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

# Extent and Efficacy of Monetary Sterilisation in the SEACEN Countries

Lim Choon Seng

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by
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## Foreword

Monetary sterilisation has become an issue of recent concern. Between 1990-1996, the SEACEN region was the recipient of unprecedentedly large capital inflows, resulting in macroeconomic disequilibrium, such as overvalued currencies and high real interest rates. The question thus arises as to whether the macroeconomic objectives of low and stable inflation, growth with full employment and sustainable balance of payments can be achieved by appropriate domestic and external policies in the context of open capital markets.

In a broader framework, this paper aims to analyse the extent and efficacy of monetary sterilisation in selected SEACEN countries and to recommend appropriate policy options to deal with excessive capital inflows. Central banks do not have unlimited reserves and as monetary sterilisation is far from perfect, a well-supervised financial system is essential to lessen the adverse effects of excessive capital inflows. This paper also suggests that non-market based techniques such as capital controls cannot be expected to be effective in the longer run.

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## Table of Contents

## LIST OF TABLES AND CHARTS

## LIST OF APPENDIX

## EXECUTIVE SUMMARY

Although a surge in capital inflows is beneficial as it eases external constraints, lowers down domestic interest rates and builds up potential for higher investment and growth, it could also feed developments perceived as signs of overheating and stability. Massive capital inflows may stoke "excessive" appreciation of real exchange rate as well as higher inflation and excessive accumulation of foreign reserves.

Faced with such a situation, a central bank has several viable options. One is to do nothing and let the domestic currency appreciates to reflect the increased demand for domestic assets. The other is to sterilise the inflows by actively intervene in the foreign exchange market and at the same time tightens domestic credit to absorb the excess liquidity in the banking system. The authorities could also employ price and quantity measures to control capital flows.

Empirical evidence using VAR methodology indicates that Indonesia appears to be more successful in its sterilisation operation while Thailand may be less insulated from foreign asset shocks. Malaysia takes a longer duration than the Philippines for the sterilisation process to be effective. However, this may be due to a deliberate policy not to sterilise. However, it is noted that the Philippines had allowed some degree of real exchange rate appreciation. The effectiveness of monetary sterilisation may also depend on the magnitude and persistence of capital inflows. During the surge, the cumulative inflows were close to 50 percent of GDP in Malaysia and Thailand, while the cumulative flows for Indonesia and the Philippines were 8.3 and 22.6 percent of GDP respectively. It is also noted that Malaysia and Thailand had also during this period experienced a large influx of volatile short-term capital flows. However, taking all these factors into consideration, sterilised intervention in Malaysia and Thailand has largely been able to prevent excessively significant nominal and real exchange rate appreciation.

In all cases, a positive shock in foreign assets leads to a decline in domestic credit. However, the converse is not true. Domestic credit creation does not lead to a decline in foreign assets. This implies that the authorities do allow some fluctuations in the exchange rate and reserve money coming from a domestic shock but they are not ready to accept similar fluctuations from a shock coming from the external sector. In an inter-temporal framework, the existence of cost constraint

means sterilisation today implies less opportunity to sterilise tomorrow. Empirical evidence suggests that quasi-fiscal costs are not important consideration in sterilisation operation in Malaysia, the Philippines and Thailand. However, quasi-fiscal costs can grow to be "non-trivially" large.

There are several measures to deal with excessive capital inflows. Eliminating some form of implicit and explicit government guarantees on capital inflows can be used to tackle the problem at source, for example, to deter discriminatory capital inflows. Implementing greater exchange rate flexibility is another way to transfer some risk premia to market participants in order to reduce "arbitrage" capital inflows. A practical way is to stabilise the exchange rate within a desirable band.

As excessive capital inflows can render any form of sterilisation ineffective in the long run, it may be desirable to introduce some form of controls to stem speculative capital inflows at source. However, capital controls should be short term in nature and be implemented as the last option. Subsequently, they should then be progressively disbanded as the situation warrants as advancement in the financial markets has made it harder to monitor compliance and prolonged use of capital controls often only lead to investors finding means to circumvent them. It may also be desirable to impose some form of tax on short-term capital inflows.

As sterilisation is imperfect in most cases, it is mandatory for the authority to improve the monitoring and surveillance of capital inflows so that timely and appropriate steps can be taken. This will reduce the tendency to pursue unnecessary arbitrary stop-go policies to deal with capital inflows. In addition, effective supervision is needed to counter the adverse effects of excessive volatile capital inflows on asset quality and financial soundness of the banking system. It is also generally acknowledged that the banking sector has to become more resilient so as not to impose additional constraints on monetary policy.

# EXTENT AND EFFICACY OF MONETARY STERILISATION IN THE SEACEN COUNTRIES

# Chapter 1

## Introduction

### 1. Significance

Between 1990-1996, annual net capital inflows to developing countries exceeded US$150 billion.[1] In 1996, net private capital flows which make up 86 percent of total aggregate long-term flows to developing countries reached US$244 billion, five times the level in 1990.[2] The Mexican crisis in December 1994 suddenly halted capital flows and fuelled speculation of a major reversal of capital flows from the developing countries. This particular episode has generated much interest as the 1982 debt crisis was due to the sudden reversal of capital flows out of some of the heavily indebted developing countries. However, the pace of capital inflows regained momentum and remained at a relatively high level by mid 1995.

Since 1980's, the SEACEN countries have been major recipients of capital inflows with Malaysia, Indonesia, and Thailand being as top country destinations for private capital inflows. In 1995, among middle-income countries, Malaysia received the highest net private flows, being 14.8 percent of GNP. This was followed by Indonesia at 6.2 percent. In 1996, the total aggregate capital flows to these three SEACEN countries was estimated to account for nearly 44 percent of total net private capital flows to the East Asia and the Pacific countries.

**Table 1**
**Net Private Capital Flows, 1990-1996[3]**
*(Billions of U.S. Dollars)*

| Country Group or Country | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 |
|---|---|---|---|---|---|---|---|
| East Asia and Pacific | 19.3 | 20.8 | 36.9 | 62.4 | 71.0 | 84.1 | 108.7 |
| Indonesia | 3.2 | 3.4 | 4.6 | 1.1 | 7.7 | 11.6 | 17.9 |
| Malaysia | 1.8 | 4.2 | 6.0 | 11.3 | 8.9 | 11.9 | 16.0 |
| Thailand | 4.5 | 5.0 | 4.3 | 6.8 | 4.8 | 9.1 | 13.3 |

Source: World Bank.

1. Fischer (1997).
2. It is also noted that private capital inflows to developing countries are mainly in the form of equity capital rather than debt financing. See Corbo and Hernández (1996), pp.61-85.
3. The World Bank (1997a), p.7.

Although a surge in capital inflows is beneficial as it eases external constraints, lowers down domestic interest rates, and builds up potential for higher investment and growth, it could also feed developments perceived as signs of overheating and stability. Massive capital inflows may stoke "excessive" appreciation of real exchange rate as well as higher inflation and excessive accumulation of foreign reserves.

Faced with such a situation, a central bank has three viable options. One is to do nothing and let the domestic currency appreciates to reflect the increased demand for domestic assets. The other is active intervention in the foreign exchange market and at the same time tightens domestic credit to absorb excessive liquidity in the banking system. The central bank can also employ indirect measures to curb capital inflows. These include implementing regulations and policies to limit the flow of capitals.

The objectives of the study are:

- to study recent development of capital inflows;
- to examine recent policy responses to capital inflows;
- to study the effectiveness of the monetary sterilisation; and,
- to recommend policy options.

## 2. Methodology

The degree and effect of sterilisation could be examined by analysing the response of the monetary base to changes in the net foreign assets. *MB = NFA + (NDA-NW), where, NFA is net foreign asset(NFA), NDA= Net domestic assets and NW= net worth*
Complete Sterilisation occurs when $\Delta\ NFA_t = -\Delta\ NDA_t$, and $\Delta\ MB_t = \Delta\ NFA_t + \Delta\ NDA_t = 0$
For example, when central banks seek to eliminate the effects of the change in NFA on the monetary base by implementing policies to offset the change in foreign assets through domestic credit.

