OPEN MARKET OPERATIONS

ITS NATURE AND EXTENT IN THE SEACEN COUNTRIES

TUMNONG DASRI

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

OPEN MARKET OPERATIONS

ITS NATURE AND EXTENT IN THE SEACEN COUNTRIES

TUMNONG DASRI

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

Published by The South East Asian Central Banks (SEACEN)
Research and Training Centre
Kuala Lumpur

ISBN 983-9553-57-7

Printed by
Graphic Stationers Sdn. Bhd.

FOREWORD

In recent years, almost all the countries in the SEACEN region have undertaken steps to liberalize their domestic financial systems and remove restrictions on international capital flows as well as accelerate the development of the money and capital markets. As the structure of financial markets has changed, both the conduct and the effectiveness of monetary policy in SEACEN countries have been affected. The relaxation of interest rate regulations and the widening range in the sources of credit have enabled changes in interest rates to be transmitted more rapidly and pervasively throughout all sectors of the economy. The increased mobility of international capital has made the balance of payments and the exchange rate increasingly important channels for the transmission of monetary policy.

As a result, the monetary authorities in these countries have had to reconsider the mix and types of money and credit instruments for achieving internal and external stability objectives. As the proportion of financial instruments carrying market-determined interest rates has grown, there has been greater emphasis by most central banks on the control of monetary aggregates rather than the quantity of bank credit. To an increasing extent, the control of monetary aggregates is accomplished through the use of open market operations accompanied by the tightening of access to the discount window. However, the use of open market operations in many SEACEN countries has been complicated by problems found in their financial market structures and the availabilty of marketable instruments.

In this regard, the research study on "Open Market Operations: Its Nature and Extent in the SEACEN Countries" is timely and appropriate in the light of the above-mentioned issues. The research study covers the SEACEN countries with the exception of Korea and Myanmar (Korea was admitted member of the SEACEN grouping when the project was well under way while open market operations are not yet relevant in Myanmar's financial system which is currently undergoing reforms). The purpose of this study is to examine the nature and extent of open market operations as currently undertaken by the SEACEN member central banks and monetary authorities. It also looks into the prerequisites and conditions for an effective implementation of open market operations. Finally, the policy measures and issues which will contribute to the wider use of open market operations are examined.

This in-house research study which is the second SEACEN study based entirely on in-house data and information, was conducted by Mr. Tumnong Dasri, Research Economist, seconded from the Bank of Thailand to The SEACEN Centre. At various stages of the Project, Mr. Tumnong Dasri was kindly assisted by Senior Research Associate, Miss Seow Yun Yee, who tirelessly provided necessary research support and proof-read the volume. The manuscript was typed by Miss Jayanthi Devi Appavoo. Without doubt, Mr. Tumnong Dasri is also grateful to the member central banks for their valuable comments on the study and the other staff of The SEACEN Centre for their moral support during his stay in Malaysia.

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

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

Kuala Lumpur
December 1991

TABLE OF CONTENTS

LIST OF TABLES

LIST OF APPENDICES

Chapter 1

INTRODUCTION

1. Overview

Open market operations (OMO) are one of the most actively and widely used monetary policy instruments by central banks in countries with well-developed money and capital markets. This policy instrument is relatively more flexible in controlling monetary aggregates and, at the same time, in minimizing unwarranted movements in interest rates compared with other monetary instruments. OMO can affect bank reserves quickly or slowly, by large or small amounts, in the long-term or on a temporary basis, and may be easily and quickly reversed. Such fundamental advantages tend to lessen banks' resistance to the use of OMO as compared to the other monetary instruments.

The central bank engages in open market operations by taking the initiative to buy and sell financial assets in the securities market with any financial institutions including non-bank institutions, especially securities dealers and brokers. The existence of securities dealers, who are the "position takers", is more important than brokers in making OMO a more powerful weapon of monetary control. These institutions provide the link between the central banks on the one hand and the commercial banks and non-bank financial institutions on the other. In addition, securities dealers play a vital role in stimulating competition as well as in adding depth and enhancing expertise in the domestic money and capital markets.

The intention of central banks and monetary authorities in engaging in open market operations is to influence the liquidity and credit condition of the banking system, which in turn affects price, output and employment levels. Moreover, open market operations can be employed to reinforce the effectiveness of other monetary instruments such as discount policy and reserve requirement. It is sometimes also used to assist in debt management and government borrowings.

However, the effective implementation of open market operations to influence monetary aggregates depends on prevailing economic conditions and other factors. These include the existence of

a well-developed securities market, a fairly neutral tax structure, an efficient handling of the physical procedures accompanying transactions in financial instruments, interagency coordination in the issuance of regulations over financial instruments, development of expertise among the market participants, sound budgetary and liquidity management by a government, a sound financial programme and the coordination between open market operations and other monetary instruments. In an attempt to develop the OMO as a tool for monetary control, these requirements have to be taken into consideration.

The kind of OMO conducted by central banks of most countries that have well developed and active money and capital markets take the form of outright purchases and sales of specified financial assets. For those with developing financial markets, the central bank usually conducts OMO in the form of repurchase agreements. The nature and extent of such operations, and their relative importance among the tools of monetary control of monetary authorities vary widely. For instance, open market operations in the United States, that is, the purchase and sale of government securities and bankers' acceptances as directed by the Open Market Committee of the U.S. Federal System - have become the chief instrument of credit control. They provide a flexible means of influencing the volume of bank reserves and thereby help in maintaining appropriate credit conditions. Outside the United States, open market operations as a full-fledged credit policy instrument are also used in the developed countries, notably the United Kingdom and Canada. Elsewhere, such operations are generally limited in scope; they are not always undertaken at the central bank's initiative; they are in some instances conducted directly with banks or other investors; and they may be conducted in securities other than government obligations and bankers' acceptances. Nevertheless, although institutional difficulties are encountered in many instances, open market operations are rapidly gaining importance in most countries. [1]

In the SEACEN countries, OMO as a central bank tool is being employed at various levels. In the Philippines and Indonesia, OMO is actively used as a monetary instrument. The other SEACEN countries like Sri Lanka, Thailand, Malaysia and Singapore have used this instrument sparingly, while it is employed in a very limited

---

1. Fousek, Peter G., *Foreign Central Banking: The Instruments of Monetary Policy*, Kennikat Press, 1957, p. 31.

way in Nepal due to the absence of a wide and active market for government securities. In view of this, it may be useful to look into the nature and extent of the open market operations in some of the SEACEN countries.

2. Main Objectives of the Study

The basic objective of this research study is to examine critically the nature and extent of open market operations as currently undertaken by central banks and monetary authorities in the SEACEN countries.

The study also intends to look closely into the prerequisites and conditions for the effective implementation of OMO.

Finally, the current policy measures and issues which would lead to the more active and wide use of OMO by central banks and monetary authorities in the region are examined.

3. Scope and Organization of the Study

To serve the purposes of this study, OMO is defined as the initiative taken by a central bank or monetary authority in the outright purchase and sale of financial assets at the going rates in the money and capital markets, as well as repurchase agreements which affect bank reserves and thereby influence the movement of monetary aggregates. Its conduct has an immediate and direct impact on bank reserves which, in turn, affect the credit-creating capacity of the banks, thereby influencing the cost and availability of credit in the economy. The central bank and monetary authority may conduct OMO by dealing with any institutions including non-bank institutions, especially security dealers and brokers.

This study is divided into five chapters. The introductory remarks are given in Chapter 1. Chapter 2 is a broader treatment of OMO, that is, the nature and conceptual framework of OMO as well as its use in non-SEACEN countries. Chapter 3 deals specifically with the use and implementation of OMO in the SEACEN countries. The requisites for the effective implementation of OMO are closely investigated in Chapter 4. Finally, the summary and concluding remarks as well as the recent policy issues for a more active and wider conduct of OMO in this region are presented in Chapter 5.

For brevity, the term "central bank" also refers to monetary authorities.

Chapter 2

THE NATURE AND CONCEPTUAL FRAMEWORK OF OPEN MARKET OPERATIONS

This chapter analyzes the nature and conceptual framework of open market operations (OMO) as a monetary instrument. It will briefly outline the theoretical aspects of the potential advantages of OMO vis-a-vis other traditional monetary instruments such as changes in reserve requirements and discount rates. This chapter is divided into eleven parts. It begins by dealing with the definition of open market operations, the scope of OMO, financial assets in OMO, and the open market participants. The next part is on the scope and limitations of OMO in developing countries. The objectives of the central banks' operations in the open market and the transmission of OMO are analyzed in part six and seven, respectively. The implemental framework and procedures of OMO as well as major problems in their implementation are investigated in parts eight and nine, respectively. The subsequent part deals with the potential advantages of OMO in comparison with other monetary policy instrument. Finally, this chapter also attempts to review the evolution of OMO and the experiences of some developed and developing countries in using this monetary tool.

1. Definition of Open Market Operations

Open market operations generally mean the act of purchasing or selling government securities by the central bank. In the strict sense, the term "open market" is defined as a perfectly competitive market for securities, but, conveniently, it has come to indicate the institutional framework of the purchase and sale (outright purchase and sale of securities or repurchase agreements) of approved securities by the central bank. [2] These buying and selling of specified

2. "Open market" is different from "negotiated-loan markets" in the sense that the 'open market' is an impersonal market in which standardized securities are traded in large volume, while the negotiated-loan market is a market in which lender and borrower personally negotiate the terms of loan agreements. For more details, see Luckett, Dudley, *Money and Banking*, 2nd edition, Macgraw-Hill Book Company, 1980, pp. 111-138.

financial securities are done at the initiative of the central bank to affect banks' reserves. In a wider sense, open market operations may include the purchase and sale by the central bank in the market of any kind of papers, which may be government securities such as government bonds, Treasury bills, central bank securities; foreign bills; foreign exchange; first class commercial bills; and, bankers' acceptances with a view to influencing monetary conditions to achieve certain monetary targets.

2. Scope of Open Market Operations

The conduct of OMO varies from country to country depending on such factors as the legal and institutional setting, the structure of the financial system, the stages of development in the securities market and the existence and efficiency of other monetary policy instruments. For instance, in Great Britain, the United States and several other countries, De Kock (1976) [3] found that the term 'open market operations' came to be applied only to the purchase or sale of government securities, both long- and short-term, and also only to the outright purchase or sale thereof. This narrower interpretation may be explained by the following: (a) the markets for government bonds and Treasury bills in these countries were sufficiently broad and active for all the purposes of open market policy; (b) the central bank rather than the market took the initiative in outright purchases or sales of government securities; and, (c) such operations, therefore, reflects the deliberate credit policy of the central bank (whether such policy was followed by the central bank is subservient to the requirements and objectives of the country or solely in accordance with its own aims and objectives). On the other hand, in the case of purchases of government securities, under "sales contracts" or "repurchase agreements", or of bankers' acceptances, the initiative is generally taken by the market. The readiness of the central bank, for example, to buy such securities and acceptances at all times at or close to market rates was based on its desire to develop and maintain an active money market. However, in countries where the central bank also deals outright in government-guaranteed securities or other securities, because of an inadequate supply of government securities or for other reasons, such transactions should appropriately be included under "open market operations," since

3. De Kock, M.H., *Central Banking*, Crosby Lockwood Staples London, 1976, pp. 179-180.

their effects on the monetary situation are the same as in the case of operations in government securities. This also applies to purchases or sales of foreign exchange by the central bank.

3. Financial Assets in Open Market Operations

The financial assets used in open market operations are usually confined to government or central bank securities, since central banks have more control over them than over other securities.

Moreover, since government securities are fully backed by the government, they represent a more attractive and practically riskless type of investment than any other financial papers. They are therefore held by a wide range of banks and financial institutions, corporate treasurers, provident and pension funds, insurance companies, government savings banks and even private individuals. In times of tight liquidity, these investors are more willing to liquidate these assets because of their relatively broad and active secondary markets where they can sell government securities more readily and at less capital loss than they can sell other securities of comparable maturities.

4. Market and Participants

Generally, the "open market" in which the central bank engages in the purchase or sale of financial assets is in the money and capital markets. Transactions in the money market are confined to those instruments which generally fall due within one year and can be rediscounted with the central bank.

The main participants in this money market are banks, specialised financial intermediaries, discount houses, securities dealers/brokers, central banks and even business corporations which deal both on their own and on their clients' accounts. Transactions in the capital market, on the other hand, involve those financial assets which fall due in a period of one year or more.

Other participants in this market are insurance companies, provident funds, investment and trust companies, and other financial institutions which deal both on their own and on their clients' accounts. The division of these two markets in terms of maturities of

securities is an arbitrary one and the markets tend to overlap.[4] But it is generally accepted that the short-term securities market is generally more active and its transactions do not affect securities prices to an appreciable extent while transactions of a central bank in longer-term securities may exert strong pressure on securities prices. Consequently, a central bank tends to deal more in the money market than the capital market while engaging in open market operations. Nevertheless, the central bank also transacts in long-term securities if its objective is to bring about a desired pattern of prices and interest rates of the securities.

The central bank may engage in the open market directly with the financial institutions, in particular with the commercial banks, or transact with securities dealers and brokers. In general, the central bank may not want to deal directly with banks and financial institutions since transacting with a large number of financial institutions is cumbersome and normally involves higher administration costs. In addition, these financial institutions may eventually become suspicious of the central bank's buying and selling activities and feel reluctant to deal with the central bank. Thus, the existence of securities dealers which are the "position takers"[5] is one of the most important conditions in making OMO an effective monetary tool.

In developed countries, securities dealers play an important role in the conduct of open market operations by a central bank because they provide a continuous and active market for buying or selling financial assets. In addition, these market dealers also have wide connections with banks, discount houses, corporate treasurers, investment and other trusts, insurance companies, and superannuation funds which make the market broader. For these reasons, the central bank prefers to deal with the securities dealers rather than transacting directly with banks. For example, the Reserve Bank of Australia engages daily in OMO, almost exclusively dealing with authorised dealers, implying that with the exception of rediscount-

---

4. For example, the original long-term securities which are previously traded in the capital market may be transacted later in money market as their maturities have less than one year to run.

5. The security dealers normally operate on their own accounts and take positions in respect of purchase and sale of securities. They bear the risk of fluctuations in capital value of securities.

ing, all movements in same-day funds are initiated through the accounts of dealers of the Reserve Bank of Australia. Further, the timing connection for debiting and crediting the exchange settlement accounts of banks and dealers gives dealers the central role in distributing exchange settlement throughout the systems. [6]

5. Scope and Limitations of OMO in Developing Countries

In developing countries, the secondary market for securities is narrower than the developed countries, and the transaction process of securities is not continuous but rather on a "discrete" manner. As a result, the central banks which are normally the last resort buyer and seller of government securities have the moral responsibility to accommodate whatever secondary transactions derive from financial institutions. Nevertheless, some countries in the developing countries have developed a secondary market for securities by establishing non-bank financial institutions or securities dealers to transact the securities in the market. This would aid the development of the securities market which makes the market more active and in turn gives leeway for effective open market operations.

Moreover, the scope of open market operations naturally depends also on the breadth and activity of markets in both short- and long-term government securities; the relative importance of these markets in the financial structure as a whole; and the volume of the requisite securities at the disposal of the central bank for market dealings. Only the central banks in developed countries, especially the Bank of England and the Federal Reserve System of the United States have these facilities and which would, therefore, make the most extensive and regular use of open market operations. A number of the central banks have in the meantime succeeded in developing reasonably active markets in government securities and acquiring sufficient securities for exercising a substantial influence on these markets and the monetary situation, in general. Furthermore, some of the central banks, which sometimes had to cope with excessive liquidity due to a favourable balance of payments position and did not possess the requisite securities for withdrawing funds from the market when they desired to contract credit, even resorted

6. Dotsey, Michael, *Open Market Operations in Australia: A U.S. Perspective*, Reserve Bank of Australia, Research Discussion Paper 8702, May 1987, p.5.

to acquiring the power to issue their own securities or financing the repatriation of foreign debts of their Governments for conversion into local securities or having the whole or part of their loans to the government converted into market securities. [7]

Nevertheless, the scope of open market operations may be limited not only from the view of the narrow and shallow money and capital markets, but also by the simultaneous operation of various counterforces, in respect of not only the supply of money and bank credit but also the demand for it. In this respect, Chandavarkar (1977, pp. 3-4) asserts that the real constraints on open market operations in developing countries arise not so much on the supply side, since it is easy enough to create the legal and institutional preconditions, but on the demand side of the securities market. These, by their very nature, are a matter of slow evaluation and development although central banks can take more positive steps to develop them. To some extent the very narrowness of the market can be an advantage insofar as in such markets comparatively small sales or purchases by the central bank can induce disproportionately large movements in securities prices. However, the merit of open market operations lies not simply in their impact on interest rates, but more importantly on the concomitant tightening or easing of credit that follows the changes in the cash reserves of commercial banks. Consequently, even with the optimal development of open market operations, the most direct and effective weapon of central bank credit control in the developing countries would still be the variation of compulsory cash reserves of commercial banks.

6. Objectives of the Central Bank's Operations in the Open Market

Since OMO is widely recognized as a more flexible monetary tool than other instruments, it is being utilized by central banks in a number of countries for a variety of reasons and objectives. Chandavarkar (1977) stated that open market operations can subscribe to one or more of the following objectives:

(1) to assist debt management and government borrowing; (2) to provide seasonal or other finance for commercial banks; (3) to create and maintain a desired pattern of yield and maturity on government securities; and, (4) to control the reserve base of the banking system.

---

7. De Kock, M.H., *Op.cit.*, p. 188.

The first objective is related to the "fiscal" aspects of open market operations, the other three have predominantly monetary significance. Although conceptually these objectives are distinct from each other, in practice they tend to be closely intermixed. This is because the purchase or sale of government securities by a central bank can simultaneously affect the debt position of the government, as well as the cash base of the banking system and the yields of gilt-edged stock. When a central bank buys securities from banks, its purchase expands the cash base of the banking system and thereby enables the latter to expand credit. Similarly, by selling securities to banks for cash, the central bank controls the cash base of the banks which are thereby obliged to restrict credit to their customers.

Moreover, open market operations can also be conducted by the central bank to reinforce the effectiveness of other monetary measures such as the discount policy and reserve requirements. For instance, in order to reduce inflationary pressures, the central bank may sell government securities to supplement increases in the discount rate and required reserve ratio so as to contract the credit and money supply in the banking system. In this respect, open market operations are just one of the overall package of policies, and the way in which they are carried out needs to reflect the way this package fits together.

In addition, OMO can also be conducted so as to be "defensive" and "dynamic" in character. In the defensive position, the central bank attempts to foresee, on a day-to-day basis, factors that will affect the liquidity of the banking system. These factors include seasonal cash drain during festive seasons, massive movement of government deposits, international capital movement and other balance of payments disequilibria. These factors normally produce extremely sharp swings in changes of reserves in the banking system. To even out sharp reserve fluctuations or at least to reduce the magnitude of the fluctuations, the central bank can undertake frequent offsetting sales or purchases in the "open market". The "dynamic" aspect of OMO, on the other hand, involves a deliberate change in the cash reserves of the banking system so as to provoke corresponding changes in the volume of credit extended by the commercial banks. The ultimate objective is to effect a change in the monetary condition in the medium-term for macroeconomic stabilization purposes.

In summary, the general objectives of OMO fall into two aspects, namely the monetary and fiscal ones. In the monetary front, the

objectives of the central bank in conducting OMO are to influence the credit condition of the banking system to offset any seasonal or temporary fluctuations in the liquidity of the banking system, to alter the interest rate structure to one which is most appropriate to the prevailing economic condition, to sterilize any unintended monetary effects arising from central bank intervention in the foreign exchange market, and to reinforce the efficacy of other monetary measures such as discount policy and reserve requirements. On the fiscal aspect, on the other hand, the conduct of OMO by the central bank is meant to assist debt management and government borrowing. For instance, an adequate sale of government securities via OMO is necessary at the time of the redemption of public debt.

7. The Transmission Mechanism of OMO

The theory of open market operations, as a special form of creation or cancellation of central bank credit, was briefly described by De Kock (1976)[8] who stated that the purchases of securities by the central bank tend to directly and immediately increase or decrease the money supply and the cash reserves of the commercial banks rather than to increase or decrease the supply of bank cash. Therefore, the credit-creating capacity of the commercial banks tends to increase or decrease the quantity of money; and those changes in the quantity of money not only in themselves bring about the desired adjustments in the domestic levels of prices, costs, production and trade, but also through their effect on changes in money rates and credit conditions which, in turn, tend to operate in the direction of the desired adjustments. These theoretical expressions of the transmission mechanism of OMO are based on the following assumptions:

(a) The quantity of money as well as the cash reserves of the commercial banks would be increased or decreased in accordance with the extent or aim of the central bank's open market operations;

(b) The commercial banks would seek to increase or decrease their discounts, loans and investments in accordance with the increase or decrease in their cash reserves; and,

(c) The scope or demand for bank credit would increase or decrease in accordance with the increase or decrease in the potential availability of credit.

8. De Kock, M.H., *op.cit.*, pp. 180-181.

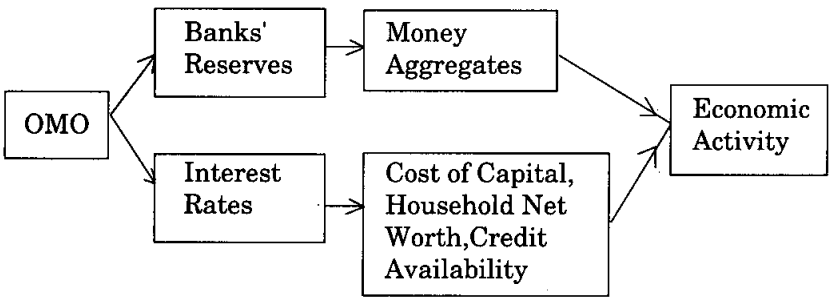
If the foregoing assumptions hold true, it is most likely that the central bank is able to meet its objective of engaging in open market operations. Nonetheless, in reality, there are some deviations from those normal assumptions, that is, (1) the quantity of money and the commercial banks' cash reserves do not always increase or decrease even approximately in proportion to the purchase or sale of securities by the central bank, as one or more counterforces might be operating simultaneously; (2) commercial banks do not always increase or decrease their discounts, loans and investment in proportion to the increase or decrease in their cash reserves; and, (3) it is not just a case of commercial banks' refraining at times from the full employment of their increased cash reserves, but also one of a lack of willing or deserving borrowers.

For instance, in an attempt by the authorities to expand economic activity during an economic recession, the central bank may wish to engage in open market purchases to increase the credit base. But the central bank cannot ensure that newly provided bank reserves would be used to increase the supply of money or credit. New reserves may be used to replace high-cost borrowed funds. Loan demand decreases as business activity declines or expects to decline. Even though interest rates fall, the need for business credit is lower than it was during the expansion phase of the cycle. Business inventories are being liquidated and the need for credit to finance these inventories declines. With the lower level of output, the need for new capital investment is reduced.[9]

Nevertheless, in order to achieve its objectives, the central bank may use other monetary policy instruments, such as the discount rate, reserve requirements, etc. or a package of policies in order to reinforce the application of open market operations, or vice-versa. In addition, it needs to be stressed that the adoption of any target, operational or intermediate, in open market operations needs to be related to the basic monetary policy objectives of low inflation, a stable exchange rate and sustainable balance of payments position linked by the intermediate objectives of appropriate money and credit growth rates and appropriate interest rates. The relationship running from the results of OMO to cash levels through intermediate objectives to ultimate objectives is complex, and lags can be both long and variable. This causal sequence can be briefly investigated as follows.

9. Savage, Donald T., *Money and Banking*, A Wiley/Hamilton Publication, John Wiley & Sons, 1977, p. 351.

The following diagram reveals that open market transactions by the central bank have two direct effects, namely, on banks' reserves and interest rates. It needs to be remembered that the authorities can



choose either to control or to influence interest rates, or the size of the reserve base and the money supply, but they cannot arbitrarily fix both. For instance, if the authorities aim to achieve a particular growth in the money supply, they must accept whatever interest rate structure is necessary to achieve this. Similarly, should the authorities wish to maintain a particular interest rate structure they must be prepared to supply or absorb whatever volume of financial assets is necessary to achieve this. The importance of this point cannot be over-emphasised. In this context, there is a need to distinguish between the desire to achieve certain objectives with respect to money supply growth, and the wish which monetary authorities sometimes express to maintain "stable" conditions in financial markets, which is often interpreted as avoiding short-run fluctuations in interest rates. The problem with seeking such stability in interest rates is that policies of this type may possibly conflict with the broader monetary policy goals with respect to money supply growth. [10] The link between money supply and interest rates to economic activity has been explained by two competing monetary theories.

One of these, the neo-Keynesian theory, emphasises the role played by interest rates in the economic system; the other, the monetarist theory, emphasises the role played by the quantity of money and hence, bank reserves.[11]

10. Deane, R.S., *The Instruments of Monetary Policy*, Discussion Paper No. G 80/10, Reserve Bank of New Zealand, October 1980, p.8.

11. The debate of these two theories has been discussed in academic, governmental, and business circles. See Cargil, Thomas F., *Money, The Financial System, and Monetary Policy*, 2nd Edition, Prentice-Hall, Inc., Englewood Cliffs, N.I. 07632, 1983, pp. 324-327.

However, to understand the transmission mechanism of open market operations, it is necessary to analyse the market for reserves or the link between open market operations and banks' reserves, the effects of OMO on interest rates, money supply, credit availability, and economic activity as follows.

7.1 The Linkage between OMO and Bank Reserves

In general, the reserve measures used by most central banks comprise total reserves (TR), required reserves (RR), excess reserves (ER), borrowed reserves (BR), non-borrowed reserves (NBR), and free reserves (FR). TR are the reserves held by banks at the central bank and cash held in their vaults. RR are the legal reserves held by banks against their specified liabilities or assets. These required reserves are used by banks to meet the legal reserve requirement. ER are the reserves used by banks for purposes other than fulfilling minimum legal reserve requirements. BR, on the other hand, are the quantity of reserves that banks borrow from the central bank at the discount window. NBR are those reserves not borrowed from the central bank. Moreover, the central bank's open market purchases are the primary source of non-borrowed reserves. Finally, the free reserves, FR, are the reserves that are not required as a legal reserve requirement and reserves that would not have to be paid back to the central bank in the near future as a result of borrowing.

The sources and uses of total reserves are shown in equations (1) and (2), respectively.[12]

$$TR = RR + ER \qquad (1)$$
$$TR = NBR + BR \qquad (2)$$

Equation (1) shows the two uses of reserves, that is, the legal reserve requirements, RR, and excess reserves for purposes other than the fulfillment of minimum prerequisite reserves, ER. In other words, these two reserves, RR and ER, indicate the demand side of the market for reserves. Equation (2) shows the two sources of reserves, i.e., supply of the reserves by the open market purchase of the central bank, NBR, and the discount facilities given to banks by the central bank, BR. In other words, these NBR and BR represent the supply side of the market for reserves.

---

12. See Higgins, Bryon, "Free Reserves and Monetary Policy", *Issues in Monetary Policy II*, Federal Reserve Bank of Kansas City, 1982, p.3.

In order to analyse the market for reserves, Davis (1971) [13] assumed that, in the general case, bank demands for both borrowed and excess reserves are interest rate sensitive in the United States, for example, the Federal funds rate is especially relevant. Required reserves are predetermined by the central bank. Non-borrowed reserves are an exogenous variable, being determined by market factors and the central bank operations. In the linear case, the system of equations are expressed simply as follows (ignoring constant terms).

$$BR = a\,(r_{st}) + e_b \qquad (3)$$
$$ER = b\,(r_{st}) + e_e \qquad (4)$$

where, BR = borrowed reserves
ER = excess reserves
r_{st} = short-term interest rate (e.g., Federal funds rates in the case of the United States)
e_b = random variable representing the random components of the demand for borrowed reserves.
e_e = random variable representing the random components of the demand for excess reserves

If the central bank supplies the reserves by engaging in open market purchase, its actions tend to raise non-borrowed reserves and lower interest rates. Excess reserves will tend to rise and borrowed reserves will tend to fall. The Trading Desk can predict the effects of its actions on these magnitudes and on total reserves only if it has some notions about the elasticities of demand for borrowed and excess reserves - in addition to predicting the behaviour of operating factors.

7.2 The Effects of OMO on Interest Rates

Interest rates are one of the direct effects resulting from the open market operations of the central bank. For instance, when the central bank engages in the open market purchase by buying a particular government security, it adds to the demand for that security and hence bids up its price resulting in a decrease in the

13. Davis, Richard G., "Short-run Targets for Open Market Operations", *Open Market Policies and Operating Procedures* - Staff Studies, Board of Governors of the Federal Reserve System, 1971, p. 42-43.

yield of the security because of the increased relationship between yield and price. Consequently, an open market purchase by the central bank will have the immediate consequence that the market yields on government securities will be lower than they otherwise would have been. An open market sale, on the other hand, will result in higher interest rates.

For example, Davis (1971) has studied the relationship between the Federal funds rate, rff, which represents the r_{st} in equations (3) and (4) to the level of free reserves, FR and discount rate (r_d) by using the U.S. data on biweekly reserve averaging periods from mid-1966 to mid-1968 as shown in equation (5) below ("t" values are in parentheses).[14]

$$rff = 2.30 - .002\ FR + .549\ r_d \qquad (5)$$
$$\qquad\qquad (12.0) \qquad (5.2)$$
$$R^2 = .915, \quad \bar{R}^2 = .912, \quad SEE = .22$$

This equation can be regarded as a reduced form, derivable from the simple model presented in equations (1), (2), (3) and (4) if the discount rate is included, as it should be, in the demand equations for borrowed and excess reserves in equations (3) and (4), respectively. The free reserves variable (FR) is of course non-borrowed reserves (NBR) minus the predetermined level of required reserves (RR), or FR = NBR - RR. This FR can be derived by rearranging equations (1) and (2). That is, since the total sources of the bank reserves must equal the total uses of bank reserves, non-borrowed reserves plus borrowed reserves must be equal to required reserves plus excess reserves. This can be expressed in the following equations.

$$NBR + BR = RR + ER \qquad (6)$$

Rearranging equation (6), we obtain

$$NBR = RR + (ER - BR) \qquad (7)$$

Hence, the required reserves and free reserves are

$$RR = NBR - FR \quad \text{and,} \qquad (8)$$
$$FR = NBR - RR \qquad (9)$$

Since RR in most countries is changed infrequently, we can assume that it is constant for a period of time. Thus, any increase or decrease in NBR by open market purchase or sale will increase or

14. Davis, Richard G., *op.cit.*, p.60.

decrease the FR. As a consequence, any increase or decrease in FR, the empirical results in equation (5), *ceteris paribus*, will induce the changes in federal funds rate in the opposite direction. Accordingly, we may conclude that the increase or decrease in banks' reserves through the central bank's open market operations will inversely affect the market interest rates.

