives of price stability and low interest rates.

After the liberalisation of foreign exchange rules and regulations, substantial net capital inflows helped support the appreciation of the peso. While this has helped to stabilise the inflation rate, exporters have been adversely affected by the lower peso export incomes.

The expansion in money supply generated by BSP purchases of dollars needs to be sterilised by contractionary open market operations. However, this incurred costs to BSP in terms of interest expenses. Thus, the BSP's intervention in the foreign exchange market should only be done when there are extreme fluctuations in the peso-dollar rate contrary to market trends.

In times of rising inflation rate, however, contractionary open market operations may be necessary to rein in monetary aggregates in line with the target level. Domestic interest rates, on the other hand, tend to rise as domestic liquidity contracts. This could discourage investments and GNP growth.

7. Singapore

The liberalisation of exchange controls did not have an adverse effect on the economy, whether in the immediate aftermath of June 1978 or over a longer time frame of comparison. The final abolition of exchange controls in June 1978 did not result in any capital outflow or concomitant rise in domestic interest rates. Instead, a higher net capital flow of $2.3 billion was recorded in 1978, compared with net inflow of $1.5 billion in 1977. For banking flows alone, there was a net inflow of $700 million in the second half of 1978, after the abolition of exchange controls. Direct foreign investment inflows also increased in 1978. Overall, a healthy balance of payments surplus of $1.5 billion was recorded in 1978, doubling the surpluses in the preceding two years.

Free capital mobility has meant that the MAS has had to choose between the exchange rate, on the one hand, or domestic monetary aggregates or interest rates on the other, as the target of its policies. The exchange rate was chosen as the target of monetary policy, in view of its more significant and predictable linkages to domestic inflation and output.

Exchange control liberalisation has reinforced the loss of control over monetary aggregates that is implicit in the choice of an exchange rate-centred monetary policy. Even when exchange controls existed, however, the absence of restrictions on capital inflows meant that traditional monetary measures to curb inflation in 1972/1973 could not cope with speculative inflows, prior to the floating of the Singapore dollar.

With no controls on capital inflows and outflows, however, the potential danger of sudden destabilising capital flows on a small open economy is recognised. For this reason, Singapore has a policy of discouraging the internationalisation of Singapore dollar, requiring that banks seek approval from the MAS before granting Singapore dollar loans in excess of S$ 5 million to non-residents.

8. Sri Lanka

The use of market-based policy instruments has resulted in a high interest rate regime in Sri Lanka particularly due to large fiscal imbalances and high demand for private sector credit. In addition, a surge in capital inflows in the country in recent years, though beneficial in many ways, has contributed to a sharp increase in liquidity imposing further constraints in containing liquidity. Open market operations carried out to sterilise large capital inflows were also partly responsible for high interest rates in the economy.

9. ROC, Taipei

The five major problems and issues in implementing monetary policy following the financial reforms are as follows:

(a) Financial liberalisation has increased the volatility of interest rates, stock prices and exchange rates, which in turn has increased the degree of uncertainty of financial markets.

(b) Some new financial market instruments have emerged along with the process of financial deregulation, and these innovations have caused money definitions to become vague.

(c) Financial liberalisation has also caused instability in money demand behaviour, and that in turn has made it more difficult for the Central Bank to select an appropriate intermediate target variable of monetary policy.

(d) Financial liberalisation also has changed the importance of the transmission channels of monetary policy. As a result, it has become more difficult for the Central Bank to forecast the impact of monetary policy on economic activity.

(e) Financial internationalisation has led world financial markets to become closely integrated with each other. As a result, the domestic economy has had to face increasing external shocks.

10. Thailand

In the case of Thailand, the financial reforms have impacted on the conduct of monetary policy, especially interest rate policy and the policies to manage increased of capital inflows.[19]

With regard to interest rate policy, after the full liberalisation of interest rate control by June 1992, it was observed that the spread between deposit and lending rates became wider. The commercial banks' interest spread increased from 1.9 percent in 1986 to 3.6 percent in 1993. Moreover, the commercial banks adjusted downward their deposit and lending rates for prime customers by a larger margin than the lending rates for general customers and prime customers. This type of interest rate adjustment was not conducive to economic growth and created a disparity between large and small customers in general because the adjustment of the lending rate for general customers did not truly reflect the decreasing cost of funds of commercial banks.