A VAR (vector autoregression)[4] can be constructed as follows:

$$X_t = \Gamma_1 X_{t-1} + \Gamma_2 X_{t-2} + \Gamma_3 X_{t-3} + \ldots + \Gamma_{k-1} X_{(t-k)-1} + \varepsilon_t$$

4. This is similar in essence to the method used by Monero (1996).

where the vector X comprises of exchange rate in domestic currency units per U.S. dollar, domestic CPI, foreign assets, domestic credit, the interest rate differential (between domestic and foreign) and a proxy for quasi-fiscal costs of sterilisation[5] will be used in this analysis. The VAR model allows us to address the issue of simultaneous equations, without explicitly specifying their structural linkages.[6]

## 3. Coverage of the Study.

This study covers four SEACEN countries, namely, Indonesia, Malaysia, the Philippines and Thailand that had experienced surges in capital inflows. The inflow episode for each country is based on the period during which the country experienced a significant surge in net private capital inflows (World Bank, 1997b). As for Korea and Singapore, they had already been extensively covered by Monero (1996).

5. Quasi-fiscal costs (an upper-bound estimate) are calculated as $\gamma_t S_t \Delta R_t$ where $\gamma_t = i_t - i_t^* - [E(s_{t+1})-s_t]$, $S_t$ = spot exchange rate, $R_t$= stock of official foreign reserve at time t, $i_t$= domestic nominal interest rates, $i_t^*$= foreign rate of interest and $E_t$ is the expectation operator. See Kletzer and Spiegel (1996).

6. The impulse response functions can give us some indications on the extent of monetary sterilisation.

# Chapter 2

## Causes and Nature of Capital Inflows

### 1. Causes of Capital Inflows

### 1.1 Macroeconomic Fundamentals

There have been many plausible explanations for the recent surge in capital inflows to developing countries. Capital flows could be attributed to both domestic and external factors.[7] The sustained decline in global interest rates in the early 1990s was a main factor for the massive influx of capital flows into developing countries. With relatively high interest rate differentials, individuals and large institutional investors were attracted to the relatively higher investment yields in developing countries.[8] In addition, short-term capital flowed into the stock markets as foreign investors claimed a stake in the growing prospects of the emerging markets, particularly in utilities and communications infrastructure projects.[9] Moreover, the globalisation of trade as well as the growing integration of regional blocs and rapid financial innovations also contributed to the surge.[10]

Over-borrowing by domestic banks[11] and the all-too-eager lending by internationally active banks and other financial institutions also contributed to the surge. Encouraged by large interest rate differentials and pegged exchange rates, the over-borrowing was facilitated by the subsidy provided by governments to domestic banks in terms of inadequately priced or free insurance/guarantee on bank liabilities. Such a perverse incentive resulted in the over-borrowing syndrome argued by McKinnon and Pill (1997).[12] Similarly, the over-lending by internation-

7. Calvo, Leiderman, and Reinhart (1996), pp.123-139.

8. Using cointegration and error-correction models, Taylor and Sarno (1997) conclude that changes in the U.S. interest rates are important determinant of short-run dynamics of portfolio flows, in particular bonds flows to developing countries.

9. United Nations (1994), p.8.

10. Gooptu (1993), pp.45-77.

11. We include "near" banks in our definition of "banks," even though *de jure* they are not banks. Examples are the finance companies in Thailand and merchant banks in Korea, which are *de facto* banks.

12. McKinnon and Pill (1997).

ally active banks was facilitated by the blanket and free government or central bank guarantee on foreign borrowing undertaken by domestic banks.

Calvo et. al., (1996) also argues that the implementation of effective stabilisation inflation programme had made the economies in this part of the world a much better prospect for investing than the developed countries.[13] In essence, increased country creditworthiness due to manageable level of external debts, stable political and economic environment is also commonly cited as one of the influencing factors.[14] On the other hand, the "push" factor was the regulatory changes in the U.S. which have made investing outside the U.S. much more attractive and profitable.[15]

To summarise, Koenig (1996) concludes that: "given the high marginal productivity of capital [in this region], as long as sound macroeconomic policies continued to be pursued, substantial net direct and portfolio investment will continue for some time".[16]

## 1.2 Liberalisation Measures

In Thailand, the recent capital inflow surges began as early as 1988, Malaysia and the Philippines in 1989, Indonesia in 1990, Korea and Sri Lanka in 1991. Indonesia, Malaysia and Thailand had earlier on in the mid-1980s undergone successful structural adjustment programmes to set the foundation for the surge of inflows. In particular, Malaysia and Thailand have since shifted the focus to the private sector and the subsequent downsizing of the public sector is an indication of such shift. The resulting surpluses in the government budgetary balances substantially increased the credibility of fiscal policy which boosted their country credit rating. In the Philippines, the successful debt to equity management programme led to a boom in foreign direct investment in 1988-1989. Even though the programme was discontinued soon afterwards, credibility had already being restored. The prospect of recovery of the then ailing Philippine economy was further enhanced

13. Calvo, Leiderman, and Reinhart (1996), p.127.
14. Fernandez-Arias, and Montiel (1995), p.51-77.
15. Mohamed, El-Erian (1992), pp.175-194.
16. Koenig (1996), p.8.

following the 18-month stabilisation programme with the IMF in 1991.

Generally, the more liberalised environment has resulted in a greater degree of capital mobility. By the 1980s, most of the SEACEN countries have implemented exchange liberalisation to allow for greater economic efficiency in the financial systems.[17] However, there were some distinct differences on how liberalisation programmes were implemented. Indonesia, Malaysia and Thailand were pioneers and pacesetter. By 1970s, in these three countries, most of the controls on the current and capital accounts had already been dismantled. In contrast, the Philippines only launched its liberalisation programme in the 1990s but it was done in a rather swift pace. In a couple of years, almost all foreign exchange restrictions were completely removed. Currently, the degree of liberalisation is at par if not surpassing that of Indonesia and Malaysia. On the other hand, Korea and ROC, Taipei chose a rather cautious and gradualist approach. Like the Philippines, their liberalisation efforts only really took off in the 1990s. Their concern over rapid liberalisation is best illustrated by the observation of The Central Bank of China, Taipei, which concludes that over-hasty relaxation of controls may eventually lead to the re-imposition of such controls and thereby creating uncertainty about future rules and regulations.[18]

The liberalisation exercises carried out by the SEACEN countries were clearly not an asymmetric effort. Capital outflows were also liberalised. Lifting restrictions on outflows, especially on capital repatriation controls can generate confidence by assuring foreign investors that earnings on their investments can be remitted without much restriction.[19] The removal of limitations on capital repatriation can be considered an incentive equivalent to the removal of an explicit tax on foreign investment.[20] It is noted that control of outflows can be counter-

17. There are two arguments for capital account liberalisation. It is considered an inevitable step towards the path of development. Also, free capital moments can also lead to a more efficient global allocation of savings hence resources can be channelled into their most productive uses. This increases welfare and economic growth. See Fischer (1997), p.3.

18. See Shih (1996), pp.126-138.

19. Laban and Larrain (1987) conclude that liberalising certain type of capital outflows is very likely to strengthen capital inflows.

20. See Fernández-Arias, and Montiel (1995), p.55.

productive as it can be interpreted as a sign of weakness as restriction on outflows normally were used by "weak-currency" countries.[21]

During the recent surge, the capital and exchange controls in Indonesia were very liberal. There were hardly any major restrictions on capital flows as most of the foreign exchange controls have been discarded in the early 1970s. In general, residents were allowed to engage in short-term external lending and borrowing and to maintain external account deposit denominated in a foreign currency. In 1989, the ceiling of commercial foreign borrowings was removed and foreigners were allowed to purchase shares of private commercial banks up to 49 percent stake. By then, Indonesia had deregulated and liberalised most of its banking sector. Korea was more gradual in liberalising its financial sector, but in September 1980, it had allowed foreign investments in many new areas. In 1988, a full-scale plan was launched to liberalise trade, foreign exchange as well as in other financial markets. It lifted some restrictions on portfolio investment and simultaneously encouraged Korean residents to invest overseas. The stock market was also liberalised, albeit with restrictions for foreigner investors in 1992. The 'Three Stage Financial Liberalisation and Market Opening Plan" and the "Foreign Exchange Reform Plan" were implemented in 1993 and 1994 respectively. In Malaysia, by early 1980s, foreign ownership was relaxed to allow certain types of manufacturing projects up to 100-percent foreign ownership. In 1990, the Labuan International Offshore Financial Centre was established to facilitate a more systematic capital flow. In general, there was virtually no major restriction on capital flows.