7.3 The Linkage between OMO and Money Supply

Theoretically, monetary growth is determined by the interaction of factors affecting the demand for and the supply of money. The amount of free reserves banks want to hold (i.e., the demand for free reserves) is a major factor influencing the supply of money and can therefore have a major impact on monetary growth. The supply of money by banks, moreover, depends on the amount of reserves provided through open market operations and the demand for free reserves by banks. For simplicity, we assume that bank deposits are considered to be equivalent to money. [15] Thus, we can use equation (9) to obtain a money supply function. The amount of required reserves (RR) that is associated with a given value of the money stock depends on reserve requirements established by the central bank. If the average reserve requirement is R_a, the ratio of the money stock to required reserves is $1/R_a$, which can be thought of as the money required-reserves multiplier. Therefore, equation (9) can be rewritten as a money supply function,

$$M_s = \frac{1}{R_a} (RR) \qquad (10)$$

or

$$M_s = \frac{1}{R_a} (NBR - FR) \qquad (11)$$

The money supply function in equation (11) indicates that an increase in non-borrowed reserves resulting from open market purchases by the central bank increases the supply of money. Conversely, a reduction in non-borrowed reserves, resulting from open market sales by the central bank, reduces the supply of money. In addition, equation (11) also shows that an increase or a decrease in free reserves reduces or increases the supply of money.

---

15. Although some definitions of money include currency and certain deposits at non-bank financial institutions, bank deposits constitute the largest portion of most measures of money." (Higgins, *Op.cit.*, p. 2)

7.4 Effects of OMO on Credit Availability

As mentioned earlier, the immediate result of open market operations is the change in securities prices and interest rates and hence banks' reserves. These changes will force the banks to adjust their credit availability. For instance, if the central bank policy objective is to reduce the banks' reserves by transacting in an open market sale, it will decrease the money available for banks to expand the credit. Assuming that the banking system does not hold large quantities of excess reserves, the decrease in the availability of reserves must affect the supply of money.

7.5 The Linkage between OMO and Economic Activity

Economic activity is the final goal that the monetary policy-makers would like to achieve by using the availability of policy instruments to influence the intermediate targets and eventually achieve the final economic goals. For example, assuming that the central bank attempts to contract money supply by engaging in an open market sale, these contractionary forces should eventually have an impact on spending plans. The absolute level, or rate of growth of output should decline. This impact on economic activity comes about either through the interest rate effect or the money supply effect as a result of open market operations or other monetary policy instruments. For instance, through the interest rate mechanism, an open market sale by the central bank will increase the interest rates, *ceteris paribus*, which in turn would reduce the demand for credit to finance economic activity.

8. The Implemental Framework and Procedures of OMO

To utilize open market operations, central banks must be empowered with legal Acts. To what extent the central bank can deal, with whom and in what securities, must be clarified. This section will first closely look into the legal and institutional setting that empower the central bank in some countries to conduct OMO. Secondly, it provides the institutional framework for coordinating and implementing open market policy.

8.1 Legal and Institutional Setting

The legalities regarding the statutory authority of a central bank to conduct open market operations are specified in various

forms in central banking laws. Some central bank acts specify the legal right of the central bank to deal in only government securities (some central banks include private papers too) in the form of outright purchase, sale or repurchase agreements. Some central banks have the power to issue their own securities for monetary policy purposes, and some central banks can deal with these securities to a certain limit and maturities of papers.

For example, Fousek (1977) found that before the 1930's, only a few central banks in developed countries had the statutory authority to conduct open market operations, but today practically all are empowered to deal in government and government guaranteed securities. Many central banks in developed countries also have the authority to purchase and sell bankers' acceptances and commercial bills. In a few countries, moreover, they can undertake operations in special mortgage bonds (e.g., in Bolivia, El Salvador and Norway) while in others they can operate in all non-government bonds (e.g., in Australia, Denmark and Japan). Finally, a number of central banks, particularly in the financially less developed countries, have the power to issue their own securities for monetary purposes (e.g., in Chile, Cuba, the Dominican Republic, Ecuador, Egypt, El Salvador, Honduras, Mexico and Paraguay).[16]

However, in many countries, the purchase of government securities by the central bank is circumscribed by legislation as to the total amount, the ways in which the purchases may be effected and the maturity of the securities that may be purchased. Limits on central bank holdings of government securities, whether acquired in the market or directly from the government, sometimes are stipulated in absolute amounts (as in Belgium) or are related to the central bank's capital and/or demand liabilities (e.g., in Pakistan and Venezuela). Such provisions are generally designed to limit governmental recourse to central bank credit. For the same reason, the legislation of a number of securities prohibits direct purchases of securities from the government, while in Cuba the central bank is normally permitted to buy only government securities that have been outstanding for more than a year. Similarly, some central bank laws provide, in effect, that open market operations may not be carried out to help finance government deficits, and specify that such operations may

16. Many central banks in the SEACEN countries also have the power to issue their own securities, namely, Indonesia, Malaysia, Nepal, Philippines, Thailand and Sri Lanka.

take place only in order to "regulate the money market" (e.g., in Chile and Korea).

In some cases, there are legal restrictions on the maximum maturity of government securities that can be included in central bank portfolios. Such restrictions either provide that the securities must be short-term, but without defining the maturity (e.g., in Venezuela), or actually specify maximum maturities, ranging from three years (in Switzerland) to five years (in Mexico) or even ten (in Guatemala). In other countries, such as Sri Lanka, the legislation requires the central bank conducting open market operations to have adequate holdings of short-term securities in order that the Bank may more readily contract its credit if necessary.

Legal limitations on the government securities holdings by central banks, however, have been relaxed in some cases when the time was right to amend the central bank laws. For instance, they were relaxed in South Africa in 1941 and Switzerland in 1953. They were removed completely in 1936 in New Zealand, in 1945 in the Netherlands, in 1948 in India, and 1954 in Canada. In some countries, such as Denmark, Norway, Sweden, and the United Kingdom, such legal restrictions have never existed.

Nevertheless, it should be noted that statutory authority alone is not sufficient to enable a central bank to conduct meaningful open market operations. A suitable framework is required, and in many countries, especially the developing countries, the lack of such a framework is a serious barrier to the development of open market operations as an effective instrument of monetary policy. The most important and most frequent obstacle is the lack of broad and active money and capital markets.

8.2 Institutional Framework for Coordinating and Implementing Open Market Policy

A standing committee is necessary for the implementation of open market policy and also to coordinate and conduct open market operations. The committee generally called "open market committee should, include the Banking and Research Department of the central bank and the Treasury. However, the component of the open market committee may vary from one country to another.

For example, the Federal Open Market Committee of the Federal Reserve System of the United States [17] (FOMC) is composed of seven Board members and five of the twelve Reserve Bank Presidents. It developed from the informal investment committee set up by the Reserve Banks in the early 1920's and was given its present legal structure and powers in 1935. The President of the Federal Reserve Bank of New York by law serves as a continuing member of the FOMC while the Presidents of four of the eleven other Reserve Banks serve one-year terms in rotation. Traditionally, the FOMC has selected as its Chairman, the Chairman of the Board of Governors, and as its Vice Chairman, the President of the Federal Reserve Bank of New York. In practice, each Reserve Bank President, or alternate, attends every meeting of the Committee and participates fully in its discussions, even if he is not currently a voting member of the FOMC.

Under the FOMC's direction, the Federal Reserve Bank of New York buys and sells securities for the account of all Reserve Banks. Annually, the FOMC customarily appoints a senior officer of the New York Reserve Bank as the Manager of the System Open Market Account. The Manager of the Account oversees system operations in both the domestic securities and foreign exchange markets. He and the Deputy Manager of the Open Market Account attend each meeting of the FOMC, report on open market operations and receive instructions. Under the direct supervision of the Deputy Manager, the securities department carries out system operations. It also executes securities transactions on behalf of the United States Treasury, foreign banks and official institutions, and international organizations.

During meetings of the FOMC, members of the Committee as well as non-voting Reserve Bank presidents evaluate business, credit, and international developments, follow the impact of open market operations, and develop their views on the future course of monetary policy. Economists in the research departments of the Board and the Federal Reserve Banks provide a stream of reports on business and financial trends to their principals. The Federal Reserve Bank of New York reports daily and weekly on Federal Reserve operations and on the money, government securities, and the foreign exchange markets. Reserve Bank presidents also gain insights into business trends from meetings of each bank's Board of

17. See Meek, Paul, *Open Market Operations*, Federal Reserve Bank of New York, June 1978, pp. 13 - 14.

Directors, which is composed of nine members drawn from the banking, business, agriculture and other sectors of society. Before each meeting of the FOMC, each president and Board member customarily meets with staff aides to review the state of the economy and to discuss the most appropriate course for monetary policy to follow.

Other countries which developed OMO in the later years tended to follow the organizational structure that has been set up in the United States, but at a lesser scale. For instance, in the Philippines, the Central Bank's Open Market Committee for coordinating and implementing the open market policy is composed of five to six members with the Governor as its Chairman and five members coming from the Department of Finance, the Monetary Board and the Deputy Governors of the International Operations, Research, and Domestic Sectors of the Central Bank. Once the intermediate goal is set by the OMC, the achievement of the desired policy goals in the intermediate term is expressedly directed to the Open Market Desk which in turn maps out the techniques it has to undertake to be able to meet the desired level of money supply aggregates which for purposes of open market operations generally addresses interest rates and bank reserves.

8.3 The Implementation Procedures of OMO

In implementing the open market policy, the Open Market Committee first formulates the general monetary policy and then issues directives as guidelines for the Trading Desk or Discount Manager to conduct day-to-day open market operations. Such policy formulations are generally based on a full-scale evaluation by the Committee members of likely tendencies in critical measures of economic performance such as output, employment, prices, and the balance of payments. In deciding the stance of monetary policy, the Committee considers whether these tendencies in domestic economic activity and the balance of payments appear desirable, and if not, how they might be influenced by changes in financial conditions including the pace of monetary expansion, credit availability, interest rates and by expectational factors. Once a general policy stance is adopted, guidelines are set for the day-to-day conduct of operations in the open market. These day-to-day operations are geared towards achieving the intermediate targets, which in turn attain the final goals.

The basic method for conducting OMO is to purchase or sell the securities by the central bank in the financial markets to achieve the

short-run and long-run targets. Conceptually, the central bank's choice of short-run monetary policy targets can be divided into two stages. [18] Firstly, policy makers choose a short-run "intermediate target", a variable that is thought to be closely linked to real output and inflation but which is not controlled precisely over a short period of time. For instance, the central bank may choose a monetary aggregate as an intermediate target and establish a desired three-month growth path for the aggregate. Secondly, the central bank chooses a short-run "operating target" that is closely linked to the intermediate target and over which policy makers can exercise quite close control. For example, the central bank may establish weekly or monthly targets for a short-term interest rate or a reserve target. In practice, the central bank's Open Market Committee will establish the intermediate goal. Once set, the achievement of the desired policy goals in the intermediate term is directed to the Trading Desk which will follow through with appropriate techniques. These include the establishment of an operating target and the setting of the amount of operations and the maturities of securities to be traded so as to be able to meet the desired level of the intermediate target.

The day-to-day conduct of OMO by the central bank is to maintain the operating variable near its target value so as to control the intermediate variable. By controlling the intermediate variable it is hoped that the long-run targets or the ultimate economic goal variables of prices and output can be maintained at their desired levels.

9. Major Problems in the Implementation of Open Market Operations

Generally, the major problems of the implementation of OMO consist of insufficient amount of marketable financial instruments in the portfolio of the central bank; banks and other securities market participants, market imperfection and uncompetitive interest rates. The choice of the appropriate "operating targets" and "intermediate targets" and the choice of the correct rules and guidelines for estimating the volume of open market operations to do and the timing of their implementation are also formidable problems. Moreover, since the whole process of open market operations nor-

18. See Sellon, Gordon H., Jr., and Ronald L. Feigen, "The Choice of Short-run Targets for Monetary Policy", *Issues in Monetary Policy II, Federal Reserve Bank of Kansas City,* March 1982, p. 8.

mally needs to be carried out quite quickly, inefficient communication within the market may also delay the operation.

The creation of marketable financial instruments to be used in the open market operations is associated with the development of the securities market, especially the government securities market. The capacity of a central bank to conduct open market operations depends mainly on the quantity and type of assets it can hold in its portfolio and the size and depth of the government securities market, that is, the number of buyers and sellers as well as the ease with which transactions can be put through without undue fluctuations in security prices. For example, in the case of excess liquidity, a central bank which has insufficient stock of government securities will find it difficult to absorb the excess liquidity from the financial system by engaging an open market sale. To overcome this problem, under certain circumstances, a number of central banks in some of the developing countries are given the power to issue their own securiti for monetary policy purposes. Some of the SEACEN countries are good examples of these experiences. In February 1953 and 1956 when the Central Bank of Sri Lanka's portfolio was exhausted and the economy was unusually liquid, the Central Bank issued its own securities with maturities of six months, one year, eighteen months, and two years. However, the use of Central Bank securities for OMO has been phased out in some countries like in the Philippines, (which was replaced by Treasury bills) but it remains an active financial instrument for the central bank to engage in the open market for some countries such as Indonesia.

The choice of appropriate operational targets is a technical problem which could be overcome by building econometric relationships that would link the intermediate target to the ultimate monetary policy goals. However, problems arise because the linkages are most likely to be imprecise. Among various operational targets, according to the observation by Meulendyke (1988), many countries are attracted to choosing an interest rate target rather than a reserve target because it is easier to observe and achieve. In the United States, however, the non-borrowed reserves serve as the intermediate target.[19]

---

19. The details of the analysis of the choice between an interest rate target and a reserve target in the U.S. can be seen in Sellon and Feigen, *Ibid*, pp. 27-50.

The main problem in the implementation of the open market policy that the Open Market Desk faces is in the estimation of the appropriate volume of open market operations. The amount of intervention should be sufficient to remove the undesired excess reserve (or supply the shortage in the bank reserves) and the deals should mature at a point in the future where a bank reserve shortage (or surplus) is expected. In the case of the United States, for example, in order to arrange the amount of open market operations which is consistent with the intended degree of reserve pressure, the Desk must estimate correctly the average for two-week reserve maintenance periods for both demand and supply of reserve from all sources other than from open market operations. In addition, incorrect estimates of the commercial banks' demand for reserves to meet reserve requirements and provide a cushion of excess reserves would mean that the non-borrowed reserve objective will be inconsistent with the intended borrowing levels. Although estimates are normally accurate by the end of a reserve maintenance period, significant errors remain.

10. The Potential Advantages of OMO

Open market operations have clear advantages over other monetary policy instruments due to the ability of a central bank to inject or to absorb the liquidity from the banking system.

They can be used to correct variations of bank liquidity in the very short-term. Moreover, they are also flexible in their application in the sense that they take into account the liquidity position of each bank. They allow the increase in the liquidity of illiquid banks and the reduction in the liquidity of liquid banks. Open market operations are therefore best suited to the step-by-step adaptation of monetary policy because they can be used to initiate small policy actions or aggressively to carry out large changes in bank reserves over a relatively short period of time.

Other monetary policy instruments such as reserve requirements and rediscount policy tend to be inflexible and frequent changes in their rates could have detrimental effects on the banking system. With respect to the reserve requirement, even though it is used at the initiative of the central bank, it is based on a rate which can be changed only rarely. In addition, the increase or decrease in the required reserve ratio improves or reduces the liquidity position of all banks without taking into account their individual situation. It is therefore a rigid and inflexible policy.

According to Coats (1980)[20], open market operations have the further political advantage of imposing adjustments on commercial banks that are less apparent than changes in reserve requirements, though achieving essentially the same results. This tends to lessen banks' resistance to their use relative to the use of reserve requirement changes. Aschheim (1963) argued that one of the advantages of open market operations over reserve requirement changes is stabilization, in the sense that they have a greater impact on the aggregate demand for a given change in the quantity of money. [21]

In the case of discount policy, a central bank can increase or decrease the rates to affect the borrowing by banks from the central bank which in turn affect the banks' reserves. However, it is up to the initiative of the banks to borrow or not and they might borrow from other alternative sources, even though the rates are higher. The central bank, therefore, may not achieve the desired monetary objectives.

In summary, we can conclude that OMO have a clear advantage over the other monetary tools. OMO can also be used to reinforce other monetary policy instruments to achieve the desired monetary goals.

11. Experiences of Using OMO in Non-SEACEN Countries

In the developed countries where active money and capital markets exist, it is easier for the central bank to use open market operations to affect bank reserves quickly or slowly in the day-to-day monetary policy implementation in contrast to developing countries where the money and capital markets are not well-developed. These developing countries have generally preferred the use of central bank discount, reserve requirements and/or moral suasion. OMO, however, have been evolved and developed and used in some developing countries to some extent. It is growing to be an important monetary policy instrument in countries where the conditions for their use exist. This section briefly examines the OMO experiences of some of the developed and developing countries outside the SEACEN region.

---

20. Coats, Warren L., Jr., "The Use of Reserve Requirements in Developing Countries", *Money and Monetary Policy in Less Developed Countries: Survey of Issues and Evidence*, edited by Coats, W.L., Jr., and Khatkhate, D.R., Pergamon Press, Oxford, 1980

21. Aschheim, Joseph, "Restrictive Open Market Operations Versus Reserve Requirement Increases: A Reformulation", *Economic Journal*, Vol. 73, September 1963, p.255.

11.1 OMO in Developed Countries

The developed countries, especially the United Kingdom and the United States, have used open market operations as a monetary tool as early as the beginning of the nineteenth century. However, it has been used to only a limited extent at the earlier periods to support or to reinforce the discount policy or other monetary policy instruments. However, once the money and capital markets became established in the first half of twentieth century, active and well-developed open market operations became the major monetary policy tool. The experiences of some of the developed countries in the implementation of OMO is briefly investigated as follows:

11.1.1 The United Kingdom

In the United Kingdom, Fousek (1957) found that the Bank of England's open market operations, which originated in the nineteenth century, were fully developed in the 1920's and 1930's. During World War II and the early post-war years, however, the Bank kept the Treasury bill rate rigidly pegged, and thus supplied funds to the market at the Bank's initiative. It was only in November 1951 that the Treasury bill rate was finally "freed" and the Bank's control over the availability of credit thereby strengthened. In addition, the Bank generally appeared to confine its open market operations to short-term securities, although on occasion it intervened also in the medium- and long-term market. Moreover, the Bank's transactions in the short-term securities market were executed by another firm, its "bill broker", one of the London discount houses. This broker normally effected transactions for the Bank of England with all of the other discount houses and also with the commercial banks. [22]

The main purpose of the implementation of OMO by the Bank of England during the early period of between 1932 and 1951 was mainly to maintain cheap money, firstly as part of an expansionary and inflationary policy in view of the Great Depression of the early thirties and its aftermath of stagnation, and secondly, to assist in the financing of war expenditure and post-war reconstruction. The use of the Bank rate as a positive instrument of credit control was resumed towards the end of 1951, and although relatively frequent and sometimes drastic changes in the Bank rate have been made

22. **Fousek, Peter** G., *op. cit.*, p. 34-35.

since that time, the general tendency would appear to have been to regard open market operations not only as a means of helping to make the Bank rate effective whenever considered necessary, but also as the principal and consistent method of control because of their direct expansionist or contractionist influence on the supply of money and bank cash. Another objective of the Bank's open market operations, moreover, was to avoid disturbances in the money market as a result of movements of government funds or seasonal movements generally.[23]

Open market operations have become the major monetary policy instrument of the Bank of England as the institutional conditions for effective open market operations have long been present, even though sometimes it has apparently not proved to be sufficiently effective to achieve the monetary targets under certain circumstances. The Bank has had to use OMO in conjunction with other monetary policy instruments such as the Bank rate and other credit control methods, e.g., reserve requirements and credit ceiling. In other words, for OMO to be an effective tool for monetary control, its coordination with other monetary policy instruments is vital in certain conditions.

11.1.2 The United States

As in the case of the Bank of England, the open market policy of the Federal Reserve System of the United States was generally in its early development aimed at reinforcing the discount rate policy and has subsequently become the major monetary policy instrument for monetary control since the fifties. As asserted by De Kock (1976), open market operations in the United States were on various occasions undertaken for the purpose of making the discount rates of the Federal Reserve Banks effective or preparing the ground for changes in their rates. This was apparently their primary function during the twenties when an active discount rate policy was followed.[24] During the thirties and forties, however, open market operations were designed to maintain cheap money and the official discount rate was kept at a very low and almost constant level. Although substantial changes in the discount rates of the Federal Reserve Banks, as in the case of many other central banks, were reserved

23. De Kock, M.H., *op.cit.*, p. 186.

24. The Federal Reserve came to discover the power of OMO during the 1920's and began to favour them more and more. It was during the same period when the Bank of England used full-fledged OMO.

during the fifties, their open market operations remained the principal instrument of monetary policy and served various purposes.[25]

OMO in the United States consist of both outright and temporary purchases and sales by the Federal Reserve of debt instrument of the Federal Government and federal sponsored agencies. Temporary purchases are called repurchase agreements and temporary sales are called matched sale-purchase agreements. Technically, the term OMO could probably be limited to those transactions that are undertaken at the initiative of the Trading Desk to affect reserves by changing the System's securities portfolio and tends to be referred to as an OMO, even if it is not arranged in the market.

Moreover, in the United States, most non-market transactions are made with foreign official institutions which hold U.S. Treasury securities in their accounts at the Federal Reserve. When the foregoing accounts want to buy or sell securities, the Federal Reserve has the option of acting as a counterparty and may choose to do so if that is consistent with meeting the estimated requirements or non-borrowed reserves (these transactions are arranged at market prices). Non-market transactions can also arise when a security in the System's portfolio matures. The Desk usually bids in auctions to replace its maturing debt, which leaves reserves unchanged. It can, if it wishes, drain reserves by bidding for a smaller amount than it holds of the maturing issue but it has no authority to buy more than it holds of the maturing issue directly from the Treasury.

In dealing with the market, the Trading Desk will deal with government securities dealers as with the Bank of England which would deal only with its discount house. That is, when the Trading Desk arranges OMO in the market, it executes them with a group of government securities dealers that have demonstrated that they meet certain standards in terms of volume of operations, capital to provide funding and absorb losses, and the ability to complete operations in a timely and accurate manner. The Trading Desk simultaneously informs all of the dealers with which it trades of its intentions in what is called a "go around" of the market. It solicits competitive bids or offers and selects the most attractive propositions to the point where the volume of transactions which has been planned will be achieved.

---

25. De Kock, M.H., *Ibid*, pp. 189-190.

Although the Federal Reserve Banks have extensive use of open market operations in the execution of monetary policy, it was found to be necessary from time to time, as in the case of the Bank of England, to employ other instruments of credit control, not only to reinforce a policy of monetary contraction but also to support one of monetary expansion.

11.1.3 Other Developed Countries

Apart from the United Kingdom and the United States, some other developed countries such as Canada, Germany, Holland, France, Switzerland, Norway, Japan and Australia have initiated the use of open market operations before the 1950's but in a limited scope due to the limited legislative power of their central banks to deal in the open market and their inactive money and capital markets. Since the second half of 1950s, however, most developed countries have used OMO extensively.

In Canada, according to Fousek (1957)[26], operations of the Bank of Canada in the market began soon after the Bank was established in 1935. The basic conditions for effective open market operations were largely fulfilled. The Canadian bond market, which was quite active even at the time of the Bank's establishment, has since widened considerably and in 1954 a genuine money market began to develop, centering around a market for Canadian Treasury bills. The Canadian commercial banks have for sometime been operating with stable cash ratios, particularly since the broadening of the money market in 1954 with the introduction of the new arrangements for day-to-day loans by banks to government securities dealers and the further development of trading activity in money market instruments. Borrowing at the Bank of Canada by the banks through discounts and advances, and by government securities dealers through repurchase agreements is intermittent and on a small scale. This is because the discount rate remains above short-term market rates and thus tends to discourage such borrowings.

The Bank of Canada's open market operations takes place over a whole range of maturities of government securities and has three major objectives. Firstly, the daily activity is designed to minimize

---

26. Fousek, Peter G., *op.cit.*, pp. 36-37.

market disturbances, as well as to offset seasonal and other temporary changes in market liquidity. Secondly, the Bank has the task of keeping bank reserves at what is regarded as an appropriate level for monetary purposes. Finally, the Bank's operations are directed at broadening the government securities market.

For the countries in the European Continent, open market operations have increasingly become a more important monetary tool since the second half of 1950's. For example, in West Germany, the Bundesbank of West Germany [27], was authorized to buy and sell in the open market a wide variety of securities, namely, eligible trade bills, Treasury bills and bonds issued by the Federal Government, certain Federal Special Funds as well as 'other bonds admitted to official stock exchange dealings'. In practice, however, the Bank preferred to deal mainly in Federal Treasury bills and Treasury bonds with maturities not exceeding two years. As there was an inadequate supply of such securities during its earlier years, it arranged for the conversion of some of its equalization claims[28] on the Federal Government into the desired marketable securities which were required from time to time to reduce the liquidity of the banking sector resulting from a favourable balance of payments. Another important feature was that the Bundesbank sold money-market securities only to the banks and certain public agencies and also bought securities only from such institutions, and this meant that in the main, only bank liquidity fell within the scope of the Bank's open market operations.[29]

In France, the open market operations of the Bank of France prior to 1957 were on a limited scale mainly due to two causes. Firstly, the Government, confronted with a large deficit, had been obliged to borrow heavily from the commercial banks through Treasury bills, sold continuously at fixed rates and with net yields substantially above the discount rate. Secondly, the Bank of France had been under the legal obligation to buy at its discount rate all Treasury bills three months or less from maturity offerred to it by the banks. This

27. Previously, the Central Bank of West Germany was known as Reichsbank which prior to 1974 had undertaken open market operations with a view to absorbing surplus cash and preventing a too rapid fall in the market rate.
28. These claims arose from the currency reform of 1948 and the conversion into so-called 'Equalization Claims', of Government debt held by the banks, including the Central Bank at the time (the Bank Deutscher Landes which was subsequently reconstituted as the Deutsche Bundesbank)
29. De Kock, M.H., *op.cit.*, p. 195.

obligation, however, was removed in mid-1957, and the Bank of France thus obtained greater freedom for its open market operations. Since then, the Bank has moved towards relying on techniques of open market intervention as one of its major monetary policy tools.

In Japan, open market operations have also been used as an important monetary policy instrument since 1955 though on a limited scale. The aim of the Bank of Japan during that period was to increase bank liquidity. The Bank's sales of securities, initially was small, and the Bank suspended them several days prior to the maturity dates of the particular securities. Moreover, the Bank stood ready, for a short period after the sales, to repurchase at the same price the securities that it had sold. It similarly stood ready to repurchase also the securities sold under a 1956 arrangement of placing new securities directly with the commercial banks and other financial institutions rather than with the Central Bank. Nowadays, the main determinants of changes in Japan's monetary base are the Bank of Japan's purchases or sales of government securities in the open market or changes in the Bank of Japan's credit to the private sector.

In Australia, according to Dotsey (1987)[30], the major aim of the Reserve Bank's domestic market operations is to maintain cash system rates at levels consistent with the objectives of monetary policy. This type of policy has been implemented since the floating of the exchange rate in December 1983. However, while the Reserve Bank uses the cash rate as its operating instrument it does not peg the interest rate. The open market operations by the Reserve Bank, moreover, consist of outright purchases and sales and repurchases and reverse repurchase agreements and are almost exclusively implemented through transactions with authorized dealers, although in unusual circumstances the Reserve Bank may transact directly with banks. Much of the trading would be characterized as defensive in nature.

That is, in order to avoid volatility in interest rates the Reserve Bank would attempt to offset flows of cash which tend to move rates. For conditions that are deemed to be short-term or seasonal, repurchase agreements are frequently employed, while the outright purchases and sales are more often used to offset longer-term market conditions which are not in accordance with desired policies.

---

30. Dotsey, Michael, *op. cit.*, p. 14.

There is one major difference between the United States and Australian systems in the accounting conventions. In the United States, operations can routinely provide on the same day, funds to the banking system by channelling funds into dealers' accounts at banks. In this way, an open market transaction directly results in a change in reserve balances. An open market operation in Australia, on the other hand, immediately affects funds to dealers on the next day.

The day-to-day transactions in the open market by the Reserve Bank of Australia are similar to those in the United States and other countries. In addition, the Reserve Bank of Australia also has "safety valves" for the banking system or dealers to adjust their cash positions if the market has badly misjudged the funds situation. The two main safety valves are the Treasury note rediscount facility and the lines of credit provided by the Reserve Bank to authorized money market dealers.

11.2 OMO in Developing Countries

Even though money and capital markets are not fully developed in developing countries, an attempt has been made by many central banks of these countries to establish the factors conducive for central bank purchases and sales of securities in order to improve the flexibility and strengthen the impact of monetary and credit controls. Due to their narrow and shallow government securities market, open market instruments are being used in a limited scope. The other obstacles that hinder the effective use of open market policy, among others, in developing countries include the large cash drain in the financial system, policy conflicts between the Treasury and the central bank and the adoption of a pegged foreign exchange rate and rigid interest rate policies.

The government securities markets in the developing countries are not well developed due mainly to the governments' deliberate policy to raise long-term funds from captive sources at lower rates of interest. There is less incentive for the governments to develop these markets as the opportunity cost of foregoing cheaper sources of finance is prohibitively high. Consequently, the government securities markets lack both breadth and depth in their market structure.

They lack breadth because the holders of government securities are heavily concentrated in the hands of a few financial institutions such as employees provident funds, government savings banks, insurance companies, central banks and commercial banks. The captive market is a result of several factors. Firstly, some of these institutions especially the provident funds, insurance companies and savings banks are required by law to invest a large portion of their investible funds in government securities. Secondly, government securities are considered as trustee stocks, legally eligible to be invested by trust funds in some of the developing countries. Thirdly, they are also considered as liquid assets even though their maturities may range from 10 to 20 years because the central bank is the buyer of last resort in this instance. Fourthly, in some developing countries, the purchase of government securities up to a certain percentage is one of the conditions for opening up bank branches. Fifthly, government securities are considered as eligible collateral for central bank advances or eligible instruments for repurchase agreements with the central banks. Finally, in a number of the developing countries, government securities represent one of the few financial assets that are available for liquidity management especially by the banking sector.

The government securities markets lack depth because there is hardly any secondary market for these securities. Most of the transactions are between the central bank and the financial institutions, mainly to meet the financial institutions' statutory requirements and for liquidity management. The institutional holders of government securities also tend to hold the securities till the maturity dates and a substantial volume of government securities is locked in the captive market. Secondary trading is therefore limited.

Moreover, the conflict between the Treasury and the central bank with regard to using a government security as an instrument for open market operations is more glaring in developing countries than in developed countries and make OMO less effective in developing countries. This is because developing countries tend to have larger government debt financing. The primary objective of the Treasury is to raise as large an amount as possible of financial resources at the lowest possible cost. For the central bank, its prime objective is to regulate money and credit conditions to the best advantage of the nation. In other words, whenever there is tight liquidity, the central bank is obliged to inject funds into the banking system. Likewise,

when there exists excess liquidity, it is the responsibility of the central bank to mop up this excess liquidity.