To establish a mechanism for the lending rate for retail customers to be automatically adjusted to the actual cost of funds as determined by the market mechanism, the working group comprising representatives from the Bank of Thailand and Thai Banker's Association introduced the Minimum Retail Rate (MRR) for retail prime customers as a reference lending rate for retail customers since 27 October 1993. Every category of lending rate to retail customers must be in line with the MRR, and the lending rate for retail customers quoted by commercial banks must not exceed the MRR plus the maximum margin set by each commercial bank. Reflecting this guideline, interest rates have moved responsively across the board to market conditions.

Liberalisation of the foreign exchange control normally results in the fluctuation in capital flows which has made the task of monetary management more difficult due to its impact on the monetary aggregate. In Thailand's case, there was a surge of net flow of portfolio

19. Source: Chotewattanakul, J., et. al., Country paper for "SEACEN Course on Monetary Policies and Strategies", 1994.

investment to Thailand from ฿ 37 billion in 1989 to about ฿ 68 million in 1993. However, up to 1994, Thailand has not experienced major problems associated with the large excessive capital inflows as its macroeconomic performance still remains satisfactory and the degree of volatility is still not too excessive. In response to the recent surge of capital inflow into Thailand, intervention has thus far not been necessary as the interest rate mechanism has induced the necessary adjustments.

Chapter 5

OBSERVATIONS AND CONCLUSIONS

The study highlighted the financial reforms in connection with the transmission mechanism of monetary policy in the SEACEN countries. For this purpose, the study uses both qualitative and quantitative approach. As the coverage of financial reforms was very broad, the qualitative approach focussed on the interest rate and exchange control liberalisation, the change in exchange rate regimes and the development of the capital market. The information was collected either through the questionnaires' responses from SEACEN member banks or from The SEACEN Centre's Library. For the quantitative part, the study period covers the date from which the interest rates were liberalised.

Insofar as the interest rate liberalisation is concerned, some member countries followed a drastic approach like in the case of Indonesia, Malaysia, the Philippines and Singapore. However, some member banks implemented the reforms gradually such as in Sri Lanka, Thailand, Nepal, Korea, Taiwan and Myanmar. The speed with which the interest rates were liberalised was also reflected in the behaviour of interest rates in some countries. In the case of Indonesia, for example, interest rates jumped right after the interest rates liberalisation of 1983 and was followed by increases in both the ratio of quasi-money and M2 to gross domestic product. However, in the countries which implemented the reforms gradually, the interest rates generally did not fluctuate very much. However, in some countries, the interest rates tended to increase drastically right after major interest rate reforms such as in the case of Nepal after 1986, Thailand after 1990, Korea after 1991 and Taiwan after 1992. The study also found that the high ratios of M2 to gross domestic product were not necessarily due to major interest rate reforms. In the case of Korea and Taiwan, for example, interest rates were liberalised in the 1990s when a high M2/ GDP ratio was already prevalent well before due to the high income per capita in these countries.

With regard to the transmission mechanism of monetary policy, after the interest rate reforms, almost all member banks relied on interest rates as the main transmission channel. This is in contrast to the pre-reform era where almost all member countries conducted monetary policy through direct instruments such as credit ceiling or selective credit policy.

In terms of monetary policy instruments, in addition to open market operations, all central banks use other instruments. Bank Indonesia uses discount facilities and moral suasion. Korea, uses central bank lending and reserve requirement ratio. Malaysia uses reserve requirement. Myanmar uses quantitative credit control while reserve requirement has been the main instrument of monetary policy in recent years. Meanwhile, in the case of the Philippines, in addition to open market operations, BSP also uses the rediscounting of loans and advances and the reserve requirement.

In the case of Singapore, to complement its exchange rate policy, the Monetary Authority of Singapore conducts money market operations. The instruments used are mainly foreign exchange swaps and bank loans/borrowings. Sri Lanka also uses the statutory reserve ratio. Taiwan adjusts its required reserve ratios, accepts deposits from financial institutions and provides selective credit controls. Thailand uses the repurchase market, loan window, refinancing and other credit facilities and foreign exchange transactions.