In the Philippines, as early as 1977, a number of Offshore Banking Units and Foreign Currency Deposit units was set-up to facilitate capital flows. However, it was the exchange liberalisation of 1992 that explicitly removed most major restrictions on capital flows. Among the restrictions lifted pertained to the repatriation by foreign investors under the debt-to equity conversion program and the remittance of profits. In 1996, the Foreign Investment Act was amended to further liberalise foreign investment by increasing the scope of investment opportunity in the Philippines. In 1991, Sri Lanka gave incentives to foreign investors by allowing 100 percent of foreign ownership, exemption from

21. See Bakker (1996), p.18.

exchange controls, duty free imports of inputs and free transferability of shares. Prior to that, in 1979, the Foreign Currency Banking Units (FCBUs) were established to provide offshore banking activities. In 1994, when Sri Lanka accepted Article VIII of the IMF Article of Agreements, the Rupee became freely convertible in respect of all current international transactions. In Thailand, the first and second Three-year Plan which included series of measures to liberalise exchange rate controls and to reduce the restrictions on capital flows were implemented in early 1990s. These measures include free repatriation of investment funds. In 1993, the Bangkok International Offshore Banking Facility (BIBF) was set up to act as a vehicle to introduce new financial instruments into the domestic markets as well as to effectively mobilise funds from abroad.[22]

**Table 2**
**Date of Acceptance of Article VIII of the IMF Article of Agreement**

| Country | Date |
|---|---|
| Indonesia | 7 May 1988 |
| Korea | 1 November 1988 |
| Malaysia | 11 November 1968 |
| Philippines | 8 September 1995 |
| Sri Lanka | 15 March 1994 |
| Thailand | 4 May 1990 |

Source: IMF.

## 2. Nature of Capital Inflows

### 2.1 Long-Term Flows

By 1990, most of the SEACEN countries had switched development strategies from that of import-substitution to more competitive export-oriented industries. By mid-1980s, Korea, Taiwan and Singapore had already shifted, in full gear, toward export promotion.[23] Realising the

22. Nijathaworn (1995), p.21.

23. Masahiro (1994).

importance foreign direct investment (FDI) plays in industrialisation, Indonesia, Malaysia, the Philippines, Sri Lanka and Thailand also implemented similar market-oriented policies to attract FDI. Many other factors were responsible for the surge in FDI. Among others, the availability of a large pool of skilled and semi-skilled labour force at relatively lower cost. Perhaps more importantly, the catalyst has been the successful stabilisation and economic reform efforts. On the other hand, the exogenous factor was the huge current accounts surplus of Japan and the appreciation of the Japanese yen which saw a shift of Japanese investment to the South East Asian countries. Between 1985 and 1988, the yen appreciated by more than 50 percent against the U.S. dollar. Subsequently, the appreciation of the currencies of Korea, Singapore and ROC, Taipei has a double-edge effect. Although these three newly industrialised countries became relatively less attractive destinations for new Japanese investment ventures, they found it beneficial to direct their outward investments into the other SEACEN economies with major comparative advantages such as Indonesia, Malaysia and Thailand.

Developing countries encourage FDI because of its association with job creation and technology transfer from the more advanced economies. It has also been long argued that FDI, classified as long-term capital inflows, is much less volatile and hence less prone to capital flights. That is, FDI is deemed able to sustain itself and tends to be less influenced by short-term macroeconomic adjustments, such as fluctuations in interest rates.[24] FDI is also normally not associated with domestic credit expansion, as the flows are usually not intermediated through the banking system.[25] The increased productive investments associated with FDI can also lessen the impact of capital flows on interest rates and exchange rates.[26]

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24. See Kant (1996). However, conflicting empirical evidence does exist. In a study by Vorbo, and Hernãndez (1996) for five industrial and five developing countries, they note that "long-term flows are as unpredictable as short-term flows." Foreign direct investors may also participate actively in the capital market, especially during times of financial stress. Their hedging or speculative activities may however not shown up in the FDI component of the capital account, but in the other components, as banks cover their hedging positions (Comments from the Monetary Authority of Singapore).

25. In Thailand, since the establishment of the offshore facilities (BIBF), a large part of FDI is now channelled through the domestic banking system and registered as short term. See Koenig (1996), p.8.

26. The World Bank (1996), p.13.

## 2.2 Short-Term Flows

Short-term movement of capital inflows, in particular, foreign borrowings is interest rate differential elastic. During the surge, domestic interest rates were kept relatively high to prevent economic overheating and to effectively contain inflationary pressures.[27] The interest rate differential further widened in the recessionary period of the industrialised countries in 1990-1993 which saw lower international interest rates.

In Indonesia, throughout the 1990s, domestic interest rates were relatively high as the Indonesian authority pursued tight monetary policy to both reduce inflationary pressures and to ward off several rounds of currency speculation. In 1991, when it became clear that high interest rates were burdening the central bank in the course of its sterilisation efforts, attempts were made by lowering the discount rates on SBIs. Initially, the efforts were only partially successful because commercial banks at that time were reluctant to expand credit. The banking system that time was undergoing consolidation in order to meet the then recently introduced prudential requirements. However, the situation was the reverse in Malaysia and Thailand where large inflows led to excessive credit creation. In turn, the high domestic interest rates caused by rapid economic growth led to a surge in foreign borrowings by the private sector. However, when credit demand subdued slightly in 1994, Malaysia tried to ease interest rates in order to lower the interest rate differential. In the Philippines, active monetary sterilisation to dampen pressure on the peso appreciation may have caused the domestic interest rates to move upwards. The central bank tried to reduce interest rates differential through reducing reserve requirements for all type of deposits in August 1994 and its borrowing rates in 1996. In Sri Lanka, the continuous use of open market operations to siphon off excess liquidity caused the interest rates to crawl upwards.

Apart from the interest rate differential, the increasing use of short-term trade financing instruments and the decline in long-term official capital flows has increased the proportion of short-term capital inflows. However, the classification of short and long-term capital movements is becoming blurred and this has raised some concerns. For example, in Indonesia, foreign short-term borrowings were used to finance long-

27. In general, inflation rates and risk premia are important determinant of domestic interest rates.

term investment projects, thus creating a mismatch of maturity.[28] In Thailand, the source of funding through the BIBF has led to the shortening of Thailand's external debt maturity as BIBF normally fund lending through revolving short-term facilities. For the record, when it was clear that short-term inflows could easily be transferred out of the countries just as quickly as they could flow into the country, Malaysia in 1994 swiftly instituted temporary capital controls to counter short-term inflows.

## 2.21 Contagion Effect

The greater degree of financial integration and advances in the global financial markets has resulted in greater capital flow volatility.[29] Thus, the speed and the degree of transmission of the contagion effect of financial turmoil from one financial market to another have also increased tremendously. The contagion effect can be rightly attributed to rational and efficient behaviour of the markets. At other times, the spillover effects are also based on asymmetric information, herd behaviour of investors or inaccurate appraisal of the economic situation.[30] In any case, the spread of the contagion effect can be magnified by market overreactions. Both the Mexican Crisis and the recent East Asian currency crisis questioned the sustainability of massive capital inflows. The contagion effect of the Mexican crisis in early 1995 caused temporary outflows from most SEACEN countries. It not only destabilised the capital markets in this region but also generated bouts of speculative attacks on the currencies. Stock markets in Indonesia, Malaysia and the Philippines fell by around 10 percent although equity prices did quickly stabilise in most countries but at discounted values.[31] Collectively, Indonesia, Malaysia, the Philippines and Thailand as a result of intervention spent an amount of more than US$2.5 billion to support their respective currencies.[32] Apart from that, discount rates also shot

28. Bank Indonesia (91/92), p.47.

29. The World Bank (1997b) notes that "volatility seems to be an inescapable fact of financial markets in the short run." Following the Mexican crisis, the IMF recognises the need to expand the scope of emergency financing. In January 1997, the IMF adopted a New Arrangement to Borrow. Malaysia and Thailand are participants of the Agreement. Also, to ensure quality and timely data of the international capital markets, the IMF adopted the Special Data Dissemination Standard (SDDS).