The rightful role of the central bank is to maintain reasonable real rates of interest so as to mobilize savings and allocate such funds efficiently to the productive sectors at reasonable costs. However, many central banks in the developing countries are normally requested to become the sole underwriter to support the market for government securities. In some countries, the central banks buy the whole primary issue first and resell to the public especially to the financial institutions later. In the secondary market, the central banks are entrusted with the moral responsibility of garnering support for the market by acting as last resort buyer and seller of government securities.

The other problem of using OMO in the developing countries is the cash drain from the banking system. Systematic cash drain will reduce the magnitude of the money multiplier, thus offsetting partly the effect of open market operations. In the developing countries, cash drain as a result of persistent financial disintermediation is increasingly rampant. This is primarily due to two major factors. One is the rapid development of non-bank financial institutions which normally offer higher interest rates and better services to customers. The second factor is the existence of the informal financial sector in the developing countries which offer higher interest rates and better services. Such disintermediation will dilute the effectiveness of open market operations in the developing countries to an appreciable extent.

It must also be noted that most of the developing countries are open economies. External influences tend to dominate the economic development of the developing countries at any conceivable time. Such external forces are either transmitted through the current accounts or capital accounts of the balance of payments and can be substantial in terms of monetary influence. Open market operations in such an environment can only play a minor role in offsetting such external influences. The question of using open market operations as a tool for sterilization purpose would not arise at all given the magnitude of the external influences encountered by the developing economies.

Most developing countries have adopted the pegged exchange rate system. The exchange rate systems range from pegging to a

single currency to pegging to a composite basket. Despite its variety, the fact that the domestic currency is pegged to some external value implicitly implies that the central bank needs to intervene in the foreign exchange markets to ensure that the rule of pegging is strictly adhered to. The central bank's intervention in this regard would have to be at the expense of domestic monetary objectives. In this sense, open market operations cannot be used as an effective instrument to actively achieve monetary targets but rather as an instrument to offset some of monetary disturbances arising from central bank intervention in the foreign exchange markets.

However, despite the unfavourable institutional factor and circumstances, central banks in developing countries have purposely developed their financial structures for implementing open market operations. Excellent studies on this matter on the experiences and evolutions of open market operations in Pakistan and Taiwan have been done by Porter and Khatkhate. [31] They found that open market operations can be evolved over time in the narrow securities markets provided that adverse policies be reversed. They noted that the securities markets in both countries can be sufficiently broad for effective open market operations. One way to evolve open market operations is to allow securities prices to vary in accordance with market conditions. Porter even suggests that the central bank may carry out its open market operations with the price rather than quantity of government securities.

However, Ng (1988) comments that such suggestions can only be operative provided that the Treasury agrees with such operations and that they would not affect interest rates of primary issues very much. Moreover, the central bank must be prepared to incur whatever costs that may arise from such operations.

In the African Continent, Asian countries and Latin American countries, the central banks have developed the money and capital markets and other institutional factors conducive for the use of open market operations as a monetary control to some extent. For instance, among the South East Asian countries, the Philippines and Indonesia

---

31. See Porter, F.C., "Narrow Security Markets and Policy: Lessons from Pakistan", reprinted in *Money and Monetary Policy in Less Developed Countries: A Survey of Issues and Evidences*, edited by Coats, W.L., Jr., and Khatkhate, D.R., *Ibid*, 1980, pp. 387-400. And, Khatkhate, D.R., "Evolving Open Market Operations in Developing Economy: The Taiwan Experience", in *Finance in Developing Countries*, edited by Ayre, P.C.I., Fouer Can & Co, 1977, pp. 92-101.

have used OMO actively since the second half of the 1980's. Some Latin American countries, such as Brazil, Uruguay, Argentina, Venezuela, Colombia, Mexico and Costa Rica have used OMO to a limited extent since the early 1980's. Due to the narrow government securities market, some of these countries have introduced central bank securities from time to time for not only absorbing excess liquidity but also as an active financial instrument in open market operations, such as in Indonesia.

Chapter 3

THE DEVELOPMENT AND IMPLEMENTATION OF OPEN MARKET OPERATIONS IN THE SEACEN COUNTRIES

This chapter examines various aspects of open market operations in the SEACEN countries where data and information are available. It covers five main areas. The first part investigates the salient features and development of OMO in the SEACEN countries in general and examines development of OMO in the Philippines and Indonesia in particular. The second part covers the conduct of OMO in selected SEACEN countries. Part three investigates the use of OMO as substitute or supplement to other monetary policy instruments as well as the coordination between OMO and other policy instruments to achieve monetary goals. Finally, the fourth part reviews and examines some of the current problems and issues in implementing OMO in this region.

1. Salient Features and Major Development of OMO in the SEACEN Countries.

The use of the open market policy instrument in some SEACEN countries has been generally tentative and experimental due to the lack of broad and active money and capital markets. Nevertheless, with improvements made in the securities markets and financial instruments as well as progress in reducing fiscal deficits, OMO have recently become the primary instrument of monetary policy in many SEACEN countries.

The financial assets used for the conduct of OMO in the SEACEN countries are not as varied as those used in developed countries, be it in terms of forms, maturities and marketability. The financial instruments have also not attained a sufficient level so as to allow the central banks in the region to actively make use of open market operations. The government securities market which usually serves as the medium through which open market operations are conducted is generally narrow and limited in the SEACEN countries. As already cited, these government securities are held by "captive" financial institutions mainly in fulfillment of certain statutory requirements. Despite this, the central banks in Indonesia, the Philippines, Sri Lanka, Malaysia and Thailand have been making

use of open market operations in their conduct of monetary policy to some extent. In particular, even though the issuance of central bank securities in the financial markets of Indonesia, Malaysia, Sri Lanka, Thailand and the Philippines was initially aimed at mopping up excess liquidity, they later provided their monetary authorities with instruments through which open market operations can be implemented.

For example, the initial aim of the Philippines and Indonesia in issuing central bank securities was to mop up the excess liquidity brought in by export earnings. With the passage of time, the terms and other features of Central Bank Certificates of Indebtedness (CBCIs) in the Philippines and SBI (Certificate of Bank Indonesia) in Indonesia have been designed so as to reflect changes in market conditions, and thereby make them suitable as open market instruments. Moreover, open market operations of the Central Bank of the Philippines and Bank Indonesia were not confined to selling securities to mop up excess liquidity. On appropriate occasions, they have also entered into repurchase transactions with banks and/or the dealers, that is, buying back the securities they have previously sold before their maturities, in order to inject liquidity into the financial system. In addition, the central banks have also created and developed other open market instruments as well as established other institutions to make open market operations an effective monetary policy instrument.

The salient features and development of OMO in Indonesia, the Philippines and some of the other SEACEN countries are examined in the following:

1.1 Indonesia

In Indonesia, monetary policy is conceived and implemented by Bank Indonesia under the direction and coordination of the Monetary Council.[32] In order to maintain the stability of the Rupiah

---

32. The Monetary Council is a coordinator body assisting the Government in the planning and determination of monetary policy. It comprises the Ministers governing financial and economic fields and the Governor of the Central Bank. The Governor of the Central bank has a special position, in the sense that he has the authority to submit his own views individually to the President of the Republic whenever a decision taken by the Council is in his opinion not in line with the current situation, objectives, and realistic economic principles.

and to promote equitable development, Bank Indonesia is empowered under the Central Bank Act 1968 to control the money supply and to regulate domestic credit and interest rates as well as the allocation of credit to the various sectors of economy. In other words, the central bank exercises this power aimed at not only maintaining monetary policy but also encouraging the development process. The objectives of monetary policy involve sustainable economic growth, equitable income distribution, increased employment opportunity, reasonably low inflation, and equilibrium balance of payments. In achieving the goals, the monetary authorities face, to some extent, a problem of choosing the correct mix of monetary policy instruments.

Prior to the monetary deregulation on June 1, 1983, the principal means whereby Bank Indonesia regulated the levels of credit and interest was through the use of credit ceilings imposed on individual banks, together with the setting of interest rates on both deposits and loans for state-owned banks. Deposit money banks were allowed regular access to liquidity credits from Bank Indonesia for refinancing most of their lending operations. For open market operations, the use of this monetary policy tool by Bank Indonesia prior to June 1, 1983 was quite limited. The main obstacles toward a more effective use of open market operations in Indonesia were, firstly, the insignificant nature of the market; secondly, the limited availability of the necessary securities; and, finally, the tendency of commercial banks to hold substantial cash reserves. [33]

On June 1, 1983, the first of major monetary deregulation measures was introduced, with a view to making the Indonesian banking system more responsive to market forces. The main objectives of this financial reform were (a) to reduce the dependence of the banking system on Bank Indonesia liquidity credit, (b) to stimulate private financial savings, (c) to improve the allocation of financial resources, and (d) over the longer term, to improve bank performance through increased competition, and assist in meeting the needs of the economy for more sophisticated financial services. Consequently, banks were allowed to set their own deposit and lending rates, credit ceilings were abolished, and the number of programmes qualifying for Bank Indonesia liquidity credits was substantially reduced. This reform allowed the monetary authorities to undertake

---

33. Wardhana, A., *Monetary Problems of an Underdeveloped Economy : With Special Reference to Indonesia*, University of California, 1962, p.154.

monetary management with added flexibility by the introduction of new mechanisms of monetary control through indirect monetary instruments such as open market operations, new discount windows[34], and reserve requirements. Among the above-mentioned indirect monetary instruments, open market operations were used actively.

The nature and extent of the conduct of OMO for monetary management in Indonesia are examined in the following:

1.1.1 The Financial Assets Used in OMO

Since the Indonesian Government's budget policy is a balanced budget, the financial instruments used in OMO are therefore confined to only central bank securities and private money market securities. Their features and development are as follows:

(1) Certificates of Bank Indonesia (SBIs)

As part of the June 1983 financial reforms, Bank Indonesia introduced the Certificates of Bank Indonesia, (or Sertifikat Bank Indonesia (SBIs)) on February 1, 1984.[35] They can be used by banks as a temporary outlet for their excess funds before being extended as loans to their customers. When the secondary market for SBIs was developed, the SBIs could be utilized more effectively to influence monetary developments in accordance with the economic policies of the Government. Their maturities are of 30 and 90 days and were initially issued once a week on a preannounced rate set by Bank Indonesia. To absorb idle funds, SBIs can be sold to banks and non-bank financial institutions (NBFIs) and can be traded or discounted through the government securities house.

---

34. Additional monetary measures were implemented in February 1984. Two new discount facilities were introduced: the first is a short-term discount window with facilities of up to two weeks designed to assist in day-to-day fund management; and the second is a slightly longer-term discount facility with availability periods of up to two months, renewable up to a maximum of four months. The extent to which a bank can have access to these new discount facilities depends on the size of its deposit base. An active interbank market has developed in Indonesia and the discount facilities of Bank Indonesia are therefore available only as a last resort.

35. It should be noted that this new SBIs differed from those issued in 1970 - 1972, the latter being introduced only as an instrument to encourage mobilization of funds.

Since March 1984, Bank Indonesia used an auction system, in which each bidder had to indicate both the volume of SBIs he was willing to buy and the interest rate he was willing to accept. Bank Indonesia set the cutoff rate for each auction. Successful bidders, who wanted to buy at rates lower than or equal to the cutoff rate, received the amount of SBIs equal to the quantity they requested at their bid rate. The issuance frequency was increased to three times a week in October 1984 and to five times a week during the period of July - August 1985. Since then, it had reverted to weekly auctions. In October 1984, the 15-day SBIs were introduced but was discontinued in May 1985. Only banks and NBFIs are allowed to buy SBIs directly from Bank Indonesia. Since the monetary crisis in 1987, SBIs of maturities of three to seven days have been sold by auction. In addition, the issuance of SBIs has been increased to every workday.

The efforts to improve and to develop the SBIs as a monetary tool by increasing the frequency of the issuance and the development of their secondary markets became noted as the SBIs recorded impressive progress. In 1989/90, SBIs issued by Bank Indonesia increased markedly to Rp. 49,317 billion which represents an increase of 38.4 per cent over the 1988/89 level of Rp. 35,629 billion. The stock of outstanding SBIs stood at Rp. 2216 billion at the end of March 1989 as compared with Rp. 768 billion two years earlier (Table 3.1). By group of purchasers, state commercial banks remained the largest buyers, having bought 90 per cent of issued SBIs. The average discount rate on SBIs remained relatively unchanged from 1983/84 to 1988/89, at 15 per cent per annum (Table 3.2).

(2) Money Market Securities (Surat Berharga Pasar Uang or SBPUs)

SBPUs are short-term securities introduced on February 1, 1985 in order to strengthen the liquidity and enhance the activities of the money market. They enable banks, NBFIs and business corporations to raise funds. Moreover, these securities can also be traded and discounted. SBPUs consist of the following:

(a) Promissory notes issued by bank's customers in connection with borrowings from banks or NBFIs and those issued by banks and NBFIs in connection with interbank borrowings; and,

(b) Trade bills drawn by one party and accepted by another in connection with a specific transaction, whereby either the

Table 3.1

ISSUANCE, REPAYMENT, AND OUTSTANDING POSITION OF BANK INDONESIA CERTIFICATES (SBI) [1]
(billions of rupiah)

Period	Issuance amount	Accumulated	Repayment	Accumulated amount	Outstanding
1983/84	96	96	50	50	46
February-March	96	96	50	50	46
1984/85	2,046	2,142	1,849	1,899	243
April-March	2,046	2,142	1,849	1,899	243
1985/86	6,186	8,328	5,035	6,934	1,394
April-March	6,186	8,328	5,035	6,934	1,394
1986/87	7,141		8,374		161
April-June	3,101	11,429	2,438	9,372	2,057
July-September	1,627	13,056	2,549	11,921	1,135
October-December	1,901	14,957	2,290	14,211	746
January-March	512	15,469	1,097	15,308	161
1987/88	27,874		27,267		768
April-June	371	15,840	163	15,471	369
July [2] -September	7,625	23,465	6,210	21,681	1,784
October-December	10,511	33,976	11.424	33,105	871
January-March	9,367	43,343	9,470	45,575	768
1988/89	35,629		34,027		2,370
April	3,038	46,381	2,894	45,469	912
May	2,184	48,565	1,983	47,452	1,113
June	2,678	51,243	2,606	50,058	1,185
July	1,577	52,820	2,010	52,068	752
August	1,713	54,533	1,791	53,859	674
September	1,765	56,298	1,377	55,236	1,062
October [3]	2,085	58,383	2,351	57,587	796
November	5,483	63,866	3,079	60,666	3,200
December	4,738	68,604	4,273	64,939	3,665
January	4,216	72,820	5,039	69,978	2,842
February	3,878	76,698	4,007	73,985	2,713
March	2,274	78,972	2,617	76,602	2,370
1989/90	49,317		49,471		2,216
April	2,122	81,094	1,954	78,556	2,538
May	4,768	85,862	4,367	82,923	2,939
June	4,010	89,872	4,318	87,241	2,631
July	3,981	93,853	3,772	91,013	2,840
August	4,552	98,405	4,448	95,461	2,944
September	4,434	102,839	4,422	99,883	2,956
October	5,121	107,960	4,821	104,704	3,256
November	6,353	114,313	5,778	110,482	3,831
December	4,284	118,597	4,814	115,296	3,301
January	4,487	123,084	4,060	119,356	3,728
February	2,726	125,810	3,265	122,621	3,189
March	2,479	128,289	3,452	126,073	2,216

1. The issuance of SBI was started in February, 1984.
2. Since July 23, 1987 the 7-day SBI has been put at auction.
3. Since October 27, 1988 the 180-day SBI has been added.

Source: Bank Indonesia, Report for the Financial Year, 1988/90, p.35

Table 3.2

INTEREST RATES ON BANK INDONESIA CERTIFICATES [1]
(per cent per annum)

Period	7 days	15 days	30 days	90 days
1983/84				
February-March	—	—	15.00	15.00
1984/85				
April-March	--	14.75-16.00	14.50-18.50	15.00-18.50
1985/86				
April-June	—	15.00	16.00	--
July-September	—	—	14.00-16.00	--
October-December	—	—	14.00	15.00
January-March	—	—	14.00	15.00
1986/87				
April-June	—	—	14.00	15.00
July-September	—	—	14.00	15.00
October-December	—	—	14.00	15.00
January-March	—	—	14.00	15.00
1987/88				
April-June	—	—	14.00-16.37	15.00-18.00
July-September	14.25-20.00	—	—	--
October-December	13.63-14.50	—	—	--
January-March	13.50-15.44	—	—	--
1988/89				
April-June	15.30-15.44	—	—	
July-September	15.00-15.50	—	—	
October-December	13.63-16.50	—	15.00-15.50	--
January-March	13.00-15.50	—	14.63-17.75	--
1989/90				
April	13.13-13.75	—	16.63-16.75	--
May	12.88-13.00	—	15.38-16.00	16.38-16.50
June	12.75-12.88	—	15.25-15.38	16.25-16.31
July	12.69-12.81	—	15.13-15.25	16.25-16.25
August	12.38-12.50	—	14.94-15.00	15.94-16.13
September	11.75-12.38	—	14.63-14.88	15.69-15.88
October	11.25-11.75	—	14.25-14.63	15.25-15.50
November	10.38-11.00	—	13.63-14.19	14.75-15.19
December	10.25-10.38	—	13.50-13.50	14.50-14.63
January	10.00-10.25	—	13.13-13.25	14.00-14.25
February	10.00-10.00	—	13.13-13.13	13.94-13.94
March	10.00-10.00	—	13.13-13.13	13.94-13.94

1. The 15-day SBI had been issued since October 1984 but was lifted on May 18, 1985. Since July 23, 1987 the issuance of the 7-day SBI has been started while the 30-day and 90-day SBI were postponed temporarily. Since October 1988 the 30-day and the 90-day SBIs have been reissued in addition to the issuance of the 180-day SBI.

Source: Bank Indonesia, Report for the Financial Year, 1989/90, p. 36

drawer or the drawee is a customer of a bank or NBFI, and trade bills drawn by a bank or NBFI customer and accepted by another bank or NBFI in connection with credit extension. Banks and NBFIs can trade in SBPUs among themselves or with Bank Indonesia. To streamline and increase trade in SBPU, as well as encourage the creation of a secondary market, an NBFI (PT Ficorinvest) was appointed as a market maker (a discount house), standing ready to purchase and sell SBPU and fund its holdings of this paper in the market.

Initially, in February 1985, the maturities of SBPUs were between 30 and 90 days and the minimum denomination was Rp. 50 million. On August 7, 1985 this maturity was extended to six months and the denomination was lowered to Rp. 25 million. The efforts to improve the features of SBPUs were intended to popularize SBPUs which in time would enhance their role in open market operations. In addition, the maximum amount of SBPUs rediscounted by banks to the securities houses has also been raised since August 1985. State banks which were previously allowed to rediscount 5.0 per cent of Rupiah mobilized from third parties were now allowed to rediscount 7.5 per cent and the maximum amount allowed to be rediscounted by other banks was raised from 10.0 per cent to 15.0 per cent.

Before July 1987, the limit holding of each bank at PT Ficorinvest was 15.0 per cent of the bank liabilities to the third parties. In order to encourage SBPU trading among banks, and hence develop the SBPU market, a bank which has already reached its SBPU limit with PT Ficorinvest could obtain additional funds from another bank which has not reached its SBPU ceiling. Thus, banks (and NBFIs) could utilize each other's limit until their total limit is equivalent to 15.0 per cent of their liabilities to third parties. Moreover, PT Ficorinvest, the market maker in SBPU, was allowed to set its buying and selling rates within the limits established by Bank Indonesia. The SBPU market has been further improved in October 1988 with the introduction of a new monetary policy package. The trading of SBPU by the Central Bank is presently conducted through auctions.

Table 3.3 shows that in 1984/85, the purchase of SBPUs by PT Ficorinvest reached Rp. 224.2 billion of which Rp. 19.2 billion was resold so that the holding at the PT Ficorinvest amounted to Rp. 205.0 billion. In 1985/86 total SPBUs purchased and sold by PT Ficorinvest increased tremendously to Rp. 6,113.4 billion and Rp. 5,704.8 billion, respectively. Taking into account the outstanding

Table 3.3

TRANSACTIONS OF MONEY MARKET SECURITIES
(billions of rupiah)

Period	Buying	Selling	Outstanding
1984/85			
February-March	224.2	19.2	205.0
1985/86			
April-March	6,113.4	5,704.8	613.6
1986/87			
April-June	4,279.8	4,452.4	441.0
July-September	5,678.3	6,005.1	114.2
October-December	7,287.7	6,435.2	966.7
January-March	14,382.3	14,426.2	922.8
1987/88			
April-June	15,784.9	16,302.4	405.3
July-September	74.9	480.2	—
October-December	—	—	—
January-March	—	—	—
1988/89			
April	—	—	—
May	140.4	140.4	—
June	100.3	50.0	50.3
July	288.8	339.1	—
August	93.1	93.1	—
September	358.4	358.4	—
October	139.8	139.8	—
November	—	—	—
December	—	—	—
January	13.0	—	13.0
February	19.4	—	32.4
March	112.2	144.6	—
1989/90			
April	369.1	158.7	210.4
May	—	—	—
June	—	—	—
July	—	—	—
August	—	—	—
September	—	—	—
October	—	—	—
November	—	—	—
December	—	—	—
January	166.1	—	166.1
February	302.1	335.0	133.2
March	464.8	345.3	252.7

Source: Bank Indonesia, Report for the Financial Year, 1989/90, p.37.

amount of SBPUs of Rp. 205.0 billion at the end of March 1985, the SBPUs held by PT Ficorinvest at the end of March 1986 was Rp. 615.6 billion. These increased transactions of SBPUs were due to the efforts made in the encouragement of trade in SBPUs. The minimum nominal value was fixed at Rp. 25 billion compared with the previous minimum level of Rp. 50 million, and the maturity was altered from a maximum of 90 days to 180 days. In addition, the rediscount rate of SBPUs fixed by Bank Indonesia was reduced from 20.5 per cent per annum in February 1985 to 19.5 per cent per annum in May, to 18.0 per cent per annum in July and to 17.0 per cent per annum in August 1985.

In 1986/87, trading in SBPUs in the secondary market continued to show good progress. The purchase and sales of SBPUs by PT Ficorinvest increased to Rp. 31,628.1 billion and Rp. 23,068.7 billion, respectively. In the same period, matured SBPUs amounted to Rp. 9,791.5 billion. Taking into account the outstanding amount of SBPUs at the end of March 1986 of Rp. 656.0 billion, SBPUs held by PT Ficorinvest at the end of March 1987 amounted to Rp. 996.0 billion.

However, the continued slow growth in the world economy coupled with uncertainty in the world oil market in 1987/88 had an adverse impact on economic developments in Indonesia. The challenges encountered in the monetary sector included, inter alia, an outbreak of speculation on the foreign exchange which put pressure on the balance of payments and caused interest rates to fluctuate markedly. In order to overcome a speculative attack on the Rupiah, Bank Indonesia pursued a tight monetary policy, especially during the first quarter of the financial year 1987/88. This policy was implemented by raising interest rates on SBIs and discount facilities, and the rediscount rates on SBPUs as well as by gradually lowering the ceiling on SBPUs. To accelerate the adjustment, the authorities transformed deposits of some public enterprises from banks into SBIs.

As a result of such cautious monetary policy during 1987/88, Bank Indonesia undertook only limited purchases of SBPUs. As of end of March 1988, there were no outstanding SBPUs compared with the Rp. 922.8 billion at the end of previous financial year, 1986/87.

1.2 The Philippines

The Central Bank of the Philippines which commenced operations on January 3, 1949 is empowered to carry out open market operations exclusively for the purpose of achieving the objectives of national monetary policy. It can buy and sell government securities in the open market for its own account, and to issue and negotiate Central Bank obligations. Decisions on such operations are governed by its effect on the balance of payments and the volume in money supply. Section 9b of R.A. 265, as amended, established the general guidelines under which open market operations may be conducted. It provides that during periods of inflation whenever inflationary dangers exist, the Central Bank shall refrain from making open market purchases and shall sell its security holdings or its own certificates of indebtedness. On the other hand, when national monetary policy requires an expansion in the money supply, the Central Bank may repurchase its own evidences of indebtedness or purchase other government securities in the open market.

In the early years of central banking, operations in the open market were very limited. Prior to 1960, the trading of government securities for monetary control was not used by the Central Bank due to the fact that there was no existing bond market. Government securities were then generally characterized by extremely low interest rates which kept them from being actively traded. They were mainly used by banks to form part of their reserves against deposit liabilities.

The first substantive move to make open market operations an instrument for fine-tuning was undertaken during the last half of the sixties with the introduction of Treasury bills. Compared to the earlier issues of the National Government, Treasury bills offered higher interest rates and a wider range of maturities ranging from 69 to 182-day maturities.

A year after the launching of the Treasury bills programme, the Monetary Board authorized the Central Bank to enter into repurchase agreements to help dealers finance their inventory positions with Treasury bills as the only acceptable collateral. Qualified dealers availed themselves of this financial assistance, which became a ready source of funds for the development of an active secondary bills market.

1.2.1 The Establishment of the Open Market Committee

In 1966, simultaneous with the development of a Treasury bills market, an Open Market Chief in the Securities Marketing Department of the Central Bank was appointed, paving the way for the creation of an Open Market Committee (OMC) on July 2, 1968. The Committee was created for purposes of advising the Monetary Board on matters relating to open market operations, implementing the policies that may be laid down by the Monetary Board on these matters and establishing close liaison with the Government through a representative from either the Department of Finance or the Auditor General recommended to the Central Bank. The newly created Committee was authorized to perform the following market operations as initial exercises for eventual full-scale open market operations [36]

(a) Setting up a pilot trading desk operations;

(b) Continuation of the process of building up contacts with the National Association of Government Securities Dealers and the financial community;

(c) Establishment of requisite statistical services/ publication of monetary indicators;

(d) Consolidation of work relationships with the Department of Finance and other government agencies involved in debt management; and,

(e) Training of selected personnel on the subject of Mechanics and Techniques of Training in Government Securities; and, Procedures; Techniques; Policies and Strategy for Open Market Operations, as directed under Monetary Board Resolution No. 309 dated February 22, 1966.

The Committee was a body of five (5) composed of a Deputy Governor as Chairman ex-officio and four (4) members which included the Directors of the Department of Economic Research, the Department of Loans and Credit, the Securities Market Department

---

36. Monetary Board Resolution No. 1036 dated July 1968.

and the Superintendent of Banks, or their representatives. The Director of the Securities Market Department was designated as the initial Manager of the Open Market Account and was made responsible for coordinating all activities of the Committee, and implementing instructions from the Committee.

In anticipation of stepped-up open market operations, the Open Market Committee was reconstituted on February 2, 1974. Designated as Chairman was the Deputy Governor of the Domestic Operations Sector and the members were composed of two (2) Special Assistants to the Governor and two (2) Assistants to the Governor. The Director of the Securities Servicing Department was appointed as Manager of the Open Market Account. The Committee was assigned the following primary responsibilities :

(a) To advise the Monetary Board and the Governor on all matters relating to open market operations; their use, timing, relationship to other tools of monetary management and other matters relative thereto; and on the determination of a suitable policy framework for operations of this nature;

(b) To implement the policies that may be laid down by the Monetary Board on these matters; and,

(c) To provide the requisite statistical background for its recommendations to the Monetary Board and for use in carrying out open market operations.

Within the Committee was an Operations Group created to coordinate its various duties and functions. The Operations Group met regularly to assess the latest developments affecting bank reserves and the state of the money market. Briefly, the Operations Group was responsible for collecting and transmitting to the OMC and to the Governor, timely and accurate economic intelligence to assist in the making of policy decisions.

A Trading Desk was also installed in the Securities Servicing Department to execute day-to-day decision to buy or sell government securities. The Director of the Securities Servicing Department, as Manager of the Open Market Account supervised the Trading Desk which also served as the observation and listening post of the Operations Group on the up-to-the-minute developments in the money and securities markets.

The Open Market Committee was reconstituted again on January 29, 1981, consistent with the objective of the Central Bank to strengthen monetary controls and to promote financial balance and economic stability. The Committee is now a body of six (6) composed of the Central Bank Governor as Chairman, a member of the Monetary Board as Vice-Chairman, and four members composed of the Assistant Secretary of the Finance Department and the Deputy Governors of the Domestic, International and Research Sectors of the Central Bank. The Deputy Governor of the Domestic Operations Sector was also designated as Manager of the Open Account. The Operations Group was replaced by the Technical Staff[37] whose duties include continuous appraisal of conditions in the money and capital markets and providing a wide range of data and analysis from the raw materials used by the Committee in evaluating the general money and credit situation. The operating arm of the Committee is the Securities Servicing Department where the Trading Desk is installed. The Director of the Securities Servicing Department was also designated the Deputy Manager of the Open Market Account and is in touch daily with the Manager of the Open Market Account for market feed-back and instructions.

At present, open market operations are conducted in conjunction with the financial programme undertaken by the Central Bank in its overall task of monetary management. The instrument is useful in its ability to influence levels of commercial banks' holdings of cash, liquid assets, foreign exchange, or government securities (i.e., reserve money) which directly affects the availability of credit. Thus, it is able to contract liquidity in times of inflation or allow an expansion should national policy so require. This is achieved by the Central Bank's purchase or sale of its security holdings or its own certificates of indebtedness.

To facilitate the implementation of open market operations in conjunction with the Bank's financial programme, the Committee is tasked with the following functions and responsibilities:

(a) To coordinate the preparation and updating of the annual financial and economic programmes;

37. The Technical Staff is composed of representatives from the National Economic Development Authority (NEDA), Budget and Finance Departments, Research Sector of the Central Bank as well as various operating departments of the Bank such as the Treasury, Loans and Credit, Accounting, Foreign Exchange and Investments and Management of External Debt.

(b) To review and recommend to the Monetary Board alternative monetary policy measures in support of these programmes, covering among others, rediscounting, repurchase agreements and open market operations;

(c) To monitor actual developments on reserve money and net domestic assets of the monetary system;

(d) To coordinate monetary and fiscal policies, particularly as they affect the credit of the monetary system to the National Government; and,

(e) To prepare special studies or issues related to the financial programme, e.g., multiplier concept, government corporation market borrowings and interest rate movements.

Overall policy directions are provided by the Committee to guide the work of the Technical Staff. Given these policy directions, the Technical Staff prepares the initial financial programme. The programme which already incorporates the recommendations on monetary and fiscal policy measures, together with the assumptions used are presented to the Committee for review. On the basis of the comments of the Committee, the programme is continuously revised until consistency among the targets and agreement on the policy measures are achieved.

To improve the implementation and monitoring of the programme which usually covers a period of one year, the OMC translates it into quarterly, monthly and weekly operational targets. A monthly reserve money programme is prepared with levels set on the fixed or uncontrollable components, and consequently, the compensatory items such as RRPs, RPs, and the build-up in National Government deposits which should be consistent with the monthly National Government cash budget. The different agency/department representatives are tasked to monitor and ensure compliance with the targets for the accounts which principally fall under their area of responsibility, e.g., the Central Bank Department of Loans and Credit implements the programme for open market operations, while the Departments of Finance and Budget implement the government budget programme. Meanwhile, the Central Bank's Research Sector undertakes the monitoring of the overall financial programme.