The member banks also experienced certain complications and difficulties in managing monetary policy as a consequence of financial reforms. Almost all member banks faced problems controlling capital movement after the period of exchange control liberalisation. When the domestic financial market is more attractive, large capital inflows emerge making it difficult to control money. Some countries also experienced the unsymmetrical movement of interest rates, in that lending rates tended to increase as soon as deposit rates increased but not as rapidly lowered when deposit rates decreased. After the financial reforms, it was also found that the relationship between monetary and real variables were changed which has strong implications on the effectiveness of monetary policy. In addition, some countries faced problems related to credit allocation due to the phasing out of some credit programmes. Lastly, since world financial markets have to become closely integrated, the domestic economy has become vulnerable to external shocks.

The empirical results out of the Vector Auto Regression (VAR) analysis found that M1, credit and interest rate are significantly related to real income in Indonesia. As for Korea, the results suggest that credit is still significantly related to prices and real income. In addition, M2 is also significant with respect to prices and real income in the same country.

As for Malaysia, currency, M1, and reserve money are found to be significantly affecting prices and real income. Meanwhile, M2 is not significant at all, which is consistent with the observation that its movements might be distorted by the disintermediation of deposits from commercial banks to the other non-bank financial institutions, particularly finance companies. For the Philippines' case, empirical results suggest that all monetary aggregates are significantly related to real income, with M2 having the highest F-statistics and also significantly related to prices.

M1 turned out to be significant in relation to real income in the case of Singapore. In the case of Sri Lanka, M1 is found to be an important variable in predicting the future behaviour of prices.

As for the exchange rate, as expected in the case of Singapore, it is significantly related to prices. It is found that interest rates are significantly related to real income in the case of Indonesia and to prices in the case of Singapore. However, despite this evidence, it should be remembered that the interest rate in Singapore is actually uncontrollable given its small and open economy. It is also worth noting that in the case of Indonesia, interest rates are significant only at the 10-percent level when predicting real income as compared with the 5-percent significance level for M1.

Finally, with regard to the exploration of alternative intermediate targets, as shown in the F-statistics values, M2 is still the "best" intermediate target in the case of the Philippines and M1 in the case of Malaysia and Sri Lanka. On the other hand, credit has the highest F-statistics followed by M2 in the case of Korea and M1 in the case of Indonesia. In Indonesia, due to uncontrollability of credit after the 1983 financial reform, M1 is suggested as an intermediate target. In Korea, it is observed that M2 is more controllable than credit, thus making M2 an ideal intermediate target for this country. On the other hand, since monetary aggregates and interest rates are uncontrollable in the case of Singapore, the exchange rate seems to be the "best" intermediate target.

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DATA SOURCES AND DEFINITIONS

The following describe the data sources and definitions used in the empirical analysis.

Monetary Aggregates

Data for currency, M1, M2, reserve money and credit were taken from lines 14a. 34, 34+35, 14, 32, of International Monetary Fund's *International Financial Statistics.*

Income and Prices

Real quarterly GDP for Indonesia from Central Bureau of Statistics (CBS) of Indonesia, real quarterly GDP for Korea from The Bank of Korea, and real quarterly GDP of Singapore are from the Monetary Authority of Singapore. Real quarterly GNP for the Philippines were taken from the International Monetary Fund's *International Financial Statistics* line 99a. For Malaysia and Sri Lanka, quarterly data were interpolated from annual observations using Otani and Riechel [see The SEACEN Centre (1981)]. It is worth noting that the stability test results for interpolated quarterly data suggest that the data for Sri Lanka exhibit more instability and first order autocorrelation than the data for Malaysia. The data for prices used included GDP deflators for Indonesia and Korea, the GNP deflator for the Philippines, and consumer price indices for Malaysia, Sri Lanka and Singapore. Annual data of consumer price indices and GDP deflators are correlated by 0.98, 0.99 and 0.99 respectively for Malaysia, Sri Lanka and Singapore.

Interest Rates and Exchange Rates

Data for interest rates and exchange rates were taken respectively from lines 60l and rf of the International Monetary Fund's *International Financial Statistics.*