30. Fischer (1997), p.4.

31. International Monetary Fund (1995a), p.6.

32. Bank Indonesia (1994/1995b), p.23.

up significantly in Indonesia, the Philippines and Thailand.[33] Thailand also opened a special swap facility to inject liquidity into the financial system.[34]

**Table 3**
**Ratio of Short-Term Debt to**
**Total Debt and Reserves (Mid-1997)**
*(Percent)*

| Country | Short-Term Debt/Total Debts | Short-Term Debt/Reserves |
|---|---|---|
| Indonesia | 24 | 160 |
| Korea | 67 | 300 |
| Malaysia | 39 | 55 |
| Philippines | 19 | 66 |
| Thailand | 46 | 107 |

Sources: World Bank and the IMF.

The root of the current financial crisis of Thailand in the second half of 1997 was its perceived vulnerability to a sudden reversal of capital flows as a result of excessive capital inflows. The massive inflows had earlier caused excessive spending, leading to large current account deficits. Foreign borrowings were readily available through BIBF which served to not only increase the economy's exposure to exchange risk but also jeopardise the ability of the central bank to monitor monetary developments. As a comparison, in the last three years, prior to the crisis, Thailand's financial sector borrowed US$55 billion from BIS-reporting banks as compared to those of Indonesia, Malaysia and the Philippines which collectively borrowed less than US$20 billion.[35] The resulting lending boom in turn caused an asset price bubble. As exports slowed down, Thailand was seen as having difficulties in servicing the large unhedged dollar debts. The initial result of the crisis was the decline in Thailand's official reserves.[36] This

33. Malaysia intervened only in the foreign exchange market. Interest rates remained relatively stable.

34. Kittisrikangwan, Supapongse, and Jantarangs (1995), pp.37-50.

35. See Montagu-Pollock (1997) for a detailed discussion, pp.16-25.

36. In August 1997, Thailand decided to accept the US$17 billion rescue package from the IMF.

led to investors doubting the sustainability of exchange rate intervention which eventually caused a reversal in market sentiment (see Table 4). It is widely believed that the markets overreacted when the spillover effects hit Malaysia and the Philippines and the contagion effect appeared to be excessive as the economic fundamentals of Malaysia in particular, at the time of the onset of the crisis, were generally stronger than that of Thailand.[37]

**Table 4**
**Credit Ratings**

| Country | Standard & Poor's | | | Moody's | | |
|---|---|---|---|---|---|---|
| | June 1996 | June 1997 | December 1997 | June 1996 | June 1997 | December 1997 |
| Indonesia | BBB | BBB | BBB- | Baa3 | Baa3 | B2 |
| Korea | AA- | AA- | B+ | A1 | A1 | Ba1 |
| Malaysia | A+ | A+ | A+ | A1 | A1 | A2 |
| Philippines | BB | BB+ | BB+ | Ba2 | Ba1 | Ba1 |
| Thailand | A | A | BBB | A2 | A2 | Ba1 |

Source: Standard & Poor's and Moody's.

The respective central banks had to intervene heavily in the foreign exchange markets.[38]

37. International Monetary Fund (1997), p.16.

38. From the end of December 1996 to 15 September 1997, the baht fell by 37 percent. During the same period, the currency of Indonesia rupiah, the Malaysian ringgit, the Philippine peso fell by 24.6 percent, 17.8 percent and 21.7 percent respectively, Warner (1997), p.48.

## Chapter 3

## Policy Responses to the Capital Inflows

### 1. Capital Surges[39]

The sheer magnitude and volatility of the recent capital surges have made the management of liquidity difficult (see Table 5). In Malaysia, the realised net private capital flows reached its peak of 23.2 percent of GDP in 1993 from 15.3 percent in 1992. Initially, most of these flows were direct investment but in 1992, net short-term capital inflows exceeded net long-term flows. In 1994, the percentage to GDP then declined sharply to only 1.2 percent.[40] In Thailand, the inflows were also extremely large at 12.3 percent of GDP for two consecutive years in 1990 and 1991 with foreign borrowings of the banking sector becoming increasingly important. For Indonesia, Korea, the Philippines, and Sri Lanka, the magnitude of the yearly inflows was not as large as Malaysia and Thailand but their cumulative flows as a percentage of GDP were not insignificant. During the period under review,[41] cumulative inflows reached 8.3 percent for Indonesia, 9.3 percent for Korea, 23.1 percent for the Philippines, and 22.6 percent for Sri Lanka. For comparison, the percentages were 45.8 percent for Malaysia and 51.5 percent for Thailand. During the same period, the volatilities of these inflows measured by the coefficient of variation were quite diverse. For a mean flow of 9.3 percent, the volatility of inflows for Malaysia was around 0.82 percent, about twice of that of Korea, Philippines and Sri Lanka. Indonesia with a mean flow of 1.8 percent has a volatility measure of 0.66 percent. However, the inflows in Thailand appeared to be more consistent. The average inflow was 9.9 percent of GDP with a coefficient of variation of only 0.21 percent.

### 2. Macroeconomic Effects and Exchange Rate Regimes

The recent financial crisis in the Asian region has raised the issue of whether open capital markets had been the primary cause. Can the macroeconomic objectives of low and stable inflation, growth with reasonably full employment, and sustainable balance of payments be

39. Figures in this section are obtained from, The World Bank (1997b), Table 4.1, p.175.

40. This was due largely impart to the various measured implemented in 1993/1994.

41. The inflow periods were Indonesia (90-95), Korea (91-95) Malaysia (89-95), the Philippines (89-95), Sri Lanka (91-95) and Thailand (88-95).

achieved by appropriate domestic monetary, fiscal, and external sector policies in the context of open capital markets?

Prior to the mid-July 1997 debacle in Thailand, the following factors characterised the macroeconomic, financial and exchange regimes in several SEACEN countries: large external current account deficits, reflecting largely private investment-saving imbalances; reasonably open capital markets; large interest rate differentials; open-ended and inadequately priced or free official safety nets; weak systems of banking, regulation and prudential supervision; and fixed or "fixed rates lite"[42] exchange rates.

Any country is linked to the outside world through the balance of payments, which is a record of real, financial, and reserve transactions between residents and non-residents. The strength of "linkage" and "contagion" effects thus depends on both trade and financial balances. While a trade transaction requires a corresponding financial transaction (either capital or reserve movement), a financial transaction need not involve trade movements.[43] Sometimes capital flows finance both real transactions and reserve accumulation. Owing to the pivotal role of capital flows in both trade and investment, any interruption in these flows invariably has adverse repercussions on the real domestic economy, in particular, levels of real incomes and consumption. However, as much as capital inflows can finance a higher rate of economic growth and living standards, they can also be disruptive as they can lead to rapid monetary and credit expansions, accelerating inflation, real exchange rate appreciation and unsustainable external debt positions. In addition, abrupt reversals of capital inflows, irrespective of causes (business cycle in developed countries, shifts in investors' sentiment influenced by, for example, perceptions of political instability and uncertainty, etc.), highlight the vulnerability of capital-importing countries.

The effects of large capital inflows on the domestic economy depend very much on the exchange rate regimes (see Table 6). Under the Mundel-Fleming model of perfect capital mobility and fixed ex-

42. Coined by Obstfeld and Rogoff (1995).

43. For example, equity, bond, or non-trade related loan transactions; or foreign direct investment in which the foreign investor sets up a plant fully using domestic inputs and producing exclusively for the domestic market.

**Table 5**
**Net Private Capital Inflows in Selected SEACEN Countries, 1988-1995**
*(Percentage of GDP)*

| *Country* | *Inflow Episode a/* | *1988* | *1989* | *1990* | *1991* | *1992* | *1993* | *1994* | *1995* | *Cumulative flows/GDP at end of episode* | *Mean Ratio* | *Coefficient of variation* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *Indonesia* | 1990-95 | | | 2.5 | 1.9 | 1.3 | 0.2 | 1.1 | 3.6 | 8.3 | 1.8 | 0.66 |
| *Korea* | 1991-95 | | | | 2.6 | 2.5 | 0.6 | 2.4 | 3.5 | 9.3 | 2.3 | 0.45 |
| *Malaysia* | 1989-95 | | 2.9 | 5.7 | 11.1 | 15.3 | 23.2 | 1.2 | 6.6 | 45.8 | 9.4 | 0.82 |
| *Philippines* | 1989-95 | | 2.1 | 3.9 | 4.4 | 2.3 | 4.4 | 7.9 | 5.2 | 23.1 | 4.3 | 0.45 |
| *Sri Lanka* | 1991-95 | | | | 3.9 | 5.3 | 8.2 | 6.5 | 3.5 | 22.6 | 5.5 | 0.36 |
| *Thailand* | 1988-95 | 7.4 | 10.4 | 12.3 | 12.3 | 8.6 | 7.7 | 8.3 | 12.1 | 51.5 | 9.9 | 0.21 |

a/ The period during which the country experienced a significant surge in net private capital inflows.