The OMC has a monitoring system which allows the timely reporting of information which would enable policy-makers to assess developments and implement necessary policy action soon

enough to help ensure achievement targets. Daily reports are submitted by the OMC Technical Staff members to the Research Sector where reports are reviewed and analyzed for the daily overall summary report for the Central Bank Governor on reserve money movements. The OMC conducts weekly meetings where members report on the developments on their respective areas and discuss issues and problems that may endanger the attainment of the programme targets together with the alternative policy measures which may be adopted to eradicate or minimize these problems. Weekly reports on the status of the financial programme, particularly the compliance with the performance criteria are submitted to the Monetary Board.

1.2.2 Basic Features and Development of Financial Assets Used in OMO

Even though the Open Market Committee was set up fully in July 1968 to advise the Monetary Board on matters relating to open market operations as mentioned above, the OMC started to engage actively in OMO only in 1975. The securities that have been used in OMO since then are the Central Bank securities, i.e., Central Bank Certificates of Indebtedness (CBCIs), and the Central Bank bills ("CB" bills or "Jobo" Bills) and Treasury bills. Their main features and developments are as follows:

(1) Central Bank Securities

Since 1970, the Central Bank has issued two securities, namely, the Central Bank Certificate of Indebtedness in 1970 and the Central Bank bills (CB bills) in 1984. These central bank securities are both evidences of indebtedness issued by the Central Bank for its own account by virtue of R.A. 265 (Central Bank Act), as amended. Both of them have the same initial objective - that of siphoning off excess liquidity in the financial system. They were later developed as monetary instruments for open market operations.

San Jose and Polvorosa (1987) stated that the Central Bank started to float CBCIs in the 1970s to mop up excess liquidity arising from the commodity export boom at that time. However, proceeds from the sale of CBCIs were specifically meant to be channeled from the urban to the rural areas in support of the country's intensified agricultural programme. The earlier issues of CBCIs were placed

in the market through direct sales. Starting from July 28, 1978, the features of CBCIs were redesigned in line with the rationalization programme for government securities to include the sale of CBCIs through auctions. A phase-down programme for CBCIs was also adopted in 1981 by allowing maturing CBCIs to be replaced by Treasury issues as part of the rationalization programme, and more specifically, to make Treasury bills paramount in the government securities market. Towards the second half of 1983, there was again a need to reduce the level of total liquidity and the phase-down programme for CBCIs was temporary suspended since the reception of the market to Treasury issues has not been favourable. Another series of CBCIs was authorized under MB Resolution No. 1394 dated August 19, 1983, to be sold through auction or negotiated basis with a new basic design to increase its attractiveness to investors. These changes in the design of CBCIs proved to be not attractive enough as the investing public took a passive stance on these issues. This, together with other considerations prompted the Central Bank to introduce CB bills in the market in order to mop up the excess liquidity in the system.

The CB bills were introduced under MB Resolution No. 416 dated March 16, 1984. These bills are direct and unconditional obligations of the Central Bank of the Philippines and are fully guaranteed by the National Government. These instruments have the following important terms and features:

(a) maturities not to exceed 360 days;
(b) registered or bearer form;
(c) taxable yields;
(d) minimum denomination of P 500,000 for firms; P 100,000 for individuals;
(e) to be sold at a discount or on a negotiated basis; and,
(f) may be used as collateral for repurchase agreement with the Central Bank but may not be used in the satisfaction of any kind of statutory reserves.

The reception of the market to the sale of CB bills was encouraging so that the first issuance of P 5 billion in March 1984 was followed by second issuance of another P 5 billion two months later. The CB bills market grew to be an active market and played a major role in the open market operations of the Central Bank until the authorities developed the Treasury bills.

The difference between CB bills and CBCIs is that CB bills are sold solely on a negotiated basis, while the sale of CBCIs varied from direct sales, negotiated to auction. In terms of yield, CB bills have higher interest rates than CBCIs [38] .Moreover, CB bills are short-term in nature with maturities not exceeding 360 days, while CBCIs are relatively long-term with maturities ranging from 18 months to 7 years. The relatively attractive features of CB bills over CBCIs explains the receptiveness of the market to CB bills. It is to be noted, however, that CB bills are aimed at the upper bracket of the market with minimum placement of P 500,000 million, while the CBCIs cover placements of as low as P 10,000 [39]

(2) Treasury bills

Like the CB bills, the Treasury bills are short-term in nature with market competitive yields. In the primary market, both CB and Treasury bills are issued in higher denominations. It is in the secondary market where Treasury bills can be sold in smaller denominations of as low as P 5,000 depending on the bank dealers such that a wider segment of the public can invest in these assets. The Philippine Treasury bills are issued by the Central Bank of the Philippines as fiscal agent of the Government under Republic Act No. 245, as amended, which authorizes the Secretary of Finance with the approval of the President after consultation with the Monetary Board, " to borrow from time to time on the credit of the Republic of the Philippines such sums as may be necessary in order to meet public expenditures authorized by law". The distinguishing features of the Treasury bills are as follows: [40]

(a) The amount offered for public subscription is subject to competitive bidding so that the interest rate is reflective of market conditions.

(b) A dealership network supports an active market where Treasury bill investors could trade their holdings with ease before maturity.

---

38. For example, the yield of CB bills in 1984 ranged from 26 to 32 per cent as against CBCIs' rate of 9 to 17 per cent.

39. San Jose, Armida, and Cesar Polvorosa, Jr., "CB bills as Instrument of Open Market Operations", Central Bank of the Philippines, *CB Review*, June 1984, p. 23.

40. Bricia, Flordelis S., "Treasury Bills : An Instrument for the Development of the Market for Government Securities", Central Bank of the Philippines, *Bondline*, Monthly Bulletin, September 1981, p. 24.

(c) The discount feature distinguishes Treasury bills from other evidences of indebtedness.

(d) The relatively no risk factor gives Treasury bills a decided advantage over privately issued securities.

(e) The short maturity period hedges investors from future losses in wide interest rates fluctuations.

(f) Treasury bills may be utilized for repurchase agreements with the Central Bank by authorized dealers of government securities.

The comparative features of Treasury bills and CB Bills are shown in Table 3.4. Treasury bills are sold in the primary market through auction. The Ministry of Finance, through the Central Bank, invites prospective participants to auctions held at the Securities Servicing Department (formerly Securities Market Department), Central Bank of the Philippines. Offerings which specify the terms and conditions of the issue to be sold with the attached tender forms to be accomplished by interested parties are released by the Central Bank. The auctions are normally held on Mondays following the announcement of the offering.

To develop a market for Treasury bills, the National Association of Government Securities Dealers was formed in 1966. These dealers guarantee the underwriting of primary issues for the National Government and at the same time, provide a safe income-earning and liquid outlet for short-term funds of investors.

In addition, to enable dealers to increase their inventory as well as their rate of return, the type of financing made available to them by the Central Bank was the repurchase agreement. They were allowed to borrow against Treasury bills acquired by them either in the primary or secondary market with the firm commitment to repurchase sold bills at some future dates.

The maturity may vary from one-day to several weeks and most usually for a period of 30 days, the interest of which is the cost of borrowing of commercial banks at the discount window (which may vary from time to time as market condition demands). The dealer may, however, prepay a repurchase agreement before the expiry of such an agreement. Roll-overs of existing repurchase agreements

Table 3.4

FEATURES OF TREASURY BILLS AND CB BILLS

Treasury Bills (New Series)		CB Bills	
Definition	: Direct obligations of Government pursuant to R.A. 245, as amended	Definition	: Direct issues of the Central Bank pursuant to Section 98 of R.A. 265, as amended
BASIC FEATURES		**BASIC FEATURES**	
Term	: With maturities of not less than 15 days but not to exceed 364 days	Term	: not to exceed 360 days
Price	: At a discount	Price	: At a discount
Interest Rate	: No interest, but with discount rates determined through negotiation or auction, which are usually reflective of market rates	Interest Rate	: No interest, but with discount rates determined through negotiation, which are usually reflective of market rates
Denomination	: P 10,000; P 50,000; P 100,000; P 500,000; P 1 million ; P 10 million	Denomination	: Minimum denomination of P 100,000 for individuals and P 500,000 for firms
Form	: Bearer	Form	: Bearer or registered
Manner of sale	: Negotiated/on tap/ or auction basis.	Manner of sale	: Through negotiator
Security of Issue	: Direct, unconditional and general obligation of the National Government	Security of Issue	: Direct and unconditional obligation of the Central Bank.
Redemption	: Redeemable on maturity at par value	Redemption	: Redeemable on maturity at par value
Other utilities	: May be accepted as security in any transaction with the Government.	Utilities	: May be accepted as security in any transaction with the Government.

Source : Bricia, Flordelis S., "T-Bills and CB Bills as Monetary Policy Instruments", Central Bank of the Philippines, Bondline, Quarterly Bulletin, Oct. - Dec. 1985, p.20.

are usually permitted. This assistance gives relief to dealers in carrying their inventories and in sustaining the market.

The auctioning of Treasury bills to the public which started in 1967 has served as a barometer of the prevailing conditions in the market guiding the Central Bank in the management of the banking system's reserves. With an active dealer network supporting the Treasury issues which in turn received Central Bank financing privileges, Treasury bills became an often-used instrument of monetary policy. Since Treasury bills constituted the bulk of the government securities handled by the public, the role of the securities was extended from simply mobilizing funds for the Government to being tools for the Central Bank's credit or contraction operations.[41]

The auction volume of the Treasury bills grew ten-fold after almost two decades since the first launch in 1966 with the size of the dealer network increasing from eight dealers to a dozen in 1983. However, from 1984 and subsequent years until 1986, the auction system was suspended to give way to the negotiated series issued on daily basis. This together with CB bills grew in magnitude which at certain dates involved redemptions of over P 5 billion (for both Treasury bills and CB bills).

It was at the beginning of the fourth quarter of 1986 that the new Treasury bills programme was pursued involving weekly auction volumes ranging from P 3.2 billion to P 6.5 billion for the first six months and thereafter leveling at P 4.5 billion up to end 1987. CB bills were phased down to zero level and Treasury bills emerged as the sole primary open market instrument.

1.2.3 Instruments Used for OMO

Open market operations in the Philippines are centred around instruments such as the repurchase agreements (RP) and outright contracts. The use of repurchase agreements as instruments of open market operations started when authorized agent banks were allowed to enter into repurchase agreements with the Central Bank on their holdings of CBCIs Series E-1, AA and B by filing their applications with the Securities Servicing Department. The purpose

41. Navarva, Jorge Equardo B., "The Emergence of the Government Securities Market", Central Bank of the Philippines, *Bondline*, December 1981, p.10.

of this operation was to influence money rate levels through the injection of funds into the system.

Generally, the Central Bank utilizes repurchase agreements as an instrument of open market operations whenever there is a need to expand or contract money supply or to accommodate a temporary shift of funds in the banking system which are expected to be reversed after a certain interval, or as a credit facility to provide financing of dealer positions. When a repurchase agreement expires, the purchase and/or sale is extinguished automatically, thus avoiding redundancy of funds in the market. The repurchase agreement in the Philippines may be divided into four categories, namely, regular RP; overnight RP, Reverse RP-term (or term RRP), and reverse RP-overnight (or o/nite RRP) which are briefly described in the following:

(a) **Regular RP** This type of RP, which includes financing for authorized government securities dealers, is an undertaking whereby the Central Bank buys government securities after a specified period. This transaction is undertaken when the Central Bank desires to increase the level of money supply in the economy only for a short period not to exceed 15 days. The interest rate charged by the Central Bank is market-oriented, taking into consideration the yield rates of Treasury bills, and the inter-bank call loan rate, among others. The government securities which may be used by banks as collateral for their borrowings must be : (a) issued by the National Government or its instrumentalities; (b) unconditionally guaranteed by the National Government; and, (c) maturing within a period not exceeding 10 years.

(b) **Overnight RP** An Overnight RP is a transaction where the Central Bank lends to banks for just one business day aimed at assisting banks in correcting their deficient liquidity positions which resulted from clearing losses, and heavier fund outflows during the preceding business day. The interest rate charged by the Central Bank is based on the interbank market plus a certain fixed charge considering that the Central Bank is a bank of last resort.

(c) **Reverse RR-Term** (Term RRP) With this type of transaction, the Central Bank is the borrower. When the Central Bank desires to decrease liquidity for a certain time duration, but only on a temporary basis, it borrows under term RRP. The rate offered by the Central Bank for its borrowings is computed based on the market and takes into consideration the yield of Treasury bills, inflation rate, the depreciation rate of the peso, and the interme-

diation indices of banks, among others. Term RRPs may run up to 1 year. The collaterals used by the Central Bank when it borrows under RRP are those government securities that are held in the central bank portfolio.

(d) **Reverse RP - Overnight (O/nite RRP)** The Central Bank's Treasury undertakes overnight borrowings under term RRP. Like term RRPs, overnight RRPs aim to siphon off funds from the monetary system only on a short-term basis and to achieve a desired level of liquidity in accordance with the reserve money programme. The rate offered by the Central Bank on its overnight borrowings is market-oriented.

As for the outright contracts, the Central Bank will use this instrument when it desires to increase or decrease money supply on a more permanent or longer basis. In other words, government securities are purchased or sold without any commitment to repurchase the same at some future time.

1.3 The Nature and Extent of OMO in other SEACEN Countries

Apart from Indonesia and the Philippines, other SEACEN countries have also put more effort in developing the securities market and other necessary conditions conducive for the use of OMO as a monetary management instrument.

In Sri Lanka, for example, under Section 95 of the Monetary Law Act, the Central Bank of Sri Lanka has the legal authority to engage in OMO, not only for the sale and purchase of government and government guaranteed papers but also for its own securities. During the recent past, the Central Bank of Sri Lanka has implemented several measures to strengthen the role of the market which included the liberalization of the interest/discount rates especially in the Treasury bill market. In order to ensure a regular supply of Treasury bills, weekly tenders have been arranged by gradually rescheduling the unregulated issues of such bills. Apart from this, bills are also made available through the branches of the Central Bank to promote the outstation market while a secondary market has been started since 1981.

Although the activities in the secondary Treasury bills market in Sri Lanka has been mostly confined to commercial banks, this has become a mechanism of regulating liquidity in the system on a daily

basis by offering the appropriate level of interest rates for sales and purchases by the Central Bank. The Superintendent of Public Debt also engages in advertising campaigns for the investment of Treasury bills among the non-bank private sector in order to limit the Central Bank's investment in the market by publishing relevant information in newspapers. It should also be mentioned that with a view to improving the scope of open market operations, a repurchase market was established by the Central Bank in January 1988. During recent years, the main thrust of monetary policy was on OMO and the Central Bank encouraged the participation of the non-bank sector in the Treasury bill market. Treasury bills with varying maturities (that is, 3- months, 6-months and 12-months) were introduced in 1989 providing a diverse portfolio option to investors. Moreover, operations under the "Tap System" were further expanded in 1989 by providing an easy access to the Treasury bills market for investors in the Colombo region as well.

The share of non-bank sector holdings of Treasury bills indicated a marked increase from 16 per cent at the end of 1988 to 45 per cent at the end of June 1991.

In Thailand, even though the repurchase market has been established since April 1979, open market operations have been used in a very limited way. This is because the Central Bank seldom "initiates" a position whereby the reserve of banks is contracted or expanded. The Bank's positions in the repurchase market are mostly the outcome of the Bank's response to other participants' demand to borrowings or to invest, although not necessarily to the full extent. The size of the position the Bank decides to take depends, in turn, on the movement of reserve money which the Bank seeks to control. In addition, brokerage activities also predominate the Bank's overall operations in the market. Such Central Bank operations in the repurchase market could not be interpreted as OMO in the strictest sense of the term. Most of the time, the Bank's operations in the repurchase market aim to facilitate liquidity adjustments of other market participants, particularly commercial banks which nevertheless could be developed into OMO in the future. Recently, the Bank has started to move towards deregulating the financial system as well as developing financial instruments in a way which will facilitate the use of open market operations for monetary management.

In Malaysia, the narrow scope of the domestic money and capital markets have so far precluded the active use of open market operations as a discretionary measure to affect the availability and

cost of credit. Open market purchases and sales of money market papers have been undertaken more as a passive response to the banking institutions' demand for liquidity. However, moves were taken to make open market operations a more effective instrument of monetary control. A number of supportive reforms towards this end were introduced, beginning 1986. The major ones included allowing the banking system to maintain its statutory reserve and liquidity ratios on an average basis, expanding the number of money market participants by allowing well-capitalised finance companies to participate in the interbank money market, and realigning the statutory reserve ratios of the commercial banks, finance companies and merchant banks. All the three institutions now have the same statutory requirements. The Central Bank as a fiscal agent of the Government also made its first move to issue government securities with market-related coupon rates in 1987. Subsequently, on January 1, 1989, government securities of up to 10 years maturities were sold by way of auction (previously on subscription basis), thereby letting the market determine their effective yields. In line with this move in June 1990, 23 financial institutions were appointed as underwriters for primary issues of Malaysian government securities. These principal dealers consist of 9 commercial banks, 7 merchant banks and 7 discount houses.

This was further facilitated by the implementation of two sophisticated electronic facilities in December 1989 and January 1990. The first one was the Interbank Funds Transfer System (IFTS), which is an on-line electronic interbank funds transfer communication network system set up to expedite daily interbank funds transfer and settlement among participating financial institutions in their money market transactions and other banking operations. The second was the Scripless Securities Trading System (SSTS), which is an on-line electronic book-entry system that effects and records the trading of government papers, Central Bank Certificates and Cagamas bonds between member institutions. On February 1, 1991, the base lending rate, to which all lending rates are tied, was freed from the administrative control of the Central Bank. Hence, with the exception of interest rates on loans to certain priority sectors, all other interest rates are now freely determined by market forces. The freeing of interest rates is expected to lead to the emergence of market-oriented yield curves which will benefit the future development of the capital market, particularly the development of viable secondary markets for public and private securities.

In Nepal, open market operations were initiated as part of the financial reforms undertaken in 1989. In order to decelerate the Central Bank's financing to the Government and to absorb the excess liquidity of the economy caused by money expansion, Nepal Rastra Bank (NRB) since 1989 has initiated regular auctions of Treasury bills. At present, there are two types of Treasury bills with maturities of 91 days and 182 days. Auctioning of Treasury bills is done on a monthly basis. Open market operations are managed by an Open Market Operation Committee.

Before the introduction of the Treasury Bill auction, the price was determined by the monetary authorities themselves and NRB used to be the sole purchaser. With the introduction of the auctioning system, the price is now determined by market forces and there has been some change in ownership pattern also. Although the securities have rather low yields, the banks and financial institutions have shown interest in holding them because of qualities such as high liquidity and low risk in terms of investment. The sales of government securities are also now being conducted in the context of comprehensive short-term monetary programming.

Since Singapore is a small and very open economy, the Monetary Authority of Singapore (MAS) has relied on the exchange rate as the target of monetary policy. Operations designed for domestic liquidity or interest rate objectives have played a supplementary role. Before May 1987, there was little scope for OMO to influence the liquidity of the monetary system as the secondary Singapore government securities market was not active then. However, with the restructuring of the government securities market in May 1987, OMO have been greatly facilitated. The authority conducted its first overnight repurchase agreement in Singapore government securities (Government bond and Treasury bills) in 1987. These securities are used in conducting OMO in Singapore because they are default free, marketable and held by most financial institutions (by regulation). The Monetary Authority adds liquidity on short-term repurchase (Repo) transactions and withdraws funds in reverse repo transactions. The duration of repos is usually one day as only overnight repos qualify as banks' liquidity assets.

2. The Conduct of OMO in Selected SEACEN Countries

Generally, the process of implementing OMO starts from the formulation of monetary policy and guidelines which are interpreted

into daily open market operations. In the formulation of monetary policy, the Open Market Committee's basic concern is with the real economy, example, production, employment, prices, and the balance of payments. The Committee must translate its broader economic goals into the monetary and credit variables over which the central bank has a direct influence.

In open market operations, the first decision to be taken each morning is whether the central bank should be in the market as either a buyer or seller. A preliminary view is also formed on the volumes the central bank may seek to achieve, i.e., how much cash it must provide or absorb. The views also take into account the general stance of policy and whether financial conditions are seen as appropriate, too tight or too easy. The next decision concerns the securities to be bought or sold. This depends to some extent on broader policy objectives but primarily on the known structure of dealers' portfolios and market portfolios and more generally, on the forecast pattern of days and weeks ahead and also the shape of the central bank's own portfolio.

After the day's trading has ended, the central bank reviews what has happened in the market. For this purpose it considers its own operations, the sources and uses of banking system cash, changes in authorized dealers' balance sheets, volumes of Treasury notes, Treasury bills and bonds settled, interest rate movements, use of the "safety valves", if any, and other market information available (including any new data on money and credit growth). Many of the day's transactions have implications for succeeding periods. Necessary amendments are made to the central bank's projections and preliminary consideration is given to the conduct of operations for the following day and days beyond that.

In the SEACEN countries, the process of implementing open market operations is similar to those in the developed countries. The only difference is that the scale of operations is smaller. The operational process of the conduct of OMO in the selected SEACEN countries of Indonesia and Philippines are investigated in the following:

2.1 Indonesia

The Committee for monetary policy in Bank Indonesia, called the Steering Committee for the Money Market convenes weekly on

Wednesday to review the reserve and money market situation and to decide on the volume of OMO, i.e., the volume of SBIs to be sold and/ or the SBPUs to be purchased, and to recommend the bid rates.

The data used for the formulation of the monetary policy normally consist of forecasts of demand for reserve money, i.e., currency in circulation, required reserves and excess reserves; estimates of factors affecting the supply of reserve money and credit components. By comparing the supply and demand for reserve money, the monetary stance will be revealed as to whether it is tight or relaxed. The Central Bank then targets the desired excess reserves considered as the adequate level for banks to operate efficiently. The difference between the supply of excess reserves and the demand for the desired excess reserves gives an indication on how Bank Indonesia should implement OMO. That is, the supply of excess reserves over the demand indicates the need to absorb reserves by selling SBIs; and the demand for excess reserves over the supply indicates the need to add reserves by purchasing SBPUs. This information is needed to set a "one week" open market operations. For daily auctions, provisional figures of the daily position are used.

Other information provided in the Steering Committee meeting include reports on the development of the money market, the prevailing transactions and interest rates and how banks are responding to the development of the situation. For example, relatively low overnight interbank rates indicate excessive reserves, and hence Bank Indonesia should sell SBIs. On the other hand, relatively high interbank rates indicate a shortage of reserves, and hence, banks can sell SBIs or SBPUs from their portfolio through PT Ficorinvest, an agent of Bank Indonesia.

Other important information for the Steering Committee include the development of the foreign exchange bourse. The situation in the bourse, whether showing overbuying or overselling, is useful to the implementation of OMO since the huge amount of transactions in the bourse would also influence banks' reserves.

Bank Indonesia announces an auction plan in the eve of the auction regarding the sale of SBIs or purchase of SBPUs including the maturity of those instruments. This announcement reflects both the policy action taken by Bank Indonesia and the signals in the money market which indicates the liquidity position of banks. In the auction,

which is implemented in the morning, banks offer their bids including the amounts and the rates of SBIs and SBPUs and Bank Indonesia will announce the accepted bid within an hour. This information covers the sale amount of SBIs or the purchase amount of SBPUs and cutoff rates.

2.2 The Philippines

In the Philippines, open market operations are conducted in conjunction with the financial programme undertaken by the Central Bank in its task of monetary management. The financial programme is a basic input to the more specific objectives of the Central Bank, which is monetary management, and which includes the determination of the broad limits within which movements in reserve money may be permitted. This reserve money can be influenced by conducting open market operations. This influence can be exercised through the use of two methods-repurchase agreements, regular and reverse, and outright purchases or sales. The repurchase agreements are more adaptable to day-to-day changes in credit and monetary condition while outright purchases, or sales are best suited for long-term change in the reserve base.

For the implementation of OMO, the Trading Desk implements the instructions of the Open Market Account Manager to buy or sell government securities on outright basis or through repurchase agreement or reverse R/P. The following are the implementing procedures that are observed daily at the Trading Desk.

(1) At 9:00 a.m., information is gathered on the interbank transaction effected the afternoon before.

(2) Telephone requests are received from banks and other participants for R/P availments (regular or overnight), roll-overs or preterminations.

(3) Requests are submitted to the Manager of the Open Market Account by the Director, Security System Development (SSD) in his capacity as Deputy Manager of the Open Market Account.

(4) Telephone approval of above requests is relayed to applicants.

(5) At 11:00 a.m., another monitoring is undertaken of the day's transactions which include demand and term borrowings/lendings of banks and non-bank financial institutions with quasi-banking authority.

(6) Trading reports are prepared .

(7) At 2:00 p.m., a third monitoring is conducted together with quotes on term lendings/borrowings.

(8) R/P documents and collaterals are received and examined.

(9) R/P is submitted for approval of the Director for amounts up to P 10 million and of the Deputy Governor, Domestic Operation Sector for amounts exceeding P 10 million.

(10) Credit is made to banks for R/P proceeds.

(11) At 4:00 p.m., reports on R/P availments and payments for the day are prepared.

3. *The Use of OMO as a Substitute or Supplement to Other Policy Instruments*

In developing countries such as the SEACEN countries where OMO are at the early stage of development, other monetary policy instruments must be used in conjunction with OMO in order to achieve monetary targets.

The effects of combining OMO with other monetary policy tools of the selected SEACEN countries can be traced in the factors affecting the reserve money (see Appendix 14).

For example, in the Philippines, even though open market operations are used to achieve monetary targets, they are also often used in combination with other policy instruments such as rediscounting, reserve requirements, selective credit regulations, and other instruments of monetary management as economic conditions warrant their collective use. In 1980s, the Central Bank has increasingly relied on open market operations as a supplementary or complementary tool for achieving certain monetary objectives. For instance, in the early 1980s when the country faced inflationary pressures from the second oil shock, the sales of CBCIs to offset the inflationary impact of the advances by the Central Bank to private sector were increased. At the same time, the Central Bank also raised the discount rate from 1 per cent to 3 per cent and initiated interest rates deregulation and uniform reserve requirement ratios.

Moreover, during the economic downturn from 1983 to 1985, OMO were also actively used to support the fiscal and monetary objectives of moderating liquidity expansion and reducing inflationary pressures. RRPs especially were actively used to mop up excess liquidity by raising the yields associated with this instrument. Since 1986, the Central Bank has relied mostly on Treasury bills as an OMO instrument and they are being used in coordination with other available monetary policy tools as and when it is warranted.

In Indonesia, following the financial reform of July 1, 1983, Bank Indonesia introduced monetary instruments which include open market operations, new discount windows, and reserve requirements. To achieve the monetary goals under certain conditions, OMO were used with other monetary policy instruments. For example, during the last two semesters of 1986/87 when the economy showed a remarkable improvement, Bank Indonesia adopted an accommodative monetary stance as reflected in the injection of funds to banks through OMO and in the reduction of interbank call money rate from 16.7 per cent in January 1987 to 13.6 per cent in April 1987. However, speculative pressures which emerged at the end of 1986 was due to the sharp drop in oil prices in August 1986 intensified during May-June 1987. In order to safeguard the business environment and to maintain a sound balance of payments condition, Bank Indonesia took measures in May and June 1987 to increase short-term interest rates.

To speed up the adjustment process in June 1987, the authorities ordered certain state enterprises to withdraw their bank deposits in the banking system and utilize their funds to purchase SBIs. In addition, the ceiling on bank holdings of SBPUs was reduced. The withdrawal of state enterprises' deposits had an immediate effect on interbank call money rate which in July 1987 reached its peak of 47.10 per cent per annum.

The combination of OMO with other measures in Indonesia succeeded in restraining further capital outflows and the contraction of liquidity prevented banks from financing foreign exchange speculation. Eventually, as investors responded to the higher levels of domestic deposit rates, the direction of capital flows was reversed. With the easing of speculative pressures, interbank interest rates declined rapidly to below 13.0 per cent per annum by end of November 1987 and net foreign assets of the banking system rose significantly.

4. Some Problems and Issues in Implementing OMO

The major issues and problems associated with the practice of OMO are related to the creating of marketable instruments, the volume of open market operations to undertake and the timing of their implementation as well as the choice of operating and monetary intermediate targets which would have a close link with the final target that the central bank would want to achieve.

In the case of well-developed money and capital markets like those of the United States, there may be less problems of the availability of marketable instruments but the main problem is in the estimation of the appropriate volume of open market operations for intervening in the market. In addition, incorrect estimates of the commercial banks' demand for reserves to meet reserve requirements and provide a cushion of excess reserves would mean that the non-borrowed reserve objective will be inconsistent with the intended borrowing level.

In the SEACEN countries, the central banks face a number of problems. One of the most glaring problems is having too few marketable instruments. The other issues and problems in implementing OMO in the SEACEN region include the collateral limitation of the central banks, limited activity in the secondary markets, unrealistic market interest rates and lack of investor awareness.

Among the above-mentioned problems, the relatively underdeveloped securities market, especially for government securities, is the major problem. As a result, the implementation of OMO is less effective. The government securities market is narrow in the sense that there are few buyers and sellers of securities and there is no wide spectrum of securities holders. The market is shallow, moreover, because the secondary market is not developed enough, i.e., they lack active securities dealers. In addition, government securities in most of the SEACEN countries are heavily concentrated in the hands of a few financial institutions such as the central banks, the commercial banks, insurance companies and employees provident funds. Most of these institutional investors hold the government securities until maturity which deters any trading activity. This, in-turn, limits their use for open market operations.

Chapter 4

REQUISITES FOR EFFECTIVE OPEN MARKET OPERATIONS

This chapter examines the basic requirements for the effective implementation of OMO as a monetary tool, and investigates the salient features of such requirements in the context of SEACEN countries. Problems and issues of creating the conditions for effective open market operations in this region are also investigated.

1. Basic Requirements for Effective Open Market Operations

Generally, the fundamental prerequisite for effective open market operations is the existence of a broad and active money and capital market. In addition, the central bank must have the legal authority to conduct open market operations at its own discretion and must closely liaise with the Treasury, if its open market operations involve sales and purchases of government securities and Treasury bills. Open market operations will also not be effective if other monetary instruments run contrary to its objective. On top of these requisites, one other condition for the effective implementation of open market policy is the existence of a competitive interest rate structure and the achievement of a certain level of domestic savings.

The existence of broad and active money and capital markets is imperative so that the central bank is able to sell and buy securities in appropriate amounts at the right time in order to exert the desired effect on bank liquidity. Moreover, the markets must be broad enough to be able to absorb these transactions without excessive price fluctuations. In this case, the central bank plays only a minor role in the markets and should be capable of achieving the desired results through relatively gentle means. In the absence of developed money and capital markets, the commercial banks tend to operate with ample excess reserves, with their cost ratios fluctuating widely, since these banks have no other way of adjusting their portfolio positions. Under such circumstances, the sale of securities by the central bank, for instance, may merely reduce the banks' excess reserves and may thus fail to restrict the availability of credit from the commercial banks.

Before such adequate money and capital markets can develop, the following basic conditions must be taken into account:

(a) The flow of funds for investment in securities must be of considerably large volume and relatively constant. In other words, there must be a lot of potential investors who are not only prepared to be actively involved in the original issues but also in the secondary market of the securities. The investors can range from private individuals, financial institutions to corporate treasures. On the supply side, the securities must be attractive enough, or at least comparable to other investments of the same maturity. Only then will the potential investors be prepared to invest in the securities.

(b) The volume of transactions in existing securities must be reasonably large. This means that a large number of investors are buying and selling securities with a rapid turnover. If the market is narrow whereby only a few large investors are involved, any single large transactions of these investors would inevitably lead to violent price fluctuations in the market.

(c) The securities are preferably transacted through dealers in the secondary market as they can operate on their own accounts and "take positions" with respect to purchases and sales of securities and bear the risk of fluctuation in the capital value of the securities. These dealers would provide a continuous and active secondary market.

(d) A satisfactory money and capital market must be based on domestic sources of funds. If it is dependent on foreign investors, it will lead to a crisis if the inflow of foreign funds is diminished. On the other hand, if the market is based on domestic sources of funds and if the lenders in this market are also willing to invest abroad, any tendency for domestic security prices to rise will encourage capital exports and any decline will encourage investors to lend in the domestic market, thus maintaining price stability in the market.

On the part of the central bank, apart from being empowered by Central Bank Acts to conduct open market operations on its own discretion, it has to have a sufficient volume of securities suitable for open market operations, including issuing its own securities.

Today, most of the central banks are empowered to sell and buy securities on their own accord. Some of the statutes even enable the central bank to issue its own securities for the purpose of open market operations in order to meet situations where its holdings of eligible securities are insufficient or where such securities do not carry maturities or other terms attractive to the market. The central bank must also possess a sufficient portfolio of securities of a size and maturity composition which it may sell in the prescribed volume in the markets to attain the desired results. On the other hand, a sufficient amount of these assets must be currently offered for sale in the markets in case the central bank wants to act as a buyer. This again implies the need for a broad and active money and capital market.

Moreover, the central bank must consult with the Treasury over matters such as the timing of new issues, range of securities, maturity dates, coupon rates and issue prices if its open market policy involves sales and purchases of government securities and Treasury bills. There is always a possibility of conflicts between the central bank and the Treasury. For instance, the objective of the Treasury is to sell the greatest volume of securities at the lowest interest cost. In this respect they may have less regard for matters such as the source of cash and effects of the issues on banking liquidity which unfortunately is the main concern of the central bank if it is planning to ease conditions in the market. This will be in conflict with the central bank's conscious effort to ease credit conditions in the economy. Apart from this, the movement of Government funds from the central bank to commercial banks and vice versa must conform with the objective of prevailing monetary policies. Nevertheless, the Treasury in another aspect can cooperate with the central bank to raise domestic loans for the purpose of mopping up excess liquidity in the banking system. Of significance is mutual understanding between the central bank and the Treasury with respect to open market operations so that the operations would not be a means by which the Treasury obtains central bank credit.

On the part of commercial banks, the close observance of liquidity ratios is quite an important condition for effective open market operations. Theoretically, commercial banks want to avoid excess cash reserves in order to maximize income. In other words, they would invest whatever amount is in excess of the legally prescribed minimum reserve requirement and keep the cash reserve close to their legal level at all times. However, many commercial

banks are not in a position to control their liquidity with that much precision. If banks have ready access to invest excess cash, even for very short periods, and at the same time are able to obtain short-term borrowing whenever their cash holdings decline below the legal minimum, then the banks will be able to maintain liquidity level close to the legally minimum level. Moreover, they must be able to react promptly to the change in cash reserves and borrow from the financial markets at low cost and at small risk. These conditions can only be fulfilled if there exists well-developed and smoothly functioning money and capital markets where quotations do not show wide fluctuations over a short period. When commercial banks do in fact keep their effective liquidity level very close to the legally prescribed minimum, their reactions to open market policy become quite predictable. In that case, if the central bank conducts an open market sale of securities and thereby narrows the credit base, the commercial banks will react promptly by reducing their credit to customers or liquidate their short-dated securities. The opposite applies when the central bank buys securities.

Finally, open market operations will not be effective if other monetary instruments run contrary to its objective. In principle, the monetary instruments must be closely co-ordinated so that changes in the banks' reserve positions brought about by open market operations will not be readily offset by changes in the discount policy or variation in the reserve requirements. Some economists maintain that the discount policy is required to supplement open market operations to achieve desired results. In this case, the discount rates offered by the central bank are maintained as "penalty rates" so as to discourage borrowing from the central bank.

2. Factors Conducive for Effective Implementation of OMO in the SEACEN Countries

Open market operations, being a very complex monetary policy instrument, have not been used widely in the SEACEN countries. The lack of well-developed money and capital markets is one of the major reasons which has prevented the SEACEN countries from using the instrument widely. Nevertheless, as the markets developed, some countries like the Philippines used open market operations for monetary management by the issuance of Central Bank Certificates of Indebtedness (CBCIs) as early as in 1970. In Indonesia, following the financial reform on June 1, 1983, the authorities decided to institute the open market mechanism due to the

inefficiency of prevailing monetary instruments to control the liquidity of the banking system. Accordingly, Bank Indonesia issued central bank securities (SBIs) in 1984 as a means to develop the capability for open market operations to influence liquidity more directly in the banking system. Other central banks in the SEACEN region such as the Bank of Thailand, Bank Negara Malaysia and the Central Bank of Sri Lanka also issued their own certificates of indebtedness although they were meant more for mopping up the excess liquidity in the banking systems. Nevertheless, the central banks in this region have realized the importance and advantage of OMO over other monetary policy instruments, thereby encouraging them to put more effort in developing the securities market. The details of such developments will be discussed in the subsequent section.

The other necessary conditions for the effective implementation of open market operations in this region were widely discussed in the SEACEN Seminar on Open market Operations as a Monetary Instrument held in Manila on 19 - 21 July 1988. A consensus was reached in the Seminar as with regards to the important conditions for OMO. They are as follows:

(a) There is a need to have knowledge and information on the market that the central bank is dealing in. The market is essentially a composition of individual treasurers and other financial operations of the institutions in the system. As such, each will operate in ways peculiar to its institutional setting. Their moves in the market are therefore important inputs for the central bank's Open Market Desk's operations. In addition, the central bank must be able to obtain information readily on the condition of the financial market at all times.

(b) The accessibility of the central bank to the data necessary for the monitoring of monetary targets that will assist the Open Market Desk in its day-to-day operations is also important. These data are used in determining the timing, magnitude and also the time frames for particular open market operations utilizing available monetary tools.

(c) The tax structure of various financial instruments must be fairly neutral on all similar financial instruments. Varying tax rates and procedures for setting taxes on financial instru-

ments would sometimes create distortions in the market thus making some instruments, albeit similar, more marketable than others.

(d) An efficient handling of the physical procedures accompanying transactions in financial instruments is essential for effective open market operations. For example, cutting down on the processing time for various instruments would improve their turnover and marketability.

(e) Coordination by various government agencies in the issuance of regulations covering financial instruments to make them marketable instruments is also vital.

(f) It is important for market participants to develop their expertise and skills in the handling of financial instruments for open market operations. Uniform sets of tax rules on similar instruments, a more effective settlement procedure and defined sets of regulations may motivate the market operators to improve their skills.

(g) A sound budget and liquidity management by the government will minimize pressures on monetary aggregates, thus paving the way for a more effective functioning of open market operations.

(h) There must also be willingness on the part of the market participants to innovate and try new tactics in the course of open market operations.

(i) The central bank must actively and flexibly purchase and sell government securities in the secondary market.

(j) The existence of active dealers and brokers of government securities is essential for the implementation of open market operations since it will give positive impact to the central bank in implementing monetary instruments, and enhancing the indirect control over banks' liquidity and interest rates.

(k) Flexible interest rates and market-oriented interest rates, especially fully competitive interest rates on Treasury bills and other government securities, are essential for OMO.

Among the mentioned requisites for effective implementation of OMO, the existence of an active money and capital market is the most important. In the SEACEN countries, many countries have succeeded in setting up the financial and monetary structure conducive to the establishment of money and capital markets which is investigated in the following section.

3. The Development of the Securities Markets in the SEACEN Countries

The securities market may be divided into the equities market, bond market, money market, and capital market. In addition, the securities market can also be classified as the primary market and secondary market. Primary securities markets are places where new securities are issued and sold, while secondary securities markets allow outstanding securities to be traded from old to new owners. A primary market constantly supplies new securities to the small market and the secondary market provides liquidity involving trading of old issues. The money and capital markets, on the other hand, are also closely related to each other within the secondary market, since securities bought from the capital markets are used as instruments for trade and collateral in the money market.

In the SEACEN countries, the securities markets are confined to either the money markets or the capital markets. The money market deals mainly with short-term debt instruments, while the capital market comprises both the equity or stock market. In addition, many SEACEN countries have recently established their own regulatory agencies to supervise the securities market, including those for protecting the interests of the investing public and to promote the development of an active capital market.

The money markets in the SEACEN countries are mainly the interbank call markets and the repurchase markets. The stock markets in the SEACEN region, on the other hand, tend to concentrate on stocks and shares, while the secondary markets for government bonds are larger than that for private corporate bonds.

The nature of the stock markets may be characterized by its 'breadth' which involves the number of investors and speculators and its 'depth' which involves the volume and orders. In some SEACEN countries such as Malaysia, Singapore and Thailand where the average daily turnovers are comparatively high, the securities

markets of these countries are considered to be relatively more developed than other countries due to the breadth of markets which involve a large number of investors and speculators. Recently, the turn-over ratio of Thailand is among the highest in the world securities markets at 78 per cent in 1989, while this ratio in Indonesia, the Philippines and Malaysia has also risen quite high to 38.7, 29.1 per cent and 21.8 per cent, respectively, during the same period.[42]

The bond markets in the SEACEN countries, on the other hand, are dominated by government bonds. The government bond markets in the SEACEN countries are relatively inactive due to the fact that the governments have little incentive to offer market rates of interest as they are considered to be captive markets. Institutional investors enter the government bond markets as required by law that they hold a certain portion of government securities. The individual investors, on the other hand, are not interested in investing in government bonds due to better investment alternatives which provide them with a better return.

The nature and extent of the securities markets of selected SEACEN countries are briefly examined in the following:

3.1 Indonesia

In Indonesia, securities trading have been confined to the trading of stocks in stock exchanges. A huge volume of stock trading was recorded in 1989, mainly as a result of the opening of the Jakarta Stock Exchange to foreign investors. As of July 1990, 121 companies were listed in the Stock Exchange with a total of 1.2 billion stocks at a nominal value of Rupiah 11.6 trillion. However, only 6 companies in Indonesia issued bonds in the capital market during 1983-1988. In 1989, the number of companies issuing bonds reached 19. The significant increase reflected in part the impact of deregulation policies.

To encourage the development of the capital market, the government in December 1987 and 1988, introduced deregulation policies, which were termed PAKDES (December package) 1987 and 1988. Deregulations of the capital market include the following:

---

42. Dejthamrong, T., *The Development of Secondary Markets in Securities in the SEACEN Countries*, Staff Paper No. 40, The South East Asian Central Banks (SEACEN) Research and Training Centre, 1991, p.6.

(a) Procedure simplification and relaxation of testing requirements for regular stock exchange;

(b) Opening the stock exchange to foreign investors;

(c) Establishing the over the counter (OTC) bourse with greater simplification of procedures and requirements;

(d) Management of trading activities for the OTC bourse which will be handled by the Money and Securities Traders Association;

(e) The establishment of securities companies that engage in underwriting, brokerage and dealing of securities;

(f) The establishment of a private stock exchange; and,

(g) Opening up of stock exchanges in cities other than Jakarta.

Moreover, in order to accelerate the development of the capital market, the equal treatment of tax on income earned from deposits and income from securities was adopted. The government has also improved the structures of capital market institutions with regulations such as the restructuring of the basic institutions and the revising of procedures and rules of the systems. As for the money market, short-term money market instruments were developed which included promissory notes, SBPUs or bankers' acceptances, SBIs or Certificate of Bank Indonesia and certificates of deposits. In 1974, efforts were made to develop the trading of promissory notes in the interbank money market. SBPUs are mainly bank promissory notes and export bills used for the implementation of open market operations (OMO). SBIs are not only used in OMO but are also used as an alternative source for banks and non-bank financial institutions (NBFIs) to invest their excess reserves. In addition, a new system of auction was introduced in January 1989 to activate the trading of SBIs in the secondary market. This system allows 15 banks and NBFIs to conduct activities as market makers while one bank and one NBFI are appointed as brokers. The market makers also serve as Bank Indonesia's agents in the issuance of SBIs through auctioning. SBI trading is in the form of outright sales as well as repurchase.

3.2 The Philippines

The financial system of the Philippines is relatively well developed and in recent years has become increasingly sophisticated responding to opportunities in the field of intermediation in a particularly innovative way. The kingpin of the whole system is the commercial banking sector, consisting of both domestic and foreign banks. In addition, an array of other institutions has emerged at various stages to perform specialized functions. There is also an active short-term money market. Foreign currency operations have grown rapidly following the establishment of Offshore Banking Units (OBUs) and Expanded Foreign Deposit Units (FCDUs). As a result, Manila has developed into a regional financial centre of growing importance.

With the sound establishment of the financial system, the Philippines's equity market is also considered well established. However, it still suffers from a lack of an adequate supply of high quality equities and a lack of demand for shares. The supply of equities has been limited by the reluctance of family-owned corporations to dilute ownership and control, and to comply with information disclosure requirements. Moreover, the lack of supply also stems from the absence of high grade securities from the few linked companies. In turn, the insufficient number of listed companies has been primarily attributed to factors such as the preference for bank financing, reluctance of family-owned corporations to share control and disclose business operation, lack of listings of multi-national companies, preemptive rights of share holders, and government financing practices for state-owned enterprises. On the demand side, trading in the equity market is dominated by a small number of well-informed investors. To attract more investors into the market, a Securities Investors Protection Fund has been established by member brokers of the exchange to protect investors against losses due to business failure or fraud or mismanagement by a member broker/dealer.

As for the government securities market, aside from providing the government with a continuous inflow of funds to finance its expenditures, they also serve as the facility for the open market operations of the central bank. To encourage the development of the secondary market for government securities, the central bank has accredited a total of 24 commercial and universal banks, and financial companies to undertake the role of market makers and to

be the authorized competitive bidders under the auction system for Treasury bills. This group of bidders is more widely known as the Accredited Government Securities Dealers or AGSDs.

Regarding the development of the short-term money market, there are four sub-markets being operated, namely: (1) the interbank call loan market; (2) the short-term government securities market; (3) the commercial paper market; and, (4) the deposit substitute market. This short-term money market provides the mechanism whereby short-term debt instruments such as promissory notes, commercial papers, repurchase agreements and Treasury bills are issued, traded and redeemed. Interbank call loans and trading of Treasury bills in the secondary market constituted the bulk of money market transactions, accounting for about 53.8 per cent and 36.2 per cent, respectively, of the total volume during the first six months of 1990. Transactions involving repurchase agreements with private securities as collateral registered an increase of 13.3 per cent. On the other hand, transactions involving promissory notes, commercial papers, repurchase agreements and other government securities registered negative growth rates in terms of volume.

3.3 Malaysia

In Malaysia, the securities market is comprised of the equity market and the debt securities market which can be further classified into the government securities market and the private debt securities market. The public trading of shares started in May 1960 when four stock brokers gathered to mark prices. In 1973, the Stock Exchange of Malaysia and the Singapore Stock Exchange were reorganized into two separate institutions, namely, the Kuala Lumpur Stock Exchange (KLSE) and the Singapore Stock Exchange. The type of securities traded on the KLSE include ordinary shares/stocks, preference shares, bonds, debentures, loan stocks, loan notes, property trust units, warrants and transferable subscription rights (TSRs). The bulk of trading activities is in ordinary shares. Individuals represent the largest group of investors in the equity of companies listed on the KLSE, accounting for more than 90 per cent of total investors.

The government securities market of Malaysia has developed mainly into a primary issue market. Secondary trading has been relatively thin until recent years. This market has two distinct segments, namely, the market for Treasury bills (TBs) which are

issued with original maturities of less than one year and sold by regular weekly tender and the market for Malaysian Government Securities (MGS) which carry a fixed coupon rate, having maturities exceeding one year with the bulk in maturities of more than ten years. TBs are money market instruments traded in the secondary market and buyers comprise mainly the banking institutions, which invest in TBs to satisfy minimum liquidity requirements imposed by the Central Bank. The MGS market is the largest component of the Malaysian capital market in terms of primary funds raised except for 1989 and 1990. The major investors in MGS include the social security organizations particularly the Employees Provident Fund and the banking institutions. The secondary trading of government securities is insignificant despite the large amount of outstanding issues and numerous incentives given. This is due to the fact that the major investors hold MGS until their maturity and the rigid movements in their yields.

On the other hand, the private debt securities (PDS) market in Malaysia consist of the market for corporate bonds and commercial paper. While the PDS market is still in its early stages of development, new markets and instruments are being promoted and encouraged in order to widen and deepen the capital market. The first major move by the authorities to promote a PDS market was realised with the setting up of Cagamas Berhad, the national mortgage corporation in 1986. The role of Cagamas was to purchase housing loans from the loan originators and "repackage" them into bearer fixed rate bonds. By the end of 1990, Cagamas had made eight unsecured bearer bond issues amounting to $2.9 billion, with tenures ranging from two to five years. As part of the Central Bank's continuing effort to develop the PDS market, a public limited company under the name of Rating Agency Malaysia Berhad (RAM) was incorporated in November 1990 and is expected to be operational by the end of 1991. The most important function of the rating agency will be to rate all issues of bonds and commercial papers and disseminate widely all appropriate and timely information to potential investors for both the primary and seconday issues of PDS.

3.4 Thailand

In Thailand, the securities market was inactive until the establishment of the Securities Exchange of Thailand (SET) in April 1975 with 14 quoted corporate securities and two government securities. The OTC market, on the other hand, has only become active in

the past few years as a result of inadequate supply of shares in the securities market and the opportunity of making higher profits. Most securities are traded among investors in the SET in the secondary market. Securities traded in the SET comprise of common stocks, preferred stocks, unit trusts, debentures, convertible debentures, warrants and government bonds. The majority of stocks listed and traded in the SET are common stocks with turnovers of more than 95 per cent of total turnover. Trading is conducted on three separate boards, namely, the main board for regular trading; the special board for big lots, odd lots, special lots and bonds; and, the "alien board" to cater to foreign registered stock trading.

In Thailand, there are two segments in the government securities market, namely, the segment for Government bonds and the segment for state enterprise bonds and Treasury bills (the issuance of new Treasury bills ceased in 1988 when the Government budget was in a surplus position). Government bonds are considered as financial instruments in the capital market rather than the money market. However, when holders of government bonds need short-term liquidity, they can trade the bonds in the secondary market or use bonds as collateral when borrowing from the repurchase market. The secondary government bonds market is very thin due to the "captive demand" and bond yields which are lower than the market interest rates. The secondary market for government bonds is also very narrow. The demand for government securities by commercial banks to satisfy the official requirement accounted for 65 per cent of total government bonds. The captive nature of the market is due to regulations and conditions that "crowd out" loanable funds from other private demand. Moreover, the Government tends to pay lower-than-appropriate interest rate levels to the financial institutions which, in turn, pass the burden on to their customers.

The use of state enterprises bonds as a financial instrument traded in the existing securities market is limited since its nature is different and also more complicated than those of the government bonds in terms of registration and payment system. This has been also a major impediment to develop the secondary market for the state enterprise bonds.

3.5 Singapore

In Singapore, the securities market is made up of two major segments, namely, the equity market and the bond market. The

equity market in Singapore deals mainly with corporate equities. Corporate bond issues are negligible compared to equity issues. The bond market in Singapore comprises a domestic and an offshore component. The domestic bond market is dominated by government bonds while the offshore market, called the Asian Bond Market, caters mostly to offshore clients from the Asia Pacific countries.

On the other hand, the Government of Singapore issues various types of securities periodically in the government securities market, to absorb the surpluses of the Central Provident Fund. Banks and finance companies also purchase government securities to meet their statutory requirements.

In Singapore, there are two major types of government securities: registered stocks and bearer bonds. For registered stocks, the purchaser is registered as the owner of the securities and ownership cannot be transfered by mere delivery. Transfer can only be effected by means of a transfer form duly signed by both parties to the deal. The government securities market has been characterized by a large primary market but a small secondary market. However, the Monetary Authority of Singapore has been quite active in stimulating a secondary market for government bonds and a wider range of maturities has been offered. Recent efforts have been directed to the revamping of the government bond market. It is now modelled after the U.S. government securities market. It is worth noting that while the Government does not need to raise additional funds from the public, the objective in issuing these securities under the new programme is to promote the development of an active government securities market and to establish a yield curve and interest rate yardstick essential for establishing an active fixed income securities market through which statutory boards, and private sector companies can raise long-term funds.

3.6 Sri Lanka

Though a well-developed securities market is a pre-requisite for mobilising long-term capital for investment purpose, a concerted effort to develop the market on modern lines was made only in the 1980s in Sri Lanka. However, in terms of magnitude, Government rupee securities (GRSs) represent the largest sub-market in the primary securities market in Sri Lanka. Unfortunately, there was hardly a secondary market for them. Consequently, all investors are virtually locked up in these securities until they are liquidated at the

time of maturity. The absence of a secondary market for them makes it impossible for an investor to increase his wealth by accruing a capital gain and his only return becomes the coupon rate of interest he receives. As a result, the private sector has been compelled to avoid the Rupee Securities Market. Thus, the market sources for the GRSs wholly comprise private provident funds and other private institutions which view these securities as a fairly safe investment in view of the government's guarantee for repayment. The major incentive for commercial banks to invest in GRSs is the collateral provided when they want to borrow from the Central Bank at the Bank rate.

3.7 Nepal

In Nepal, the securities market is in an evolutionary stage. It is steadily emerging as a means to mobilize public savings for industrial investment. Two types of securities are traded in the Nepalese market, namely, government bonds and corporate securities. The total volume of trading in the secondary market reached Rs. 520 million during the year 1988/89 compared to only Rs. 310 million in 1985/86. The securities market of Nepal is dominated by government securities. The share of corporate securities is only 3 per cent. The basic reason behind the low share of equity trading has been lack of supply of securities as well as the lack of participation from institutional investors in the secondary activity of the market.

4. Major Problems and Issues of Developing Secondary Markets in Securities

Many SEACEN countries face difficulties in developing the secondary securities market due to constraints found in the market structures, the fiscal structures and the general economic financial and political conditions. To enhance the development of the securities markets, the authorities should fundamentally deal with the factors conducive for efficient secondary trading in securities. These factors include the macroeconomic factors and sectoral factors. The macroeconomic factors are a combination of political, economic and price stability with satisfactory external transactions to promote a healthy business climate and investors' confidence. As such, monetary, tax, interest rate and exchange rate policies are significant in moulding the macroeconomic environment. The sectoral factors, on the other hand, include market-determined interest rates, tax neutrality with respect to yields, appropriate regulations and

supervision, matching the supply of and demand for securities, promoting the role of the private sector, and the privatization of public enterprises.

In the SEACEN region, Malaysia and Thailand are cases in point where the macroeconomic stability and economic growth together foster the development of secondary markets in securities. On the other hand, the political factor in the Philippines appeared to have affected the activities of stock-market trading. The institutional framework of individual SEACEN countries is also an important condition for the development of secondary markets in securities. The existence of licensed dealers and an efficient clearing and settlement system goes a long way in the development of secondary markets. It is equally important to boost investors' confidence and towards this end, legislation is needed to protect investors against unfair trading practices. In addition, privatization, which has been going on in certain SEACEN countries such as Malaysia, Thailand, and the Philippines, can also foster the development of stock markets.

Going by country experiences, the equity market in Malaysia does not encounter any major problems and trading has been active. The debt securities market, on the other hand, is still far from active, particularly for Malaysian government securities (MGS). The secondary market in MGS did not take off despite its large size due to the captive nature of the market, and because the macroeconomic conditions were not conducive. The captive market significantly reduced the amount of MGS available for trading. Moreover, the regulated yields on MGS were highly artificial yields which did not reflect market conditions.

In Thailand, the insufficient supply of government bonds to meet the needs of all the financial institutions' "captive demand" is a major problem in the process of developing a secondary market. In addition, the lower yields of government bonds as compared to other financial instruments also posed a problem of attracting new investors. In the private securities market, there is the problem of insufficient supply of securities due to a number of factors. Most Thai companies are family-owned and therefore reluctant to allow outside participation. According to the Public Company Act, B.E. 2521, and the Commercial Code, private companies are not allowed to issue shares and debentures to the public unless they are listed companies in the Securities Exchange of Thailand (SET). Tax incentives granted to listed companies are not attractive enough as the corporate tax levied on listed companies is 30 per cent as compared to 35 per cent imposed

on other private companies. The number of listed companies has been increasing, which has contributed to the Thai economy rather than the tax incentive factor. Availability problem exists in terms of the insufficient supply of first class securities or the so-called blue chips. Finally, most private firms are more inclined to rely on funding from commercial bank borrowing rather than issuing shares and debentures, the major reason being that they are reluctant to fulfil the SET criterion in terms of management standard and accounting system.

In addition, the securities market development in Thailand also faces the problem of inadequate demand due to a number of reasons. Firstly, activities in the market have so far been dominated by short-term investors rather than long-term ones, which reflect the deficiency of institutional investors. Secondly, at present, the Mutual Fund is the sole manager of mutual funds. Thirdly, the present 40 brokers are rather disproportionate in relation to the size of market and trading activities. Finally, the 3.3 per cent business tax (plus 0.3 per cent of municipal tax) has discouraged active trading.

In the Philippines, one of the constraints to the development of secondary markets in securities is the problem of low supply of securities. This is attributable to several reasons, one of which is the reluctance of corporations to go public. In 1990, for example, of the top 1,000 corporations in the country, less than 70 are listed in the exchanges. In addition, the equity market is also characterized by a low demand for securities. The ordinary investor or saver may not be knowledgeable about securities as an alternative to other forms of savings such as traditional deposits which are perceived to be safer and more liquid. Consequently, trading in the market is dominated by a small number of investors. Another problem which inhibits the demand for securities in the Philippines is the paucity of professional money managers to attract funds for management and investment in equities. In addition, tax discrimination on one form of investment against another plays a significant barrier in the development of the securities market in the Philippines. Above all, the high inflation, high interest rates, the large current account deficits, and the depreciation of the peso as well as the unstable political conditions constitute a threat to the development of the securities market.

The problems of the development of securities markets in Indonesia, Sri Lanka and Nepal are caused more fundamentally by

limited supply of and demand for equity shares. The equities in these countries provide only a narrow range of stocks and shares as reflected in the low level of market capitalization. Indonesia's market capitalization expanded ten times in 1989, but the market capitalization of US$2.5 billion is still relatively low by world standards. The main problem in Indonesia is the high interest rate which was deregulated in June 1983. The problems of Sri Lanka, on the other hand, are mainly due to civil disturbances within the country. In Nepal, even though the political conditions are stable, an inadequate supply of securities and lack of participation from institutional investors in the secondary trading of securities have slowed the evolution of a securities market.

In summary, the main problems that inhibit the development of securities markets in this region are fundamentally due to the shortage of supply of quality and marketable financial instruments and the insufficient demand from professional investors. Macro-economic problems in some countries also hinder the development of secondary markets, such as high inflation and high interest rates in Indonesia and the Philippines. In the case of equity markets, the main problems that slow down their development in many of the SEACEN countries are the limited number of listed companies and shares in the stock exchanges, dominance of government-owned enterprises, the relative ease of borrowing from non-securities sectors, the relatively high cost of raising funds from the equity markets due to tedious and lengthy listing procedures and the high tax on dividends and capital gains. On the demand side, the lack of demand for securities is due to the lack of confidence in the securities market, insufficient information about the operation of the stock exchange and low levels of savings.

There are also a number of problems that are not conducive for an active secondary market in government securities and Treasury bills. These problems, among others, include: (1) the low coupon yields relative to other financial papers; (2) primary issues of government securities are also irregular and unpredictable making it difficult for forward planning by the investors; (3) the limited number of participants; (4) lack of professional dealers to be efficient "market makers"; and, (5) low excess holding of government securities implying that very little is released for trading in the open market. The effective implementation of open market operations in the SEACEN countries is thereby hindered by such inactive markets for securities trading.

Chapter 5

SUMMARY AND CONCLUSIONS

Having asserted that the main advantage of open market operations lies in their flexibility, most of the monetary authorities of the SEACEN countries have started to set up financial and monetary structures conducive to the establishment of capital and money markets. It is revealed in this study that many SEACEN countries conduct monetary policy through the use of OMO to some extent, although the particular type of instrument used may differ. Nevertheless, the captive nature of government bonds in the securities markets of the SEACEN countries is a common phenomenon and a unique feature hindering effective implementation of OMO in this region. There are various starting points for the different SEACEN countries with regards to open market operations, some are at the stage of creating the groundwork for open market operations while others are delving into the solution of certain technical problems associated with the implementation of open market operations. The following gives a summary of the main experiences of the use of open market operations as a monetary tool in the SEACEN region.

1. Main Observations of the Nature and Extent of OMO in the SEACEN Countries

Many SEACEN countries are conducting open market operations for monetary management with varying degrees. The differences may lie with the availability of existing marketable securities and the degree of active trading of those securities in the money and capital markets as well as the particular type of repurchase agreements being undertaken in individual countries that do have active money markets. The gradual development in the securities market of some SEACEN countries has enabled the central banks and monetary authorities to increasingly rely on open market opera tions to achieve their monetary policy objectives more effectively and efficiently. Some countries like the Philippines have resorted to the use of OMO as a monetary policy tool as early as in the mid-1970s while Indonesia initiated the use of OMO in the mid-1980s. Other SEACEN countries such as Malaysia, Sri Lanka and Thailand have resorted to this policy instrument to a certain extent in the late 1980s

when their money and capital markets were conducive to facilitate OMO. Singapore, on the other hand, has resorted mostly to the management of its foreign exchange market in the control of the monetary condition.

In the Philippines, although an attempt was made to use OMO in the 1970s, the Central Bank only started to extensively use OMO consisting of repurchase agreements and/or outright contracts from 1984 to 1985, the crisis period, to support the objective of moderating liquidity expansion and reducing inflationary pressures. In 1970, the Central Bank issued and launched the Central Bank Certificates of Indebtedness to ensure that the long-term behaviour of credit and money supply remained firmly under the control of the monetary authorities. During the crisis from 1982 to 1985, even though RRPs transactions of the Central Bank were actively used to mop up excess liquidity by raising the yields associated with this instrument, the liquidity levels still continued to grow beyond programme levels. Consequently, the Central Bank introduced another open market instrument, the CB bills in 1984, at competitive market rates to restrain unwarranted growth in liquidity. Recently, Treasury bills have developed to be a major open market instrument. The Treasury bills with its higher interest rates and wider range of maturities attracted a bigger market compared to other government-issued securities. The conduct of OMO by the Central Bank of the Philippines at present plays a major role in monetary management.