Source: *Private Capital Flows to Development Countries*, World Bank, p.175.

change rate, the country cannot hope to pursue an independent monetary policy.[44] This is also known as the "Impossible Trinity." That is, foreign exchange flows impose a constraint on the implementation of monetary policy. Under the fixed exchange rate, inflows of capital would tend to lead to an increase in money supply and thus a reduction in domestic interest rates. Domestic absorption would then increase causing domestic prices to rise. That increase in inflation rate would translate, *ceteris paribus* into an appreciation of the real exchange rates. Under the fixed exchange regime, intervention policy in the form of purchasing foreign exchange from the private sector is necessary to maintain the exchange rate.[45] Intervention would then result in an increase in international reserves but that increase would not be a one-to-one relationship, as the current accounts tend to deteriorate.

Under the floating regime, the nominal exchange rates are allowed to appreciate in response to a surge in capital inflows. This can trigger a vicious cycle of attracting another round of inflows as expectations of further appreciation of the currencies cause speculators to purchase assets dominated in the home currency. In a managed float system, the authority can resist appreciation of the exchange rate by intervening in the exchange rate market. In many cases, interventions are deemed necessary as appreciation of exchange rate has adverse implications on export performance. This is particularly applicable to export-oriented economies. This view is fully endorsed by Villanueva (1996) who notes that export growth is an important determinant of long-term economic growth.[46] In addition, real exchange rate appreciation could lead to misallocation of resources known as the "Dutch disease" problem. Currency appreciation makes tradable goods cheaper which in turn encourages reallocation of resources to non-tradable goods at the expense of tradable manufacturing goods. Moreover, allowing the currency to appreciate in response to transitory inflows would be risky as a sudden reversal could result in costly macroeconomic adjustments. Furthermore, even if the exchange rate appreciation may just be temporary, it may have a permanent hysteresis effect on trade and invest-

44. The World Bank (1996), p.77.

45. Implementation of fixed exchange rate requires on the part the government a strong fiscal discipline. See Calvo (1996), pp.207-223.

46. See Villanueva (1997).

ments.[47] However, a real appreciation can generate economic advantages. It promotes competition and this has a tendency to increase productivity of the tradable sector. Indeed the view of Singapore is that a "weak" currency would only result in a temporary increase in competitiveness as the inevitable increase in the wages as a result of higher inflation would eventually negate any short-term gains.

**Table 6**
**Long-Run Effects of Capital Inflows with Different Exchange Rate Regimes**

| | |
|---|---|
| Fixed exchange Rates | • Increase money supply<br>• lower interest rates<br>• Increase domestic prices<br>• Appreciation of real exchange rates<br>• Deterioration of current accounts<br>• Increase in international reserves by amount of capital inflows |
| Floating Exchange Rates/ Managed Floats | • Appreciation of real and nominal exchange rates<br>• More capital inflows if further appreciation of exchange rates is expected<br>• Current accounts may deteriorate<br>• In the managed float, if partial monetary 'sterilisation is implemented or nominal exchange rate is allowed to appreciate, the effect on the monetary base could be minimised.<br>• Effectiveness of sterilisation depends on the degree of substitutability of domestic and foreign assets<br>• Increase in international reserves by amount equals to the degree of intervention. |

During the recent surges, Indonesia was on the managed float exchange rate system whereby the central bank announced an intervention and a conversion rate. In fact, Indonesia implemented a policy of targeting depreciation of its currency.[48] In dealing with the episodes of currency speculations, the central bank saw the merit of allowing greater flexibility of the exchange rate by widening the intervention bands several times. The widening of the bands can send the message that the inflow-related appreciation is temporary and as such, is likely

47. International Monetary Fund (1995a), p.12.

48. Koenig (1996), p.18.

to reduce short-term inflows by increasing the currency risk premia in local interest rates and at the same time avoiding discouragement of investment in the tradable sector.[49] Furthermore, a more flexible exchange rate can create an element of uncertainty. The effect in easing speculative pressures being equivalent to Tobin-type transaction tax on foreign exchange.[50] The specific arrangement of crawling intervention band in Indonesia has worked well until the rupiah fell under extreme heavy selling pressure following the Thai financial crisis in August 1997. Subsequently, the central bank floated the rupiah to transfer a higher degree of risk premia to speculators.

Korea, in March 1990, adopted the market-average exchange rate system (MAR). Under this system, the exchange rate of Korean won against the US dollar was calculated through the weighted average of the rates utilised in the previous business day's transactions amongst banks. The MAR allowed the exchange rate to fluctuate within a narrow but flexible band. In October 1993, like Indonesia, the narrow range was widened to effectively lessen the degree of moral hazards by transferring some risks to market participants. During the surge, both Malaysia and the Philippines were under the "managed" floating exchange rate regimes. However, unlike Indonesia, the intervention bands which exist in practice were neither explicitly nor officially stated. This may have given the respective central banks greater flexibility to deal with currency speculation. For example, Bank Negara has always emphasised that Malaysia's exchange rate is determined by demand and supply but it discretely intervenes occasionally to avoid excessive fluctuations of the ringgit. In Thailand, until the recent financial crisis, the exchange rate was rigidly pegged to a weighted basket of currencies of its major trading partners. The Thai baht was strongly defended by the central bank until it opted for a more flexible exchange rate regime, resulting in an immediate defacto devaluation of the baht *vis-á-vis* the U.S. dollar by around 20 percent.

The classical response to large sustained capital inflows is to let exchange rate appreciate. This apparently was not the case of the above four SEACEN countries. Furthermore, in the four countries, the usage of both explicit and implicit intervention bands for the exchange rates indicates that the four SEACEN countries placed great value on

49. Reisen (1996), p.93.

50. International Monetary Fund (1995a), p.89.

nominal exchange rate stability. Thailand aggressively defended its nominal exchange rates which stabilised at around 25 baht to a dollar. In Indonesia, the implementation of the crawling peg allowed the exchange rate to depreciate gradually against the U.S. dollar. Malaysia and the Philippines allowed some appreciation of their respective currencies. But the peso appreciated much more than the ringgit despite the relatively large capital inflows into Malaysia. In fact, the ringgit depreciated somewhat in 1993 and 1994. On the other hand, the Bangko Sentral of the Philippines shares a rather similar view with Singapore, arguing that "exports should be able to establish and fortify their international competitiveness by being more productive and more efficient in looking for new products and new markets."[51]

## 3. Matrix of Viable Policy Options

The appropriate policy responses in dealing with large capital inflows in a relatively liberalised environment are to find the right mix between monetary, fiscal and the exchange rate policies. The authorities have to assess not only the favourable impact but also the destabilising effects of excessive inflows on macroeconomic stability. Large interest rate differentials, perceived "undervalued" currencies and unrestricted capital movements have made the task even more onerous.

### 3.1 Intervention

The main purpose of intervention in the foreign exchange market is to ensure that both nominal and real exchange rates do not deviate too substantially from the perceived appropriate rates. As non-sterilisation intervention increases liquidity, the financial system becomes more vulnerable to financial distress, especially when the appropriate prudential and supervisory framework is not in place. One way to lessen the possibility of a crisis is to intervene with monetary sterilisation.

Monetary sterilisation is a process in which central banks simultaneously attempt to minimise the appreciation of the exchange rate and reduce or leave the monetary base unchanged by selling domestic

51. Bangko Sentral ng Pilipinas (1994). pp.1-2.

assets.[52] It can also be broadly defined to include attempts to leave broad money supply unchanged instead of the monetary base. For example, increasing reserve requirement can be used as a channel to reduce the money multiplier. In this case, the change in money supply largely depends on the size of the inflows, the extent of monetary sterilisation as well as the volatility and magnitude of the money multiplier. Until the authority can ascertain the nature of the inflows, monetary sterilisation is often the first response to a surge in capital flows as it is easy to use and quickly reversible.[53] Normally capital inflows perceived to be of speculative nature are sterilised.

## 3.2 Open Market Operations

One of the most common instruments used is sterilisation via open market operations (OMOs). The chief advantage of OMOs over many other forms of sterilisation is that no extra burden is imposed on the banking system.[54] It is common to conduct OMOs using government securities but in many circumstances, central banks find it necessary to issue their own bills to absorb liquidity from the banking system.[55]

In Indonesia, the sales of Bank Indonesia Certificates (SBIs),[56] introduced in 1984 have increased significantly.[57] During the inflow period, daily auctions of the SBIs, inclusive of one-week repurchase agreement was carried out. During the early stage of the surge, BI implemented "non-market" form of sterilisation by requiring a number of public enterprises to convert part of their excess funds to SBIs. To ensure greater effectiveness, the method of auctioning of SBIs was later

52. The adverse effect of capital inflows can be mitigated by an increase in demand for money. Excessive capital inflows without a corresponding increase in money demand can cause the central banks to lose control of the money stock. For the above four SEACEN countries (Indonesia, Malaysia, Philippines and Thailand), money supply grew at an average of more than 14 percent during the inflow period.

53. Burcuson and Koenig (1993), p.16.

54. International Monetary Fund (1995a), p.81.

55. OMO can either be passive or active. Active in the sense that OMO is aimed to achieve a given reserve but allowing the interest rate to fluctuate; or passively by aiming to attain a particular interest rate and hence allowing the reserve to fluctuate. See Axilrod (1996).

56. Surat Berharga Pasar Uang (SBPU), a form of banker's acceptance was introduced by BI in 1985 to increase liquidity.

57. No government security was issued as the "Guidelines of State Policy" stipulates that the government is not allowed to undertake any domestic borrowings.

replaced to enable the discount rates on SBI to be market determined. The Bank of Korea became one the first central banks to issue its own bonds: the Monetary Stabilisation Bond (MSB). However, it was only in April 1993 that the first auction of the bonds was conducted.[58] Meanwhile, OMOs were adopted only after the mid-1980s. This was due to shortage of marketable securities following government's decision to finance its fiscal deficits through borrowings at preferential interest rates from the central bank.[59] Since 1989, repurchase agreements became more prominent. In Malaysia, during the peak of the surge in 1993, Bank Negara Malaysia issued the Malaysian Savings Bonds and several series of Bank Negara Bills.[60] In Nepal, the central bank issued the Nepal Rastra Bank bonds in February 1992 through competitive auctions to sterilise foreign exchange transactions while in the Philippines, the central bank has frequently undertaken outright transactions as well as regularly borrowed through its reverse repurchase facility on central bank bills. Since 1987, sales of treasury securities were carried out via auctions and proceeds deposited with the central bank. By 1994, government securities gained prominence in OMOs following the restructuring of the central bank which only allow the central bank to issue debt instruments under certain circumstances. In ROC, Taipei, the central bank issued savings bonds and CBC Negotiable Certificates of Time Deposit (CBC-NCDs).[61] In Sri Lanka, by 1992, OMOs using Central Bank Securities became the main thrust of monetary policy. In October 1993, it introduced a repurchase market for Treasury Bills in an effort to better manage liquidity on a daily basis. In Thailand, the central bank in 1987 started to issue the Bank of Thailand Bond with maturity of 6 months to one year to absorb liquidity over a longer term. Prior to that, over 90 percent of the volume transacted in the repurchase market for government and state enterprise bonds were for between 1- to14-day maturities.[62]

58. In 1996, MSB can be issued up to 50 percent of the money stock in terms of M2. See The Bank of Korea (1996), p.9.

59. The reluctance of the government to issue short-term Treasury bill was a barrier to efficient operation. See Hong and Ahn (1993). To enhance the efficiency of OMO, since 1996 the BOK has issued MSB with a maturity of 2 years and orders for purchases or sales of government and public bonds can be done through the BOK_Wire payment system.

60. The central bank first issued securities in 1987 and securities up to ten years maturity were sold by auctions in 1989. Bank Negara has also frequently intervened in the inter-bank through short-term borrowings.

61. The Central Bank of China Act stipulates that OMO should include securities issued or guaranteed by banks. However, these are relatively small in quantity, Hsu (1996).

62. Kittisrikangwan, Supapongse, and Jantarangs (1995), pp.37-50.

OMOs require adjustments in the assets and liabilities of the central bank since they involve asset swaps of high yielding domestic assets for low-yielding foreign ones. Thus, OMOs can be extremely costly to the authority. It is most likely that prolonged sterilisation could thus lead to massive increase in quasi-fiscal costs and debt stocks. Besides, there are some uncertainties regarding the effectiveness of OMOs in dealing with persistent large capital inflows. Thus, the ability of the authority to keep carrying on sterilising capital inflows is questionable.[63] This inter-temporal implication may eventually ruin the credibility of the stabilisation programme. Hence, there is a genuine practical limitation of using open market operations over the course of an extended capital inflow episode.[64]

Quasi-fiscal costs of sterilisation can become "non-trivially large" during period of capital surges.[65] It is a well-known fact that prolonged sterilisation prevents domestic interest rates from falling thus increasing the yield differential even further. This will not only put in motion a vicious cycle of drawing more volatile short-term placements but also distort the composition of capital inflows.[66] Thus, the very design to limit capital inflows makes future capital inflows more likely. The case of Indonesia serves as a good example. As a result of heavy sterilisation, the interest rates for the SBI was raised from 11.6 percent in 1988 to 18.8 percent in 1990 and 21.5 percent in March 1991. From the end of 1991 to 1992, the SBI position of the central bank nearly doubled from Rp.10.9 trillion. The entire quasi-fiscal cost was borne by the central bank.

The effectiveness of OMOs also depends on the structure of the financial system. The degree of substitutability between foreign and domestic bonds is a deciding factor.[67] If they are perfect substitutes as

63. Calvo (1991), pp.921-926.

64. Spiegel (1995).

65. Kletzer and Spiegel (1996) come to the above conclusion using a sticky-price model with imperfect asset substitutability.

66. Following liberalisation, the higher domestic interest rates have a far greater impact as changes in interest rates could now be transmitted much more quickly to the whole economy.

67. Risk aversion on the part of investor is adequate to create imperfect substitutability, Frankel (1994).

in the case of perfect international mobility, sterilisation by OMOs would not work since the central bank does not have unlimited supply of domestic assets to offset foreign inflows. This is because market participants will substitute foreign assets with domestic assets in their portfolios. For the extreme case of imperfect substitute among foreign and domestic bonds, the effectiveness of OMOs also depends on the substitutability among domestic assets. If they are imperfect substitutes and investors demand for a particular type of domestic asset which the central banks cannot provide, sterilisation will be ineffective.[68] For example, say if treasury bills is an imperfect substitute for financial assets which foreign investors wish to hold, sterilisation would only result in an increase in interest rates, perpetuating capital inflows.[69] It appears that the international asset substitutability for the SEACEN countries is rather limited as the existence of risk premia and country risk are enough to render less than perfect substitutability between foreign and domestic bonds.[70] This indicates that there is some scope for effective sterilisation in the OMOs.[71]

The effectiveness of the OMOs as a sterilisation instrument can be also hampered by the lack of maturity of the secondary market. Monero and Spigel (1997) conclude for the case of Singapore, that the secondary market for government securities is surprisingly relatively thin even though the financial market is generally relatively developed.[72] Similarly, in the other SEACEN countries, financial institutions hold government securities merely to meet the statutory or liquidity requirements. Government securities are also held by a few big institutional investors such as pension funds and insurance companies in the "captive market". As the main aim of these institutional holders is to meet legal requirement and at the same time earn reasonable returns with minimum risks, majority of these securities is held until maturity.[73] Furthermore, the narrowness of the money market and the shortage of marketable instruments due to the lack of new government issues follow-

68. The World Bank (1997b), p.223.

69. See Lee (1996).

70. Glick, and Monero (1994), p.6.

71. Most empirical evidences support the above conclusion. See Lee (1996), p.5.

72. Monero, and Spiegel (1997).

73. Ng (1996).

ing the government's strong fiscal position, has not helped to deepen the secondary market either.