In Indonesia, the Central Bank decided to institute open market operations due to the inefficiency of prevailing monetary instruments in controlling the liquidity position of the banking system. On June 1, 1983, the authorities decided within the framework of the financial reforms, to remove the "credit ceiling" instrument which contributed the major mechanism of controlling domestic credit expansion. Following the deregulation of the banking system on June 1, 1983, Bank Indonesia has applied indirect monetary instruments such as the reserve requirements, discount windows, and open market operations. In conducting OMO, Bank Indonesia sells Certificates of Bank Indonesia (SBIs) for monetary contractions and buys short-term money market promissory notes (SBPUs) to stimulate credit expansion. In conducting daily operations of OMO using the SBIs and SBPUs, the authorities use the overnight interbank rates as the basic tool for creating leverage in the desired direction. Changes in the overnight interbank rate, set in motion by its operations in SBIs and SBPUs,

affect rates on maturities of one week and longer in the interbank market and in turn the rates on customers' time deposits. To maintain the overnight interbank rate within a desired range, it relies primarily on short-term transactions, i.e., the sale of SBIs for one week to one month. At present, OMO is the major monetary policy instrument used by Bank Indonesia to manage the money supply and credit expansion. In order to further enhance the effectiveness of OMO, Bank Indonesia has recently launched a series of policies to develop the securities market.

In Malaysia, prior to January 1989, open market operations were used only in a limited extent because of the underdeveloped money and capital markets. Bank Negara Malaysia (BNM) therefore resorted to currency swap transactions and other available monetary policy instruments such as statutory reserve requirements, liquidity requirements, discount facilities, selective credit control and moral suasion. However, since January 1989, Bank Negara Malaysia introduced a whole package of financial reforms to speed up capital market development. Open market operations are presently conducted through appointed principal dealers and are focused on the need of liquidity in the financial system. Individual financial institutions with excess liquidity or shortage of funds have to square their positions in the market and no longer with Bank Negara Malaysia. As financial institutions are required to keep Malaysian Government Securities (MGS) as part of the liquidity requirements, it is difficult to buy or sell MGS from or to the financial institutions especially when the amount involved is large, and would affect their liquidity requirement position. In the case of rising interest rates, the principal dealers find it difficult to sell the MGS to the end buyers. Thus, Bank Negara Malaysia has to step in to absorb or pump in deposits in order to maintain liquidity in the financial system. However, although some progress have been made with the reforms of 1989, the problem of the thinness of the securities market still exists. The current market does not have a well-diversified range of players. Thus, it is necessary to increase the number of players in the market, and at the same time, the need for greater professionalism and skills to be injected in the system. By stepping up the development of the government securities market, it will therefore eventually facilitate Bank Negara Malaysia to use OMO as a major monetary tool in the future.

In Sri Lanka, following the economic reforms of 1977, the financial system went through several changes in terms of markets,

instruments and the number of financial institutions. The main components of the financial reforms, undertaken after 1977, were the deregulation of financial activities and placement of greater reliance on market-oriented measures in the implementation of monetary policy. As a result, the money market in Sri Lanka underwent rapid changes and a number of sub-money markets emerged. The Treasury bills market has been developed into a major sub-money market in order to facilitate the implementation of OMO as an effective policy instrument. Since then, OMO policy with Treasury bills has gradually become the major monetary policy measure while reducing the reliance on traditional policy measures such as changes in the Bank Rate and reserve requirements. At present, OMO have become a more effective tool of monetary management due to its broader implications on the financial system as a whole.

In Thailand, the narrow and inactive money and capital market inhibits the active use of open market operations. Nevertheless, financial system reforms have been made and monetary policies carried out especially to alleviate the impact of external shocks in the 1970s. Following the financial reforms, a securities repurchase market was established in 1979 to help develop the money market to facilitate the free flow of money between the foreign exchange and domestic market in a less disruptive way and to serve as a vehicle for the implementation of open market operations. Since its opening, the market has become the most important channel through which borrowings between financial institutions are conducted. However, the establishment of the repurchase market is just at the initial stage of attempting to create the conditions conducive for effective open market operations in the future. With a view to developing the securities market, the Bank of Thailand recently made the development of a secondary market for securities a high priority in the Bank's three-year plan. The Bank has drawn up a number of plans to promote the development of financial instruments. Other plans include the establishment of a basic financial infrastructure, removal of barriers and impediments to the development of trading of securities in the secondary market, reforms in the impractical tax structure as well as outdated laws and regulations.

In Singapore, its relatively undeveloped securities market severely limited the scope of open market operations. Accordingly, the conduct of monetary policy in Singapore hinges on the manage-

ment of the exchange rate as an instrument of domestic price control, complimented with domestic money market operations to ensure an appropriate level of liquidity in the banking system.

In Nepal, open market operations have been used in a very limited scope due to its undeveloped money and capital markets. However, the liberalization of the interest rate structure of banks and financial institutions effective August 31, 1989 will assist in the development of open market operations in the future as the present difference in interest rates on bank deposits and government bonds is likely to be narrowed.

2. Recent Major Policy Responses to Develop OMO as a Monetary Policy Tool in the SEACEN Countries

Like other developing countries, the major issue inhibiting the effective implementation of OMO in the SEACEN countries is the lack of a broad and active money and capital market. In the light of this condition, the central banks in this region are not in a position to buy or sell securities on a considerable scale in order to affect the cash reserves of banks, without causing serious fluctuations in the price of securities. Fundamentally, as suggested by Sen (1956), a money market can generally be regarded as developed only when it is based on an organised banking system and it has a wide range of competitive sub-markets of considerable depth, each influenced by, and dependent on others. [43]No money market can be regarded as sufficiently developed unless it shows all these characteristics. In other words, developed money markets must possess ample resources to finance the dealings in so many sub-markets. The securities market, on the other hand, cannot become broad and active unless the country has reached a certain stage of industrial development with the predominance of the corporate form of business organizations. In addition, as there is also a close connection between the money market and other related markets, such as the commodity market, the foreign exchange market, etc., these markets need to be developed to provide opportunities for the investment of funds in the short-term money market. With a view to instituting the above mentioned conditions, many SEACEN countries have recently launched various policy packages to accelerate the development of the money and capital markets.

---

43. See Sen, S.E., *Central Banking in Underdeveloped Money Markets*, Bookland Private Limited, 1956, p.19.

Some common policy issues that are being undertaken in the SEACEN countries include the opening of securities markets to foreign investors and the privatization of public entities. For example, the equity markets of both Malaysia and Thailand are open to foreign participation, while this is currently being carried out in Indonesia and the Philippines. Nepal, on the other hand, is still considering the issue at hand. There is also no capital gains tax on listed shares in Malaysia and Thailand. In addition, both Malaysia and Thailand also established a second board to list potential companies that cannot meet the requirements of the main board. With regard to the efforts of developing the money market, most of the SEACEN countries have liberalized interest rates as well as diversified the sub-markets of the money market. However, despite of all these efforts, the development of the secondary markets for securities is still rudimentary. A combination of an improved macroeconomic environment and sectoral environment achieved through a good mix of policies, appropriate legal, regulatory and supervisory frameworks would be needed in order to develop efficient secondary markets in securities.

In Malaysia, for instance, a special task force committee on the reform of the capital market, comprising representatives of various government authorities and the financial sector, has been established in 1988 to foster the growth of the securities market. Moreover, to develop a corporate bond market, a credit-rating agency will be established to spearhead the development of securities markets. In order to speed up the development of the capital market, the Central Bank on January 1, 1989, has introduced a whole package of financial reforms as well as the guidelines for the implementation of open market operations. With a view to developing the secondary market for Malaysian Government Securities (MGS), the authorities have launched the following measures:

(a) Bank Negara Malaysia has appointed 18 principal dealers (4 commercial banks, 7 merchant banks and all 7 discount houses) to underwrite the primary issues of MGS, which are sold by auction. Only the principal dealers will have access to the Central Bank's rediscount window, and the Bank's open market operations will be conducted through the principal dealers.

(b) MGS with maturity periods of up to 10 years would now be issued by way of auction through the principal dealers. The

Central Bank will no longer accept advance subscriptions for MGS except from the Employees Provident Fund (EPF) and, in the interim one-year period, from the National Savings Bank (NSB).

(c) Trading in Malaysian Treasury Bills (TBs) has been revised by appointing 7 discount houses as principal dealers in order to promote active trading in TBs. The weekly tender of these bills would be restricted to the discount houses, which would underwrite all Treasury bill issues and are obliged to make a two-way price for TBs. Other institutions and individuals, not allowed to participate in the primary issue, may purchase TBs in the secondary market, particularly through the principal dealers.

(d) The Central Bank's open market operations would be conducted through the principal dealers and will focus on the reserves in the system as a whole. The Central Bank's role in the money market is maintaining liquidity in the system as a whole and not responding to the needs of each individual institution. Individual financial institutions with excess liquidity, or which are short of funds, will have to square their positions in the market and not with the Central Bank. This is to encourage more active trading among the financial institutions in various money market instruments. Under special circumstances, however, the Bank may provide direct access to its rediscount window to individual institutions, including non-principal dealers.

(e) The commercial banks, finance companies and merchant banks are allowed to observe an average statutory reserve ratio within a 0.5 percentage point band on a 2-week period. Previously, they had to observe the ratio on a daily basis.

(f) The primary liquidity ratio of the finance companies was abolished, while the ratio for the commercial banks was reduced from 8 per cent to 5 per cent of total eligible liabilities.

(g) Guidelines on the operations of private debt securities were issued to promote the orderly development of the market for private debt securities.

Since January 1, 1989's capital market reform, Bank Negara Malaysia has launched various measures to develop the secondary market for securities conducive for the effective open market operations in the future. The details of those measures are tabled in Appendix 15.

In the case of Thailand, the acquisition of government bonds as required by law for opening bank branches has been reduced from 16 per cent of commercial banks' deposits to 9.5 per cent on November 13, 1990 and reduced to 8.0 per cent on September 13, 1991. There is a likelihood for the authorities to completely remove the 8.0 per cent requirement in order to develop the secondary market for government securities. The policy measures will also be launched in order to enhance the development of financial instruments and their secondary markets. These measures among others, include the revision of the tax structure, moves toward financial and banking de-regulation and other necessary measures deemed appropriate to accelerate the development of both the primary and secondary markets for securities.

In Indonesia, the Government has also introduced packages known as PAKDES (December Package) 1987 and 1988 and at the same time, has also improved the capital market regulations by restructuring and revising the procedures and rules of the system. Moreover, the latest October 27, 1988 reform is intended to promote: (a) mobilization of funds; (b) non-oil exports; (c) efficiency in the operation of banks and other financial institutions; (d) effectiveness in the implementation of monetary policy; and, (e) development of the capital market.

To enhance the efficiency of banking and financial institutions in Indonesia, measures which have been adopted include, (a) allowing non-bank state enterprises to deposit their funds in commercial, development and savings banks as well as in the non-bank financial institutions (NBFIs) instead of just confined to depositing their funds in state banks; and, (b) legal lending limits are imposed on all banks extending credit to particular borrowers so as to strengthen the soundness of banks and NBFIs.

With a view to increasing the efficiency of the implementation of monetary policy in Indonesia, several stipulations on monetary instruments have been improved by: (a) the lowering of the minimum liquidity requirement for non-banks from 15 per cent to 2 per cent as

well as that for NBFIs to 2 per cent; (b) diversifying the maturity of SBIs and SBPUs from 7 days to various maturities up to 6 months as well as improving the trading procedures of SBPUs; and, (c) removing the limitation on interbank loans which was previously set at 15 per cent.

In the Philippines, the Government launched a privatization programme with the establishment of the Asset Privatization Trust in 1986. The role of the Government in the abovementioned Trust is to encourage more cost efficient private management. This policy brought about a greater demand for equity capital by the privatized companies, thus increasing the supply of shares and easing the pressure on the government securities market. The Securities Exchange Commission also relaxed the residency requirement for foreign investors under the Corporate Code of the Philippines. Moreover, an attempt is also being made to unify the two stock exchanges in the Philippines. The unification of the two bourses will simplify and reduce the cost of trading operations. It also does away with the variance in the price of one issue in both exchanges and pave the way for a central depository.

In Sri Lanka, since the Central Bank introduced a regular weekly primary Treasury bill auction system in 1986, the holdings of Treasury bills by the non-central bank sector increased continually from Rs. 2 billion at the end of 1985 to Rs. 32.6 billion at the end of August, 1990. This brought down the share of the Central Bank in total Treasury bills outstanding from 95 per cent in 1985 to 42.3 per cent at the end of August, 1990 thus reducing the expansionary impact of government domestic borrowings. As a consequence, the Treasury bills market has developed into a major sub-money market making open market operations an effective policy instrument.

In Nepal, in order to introduce greater flexibility in the interest rate structure and to strengthen monetary and government domestic debt management, Nepal Rastra Bank, since fiscal year 1988/89, has initiated regular auctions of Treasury bills (up to 182 days maturity) and development bonds (with maturity periods of 3 years, 5 years and 7 years). In line with this development, Nepal Rastra Bank published a time-table for the auctioning of Treasury bills and development bonds. As per the notice, auctioning of Treasury bills and development bonds will be held as follows: 91 days Treasury bills put on auction on every 27th day of every Nepalese month; 182 days Treasury bill put on auction on the 12th day of every Nepalese month;

and development bonds in mid-December 1989, mid-March and mid-June, 1990. These sales of government securities are now being conducted in the context of a comprehensive short-term monetary programming framework. With the introduction of these measures, interest rates on Treasury bills and development bonds are market-determined and can effectively be used as tools of monetary management through open market operations.

Moreover, in conjunction with the development of Treasury bills, Nepal Rastra Bank has started to set a comprehensive short-term monetary programming framework since August 1989. In this regard, Nepal Rastra Bank has been regularly monitoring the level of reserve money and has coordinated the reserve money management with the public debt operation. Open market operations with Treasury bills and other government securities have been used as a potent tool in the pursuance of monetary policy objectives. Similar use of other indirect instruments of monetary control has been applied as and when necessary. In light of its intervention in the open market, the Nepal Rastra Bank has already taken strong actions to mop up excess liquidity, including an increase in the cash reserve requirement of commercial banks from 9 per cent of deposit liabilities to 12 per cent (effective as of September 1989) and has undertaken sizeable open market sales of government securities out of the Central Bank's portfolio.

3. Conclusions

The evidence presented in this study discloses that many SEACEN countries have been observed, in recent years, to take various policy measures to promote and broaden their money and capital markets, especially the government securities market primarily not only as a means to mobilize savings but also as the basis for using the government securities for open market operations as an instrument to control the money supply. Nevertheless, the problems of captive markets and the thinness of the government securities market still exist in most of the SEACEN countries. Thus, the application of open market operations has not fully achieved the monetary objectives. For open market operations to be successful, there is a need to recognize them as simply a measure to an end and their value depends on the particular circumstances of time and place, prevailing conditions in the economy and the financial system, and the need for their coordination with other tools of monetary control. Accordingly, a critical and constant self-evalu-

ation is necessary for choosing the right financial instruments, intermediate targets as well as the operating targets. This requires that a certain amount of resources be devoted to the setting up of good information systems and also the training and development of personnel entrusted with the implementation of a country's monetary policy.

It should be noted that the most obvious and challenging problem regarding open market policy in the SEACEN region is the need to reduce the size of the captive market for government securities. To reach the objective of effective OMO, interest rates must also be completely liberalized and active secondary markets for securities must be developed. Most of the central banks have generally confined their operations to the short-term money markets as these give them a very good position from which to influence the cost, availability and supply of money. A good mix of policies, appropriate legal, regulatory and supervisory framework are therefore necessary conditions for the development of efficient and active money markets. In other words, a country must develop its financial system in order to promote an organised banking system and organised money markets comprising of various competitive sub-markets which are interdependent. In addition, Sen (1956) notes that the different sub-markets of the money market should not only be competitive but also complementary to one another. He further underscores that each sub-market should, as far as possible, also be active with considerable capacity.

In the absence of such competitive sub-markets, a central bank is considerably hampered in its operations undertaken for taking off funds from the market. Withdrawing funds through the sale of securities is more complete an operation as compared to the withdrawal of funds through the maturing of bills of exchange, especially in view of the limited capacity of the local securities markets. In the light of this limited capacity of securities markets, some of the SEACEN countries have diversified their financial assets as well as introduced a wider range of maturities for their existing securities. These diversifications and variations in the maturities of securities have made open market operations more functional in the exercise of monetary control in this region.

In summary, we may conclude that the success of OMO by central banks in the SEACEN countries depends on a number of conditions. Firstly, the market for government securities should be

sufficiently large, active and diversified; otherwise, even a small sale of securities will lead to a significant fall in their prices. Secondly, there should be an adequate supply of government securities or else the impact of OMO will be very limited. Thirdly, there must be stable cash-deposit ratios unlike in some of the SEACEN countries where many commercial banks maintain a fluctuating cash-deposit ratio. These ratios are sometimes substantially higher than the minimum legal requirements. Under such circumstances, the use of OMO may not be effective. Last but not least, for OMO to be really effective, the discount rate must be a penal rate. In other words, the central bank rates must be high enough to make a central bank purely the lender of last resort to the commercial banks.

THE GROWTH OF ASSETS OF FINANCIAL INSTITUTIONS IN THE SEACEN COUNTRIES (in Percentages)

Country	Average 1977-1989	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Indonesia														
Deposit Money Banks [1]	28.6	14.8	30.9	28.7	49.1	29.9	21.1	30.8	33.3	20.7	21.2	18.1	31.3	42.4
Development Finance Companies	37.5	27.5	53.9	49.0	51.5	21.2	59.3	30.7	42.8	13.7	28.7	20.7[a]	50.9[a]	38.2[a]
Investment Finance Companies	30.3	44.6	56.0	41.2	41.2	41.8	41.6	37.1	14.5	63.8	4.4	-22.6[a]	17.1[a]	12.8[a]
Other Finance Companies	59.3	n.a.	n.a.	n.a.	n.a.	5.0	41.7	138.7	60.2	103.5	6.7	n.a.	n.a.	n.a.
Insurance Companies	31.2	36.0	37.3	35.5	43.6	38.8	38.4	33.2	25.4	29.1	28.6	24.8	13.0	n.a.
Leasing Companies	63.3	105.2	35.9	41.6	22.3	73.1	90.3	242.9	62.0	33.5	9.7	n.a.	n.a.	n.a.
Pawnshops	24.3	32.6	21.8	37.6	24.3	58.7	32.8	2.3	13.1	15.7	4.1	n.a.	n.a.	n.a.
Malaysia														
Commercial Banks	17.6	15.5	18.1	31.8	27.7	26.5	20.2	22.9	10.9	11.2	6.8	6.8	9.8	21.1*
Finance Companies	22.6	23.3	25.3	28.8	33.8	31.3	23.1	24.8	34.0	17.1	10.1	8.3	14.2	20.4*
Merchant Banks	21.3	17.3	17.4	67.2	24.2	30.3	23.8	31.8	13.6	13.6	1.2	-0.5	10.8	26.4*
Discount Houses	19.1	35.5	38.8	34.1	7.0	8.7	8.5	12.7	22.7	34.4	14.2	-6.8	n.a.	n.a.
Provident, Pension and Insurance Funds	17.4	17.5	18.2	17.8	21.9	22.6	20.3	16.0	18.8	10.7	14.1	13.2	n.a.	n.a.
Development Finance Institutions	19.3	25.8	24.8	29.6	52.1	23.2	20.4	16.4	1.0	5.7	7.8	5.1	n.a.	n.a.
Savings Institutions	16.7	15.0	13.6	7.1	15.1	-1.3	13.7	31.0	61.3	38.8	-15.2	5.1	n.a.	n.a.
Other NBFIs	32.3	14.0	22.3	33.8	36.7	71.6	26.6	25.8	30.5	56.5	25.4	11.9	n.a.	n.a.

1. Deposit Money Banks include State banks, private national commercial banks, regional development banks and foreign banks.
a. Figures are for the 12-month period ending March of each year.
* Data refers to figures using the new banking format.

Appendix 1(c)

THE GROWTH OF ASSETS OF FINANCIAL INSTITUTIONS IN THE SEACEN COUNTRIES
(in Percentages)

Country	Average 1977-1989	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Singapore														
Commercial Banks	17.3	10.4	16.3	26.1	24.6	34.0	8.8	16.5	16.2	7.5	8.8	12.6	11.5	31.9
Finance Companies	15.8	9.6	14.5	22.6	24.4	39.0	25.3	22.6	10.8	-4.2	0.2	10.9	10.0	19.6
Merchant Banks	21.1	-7.3	52.1	123.6	58.7	45.0	14.2	7.3	9.4	9.1	12.0	1.7	15.0	-7.8
Asian Currency Units	26.3	21.1	28.7	41.1	42.5	57.7	20.4	8.3	14.5	21.3	29.1	22.1	14.5	20.0
Sri Lanka														
Commercial Banks	24.2	55.6	35.0	34.8	42.6	23.1	22.7	25.3	12.2	10.3	6.3	11.3	24.7	11.0
National Savings Bank	21.6	24.6	26.2	33.0	15.5	10.3	41.2	25.2	19.6	15.4	5.2	n.a.	n.a.	n.a.
Finance Companies	47.1	23.1	27.8	-9.6	124.7	35.4	87.3	31.7	75.9	48.0	26.6	n.a.	n.a.	n.a.
Insurance Corporations	0.7	-	-	-	-	13.4	11.1	-4.6	-24.4	11.7	n.a.	n.a.	n.a.	n.a.
Foreign Currency Bank Units (FCBUs)	76.6	-	-	-	536.9	98.0	84.0	47.9	-2.9	1.1	-2.3	4.0	5.9	n.a.
Thailand														
Commercial Banks	19.6	24.1	26.7	19.3	15.6	17.3	20.4	25.2	20.2	10.0	8.8	21.5	21.3	24.6
Finance Companies	22.6	36.5	45.0	2.1	15.6	18.7	23.5	11.0	12.1	10.8	6.8	14.3	22.3	43.5
Government Savings Bank	17.8	16.7	8.8	22.0	15.8	11.4	17.8	23.1	19.8	19.8	45.1	18.5	11.4	1.2
BAAC [1]	14.9	28.7	30.6	14.7	20.3	11.6	8.0	7.4	12.3	13.0	6.2	11.1	8.9	20.6
Government Housing Bank	20.1	60.0	57.8	49.8	35.9	16.1	-2.0	-6.2	19.6	6.1	7.3	5.1	26.4	42.4
Credit Foncier Companies	14.0	21.6	63.1	18.5	17.9	27.4	24.5	-13.7	-18.3	-4.3	3.1	-12.8	2.2	4.7
Agricultural Cooperatives	10.4	26.6	21.1	10.0	11.9	4.5	-2.8	6.9	7.4	10.4	4.4	4.6	7.1	17.6
Savings Corporations	27.6	22.9	26.5	26.9	29.7	29.8	28.4	29.7	25.4	31.7	25.0	31.5	31.3	29.5
Industrial Finance Corporation of Thailand	23.7	2.7	21.0	29.9	29.1	33.2	19.1	12.7	49.5	34.7	19.8	25.9	6.9	22.8
Life Insurance Companies	22.7	23.1	23.4	26.3	26.4	25.2	22.3	26.5	18.7	18.8	16.3	17.9	21.9	25.1
Small Industrial Finance Office	0.3	1.4	0.2	-0.2	-1.2	-1.1	-0.4	0.7	0.8	1.0	1.3	0.5	36.3	1.3

1. Bank for Agriculture and Agricultural Cooperatives.

Source: Adhikary, Ganesh P., Non-Bank Financial Institutions (NBFIs): Their Impact in the Effectiveness of Monetary Policy in the SEACEN Countries, The SEACEN Centre, December 1989.

Annual Reports and Statistical Bulletins of SEACEN Member Central Banks, Various Issues.

THE GROWTH OF ASSETS OF FINANCIAL INSTITUTIONS IN THE SEACEN COUNTRIES (in Percentages)

Country	Average 1977-1989	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Nepal														
Commercial Banks [a]	20.8	33.1	20.0	22.6	16.0	31.8	4.5	23.6	10.7	24.7	20.6	18.7	23.5	n.a.
Agricultural Development Bank (ADB)	21.0	28.9	14.5	20.2	13.2	5.7	19.8	20.8	28.1	29.3	29.6	19.1[a]	21.5[b]	n.a.
Nepal Industrial Corporation (NIC)	13.3	24.7	20.3	7.5	3.1	7.3	23.2	21.5	3.6	7.2	14.7	18.1[a]	13.0[b]	n.a.
Provident Fund Corporation	24.7	32.3	26.8	19.6	25.2	24.0	27.0	23.7	21.2	26.2	20.6	n.a.	n.a.	n.a.
National Insurance Corporation	27.1	39.5	33.9	15.6	33.0	25.4	18.1	25.1	43.8	23.6	12.7	n.a.	n.a.	n.a.
Credit Guarantee Corporation	24.7	20.6	9.8	6.7	29.2	25.8	67.9	12.2	12.2	44.8	17.6	n.a.	n.a.	n.a.
Securities Marketing Centre	52.0	-	-	-	-	-	-	30.6	272.3	-38.9	256.1	n.a.	n.a.	n.a.
Philippines														
Deposit Money Banks														
Commercial Banks	19.1	17.6	26.5	26.9	25.2	18.8	15.8	29.0	16.7	-0.1	-10.8	8.6	19.1	22.8
Savings Banks	16.8	37.6	38.7	38.3	36.4	-5.7	-15.3	26.0	2.9	-10.1	18.7	29.7	34.5	39.0
Rural Banks	13.8	10.8	21.6	22.0	12.5	17.5	22.7	16.8	-5.0	-2.2	6.0	6.5	10.6	13.6
Development Banks	12.2	23.7	15.6	22.6	25.6	28.3	25.9	25.0	20.7	8.9	-83.3	7.0	3.3	-0.7
Investment Houses	1.8	n.a.	n.a.	n.a.	33.2	-34.9	14.8	5.4	5.2	-13.8	2.6	n.a.	n.a.	n.a.
Financing Companies	-7.8	n.a.	n.a.	n.a.	21.8	-0.4	6.8	-11.9	-22.6	-40.5	-7.8	n.a.	n.a.	n.a.
Securities Dealers/Brokers	-8.5	n.a.	n.a.	n.a.	-1.5	-0.8	-42.8	4.3	-30.9	-28.1	48.3	n.a.	n.a.	n.a.
Investment Companies	68.1	n.a.	n.a.	n.a.	21.9	15.8	10.6	-4.9	-57.1	493.5	-3.2	n.a.	n.a.	n.a.
Fund Managers	102.5	n.a.	n.a.	n.a.	493.9	-87.7	-5.2	83.5	71.0	169.2	-7.3	n.a.	n.a.	n.a.
Lending Investors	55.1	n.a.	n.a.	n.a.	152.7	-37.4	13.9	20.1	39.1	39.4	157.8	n.a.	n.a.	n.a.
Pawnshops	25.6	n.a.	n.a.	n.a.	35.7	33.8	7.9	4.1	47.9	42.6	7.2	n.a.	n.a.	n.a.
Private Insurance Companies	10.8	n.a.	n.a.	n.a.	11.2	14.1	24.4	0.0	-2.8	28.8	0.0	n.a.	n.a.	n.a.
Government NBFIs	41.2	n.a.	n.a.	n.a.	41.7	44.4	84.8	198.9	34.1	-21.6	6.2	3.8	13.0	6.2[b]
Venture Capital Corporation	12.6	-	-	-	-	-	4.9	65.5	-26.4	28.4	-9.3	n.a.	n.a.	n.a.

a. Figures are based on the 12-month period ending July of each year.
b. Figure is for the 12-month period ending September 1989.

INDONESIA

NUMBER OF FINANCIAL INSTITUTIONS

Type	1969	March 1974	March 1979	March 1985	March 1990
TOTAL	**8849**	**5990**	**6087**	**6099**	**n.a.**
A. Banks	***8849***	***5990***	***5999***	***5949***	***7971***
1. Central Bank	1	1	1	1	1
2. Commercial banks	142	123	94	85	119
- State Banks	5	5	5	5	5
- National Private Banks	126	107	78	69	91
- Foreign Banks	10	10	10	10	23)
- Joint-Venture Banks	1	1	1	1	)
3. Development Banks	25	28	28	29	29
- State Banks	1	1	1	1	1
- Regional Development Banks	23	26	26	27	27
- Private Banks	1	1	1	1	1
4. Savings Banks	12	11	5	2	3
- State Banks	1	1	1	1	1
- Private Banks	11	10	4	1	2
5. Rural Banks	8669	5827	5871	5832	7820
- Village Banks	5091	3505	3564	3581	3279
- Paddy Banks	3317	2212	2154	2078	2056
- Petty Traders Banks	261	110	152	172	195
- Employees Banks	-	-	1	1	1
- Others	-	-	-	-	2290
B.Non-Bank Financial Institutions	-	-	***12***	***14***	***14***
- Development type	-	-	3	3	3
- Investment type	-	-	9	9	9
- Others	-	-	-	2	2
C. Others [1]	***n.a.***	***n.a.***	***76***	***136***	***219***
Insurance Companies			76	89	118
- Life Insurance	n.a.	n.a.	13	16	31
- Social Insurance	n.a.	n.a.	5	5	5
- Indemnity Insurance	n.a.	n.a.	58	68	82
Leasing Companies	-	-	n.a.	47	101

1. Note: 1 life, 5 social and 3 indemnity insurance companies and 1 leasing company are state companies; the rest are private.

Source: Bank Indonesia, Report for the Financial Year, 1989/90

Appendix 2(b)

MALAYSIA

NUMBER OF FINANCIAL INSTITUTIONS

Type	1984	1989
TOTAL	**2716**	**2313**
A. Money-generating	39	39
1. Central bank	1	1
2. Commercial banks	38	38
- Domestic	22	22
- Foreign	16	16
B. Other deposit-type	2558	2164
1. Finance companies	43	47
2. Merchant Banks	12	12
3. National Savings Bank	1	1
4. Cooperatives: banks societies	2500	2104
C. Development-type	7	7
D. Contractual savings	67	62
1. Provident and pension funds	4	3
2. Insurance companies	63	59
E. Investment-type (unit trusts)	35	29
F. Others	10	12
1. Discount houses	5	7
2. Islamic Bank	1	1
3. Building and Housing	2	2
4. Pilgrim Management Board	1	1
5. Credit Guarantee Corporation	1	1

Source: *Kok, Swee Kheng, Role of Financial Markets in SEACEN Countries, Bank Negara Malaysia, 1989.*

Tison, Gerardo S., The Financial Structure and Its Implementation for Monetary Policy in the SEACEN Countries, The SEACEN Centre, 1986.