### 3.3 Reserve Requirement

Malaysia and Sri Lanka, in particular, have used reserve requirement extensively to sterilise capital inflows. The main purpose of this instrument is to reduce the impact of foreign inflows to the financial sector. Since no quasi-fiscal cost is involved, the use of reserve requirement indirectly transfers the effective cost of sterilisation to the financial sector. This is in fact a form of implicit tax on the financial banking system with the cost shared among the market participants. However, there is a wider interest in limiting the degree of capital inflows intermediating through the banking system. Transitory large flows can generate large swings in banking liquidity that can eventually lead to banking problems. Furthermore, large capital inflows coupled with weak banks and poor banking supervision may exacerbate the moral hazard problem, resulting in a financial bubble.[74] In such a circumstance, it is also widely acknowledged that reserve requirement can be a useful instrument in short-term liquidity management.[75]

In the case of Malaysia and Sri Lanka, reserve requirement was raised numerous times. When warranted, the scope of the eligible base for computing reserve requirement was expanded to increase its effectiveness. For instance, in 1994, Malaysia redefined the eligible base of banking institutions to effectively capture the inflow of foreign funds. This was done by subjecting the vostro balances, all outstanding ringgit received through swap transactions with non-residents, outright borrowings from non-residents to statutory requirement and liquidity requirements.[76] In Sri Lanka, in 1992, reserve requirement was revised to cover all deposit liabilities of commercial banks, including foreign currency deposits. However, it is interesting to note that by 1994, reserve requirement on foreign currency deposits placed abroad was

74. Corbo, and Hernández (1996), p.65.

75. International Monetary Fund (1995b).

76. It required commercial banks to deposit with the central bank the ringgit funds of foreign banking institutions held in non-interest bearing vostro accounts. This implicitly imposed a tax on non-resident deposits.

reduced from 15 percent to 5 percent to encourage commercial banks to build up their foreign currency assets. In the Philippines, the relatively high reserve requirement encouraged banks to circumvent it by engaging in off-balance sheet activities through the common trust funds, fuelling exchange rate speculation. These trust funds were at that time not subject to any restriction. To close this loophole, the central bank imposed a 10-percent reserve requirement on peso-dominated common trust fund effective from October 1993. However, by 1994, the central bank decided to lower reserve requirement of the banking sector in order to reduce interest rate differential.

On the other hand, Indonesia reactivated the use of statutory reserve requirement by raising the ratio in February 1996 and again in April 1997 to reinforce OMOs.[77] Like Indonesia, Thailand, until recently, was reluctant to use reserve requirement as one of its main monetary instruments. Until 1996, the current ratio of the reserve requirement (liquidity assets requirement) has not been changed since June 1979.[78] In 1996, short-term offshore borrowings by banks and finance companies and deposits from non-residents with maturity of less than one year were subjected to non-remunerated reserve requirement.

In a more liberalised environment, the frequent use of reserve requirement is often criticised as a 'high-handed' method since it can promote disintermediation in the financial sector. In this respect, Korea has substituted reserve requirement with sterilisation through OMOs not only to provide a level playing field between banks and non-banks but also to prepare for a system of indirect monetary management.[79] In ROC, Taipei, as at June 1996, the reserve requirement was also lowered on ten occasions since 1990 as excessive reserve requirement was deemed to put the domestic banks at a disadvantage.[80]

### 3.4 Government Deposits

Government deposits and pension funds can form a sizeable part of money supply. In Malaysia and Singapore, the authorities

77. Bank Indonesia (1996/1997), p.43.
78. Tivakul (1995), p.43.
79. The Bank of Korea (1996), p.28.
80. See Shih (1996), p.137.

frequently shifted the Employee Provident fund and the Central Provident Fund from the commercial banks to the respective central banks. In the case of Malaysia, in 1992, more than US$2.6 billion of the pension funds was centralised with Bank Negara Malaysia. ROC, Taipei did the same for the assets (postal savings) of the postal system. Malaysia and ***Thailand*** have also actively shifted government deposits to the central banks when it was deemed necessary. Indonesia has also imposed a ceiling for the Treasury office's deposits maintained with banks and required banks to promptly transfer all tax receipts to the central bank.

The transfer of these deposits is effectively equivalent to a 100-percent increase in reserve requirement. The main advantage is that unless the withdrawal is excessively large, frequent, and unpredictable, it creates minimum distortion to the financial market. The other advantage is that no quasi-fiscal cost is involved if these government deposits are not remunerated. However, the scope for further sterilisation may be limited by the already high proportion of deposits held at the central bank. For example, in Thailand, by mid-1992, the proportion of government funds held in the BOT was 82 percent, making further use of this instrument no longer effective.[81]

### 3.5 Fiscal Consolidation

The existence of a large government sector which is not cost and interest sensitive is also likely to erode the effectiveness of sterilisation.[82] Fiscal consolidation can have a direct impact on aggregate demand if it is associated with the reduction of the purchase of non-traded goods and services.[83] Furthermore, if the reduction is reflected in the current accounts, there will be less pressure on the exchange rate to appreciate. Thailand turned fiscal deficits to surpluses in 1988 while the Philippines, for the first time in twenty years experienced government budget surplus in 1994. In the case of Malaysia, fiscal tightening eased the pressure on the already high domestic interest rates.

81. International Monetary Fund (1995a), p.84.

82. Karunasena (1996), p.124.

83. See Calvo, and Leiderman , Reinhart (1993), p.19.

However, it is difficult to classify fiscal consolidation as a policy response as it may be by coincident, a part of a longer-term adjustment programmes during buoyant economic conditions. Furthermore, it may not be feasible if the consolidation reflects a reduction in expenditures that may eventually affect social and economic developments. However, maintaining long-term strong fiscal position can signal clear policy intention to market participants.

**Table 7**
**Fiscal Balances**
***(Percentage of GDP)***

| Country | 1993-95 | 1996 |
|---|---|---|
| Indonesia | 1.2 | 0.9 |
| Korea | 0.4 | 0.3 |
| Malaysia | 2.3 | 1.1 |
| Philippines | 0.0 | -0.4 |
| Thailand | 2.3 | 2.3 |

Sources: IMF and World Bank.

### 3.6 Capital Controls

When it was deemed that market-based instruments such has OMOs may not be too effective, the SEACEN countries employed direct capital controls. Capital controls are often implemented to enable the authorities to use monetary policy to achieve domestic economic objectives while ensuring that irrespective of external development, the exchange rate remains stable.[84] The IMF classifies capital controls into four distinct forms:[85]

(i) The administrative controls: This controls the foreign direct investment to foreign equity transactions, foreign exchange transactions and short-term external position of the commercial banks;

84. See Bakker (1996), p.21.

85. ibid., p.11.

(ii) Dual or multiple exchange rate systems: The system imposes different exchange rates for different types of commercial and financial transactions;

(iii) Specific taxation of cross border financial flows or income resulting from external portfolio: Under this system, taxes are levied on cross-border transactions thus making such transactions less attractive; and,[86]

(iv) Residual group of indirect restrictions or regulations: This group among others includes limitations on interest payments on deposit accounts of non-residents and other measures to limit capital flows, though not prohibit them outright.

The SEACEN countries have tried to curb banks' offshore borrowings and impose restrictions on the open foreign exchange position of commercial banks. For example, imposing restrictions of net difference between off-balance sheet assets and liabilities or limiting short-term external liabilities up to a maximum of a certain percentage of a bank's capital. The justification for imposing such restriction was the significant increase in short-term foreign borrowings. In 1994, for the Philippines and Thailand, short-term borrowings as a percentage of foreign exchange reserves stood at 123.2 and 114.7 percent, respectively. For, Indonesia, the ratio was 60.9 percent. In contrast, Malaysia was the exception with a relatively low ratio of 19.6 percent.[87]

The Philippines limited loan approval including FCDU loans in 1994 while in Malaysia, Korea and Thailand, swaps and forwards restrictions were limited only to transaction on real foreign trading. In an extreme move, Indonesia stopped altogether the swap facility with Bank Indonesia. In 1994, in a surprise move, Malaysia imposed outright ban on the sale of short-term market instruments to foreigners by domestic residents. These measures deemed draconian by the markets, nevertheless achieved its objective of scaring away would be speculators. The rationale for implementing the ban was to limit on the net

86. James Tobin, suggests the "Tobin Tax" in which tax would be imposed for conversion of one currency to another in the spot market. The Tobin tax would act as a deterrent for short-term capital flows. For capital flows of a longer nature, the cost would be relatively small as the tax is 'amortised' over a longer period.