Appendix 2(c)

NEPAL

NUMBER OF FINANCIAL INSTITUTIONS

Type	1984 [a]			1989 [b]		
	Head Office	Branches	Total	Head Office	Branches	Total
A. Money-generating	4	370	374	6	445	451
1. Central bank	1	13	14	1	13	14
2. Commercial banks	3	357	360	5	432	437
B. Other deposit-type		75	75	n.a.	n.a.	n.a.
1. Postal savings	-	75	75	n.a.	n.a.	n.a.
C. Development-type	2	25	27	2	44	46
1. Agricultural Development Bank	1	25	26	1	44	45
2. Nepal Industrial Devl. Corp.	1	-	1	1	-	1
D. Contractual Savings	5	-	5	n.a.	-	n.a.
1. National Insurance Corp.	1	-	1	n.a.	-	n.a.
2. Private Insurance Cos.	3	-	3	n.a.	-	n.a.
3. Provident Fund Corp.	1	-	1	1	-	1
E. Others	2	-	2	2	-	2
1. Credit Guarantee Corp.	1	-	1	1	-	1
2. Securities Marketing Centre	1	-	1	1	-	1

a. July 1984 figure.
b. January 1989 figure.

Source: Nepal Rastra Bank, Statistical Bulletin, Various Issues.

PHILIPPINES
NUMBER OF FINANCIAL INSTITUTIONS

Institution	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
TOTAL	4,333	4,745	5,057	5,421	5,569	5,810	5,993	5,786	6,109	6,506	6,916	7,267	7,482
Banking institutions	2,873	3,169	3,364	3,652	3,749	3,861	3,829	3,630	3,615	3,553	3,562	3,588	3,637
Commercial banks r/	1,301	1,423	1,521	1,774	1,885	1,927	1,947	1,776	1,789	1,761	1,774	1,794	1,863
Thrift banks	509	589	673	637	676	708	650	661	665	658	664	675	653
Private development banks	117	130	154	182	203	218	209	215	213	205	205	206	211
Savings and mortgage banks	207	236	268	187	193	209	211	226	231	243	250	277	270
Stock savings and loan associations (SSLA)	185	223	251	268	280	281	230	220	221	210	209	192	172
Rural banks	994	1,086	1,096	1,167	1,112	1,131	1,137	1,117	1,085	1,058	1,048	1,043	1,045
Specialized government banks r/	69	71	74	74	76	76	76	76	76	76	76	76	76
Non-bank financial institutions (NBFIs)	1,378	1,492	1,613	1,688	1,739	1,868	2,082	2,068	2,412	2,871	3,287	3,593	3,762
Investment houses	56	57	62	49	52	51	49	47	40	44	31	32	32
Financing companies	424	478	531	559	537	532	545	353	334	285	237	226	191
Securities dealers/brokers	130	137	141	141	123	124	127	125	124	129	132	88	116
Investment companies	58	63	62	63	66	65	68	80	82	81	75	60	63
Fund managers	9	9	12	9	10	12	12	12	11	10	12	13	13
Lending investors	40	53	61	78	96	124	152	200	300	484	697	811	882
Pawnshops	310	544	598	634	693	797	970	1,097	1,367	1,681	1,953	2,221	2,324
Private insurance companies	143	141	137	136	136	136	131	127	127	130	129	128	128
Government non-bank financial intermediaries	4	5	6	6	5	6	6	5	5	5	3	3	3
Venture capital corporations	-	-	-	8	15	15	17	17	17	17	13	11	10
Money brokers	4	5	5	5	6	6	5	5	5	5	5	-	-
Non-bank thrift institutions	82	84	78	81	81	81	82	82	82	82	67	86	83
Mutual building and loan associations (MBLA)	7	7	7	7	7	7	7	7	7	7	7	7	7
Non-stock savings and loan associations (NSSLA)	75	77	71	74	74	74	75	75	75	75	60	79	76

r. Revised based on expanded commercial banks' concept which includes the Land Bank of Philippines (LBP) formerly classified under specialized government banks.

Source: Adhikary, Ganesh P., Non-Bank Financial Institutions (NBFIs): Their Impact in the Effectiveness of Monetary Policy in the SEACEN Countries, The SEACEN Centre, December 1989.

SINGAPORE

NUMBER OF FINANCIAL INSTITUTIONS

Institution	1989
A. Money-generating	137
1. Monetary Authority	1
2. Currency Board	1
3. Commercial Banks	49
- Domestic	13
- Foreign	36
4. Offshore Banks	86
B. Other deposit-type	96
1. Finance Companies	31
2. Savings Banks	1
3. Merchants Banks	64
C. Development-type	1
D. Contractual savings	71
1. Insurance Companies	70
2. Provident Funds	1
E. Others	
1. Leasing Companies	20

Source: *Kok, Swee Kheng, Role of Financial Markets in SEACEN Countries. Bank Negara Malaysia 1989.*

SRI LANKA
NUMBER OF FINANCIAL INSTITUTIONS

Institution	1970			1975			1980			1984		
	Head Office	Branches	Total	Head Office	Branches	Total	Head Office	Branches	Total	Head Office	Branches	Total
TOTAL	17	259	276	49	1033	1082	67	1323	1390	103	1659	1762
A. Money generating	12	166	178	12	563	575	21	616	637	26	651	677
1. Central bank	1	1	2	1	1	2	1	1	2	1	3	4
2. Commercial banks	11	165	176	11	562	573	20	615	635	25	648	673
B. Other deposit-type		90	90	32	467	499	41	683	724	67	943	1010
1. Finance companies				31	-	31	40	-	40	64	-	64
2. Rural banks		90	90		447	447		641	641		888	888
3. Nat. savings banks				1	20	21	1	42	43	1	52	53
4. Merchant banks										2	3	5
C. Development-type	3	3	6	3	3	6	3	6	9	3	6	9
D. Contractual savings	2	-	2	2	-	2	2	-	2	4	34	38
1. Insurance corp.	1	-	1	1	-	1	1	-	1	2	34	36
2. Provident funds (major)	1	-	1	1	-	1	1	-	1	2	-	2
E. Others							-	18	18	3	25	28
1. Leasing companies										3	-	3
2. Foreign currency banking units							-	18	18	-	25	25

Source: Tison, Gerardo S., The Financial Structure and Its Implementation for Monetary Policy in the SEACEN Countries, The SEACEN Centre, 1986.

DEPOSITS OF COMMERCIAL BANKS

(as a percentage of total)

Country	1975	1980	1985	1989
Indonesia [1]				
Demand Deposits	45.0	51.3	30.0	24.7
Savings Deposits and Time Deposits	45.3	27.2	51.8	59.3
Other Deposits [2]	9.7	21.5	18.2	16.0
Total	100.0	100.0	100.0	100.0
Korea				
Demand Deposits	n.a.	n.a.	34.5	38.2
Savings Deposits and Time Deposits	n.a.	n.a.	63.5	61.4
Other Deposits [2]	n.a.	n.a.	2.0	0.4
Total	n.a.	n.a.	100.0	100.0
Malaysia				
Demand Deposits	27.2	22.0	15.6	18.4
Savings Deposits	19.5	17.2	12.2	18.7
Time Deposits	53.3	57.0	62.1	49.3
Deposit Substitutes	-	-	-	-
Other Deposits [2]	-	3.8	10.1	13.6
Total	100.0	100.0	100.0	100.0
Nepal				
Demand Deposits	41.2	25.4	19.6	19.2
Savings Deposits	6.8	17.2	20.7	22.5
Time Deposits	48.5	54.7	55.0	53.7
Other Deposits [2]	3.5	2.7	4.7	4.6
Total	100.0	100.0	100.0	100.0

DEPOSITS OF COMMERCIAL BANKS (cont'd)

(as a percentage of total)

Country	1975	1980	1985	1989
Philippines [1]				
Demand Deposits	21.4	20.3	10.5	12.5
Savings Deposits	28.1	32.1	41.7)	84.1
Time Deposits	6.3	22.0	38.0)	
Deposit Substitutes	37.1	20.4	7.6	1.4
Other Deposits	7.1	5.2	2.2	2.0
Total	100.0	100.0	100.0	100.0
Singapore				
Demand Deposits	27.8	21.7	16.4	14.3
Savings Deposits	11.7	10.6	20.8	15.6
Time Deposits	60.0	67.3	62.4	69.4
Other Deposits	0.5	0.4	0.4	0.6
Total	100.0	100.0	100.0	100.0
Sri Lanka				
Demand Deposits	52.1	38.7	25.8	30.6
Savings and Time Deposits	47.9	61.3	74.2	69.4
Other Deposits [2]	-	-	-	-
Total	100.0	100.0	100.0	100.0
Thailand				
Demand Deposits	16.2	13.1	4.6	5.0
Savings Deposits	8.9	12.9	21.0	32.2
Time Deposits	74.7	72.5	73.1	61.9
Other Deposits [2]	0.2	1.4	1.3	0.9
Total	100.0	100.0	100.0	100.0

1. Refer to deposits of deposit money banks. For the Philippines, data are revised for the period 1985 to 1989. Data reflect expanded coverage of deposit money banks and other changes in the classification accounts.
2. Other deposits refer to foreign currency deposits for Indonesia; negotiable certificates of deposits, deposits under the New Investment Account and Special Deposit Account excluding Repos for Malaysia and marginal deposits for Philippines and Thailand.

Source: Annual Reports and Statistical Bulletins of SEACEN Member Central Banks, Various Issues.

MARKET SHARE OF DEPOSITS AMONG THE MAJOR FINANCIAL INSTITUTIONS IN THE SEACEN COUNTRIES

(As a percentage of total)

Country	1977	1980	1985	1989
Indonesia				
State Banks	90.6	74.3	62.3	54.2
Nat. Private Banks	4.7	14.6	29.2	38.4
Local Dev. Banks	0.5	1.3	1.7	1.1
Foreign Banks	4.2	9.9	6.8	6.3
Total	100.0	100.0	100.0	100.0
Malaysia [1]				
Commercial Banks	80.5	79.9	72.6	71.8
Finance Companies	14.7	15.8	19.9	21.6
Merchant Banks	4.8	4.3	7.5	6.6
Total	100.0	100.0	100.0	100.0
Nepal				
Commercial Banks	97.7	98.9	98.9	95.6
Agri. Dev. Banks	2.3	1.1	1.2	4.4
Total	100.0	100.0	100.0	100.0
Philippines				
Commercial Banks	81.4	82.7	88.8	88.6 [a]
Thrift Banks	7.6	8.7	6.3	7.9 [a]
Specialized Govt. Banks	7.9	6.3	3.1	1.5 [a]
Rural Banks	3.1	2.3	1.8	2.0 [a]
Total	100.0	100.0	100.0	100.0
Singapore				
Commercial Banks	87.3	88.3	85.1	87.8
Finance Companies	12.7	11.7	14.9	12.2
Total	100.0	100.0	100.0	100.0

MARKET SHARE OF DEPOSITS AMONG THE MAJOR FINANCIAL INSTITUTIONS IN THE SEACEN COUNTRIES (cont'd)

Country	1977	1980	1985	1989
Sri Lanka				
Commercial Banks	56.7	53.7	46.7	n.a.
Finance Companies	1.5	1.3	4.0	n.a
Other Deposit-Taking Institutions	41.8	45.0	49.3	n.a.
Total	100.0	100.0	100.0	n.a
Thailand				
Commercial Banks	76.2	75.2	78.8	90.3
Finance & Securities Company	13.4	15.2	11.4	n.a.
BAAC	1.1	0.8	0.7	1.0
Govt. Savings Bank	8.8	8.3	7.8	7.2
Other Deposit-Taking Institutions	0.5	0.6	1.3	1.5
Total	100.0	100.0	100.0	100.0

a. Figures refer to those for 1990.
1. Deposits including Repos.

Sources: *Annual Reports and Statistical Bulletins of SEACEN Member Central Banks, Various Issues.*

Appendix 5 (a)

SHARE OF M1 TO GDP [1] IN THE SEACEN COUNTRIES

Country	1970	1975	1980	1985	1989
Indonesia	1.2	4.1	11.0	17.9	16.8
Malaysia	14.2	20.9	18.3	20.6	29.4
Nepal	3.7	6.4	12.3	19.9	22.1
Philippines [2]	9.2	15.1	3.7	6.3	11.2
Singapore	15.6	21.0	24.5	26.1	26.1
Sri Lanka	4.6	6.0	14.0	11.5	18.2[a]
Thailand	5.5	7.3	10.4	10.3	9.8

1. Refer to Real Gross Domestic Product.
2. Refer to Real Gross Domestic Product with 1985 as base year.
a. Figure refers to that for 1988.

Sources: IMF, International Financial Statistics, Various Issues.

Appendix 5 (b)

SHARE OF M2 TO GDP [1] IN THE SEACEN COUNTRIES

Country	1970	1975	1980	1985	1989
Indonesia	1.6	6.5	17.0	41.0	47.8
Malaysia	28.3	48.1	51.5	71.5	103.2
Nepal	4.9	10.5	23.7	46.0	52.9
Philippines	6.3	9.9	33.7	49.5	41.2
Singapore	36.7	49.5	64.0	83.7	97.8
Sri Lanka	7.5	9.4	32.0	31.2	39.7[a]
Thailand	11.9	18.6	36.8	68.5	68.0

1. Refer to Real Gross Domestic Product.
a. Figure refers to that for 1988.

Sources: IMF, International Financial Statistics, Various Issues.

Appendix 6

MONEY MULTIPLIERS OF SEACEN COUNTRIES

Country	M1					M2				
	1970	1975	1980	1985	1989	1970	1975	1980	1985	1989
Indonesia	1.2066	1.1770	1.5257	1.5033	1.9057	1.5927	1.8625	2.3491	3.4447	5.4251
Malaysia	1.5067	1.4477	1.5034	1.3957	1.4374	3.0558	3.3227	4.2587	4.9745	5.0102
Nepal	1.0814	1.1527	1.2040	1.2755	1.0737	-	-	2.1622	2.5261	2.5747
Philippines[1]	1.4587	1.4727	1.3919	0.9336	0.8455	2.9155	2.7490	3.4234	3.2753	2.7040
Singapore	1.8305	1.5803	1.4135	1.2651	1.3324	4.3187	3.7160	3.7016	4.0536	4.9967
Sri Lanka	1.4955	1.4403	1.5008	1.0374	1.2861	2.3687	2.2188	3.1614	2.6769	2.7818
Thailand	1.2689	1.1957	1.2490	0.9922	1.1149	2.7227	3.4940	4.3927	6.8580	7.7033

1. Figures are based on commercial banks' concept which includes Land Bank of the Philippines (LBP) formerly classified under Specialized Government Banks.

Sources: *IMF, International Financial Statistics, Various Issues.*
Annual Reports and Statistical Bulletins of the SEACEN Member Central Banks, Various Issues.

Appendix 7

ANNUAL GROWTH RATES OF M1 AND M2 IN THE SEACEN COUNTRIES

(In percentages)

	M1					M2				
Country	**1970**	**1975**	**1980**	**1985**	**1989**	**1970**	**1975**	**1980**	**1985**	**1989**
Indonesia	36.4	33.3	47.6	17.7	39.8	41.6	36.2	47.3	29.1	39.8
Malaysia	8.0	7.2	15.0	1.7	19.1	10.9	14.5	29.0	5.6	16.1*
Nepal	-5.4	3.4	13.0	33.0	19.3	0.8	3.4	13.6	20.0	21.1
Philippines	0.7	14.4	19.7	6.5	31.5	5.4	14.3	22.0	13.3	28.2
Singapore	17.4	21.5	7.5	-0.9	14.9	16.3	17.9	24.5	3.8	22.5
Sri Lanka	4.4	4.8	22.9	11.5	9.1	9.2	4.1	31.9	11.5	12.5
Thailand	8.0	5.8	12.7	3.3	17.6	13.5	16.1	22.5	10.3	26.3

* Include Repos

Sources: Annual Reports and Statistical Bulletins of the SEACEN Member Central Banks, Various Issues.

TREASURY BILL RATES OF SELECTED SEACEN COUNTRIES [1]

(per cent per annum)

Period	Malaysia	Nepal	Philippines	Singapore	Sri Lanka	Thailand
1980 Q 1	3.7	5.0	11.949	6.96	9.0	8.68
2	4.2	5.0	11.961	6.76	13.0	9.15
3	4.3	5.0	12.293	7.01	13.0	8.58
4	4.5	5.0	12.309	6.78	13.0	10.44
1985 Q 1	5.0	5.0	34.165	2.65	11.0	12.10
2	4.8	5.0	34.051	2.61	11.0	11.50
3	4.7	5.0	17.769	1.99	11.0	10.00
4	4.1	5.0	16.462	2.03	11.0	10.80
1986 Q 1	4.2	5.0	23.851	2.65	11.0	7.80
2	4.2	5.0	14.626	2.61	11.0	5.70
3	4.2	5.0	12.750	1.99	11.0	5.80
4	3.9	5.0	9.547	2.03	11.0	5.70
1987 Q 1	2.4	5.0	11.758	1.98	11.2	4.25
2	2.2	5.0	11.200	2.74	11.1	3.65
3	2.6	5.0	12.599	3.31	10.9	1.83
4	3.2	5.0	13.589	2.96	10.6	3.70
1988 Q 1	3.3	5.0	13.875	2.94	11.4	5.00
2	3.7	5.0	14.363	3.65	12.76	4.28
3	3.2	5.0	14.657	4.50	17.6	5.71
4	4.1	6.01	16.740	3.75	18.5	5.84
1989 Q 1	5.5	5.84	15.497	3.81	12.6	6.00
2	5.8	5.0	17.106	3.95	13.8	6.00
3	5.1	6.59	22.683	4.18	17.1	8.89
4	4.9	6.22	20.452	4.55	17.9	-
1990 Q 1	5.1	6.55	22.931	3.79	14.7	-
2	6.2	6.67	23.075	2.72	14.9	-

1. Refer to the 3-month Treasury bill rates.

Source: *Annual Reports and Statistical Bulletins of the SEACEN Member Central Banks, Various Issues.*

MONEY MARKET RATES OF SELECTED SEACEN COUNTRIES

(per cent per annum)

Period		Indonesia		Malaysia			Philippines		Singapore	Sri Lanka	Thailand
		Interbank Call Money rate[1]	Bank Indonesia Certificate Rates (30 days)	Money at Call rate[2]	Overnight Money rate[3]	7 day Call Money rate	Overnight Money rate	1-7 day Call Money rate	Overnight Money rate	Money at Call rate	Interbank
1980	1	14.73	-	2.90	4.30	6.10	14.087	13.786	7.76	10.00-14.00	16.78
	2	13.67	-	4.70	5.20	6.80	11.335	14.357	9.49	15.50-19.50	12.49
	3	10.52	-	5.30	7.00	11.60	9.711	10.407	15.34	15.50-19.75	12.75
	4	12.55	-	4.30	4.10	6.40	15.699	14.808	13.89	21.50-25.00	16.35
1985	1	11.19	6.00	5.30	7.60	9.20	27.824	29.714	2.25	10.00-12.00	17.54
	2	10.63	16.00	5.30	6.90	7.90	25.948	20.668	9.00	10.00-13.00	11.35
	3	8.42	14.00-16.00	5.20	5.70	6.30	10.249	14.971	9.00	10.50-13.00	10.86
	4	10.42	14.00	4.90	5.50	6.80	15.033	23.225	8.00	12.00-12.75	15.03
1986	1	13.32	14.00	4.80	8.60	8.70	17.827	18.220	5.00	10.00-12.00	9.19
	2	13.71	14.00	4.80	7.80	8.70	11.612	13.425	4.63	10.00-13.00	6.89
	3	12.48	14.00	4.80	10.70	11.90	11.722	12.200	3.75	10.50-13.00	6.42
	4	13.48	14.00	4.4	3.20	4.30	9.917	12.782	7.00	12.00-12.75	6.35
1987	1	15.02	14.00	2.30	1.20	1.70	13.789	10.791	4.00	7.00-21.00	5.40
	2	17.72	14.00-16.37	2.40	2.20	2.40	8.130	12.587	3.00	7.50-9.00	5.81
	3	13.81	-	2.50	2.30	2.40	16.050	12.881	3.13	6.50-12.00	5.67
	4	11.86	-	3.30	2.90	3.10	21.872	13.601	3.25	11.00-14.00	6.50
1988	1	13.49	-	3.44	3.00	3.30	13.857	10.319	3.13	13.25-14.50	7.34
	2	14.65	-	3.74	2.90	3.50	12.056	9.522	3.88	12.90-16.50	7.61
	3	14.98	-	3.04	3.40	3.40	15.781	6.004	5.38	16.00-19.00	10.32
	4	16.69	15.00-15.50	2.91	3.90	4.10	18.647	8.630	5.63	16.00-21.00	10.61
1989	1	13.83	14.63-17.75	5.46	5.00	5.30	13.578	11.156	3.81	13.00-24.00	9.71
	2	12.04	15.25-16.75	5.64	5.40	5.50	14.206	13.525	3.95	12.10-24.00	9.34
	3	12.25	14.63-15.25	4.70	4.30	4.60	24:800	11.558	4.18	14.25-19.00	9.57
	4	12.09	13.50-14.50	4.86	4.50	4.70	11.683	11.884	4.55	13.00-25.00	12.06
1990	1	10.40	13.13-13.25	5.20	5.00	5.20	15.274	12.175	6.19	13.00-14.75	8.02
	2	13.10	13.12-17.75	6.12	6.00	6.10	10.631	19.759	7.25	14.75-19.75	14.08

1. Refers to weighted average rates
2. Refers to predominant rate
3. Refers to daily average of the month

Sources: *Annual Report and Statistical Bulletin of SEACEN Member Central Banks, Various Issues*
SEACEN Economic Survey and Outlook Questionnaire Replies, Various Years.

MALAYSIA: FEDERAL GOVERNMENT DEBT CLASSIFIED BY HOLDERS

(per cent of total govt. domestic debt)

End of Period	1980	1983	1986	1989
Treasury Bills held by				
Central Bank	0.4	0.7	-	-
Commercial Banks	6.5	6.6	5.2	3.9
Others	1.2	0.9	1.3	2.7
Investment Certificates	-	0.3	0.7	1.5
Other Govt. Securities				
Govt. Sector				
Federal Government	2.4	1.4	1.0	0.6
Others	1.5	-	0.5	0.4
Social Security Insts.				
Employees' Provident Fund	46.2	42.5	52.5	51.8
Teachers' Provident Fund	0.3	0.2	0.1	0.1
Others	2.2	2.1	2.3	2.3
Insurance Co.	2.7	1.9	1.7	2.1
Financial Sector				
Central Bank	8.7	9.6	4.5	1.9
National Savings Bank	5.0	2.7	2.0	2.3
Commercial Banks	13.2	11.9	9.0	11.9
Others	7.9	5.9	7.9	9.0
Non-Financial Private Sec.	0.1	10.3	8.9	6.1
Foreign Holders	0.1	0.1	-	-
Other Loans	1.6	3.0	2.4	3.4
TOTAL	100.0	100.0	100.0	100.0

Source: Bank Negara Malaysia, Quarterly Statistical Bulletin, Various Issues.

Appendix 10 (b)

MALAYSIA: FEDERAL GOVERNMENT DEBT

(In million ringgit)

End of Period	1980	% of DD	1983	% of DD	1986	% of DD	1990	% of DD
Domestic Debt (DD)	18578.4	100.0	33955.0	100.0	45697.5	100.0	69988	100.0
Treasury Bills	1490.0	8.0	2790.0	8.2	3000.0	6.6	4320	6.1
Investment Certificates	-	-	100.0	0.3	300.0	0.7	900	1.3
Other Government Securities	16762.9	90.2	29201.5	86.0	40782.0	89.2	62106	88.7
2 and 3 years	1308.3	7.0	599.9	1.8	949.9	2.1	-	-
4 and 5 years	1050.0	5.7	756.0	2.2	150.0	0.3	2250	3.2
7 to 9 years	500.0	2.7	630.0	1.9	630.0	1.4	6380	9.1
10 and 11 years	682.7	3.7	602.7	1.8	584.7	1.3	7836	11.2
12 to 15 years	4468.1	24.0	6068.1	17.9	5971.1	13.1	9006	12.9
Above 15 years	8753.8	47.1	20544.8	60.5	32496.3	71.1	36634	52.3
National Defence Bonds	-	-	-	-	-	-	-	-
Advance Subscriptions	32.6	0.2	835.8	2.5	518.8	1.1	-	-
Other Loans [1]	292.9	1.6	1027.7	3.0	1096.7	2.4	2662	3.8
External Debt	4860.6		17728.1		28310.0		24726	

1. Mainly commercial bank loans for the Housing Loans Fund.

Source: Bank Negara Malaysia, Quarterly Statistical Bulletin, Various Issues.

NEPAL: HOLDERS OF GOVERNMENT BONDS AND TREASURY BILLS [1]

(per cent of total)

End of Period	1980	1983	1986	1989 [a]
Treasury Bills held by				
Rastra Bank	43.0	29.2	41.8	3.1
Commercial Banks	1.2	5.1	0.8	3.7
Others	0.4	0.4	0.2	-
Development Bonds				
Rastra Bank	8.0	14.2	4.4	12.6
Commercial Banks	23.5	35.2	24.6	25.2
Financial Institutions	4.8	4.4	1.3	0.8
Provident Funds	0.9	0.2	-	-
Govt. Business Enterprises	0.5	0.3	0.3	0.1
Private Business Enterp.	0.6	0.4	0.8	0.3
Individuals	4.8	2.7	0.2	0.05
Non-Profit Organisations	0.3	0.7	0.2	0.2
Forest Compensation Bonds				
Provident Fund	0.3	0.1	-	-
Individuals	0.1	0.1	-	-
National Savings Bond	-	-	-	-
Rastra Bank			-	-
Other Financial Insts.			-	-
Special Bonds				
Rastra Bank	11.8	7.0	4.5	35.8
TOTAL	100.0	100.0	100.0	100.0

1. All figures are based as at mid-July of each year.
a. Figures are at mid-April 1989.

Source: Nepal Rastra Bank, Statistical Bulletin, Various Issues.

Appendix 12

THE PHILIPPINES: HOLDERS OF GOVERNMENT SECURITIES

(In million pesos)

	1980	% of Total	1983	% of Total	1986	% of Total	1989	% of Total
TOTAL	34262	100.0	50818	100.0	123713	100.0	227200	100.0
Central Bank	607	17.7	7841	15.4	11070	8.9	10520	4.6
Commercial and Other Thrift Banks	12969	37.9	18275	36.0	26116	21.2	57501	25.3
Trust Funds	4327	12.6	5748	11.3	7810	6.3	10058	4.4
Semi-Government Entities	6990	20.4	13554	26.7	15064	12.3	27100	11.9
Private Sector	3635	10.6	4810	9.5	63347	51.2	122021	53.7
Foreign Holders	262	0.8	590	1.2	-	-	-	-

Source:Central Bank of the Philippines, Philippine Financial Statistics, Various Issues.

THAILAND: HOLDERS OF GOVERNMENT DOMESTIC DEBT
(In million bahts)

	1980	% of Total	1983	% of Total	1986	% of Total	1989	% of Total
Government Bonds held by	86316.1	78.6	146058.5	78.6	222374.7	73.8	201406.2	69.2
Bank of Thailand	36099.9	32.9	58951.9	31.7	62037.2	20.6	23682.3	8.1
Domestic Currency	35683.1	32.5	58617.9	31.5	61696.0	20.5	23389.7	8.0
Foreign Currency	416.8	0.4	334.0	0.2	341.2	0.1	292.6	0.1
Commercial Banks	31650.7	28.8	54587.8	29.4	102740.7	34.1	129136.4	44.3
Government Savings Bank	9843.8	9.0	9050.1	4.9	8150.0	2.7	1040.0	0.4
Financial Institutions	3944.5	3.6	7686.8	4.1	21007.5	7.0	22888.8	7.9
Other Domestic Sectors	4777.2	4.4	15781.9	8.5	28439.3	9.4	24658.7	8.5
Promissory Notes held by								
Government Savings Bank	14626.0	13.3	28475.0	15.3	66819.0	22.2	89819.0	30.8
IBRD Loans Part. Certs held by								
Bank of Thailand	438.5	0.4	281.9	0.2	41.5	0.01	-	-
Treasury Bills held by	8400.0	7.7	11000.0	5.9	12000.0	4.0	-	-
Bank of Thailand	6258.0	5.7	8154.3	4.4	4485.6	1.5	-	-
Exchange Equalization Fund	1409.0	1.3	1570.0	0.8	2066.7	0.7	-	-
Commercial Banks	330.0	0.3	935.0	0.5	1850.6	0.6	-	-
Government Savings Bank	-	-	-	-	3438.0	1.1	-	-
Financial Institutions	76.4	0.1	14.8	0.01	29.1	0.01	-	-
Other Domestic Sectors	326.6	0.3	325.9	0.2	130.0	0.04	-	-
TOTAL	109780.6	100.0	185815.4	100.0	301235.2	100.0	291225.2	100.0

Source: Bank of Thailand, Monthly Statistical Bulletin, Various Issues.

FACTORS AFFECTING RESERVE MONEY [1], 1985-1989

(Change as a per cent of reserve money at beginning of period)

Country/Period	1985	1986	1987	1988	1989
Indonesia [2]					
Autonomous factors	-19.0	12.9	-18.6	17.3	-17.6
Net foreign assets	30.5	5.0	14.7	39.7	-26.7
Net claims on Government	-50.7	17.9	-26.2	22.3	8.5
Net claims on private sector [3]	-3.0	2.1	2.9	2.2	1.8
Net other items	4.2	-12.1	-10.1	-46.9	-1.1
Policy Factors	31.7	16.8	33.3	-23.1	-3.2
Liquidity credit to banks	25.0	16.4	15.6	16.5	31.8
New indirect policy instruments	3.4	0.2	8.9	-19.8	-17.5
New Bank Indonesia facilities [4]	7.1	19.9	-7.4	-12.2	0.2
Open market operations [5]	-3.7	-19.7	16.3	-7.6	-17.8
Reserve Money	9.3	29.5	5.8	14.0	-3.3
Malaysia [6]					
Autonomous factors	0.6	4.0	5.0	7.3	47.2
Net foreign assets	33.0	42.6	30.3	-10.3	27.5
Net claims on Government [7]	-8.6	-2.9	-4.0	0.6	-4.9
Net claims on private sector	-1.1	0.4	-0.1	8.1	1.7
Net other items [8]	-22.7	-36.2	-21.2	9.0	23.0
Policy Factors	0.9	1.2	-0.2	4.5	-19.5
Claims on banks [9]	0.9	1.2	7.4	4.5	-26.2
Bank Negara Certificates	-	-	-7.6	-	6.7
Reserve Money	1.5	5.2	4.8	11.8	27.8
Philippines [10]					
Autonomous factors	61.7	31.0	-30.4	16.3	32.5
Net foreign assets	-194.0	-13.5	4.9	20.6	23.3
Net claims on public sector [11]	66.2	-21.4	-70.2	-32.6	-19.6
Net other items	189.5	65.9	34.9	28.2	28.8
Policy Factors	-46.7	1.8	43.5	0.3	5.5
Assistance to financial institutions	8.4	-	5.3	-1.4	-0.4
Regular rediscounting	-0.3	-3.6	0.6	-	1.0
Indirect policy instruments [12]	-54.8	5.5	37.6	1.7	4.9
Reserve Money	15.0	32.8	13.1	16.6	38.0

FACTORS AFFECTING RESERVE MONEY [1], 1985-1989

(Change as a per cent of reserve money at beginning of period)

Country/Period	1985	1986	1987	1988	1989
Sri Lanka [13]					
Autonomous factors	24.5	0.7	5.0	30.8	2.0
Net foreign assets	-11.3	-7.5	-11.5	-9.3	9.8
Net claims on Government [14]	48.8	14.8	4.4	43.2	-8.0
Net other items	-13.0	-6.5	12.1	-3.1	0.1
Policy Factors					
Net claims on financial institutions	-1.3	6.0	1.9	1.9	-2.5
Reserve Money (outstanding)	23.3	6.7	6.9	32.6	4.8
Memorandum item					
Central Bank securities	4.5	8.5	-14.3	-	-0.1
Thailand [15]					
Autonomous factors	0.6	1.5	13.7	-1.2	27.8
Net foreign assets	2.1	23.8	36.7	48.3	74.7
Net claims on Government	10.7	-10.6	-6.4	-43.9	-40.8
Net other items	-12.1	-11.7	-16.6	-5.6	-6.1
Policy Factors	7.7	10.0	7.4	16.1	-
Net claims on financial institutions	7.7	12.2	7.3	14.6	-11.3
Development credits	6.1	13.4	7.5	14.2	-11.9
Liquidity credits	1.6	-1.2	-0.2	0.4	0.6
Central Bank net repurchase position	-	-2.2	0.2	1.5	-
Reserve Money	8.4	11.3	21.2	14.8	16.6

1. Autonomous factors are defined to include changes in the central banks' net holdings of foreign assets and net claims on government while policy factors include central banks' lending related to preferential, rediscount, and special liquidity support measures and the use of indirect monetary policy instruments to influence bank liquidity such as sales/purchases of treasury bills, central bank bills, repurchases and foreign exchange swaps.

2. Figures are as at the year ending March. Positive sign indicates increase in assets or decline in liabilities, that is, an expansionary factor; negative sign indicates decrease in assets or increase in liabilities, that is, a contractionary factor.

3. Until 1985, data include claims on non-financial and financial public enterprises, and private sector. From 1986, data include claims on financial public enterprises and private sector.

4. New central bank facilities for discounting of money market papers.

5. Central bank debt certificates, Sertificat Bank Indonesia (SBI).

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

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

8. The changes in other items net in 1988 and 1989 include the acquisition of government shares of M$1,050 million in Malaysian Airlines System and Malaysian International Shipping Corporation.

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

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

11. Including government-fixed deposits with the Central Bank associated with the sales of treasury bills for monetary control purposes.

12. Repurchase/reverse repurchases, operations in central bank certificates and bills, special reverse repurchases.

13. Positive sign indicates increase in assets or decline in liabilities, that is, contractionary factor.

14. Including operations in Treasury bills for monetary control purposes.

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

Source: Tseng, Wanda and Robert Corker, Financial Liberalization, Money Demand and Monetary Policy in the SEACEN Countries During the 1980s, Asian Department, International Monetary Fund, 1990.

Appendix 15

SUMMARY OF POLICIES TAKEN IN THE SEACEN COUNTRIES TO FACILITATE THE USE OF OPEN MARKET OPERATIONS

INDONESIA

June 1983 Reforms

- Introduction of indirect monetary instruments such as reserve requirements, open market operations, discount facilities and moral suasion.

- Indirect instruments introduced comprised the following:

  SBI (Sertificat Bank Indonesia or certificates of indebtedness) was created to provide an attractive rupiah asset suitable for cash position management by banks, especially in the case of excess liquidity. Only banks and non-bank financial institutions (NBFIs) are authorized to buy SBI directly from Bank Indonesia, but these institutions as well as the public are also allowed to trade in SBI in the secondary market.

  In order to complement the new systems of reserve money management through sales and redemptions of SBI, Bank Indonesia established two types of discount facilities in February 1984. The Discount Window I was created to assist banks in overcoming liquidity shortage in their day-to-day operation. Discount Window II was designed to support banks dealing with shortage of funds because of maturing mismatch of fund. Banks categorized as 'sound' and 'sufficiently sound' are eligible for access to these facilities.

  In order to stabilize the money market, the authorities, on 1 October 1984, imposed a limit on each bank's borrowings from the interbank market. At the same time, the authorities introduced a special credit facility as a substitute for inter-bank borrowing by a bank that had exceeded this limit.

In 1985, the central bank created a new market instrument and allowed banks and NBFIs to trade in these instruments among themselves or with Bank Indonesia. The newly created money market instrument is known as SBPU (Surat Berharga Pasar Uang).

To streamline the process of open market operations and to enhance the secondary market, the Government appointed one non-bank financial institutions (NBFI) to act as a security house in trading SBI and SBPU.

October 1988 Policy Package

- To promote the rapid development of the financial sector.
- Measures included the permitting of the opening of branch offices of bank and non-banks and establishment of new private banks, joint venture banks and rural credit banks.
- The reserve requirement ratio was reduced from 15 per cent to 2 per cent.

MALAYSIA

23 October, 1978

- Interest rates were liberalised.

May 1979

- Introduction of new instruments (bankers' acceptances and Negotiable Certificates of Deposits).

1980

- Central Bank issued its own Certificate.

December 1986

- The National Mortgage Corporation, Cagamas, was set up.

1987

- Exchange control system was further liberalized.

February 1987

- Banking institutions were allowed to meet their minimum liquidity requirements on a fortnightly basis, instead of observing the requirements daily. These measures have reduced the volatility of interest rates in the money market significantly.

1 February 1987

- Pegged interest rate arrangement was dismantled for all financial institutions.

October 1987

- Well-capitalised finance companies were allowed to participate in the interbank money market.

15 October 1987

- Cagamas Berhad was authorised to participate in the interbank market.

1 January 1989

Capital Market Reform

A whole package of financial reforms were introduced to develop the capital market:

Secondary Market for Malaysian Government Securities (MGS)

1. **Appointment of Principal Dealers:** Eighteen principal dealers (4 commercial banks, 7 merchant banks and all 7 discount houses) were appointed to underwrite the primary issues of MGS, which are sold by auction. Only the principal dealers will have access to the Central Bank's rediscount window, and the Bank's open market operations will be conducted through the principal dealers. In return, the principal dealers will be obliged to provide two-way quotations to all potential buyers or sellers of MGS. The discount houses' role as principal dealers in MGS is limited to securities with remaining maturities of 5 years or less (previously 3 years).

2. **Issue of MGS by Auction:** MGS with maturity periods of up to 10 years would now be issued by way of auction through the dealers. The Central Bank will no longer accept advance subscription for MGS except from the Employees Provident Fund (EPF) and, in the interim one-year period, from the National Savings Bank (NSB). Before an auction, all amounts of advance subscriptions by the EPF and NSB will be converted into MGS with maturity periods of more than 10 years. Institutions and individuals wishing to purchase a stated amount of MGS at a specified bid price in the primary market may do so through the principal dealers.

Trading in Malaysian Treasury bills (TBs): 7 discount houses were appointed as principal dealers in order to promote active trading in TBs. The weekly tender of these bills would be restricted to the discount houses, which would underwrite all TB issues and are obliged to make a two-way price for TBs. Other institutions and individuals, who are not allowed to participate in the primary issue, may purchase TBs in the secondary market, particularly through the principal dealers.

BNM Open Market Operations: The Central Bank's open market operations would be conducted through the principal dealers and will focus on the reserves in the system as a whole. The Central Bank's role in the money market will be that of maintaining liquidity in the system as a whole and not responding to the needs of each individual institution. Individual financial institutions with excess liquidity, or which are short of funds, will have to square their positions in the market and not with the Central Bank. This is to encourage more active trading among the financial institutions in various money market instruments. Under special circumstances, however, the Bank may provide direct access to its rediscount window to individual institutions, including non-principal dealers.

Averaging of Statutory Reserve Requirements: The commercial banks, finance companies and merchant banks are allowed to observe an average statutory reserve ratio within a 0.5 percentage point band over a 2-week period. Previously, they had to observe the ratio on a daily basis.

Changes in Primary Liquidity Requirements: The primary liquidity ratio of the finance companies was abolished, while the ratio for the commercial banks was reduced from 8 per cent to 5 per cent of total eligible liabilities.

Guidelines for the issue of private debt securities were issued to promote the orderly development of the market for private debt securities.

15 December 1989

- The **Interbank Funds Transfer System (IFTS)**, an on-line electronic fund transfer system was implemented to expedite the daily interbank fund transfers and settlements among participating institutions.

2 January 1990

- The **Scripless Securities Trading System (SSTS)**, an on-line book-entry system that effects and records the trading of Government papers and Cagamas bonds between member institutions, was implemented. SSTS will ensure an efficient system of settlement of dealings between counterparts, provide for the registration of securities instruments, and keep an up-to-date record of stock in security accounts. The risk of loss, destruction and the forgery of certificates is also eliminated since scrips are no longer issued.

1 June 1990

- Discount houses **cease to be the sole principal dealers for Treasury bills**. The principal dealership network is now extended to include all other institutions which are also principal dealers for MGS. A discount house is now required to tender a minimum 5 per cent of the tender amount of any primary issue of TBs, MGS and Cagamas bonds.

November 1990

- The Rating Agency Malaysia (RAM) was incorporated. The agency will rate all issues of bonds and commercial papers and disseminate widely all appropriate and timely information to potential investors for both the primary and secondary issues of

private debt securities (PDS). This will encourage the development of the PDS market.

1 February 1991

- The base lending rate (BLR) was freed from the administrative control of the Central Bank.

NEPAL

31 August 1989

- Interest rates of banks and financial institutions were liberalised.

- Introduction of the call money market which was established with the aim to reduce commercial banks' dependence on Central Bank's fund for short-term use.

- Regular auction of Treasury bills were initiated. Auctions on T-bills (91 days and 182 days) are done monthly.

- Interest rates on T-bills are market determined.

- The Central Bank issued the National Savings Certificate for absorbing excess liquidity for the financial system.

- An in-house Monetary Management Committee (MMC) was set up to monitor the sales and purchases of government securities.

THE PHILIPPINES

1980 Financial Reforms

- The introduction of expanded commercial banks which, in addition to their commercial banking functions, were allowed the powers of an investment house.

- The elimination of all functional distinctions among thrift banks.

- Reduction in differentiation among categories of banks and non-bank financial intermediaries authorized to perform quasi-banking functions.

- An increase in the powers and functions for non-bank financial intermediaries authorized to perform quasi-banking functions.

- 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. The lifting of the interest rate ceilings on short-term loans was the remaining last phase of the gradual deregulation of interest rates.

- The rationalization of government securities included the gradual phase-out of Premyo Savings Bonds as eligible reserves against deposit liabilities of commercial banks starting 1983 and the phase-out of other low-yielding reserve-eligible government securities starting March 1986. Towards the close of 1986, the auction system of marketing Treasury bills was reintroduced to replace the negotiated system. The market competitive rates of these securities provided the banking system with an outlet for their investible funds and represented a move away from the negotiated system where rates on government securities are unilaterally determined by the monetary authorities.

- These financial reforms were complemented by further deregulation of interest rates. Hence, the freeing of interest rate ceilings initiated in 1981 and completed by January 1983 further complemented the move towards a modified universal banking, and the increase in the required minimum capitalization of banks for increasing the availability of longer-term funds.

SINGAPORE

May 1975

- Selected banks were given approval to issue Singapore dollar negotiable certificates of deposit (S$NCD).

July 1975

- The cartel system of determining interest rates was abolished. Banks are free to quote their own rates of interest.

June 1978

- Exchange control was completely liberalised. Residents are free to borrow and lend in all currencies as well as deal freely in foreign exchange.

April 1984

- The Singapore Clearing House Association launched the Inter-bank Giro System which facilitates paperless transfer of funds between customers of participating banks by direct debiting and crediting of customers' accounts with these banks.

May 1987

- The Monetary Authority of Singapore launched the revamped government securities market which is characterised by scripless trading and market-determined yields. Five approved primary dealers and three approved registered dealers (all upgraded to primary dealer status in August 1988) replaced the four discount houses in an enhanced role as market makers in government securities. All applications in the primary auction of government securities have to be submitted through the primary dealers, and all primary and registered dealers are obliged to quote two-way prices under all market conditions.

- The reserve and liquidity requirements of banks and finance companies was revised in line with the Government's plan to develop an active market in Singapore Government securities.

- For banks, the minimum liquid assets ratio was reduced from 20 per cent to 18 per cent. Banks' deposits with discount houses, which previously qualified as first-tier liquid assets, are no longer eligible as liquid assets. Instead, government securities held by banks under overnight Repurchase Agreements (Repos) with financial institutions now qualify as liquid assets, subject to a maximum of 5 per cent of their liabilities base.

- For finance companies, net balances with banks and net money at call with discount houses no longer qualify as liquid assets. Government securities held under overnight Repos with financial institutions are now eligible.

SRI LANKA

1977

- Adoption of new economic strategy marking a significant departure from a closed economic policy to one which emphasized greater reliance on the market system, for resource allocation, gradual dismantling of import and exchange controls, establishment of an outward oriented industry and harmonising of private foreign capital to supplement domestic resource flows.

1980

- Definition of money supply broadened in effort to adopt a more realistic monetary aggregate for targetting.

- For the successful implementation of the open market operations (OMO), action was taken to create the necessary pre-requisites by promoting the country's money market. The commercial banking system was expanded considerably by inviting foreign banks to open branches in Colombo and the number of commercial banks more than doubled between 1979 and 1982 to reach 25 at the end of the latter year. This greatly expanded the competitive spirit among banks. A number of specialized financial institutions such as development banks and merchant banks also came into existence. Money brokers were allowed to operate so as to lower intermediation costs, while new features were added to the market by establishing a Secondary Market for Treasury bills in the Central Bank. The interest rates were allowed to move freely in the market in response to the emerging demand and supply conditions. The Primary Market for Treasury bills was used as far as possible to achieve the broad objectives of monetary policy.

- To facilitate investors in outstations, a "Tap System" under which Treasury bills are sold from the following week's Auction at the weighted average rate of the current week's Auction was

introduced. In 1989, this facility was extended to the Colombo area as well.

This procedure is applicable to the sale of Treasury bills in the primary market. In addition, a secondary Treasury bills market has been established enabling the public to discount and re-discount Treasury bills as and when they wish.

With the shift in emphasis towards open market operations as a primary tool of monetary policy, new institutional and operational procedures came into existence. Among these are the conduct of weekly tenders for Treasury bills, the establishment of a secondary market for Treasury bills, introduction of a more diverse structure for Treasury bills and a weekly forecast with respect to the public demand for Treasury bills.

THAILAND

1979

- Repurchase market established to help develop the money market and facilitate the free flow of money between foreign exchange and domestic markets and to serve as a vehicle for the implementation of monetary policy.

1980

- Interest rate ceilings for financial institutions freed from the 15 per cent limit imposed by the Civil and Commercial Code 1924. From then on, interest rates charged by financial institutions will be set by the Minister of Finance upon the advice of the Bank of Thailand, thereby giving more flexibility to the interest rate structure of the country.

September 1984

- Amendment to the Securities Exchange of Thailand Act 1974, to overcome the inadequacies or inconsistencies of the laws. The new amendment enables the SET to have better control on trading activities by requiring that all trade activities by insiders be recorded.

March 1985

- BOT encouraged the commercial banks to introduce BIBOR, Bangkok Interbank Offered Rate, as a reference for the pricing of floating rate loans to customers.

1986

- To enable credit foncier companies to efficiently mobilize funds from the public through the issuance of promissory notes. Credit foncier companies have been allowed to reduce the maturity of such notes from 3 years, to 1 year without prematured redemption.

June 1989

- Ceiling of interest rates on time deposits with more than one-year maturity was lifted.

February 1990

- To protect investors' interests, security underwriters were required to disclose to the public the data indicating that the floated shares were old issues and that profits from share sales could not be claimed by unregistered companies. Moreover, details on companies' names and locations, objectives of share offering, their performances, and current executives, etc., must also be disclosed. The measure was effective as of 24 February 1990.

March 1990

- Ceilings of interest rates on time deposits of all maturities were lifted.

- BOT bonds with one-year maturity were auctioned on 23 March 1990 to absorb excess liquidity from the financial system. Total bonds issued amounted to Baht 13.5 billion and had a coupon rate of 9.125 per cent.

May 1990

- On 21 May 1990, the Government officially announced the acceptance of obligations of the Article VIII of the International Monetary Fund's Articles of Agreement which essentially entailed unrestricted international payments relating to current account transactions and an abstention from multiple exchange rate practices.

July 1990

- To promote security trading in provincial areas, the authorities announced regulations and conditions for the setting up of security trading offices in the provincial areas. Eligible companies must have licences to perform security brokerage service and be members of the SET. Alternatively, they must be security companies that, for the past 12 months prior to the application date, had average security trading volume of no less than the average trading volume of the SET's members during the same period. They must also be recorded to have profits for the last two consecutive years prior to the application date. The permission would be granted only to the setting up of offices in Muang or major districts. This stipulation was effective from 5 July 1990.

August 1990

- To boost investors' confidence following depressed security prices, the Bank of Thailand revised a regulation to allow finance companies to invest a greater amount of their funds in registered or listed securities with good fundamentals. The ratio was temporarily increased from up to 60 per cent to up to 100 per cent of their capital funds. This new regulation would apply to finance companies that had already invested 60 per cent of their capital funds or were expected to reach that level within a period of one month from 27 August 1990. After having received the permission, the finance companies would be given three months to increase their investment up to the level stipulated. The level of investment achieved at the end of the third month would be considered a temporary limit from which the companies would be obliged to reduce their investment back to the original limit (60 per cent of capital fund) within two years after the permission was granted.

- The required proportion of commercial banks' securities holdings to total deposits for branch opening after deducting the amount of government bonds sold in the repurchase market was reduced from 12 per cent, effective 14 August 1990. As of 13 November 1990, this proportion was lowered to 8 per cent while the proportion inclusive of government bonds sold in the repurchase market was reduced from 16 per cent to 9.5 per cent.

September 1990

- Modification of the maturity period in the repurchase market was made by replacing 3-day and 15-day agreements with 7-day and 14-day agreements, respectively, while other remaining maturity periods, that is, 1 day, 1 month, 3 months, 6 months were maintained.

January 1991

- To stabilize the money markets and reduce fluctuations of short-term interest rates, the Bank of Thailand modified commercial banks' reserve requirement computation procedure. Under the new system, the reserve maintenance period used for calculation was extended from every business day in a week to everyday in a fortnight. The first period starts from day 8 to day 22 in any month and the second period from day 23 to day 7 in the following month (including bank holidays). The daily average level of deposits for the preceding fortnight would be used as a deposit base for reserve requirement calculation in the current period. This arrangement was to be in effect from 4 January 1991.

April 1991

- On 1 April 1991, the second phase of foreign exchange deregulation was announced.

June 1991

- Liquid asset requirement was introduced in June 1991 and amended on 23 September, 1991 to replace the legal reserve ratio.

- Total ratio is not less than 7 per cent of deposit liabilities.

- The composition of eligible assets are:

  - (1) Balance at Bank of Thailand of at least 2 per cent of the deposits.

  - (2) Cash in hand is allowed to accommodate not more than 2.5 per cent of the deposits.

  - (3) The residual from (1) and (2) of the legal reserves can be held in the form of eligible securities.

REFERENCES

1.Adhikary, Ganesh P., *Deregulation in the Financial System of the SEACEN Countries,* The South East Asian Central Banks (SEACEN) Research and Training Centre, December 1989.

2.Aghevli, Bijan B., "Monetary Policy in Selected Asian Countries", *IMF Staff Papers,* Vol. 26, No. 4, December 1978.

3.Arndt, H.W., "The Financial System of Indonesia", *Savings and Development*, No. 3, 1987.

4.Aschheim, J., "Restrictive Open Market Operations Versus Reserve-Requirement Increases: A Reformulation", *Economic Journal*, Vol. LXXI II, June 1963.

5.Axilrod, Stephen H., "Monetary Aggregates and Money Market Conditions in Open Market Conditions in Open Market Policy", *Open Market Policies and Operating Procedures - Staff Studies,* Board of Governors of the Federal Reserve System, July 1971.

6.Bank Indonesia, *Report of the Financial Year 1983/84, 1984/85, 1985/86, 1987/88.*

7.Bank Negara Malaysia, *Money and Banking in Malaysia (1984),* Silver Anniversary Edition 1959-1984.

8._____ , *Money and Banking in Malaysia,* Percetakan Kum Sendirian Bhd., 1981.

9.Bricia, Flordelis S., "Treasury Bills: An Instrument for the Development of the Market for Government Securities", Central Bank of the Philippines, *Bondline*, September 1981.

10._____ , "T-Bills and CB Bills as Monetary Policy Instruments", Central Bank of the Philippines, *Bondline*, October-December 1985.

11.Cargil, Thomas F., *Money, the Financial System and Monetary Policy,* 2nd Edition, Prentice Hall, Inc., 1983.

12.Central Bank of Sri Lanka, *Central Bank of Sri Lanka: Functions and Working*, Lake House Printers and Publishing Ltd., 1986.

13.Central Bank of the Philippines, "CB Bills: A Monetary Tool", *Bondline*, Quarterly Bulletin, April-June 1984.

14.Chandavarkar, Anand G., *Open Market Operations*,(mimeograph), IMF, Washington D.C., 1977.

15.Chick, Victoria, *The Theory of Monetary Policy*, Graw-Mills Publishing Ltd., 1973.

16.Coats, Warren L., Jr., "The Use of Reserve Requirements in Developing Countries", *Money and Monetary Policy in Less Developed Countries: Survey of Issues and Evidence*, edited by Coats, W.L. Jr., and Khatkhate, D.R., Pergamon Press, Oxford, 1980.

17.Contreras, Naty S.D., "The Conduct of Open Market Operations", Central Bank of the Philippines, *Bondline*, August 1981.

18._____, "The Central Bank in an Era of Stepped-Up Open-Market Operations", Central Bank of the Philippines, *Bondline*, February 1982.

19._____, "Capital Market Development in the Philippines", Central Bank of the Philippines, *CB Review*, May 1986.

20.Dasri, Tumnong, *The Reserve Requirement as a Monetary Instrument in the SEACEN Countries*, The South East Asian Central Banks (SEACEN) Research and Training Centre, May 1990.

21._____, *A Note on Open Market Operations in the SEACEN Countries*, Staff Paper No. 30, The South East Asian Central Banks (SEACEN) Research and Training Centre, 1989.

22. De Kock, M.H., *Central Banking*, 4th edition, Crosby Lockwood Staples London, 1976.

23. Deane, R.S., *The Instruments of Monetary Policy*, Discussion Paper No. G80/70, Reserve Bank of New Zealand, October 1980.

24. Dejthamrong, Thanisorn, *The Development of Secondary Markets in Securities in the SEACEN Countries*, Staff Paper No. 40, The South East Asian Central Banks (SEACEN) Research and Training Centre, 1991.

25. Dotsey, Michael, *Open Market Operations in Australia: A U.S. Perspective*, Reserve Bank of Australia, Research Discussion Paper 8702, May 1987.

26. Duggar, Jam Warran, "The Federal Open Market Committee's Proviso Clause: Usage and Analysis", *The Journal of Finance*, Vol. 26, No. 4, September 1971.

27. Duremdes, Teresita J., "Repurchase Agreement as a Monetary Policy Tool in the Philippines", Central Bank of the Philippines, *CB Review*, August 1983.

28. Ealdama, E., Jr., "The Auction Market for Treasury Bills" Central Bank of the Philippines", *Bondline*, December 1986.

29. _____ , "The First Full-Year Cycle of Treasury Bills Under the New Auction System", Central Bank of the Philippines, *CB Review*, October 1987.

30. Fousek, Peter G., *Foreign Central Banking: The Instruments of Monetary Policy*, Kennikat Press, 1957.

31. Ghatak, Subrata, *Monetary Economics in Developing Countries*, The Macmillan Press, Ltd., 1981.

32. Goldstein, Henry N., "The Relative Security Market Impact of Open Market Sales and 'Equivalent' Reserve Requirement Increase", *Economic Journal*, Vol. LXXII, September 1962.

33. Guzman, Michael Cesar U. de, "Towards a Wider Market for Government Securities", Central Bank of the Philippines, *Bondline*, October 1981.

34. _____ , "The Role of Dealers in the Secondary Market", Central Bank of the Philippines, *Bondline*, January 1982.

35. Higgins, Bryon, "Free Reserves and Monetary Policy", *Issues in Monetary Policy II*, Federal Reserve Bank of Kansas City, 1982.

36. Horvitz, Paul M., and Richard A. Wand, *Monetary Policy and the Financial System*, 5th ed., Prentice Hall, 1983.

37. Khan, M.S., "Variable Expectations on the Demand for Money in High Inflation Countries", *Money and Monetary Policy in Less Developed Countries: Survey of Issues and Evidence*, edited by Coats, W.L., Jr., and Khatkhate, D.R., Pergamon Press, Oxford, 1980.

38. Khatkhate, D.R., "Evolving Open Market Operations in a Developing Economy: The Taiwan Experience", *Journal of Development Studies*, Vol. 2, 1977.

39. Landicho, Isagani L., "The 1988 Dealer Network for Government Securities", Central Bank of the Philippines, *CB Review*, November 1988.

40. Lee Sheng Yi, *Monetary Policy and Foreign Exchange Management in Singapore*, a paper presented to the symposium organized by The Economic Society of Singapore and The Department of Economics and Statistics, National University of Singapore, Regional English Language Centre, Singapore, 25-26 March 1983.

41. Lirio, Ricardo P., "The Philippine Capital Market and Its Development", Central Bank of the Philippines, *CB Review*, March 1989.

42. Lopez-Lasala, Norma T., "Conditions for the Effective Implementation of Open Market Operations", *Report on Seminar on Open Market Operations as a Monetary Instrument*, The SEACEN Centre, September 1988.

43. Low, A.R., "Open Market Operations", *SEANZA Lectures*, Vol. 1, 1964.

44. Luckett, Dudley G., *Money and Banking*, McGraw-Hill Book Company, 1980.

45. Meek, Paul, *Open Market Operations*, Federal Reserve Bank of New York, June 1978.

46. Meulendyke, Ann-Marie, *Open Market Operations as a Policy Tool in the United States*, Occasional Paper No. 8, The South East Asian Central Banks (SEACEN), Research and Training Centre, October 1988.

47. Navarva, Jorge Equardo B., "The Emergence of the Government Securities Market", Central Bank of the Philippines, *Bondline*, December 1981.

48. Ng Beoy Kui, *Open Market Operations as a Monetary Instrument in the Developing Countries*, (mimeograph), 1988.

49. _____ edited, *"The Development of Capital Markets in the SEACEN Countries"*, The South East Asian Central Banks (SEACEN) Research and Training Centre, February 1989.

50. Park, Y.C., "The Ability of the Monetary Authorities to Control the Stock of Money in LDCs", *Money and Monetary Policy in Less Developed Countries: Survey of Issues and Evidence*, edited by Coats, W.L., Jr., and Khatkhate, D.R., Pergamon Press, Oxford, 1980.

51. Polvorosa, Cesar G., Jr., "Government Securities as Fiscal and Monetary Policy", Central Bank of the Philippines, *CB Review*, December 1983.

52. Porter, F.C., "Narrow Security Markets and Monetary Policy: Lessons from Pakistan", *Money and Monetary Policy in Less Developed Countries: A Survey of Issues and Evidence*, edited by Coats, W.L., Jr., and Khatkhate, D.R., Pergamon Press, Oxford, 1980.

53. Reserve Bank of Australia, "The Reserve Bank's Domestic Market Operations", *Reserve Bank Bulletin*, June 1985.

54. _____ , "Open Market Operations Since the Float", *Reserve Bank Bulletin*, December 1986.

55. Roth, Howard L., "Federal Reserve Open Market Techniques", *Economic Review*, March 1986.

56. Rowan, D.C., "A Note on Open Market Operations Versus Variations in Reserve Requirements", *The Economic Journal,* Vol. LXXII, July 1962.

57. San Jose, Armi S. and Cesar G. Polvorosa, Jr., "CB Bills as Instrument of Open Market Operations", Central Bank of the Philippines, *CB Review,* June 1984.

58. San Jose, Armida S., "The Thrust of Monetary Policy Under the Economic Recovery Program", Central Bank of the Philippines, *CB Review*, January 1987.

59. Savage, Donald T., *Money and Banking*, A. Wiley/Hamilton Publication, John Wiley & Sons, 1977.

60. Scarella, Lamberta P., "Making a Market for Treasury Bills: The AIDC Experience", Central Bank of the Philippines, *Bondline,* August 1983.

61. Sihotang, Kilian, Bambang S. Wahyudi, and Widharto, *Monetary Policy and Developments in Indonesia since 1983,* Back ground paper for the Eight Pacific Basin Central Bank Conference on Economic Modelling, Kuala Lumpur, Malaysia, November 11-15, 1988.

62. Sellon, Gordon H., Jr., and Ronald L. Feigen, "The Choice of Short Run Targets for Monetary Policy", *Issues in Monetary Policy II,* Federal Reserve Bank of Kansas City, March 1982.

63. Sen, S.N., *Central Banking in Underdeveloped Money Markets,* Bookland Private Limited, 1956.

64. Suleik, Mercedes B., "Financial Development in ASEAN Countries", Central Bank of the Philippines, *CB Review,* November 1984.

65. Thanos, C.A., "Open Market Operations and the Portfolio Policies of the Commercial Banks", *Economic Journal,* Vol. LXXI, September 1961.

66. The South East Asian Central Banks (SEACEN) Research and Training Centre, *Monetary Policy in SEACEN Countries,* (mimeograph), 1979.

67. _____ , *The Financial Structure and Its Implications for Monetary Policy in the SEACEN Countries*, November 1986.

68. _____ , *Report on the Seminar on The Development of Secondary Markets in Securities in the SEACEN Countries,* The SEACEN Centre, March 1991.

69. The Economics Department, Bank Negara Malaysia, *Money and Banking in Malaysia*, Silver Anniversary Edition 1959- 1984, Percetakan Kum Sendirian Berhad, 1984.

70. The Finance Ministry Central Bank Committee on the Rationalization of the Government Securities, " The 1982 Government Securities Rationalization Program: Concept and Perspectives", Central Bank of the Philippines, *Bondline* November 1986.

71. Thillainathan, R., "Financial Markets in Malaysia - A Review of Recent Development and Outlook", *Banker's Journal* Malaysia, February 1988.

72. Villanueva, Edmundo S., "Portfolio Management and the GS Secondary Market", Central Bank of the Philippines, *Bond line*, November 1982.

73. _____ , "CBCI Stages a Comeback", Central Bank of the Philippines, *Bondline* January - March, 1984.

74. Wardhana, A., *Monetary Problems of an Underdeveloped Economy: With Special Reference to Indonesia,* University of California, 1962.

75. Ygrubay, Anthony P., "Monetary Policy in the Philippines: 1970 to 1985", Central Bank of the Philippines, *CB Review*, March 1986.

76. Zawadzki, K.K.F., "Are Open-Market Operations Effective?", *Oxford Economic Papers*, Vol. 17, 1965.