87. Bank Indonesia (1994/1995b), p.24.

external liability position that prevents the possibility of the roll over of maturity deposits.[88] For comparison, it is interesting to note that Singapore was able to manage large capital flows without recourse to capital controls while the strong presence of capital controls probably insulated the ROC, Taipei from the undesirable consequences of massive capital inflows.

The IMF views the controls as having highly distorting effect but concludes that it is rather 'dangerous' to draw any conclusion on its effectiveness without making any references to the nature of such measures.[89] However, it is clear that the effectiveness of direct controls may not work in the long run as they can sometimes be easily circumvent. For example, in ROC, Taipei, the imposition of maximum investment quota for foreign institutions and restrictions on foreign individual investors investing in domestic securities only resulted in redirecting of funds to the sub-accounts of overseas subsidiaries of qualified institutional investors and under the names of various affiliates. These restrictions on foreign individuals investing in the stock market were eventually lifted.[90]

Prolonged use of capital controls can also jeopardise financial developments but it is explicitly recognised that the use of capital controls and prudential measures such as imposing limits on the net open position of domestic foreign banks can be justified on the account to "steer the flow of capital towards the acquisition of relatively safe assets."[91]

Table 8 gives a summary view of the advantages and disadvantages of various sterilisation instruments while Table 9 summarises the policy responses of selected SEACEN countries.

88. The ban on the sale was removed when the market stabilised.

89. International Monetary Fund (1995a), p.13.

90. Shih (1996), p.135.

91. International Monetary Fund (1996), p.151.

## Table 8
## Selected Indirect Instruments of Monetary Policy[92]

| Instruments | Advantages | Disadvantages | Issues and Design |
|---|---|---|---|
| **Reserve Requirements** | Enhance predictability of reserve demand. Useful in one-off sterilisation of excess liquidity or to accommodate structural changes in demand for reserves. | Imposes tax on bank intermediation, lead to a widening gap between lending and deposit rates. Frequent changes may disrupt bank portfolio management. Not effective if excess reserve is unevenly distributed. | Designs include definition and monitoring of requirement base, eligibility of assets rules, etc. |
| **Primary Market sales of central Bank Paper** | Flexible instruments of short-term management. Issuance at discretion of central bank and various auction/tender formats can be used. Can be used when secondary market is insufficiently developed. | Can be costly if primary issuance is large. Absence of coordination with other issuing agents (Treasury) may generate problems. | Management of liquidity can be achieved through staggered primary issuance. |
| **Primary Market of Government securities** | Similar to central bank papers. Encourage fiscal discipline if direct central financing is discontinued. | Debt-management objective may conflict with monetary management if treasury manipulates auction to keep funding cost low or high frequent issuance may impede secondary market development. | When Central bank has government securities in its portfolio, reverse repo auctions can be used. |
| **Foreign Exchange (FX) swaps and outright sales and purchases** | Swaps can substitute repo operations FX outright sales and purchases may be useful if FX market is more developed than money market. | Suffer losses if foreign exchange operations are used to preserve an unsustainable exchange rate. | Need to design appropriate risk-management procedures. |
| **Shifting Government funds between the central bank and commercial banks[93]** | Convenient and accurate way of achieving monetary goals. Useful when secondary market is not yet developed. Involve smaller quasi-fiscal costs. | Not truly market-based and large withdrawal of deposit may create liquidity problems for individual banks. Interfere with bank's liquidity management. | Need to establish operational arrangements with the treasury. |

92. Source with modification from International Monetary Fund (1995b), pp.4-5.

93. Quintyn (1994).

**Table 9**
**Main Policy Responses of Selected SEACEN Countries to Surges in Capital Inflows, 1988-96**

| *Country* | *New Restrictions on Inflows* | *Nominal Appreciation* | *Sterilised Intervention* | *Higher Reserve Requirements* | *Tighter Fiscal Policy* | *Other* |
|---|---|---|---|---|---|---|
| *Indonesia* | 1991 | | 1990-93<br>1996 | 1996 | 1990-94 | Repayment of public external debt, 1994; widening of exchange rate band, 1994-96 |
| *Korea* | | 1989 | 1989, 1992-93 | 1990 | 1992-94 | |
| *Malaysia* | 1992,1994 | | 1992-93 | 1989-92, 1994<br>1996 | 1988-94 | Shifting pension funds and Government deposits to central bank, 1990-1996<br>Direct borrowings by central bank |
| *Philippines* | | 1992 (small) | 1990-93 | 1990 | 1990-95 | Accelerated debt repayment, 1994-95 |
| *Thailand* | 1995 | | 1988-95 | 1995<br>1996 | 1988-91 | Accelerated debt repayment, 1988-90 |

Source: *Private Capital Flows to Development Countrie*, World Bank, p.178 with modification to reflect updates.

## 4. Selected Country Experiences[94]

### 4.1 Indonesia (1990-1996)[95]

Like other SEACEN countries, the external factors responsible for the surge in capital inflows in Indonesia had been the yen factor and the large interest rate differential. With persistent deficits in the current account, there was a constant need for external financing as domestic savings were generally insufficient to support the relatively high growth in investment. The first year of the surge in FY 1990/1991 saw net inflows of private capital increase significantly from US$5.75 million to US$5.86 billion. These inflows were sustained during the Mexican crisis in 1994/1995 where only a slightly lower surplus of US$4.6 billion was recorded. Net private inflows again rose sharply in 1995/1996 and 1996/1997, registering a double digit of US$11.0 billion and US$ 11.8 billion, respectively. However, during the same period, official inflows declined and by 1996/1997, a deficit of US$0.8 billion was recorded due to prepayment of government foreign debts with high interest charges.

The lifting of the ceiling on foreign commercial borrowing of banks in 1989 saw a surge in offshore borrowings to finance private and public mega-projects. Furthermore, the availability of swap facility eliminated foreign exchange risks associated with such foreign borrowings.[96] The increase in liquidity in the financial system during the early stages of the surge was compounded by a drastic decrease in reserve requirement from 15 percent to 2 percent in October 1988. The initial response of Bank Indonesia (BI) to the surge was to purchase a huge quantity of foreign exchange and to conduct monetary sterilisation.[97] OMO were conducted through transactions of BI certificates (SBIs) and money market securities (SBPUs). Initially OMO were not truly market-oriented, as in March 1991 whereby, BI instructed a number of public

94. Based on various issues of the Annual Report of the respective Central Banks, unless otherwise stated.

95. Figure in bracket represents the period of the recent surge in capital inflows.

96. Nasution A., 1997.

97. Apparently, between the period June 1990 to December 1993, the central Bank purchased about US$14 billion of foreign exchange. See Mcleod H.R., 1997, p.37.

enterprises to convert a portion of their funds deposited in state and private banks amounting to Rp9.9 trillion to SBIs. In addition, all tax receipts were promptly transferred to Bank Indonesia with ceilings imposed on each Treasury office's deposits maintained with banks.

The subsequent tightening of monetary policy eventually led to a larger spread between the domestic and international interest rates, prompting companies to source cheaper funds from abroad. The large interest rates differential imposed a cost constraint for OMO. Hence, capital controls were re-imposed in 1991 to reverse the earlier decision of 1989 to liberalise foreign borrowings. The Foreign Commercial Borrowing Management Coordinating Team (Team PKLN) was set up to monitor not only the magnitude but also the timing of capital inflows and foreign borrowings by government and public enterprises. Team PKLN recommended rescheduling of a number of large projects and at the same time, albeit with exceptions, set an annual ceiling for foreign commercial borrowings for the next five years. To reinforce the above restrictions, BI also revised measures on net open position of banks, swaps and credit extension denominated in foreign currency. It not only lowered ceilings on swaps of individual banks and reduced swaps transactions with BI but also raised the three-month swap premium. Furthermore, it imposed the condition that the short-term external borrowings should not exceed 30 percent of a bank's capital. It also restricted the net difference between off-sheet assets and liabilities to a maximum of 20 percent of a bank's capital.

During the earlier stage of the surge, the relatively weak financial sector posed a rather unique situation in Indonesia. The excess liquidity did not lead to a boom in bank lending due to the Policy Package of February 1991 which introduced several prudential banking requirements. In order to comply with these regulations, commercial banks, burdened by non-performing loans, preferred to invest their excess liquidity in SBIs rather than expand their lending. This put more pressure on the already high domestic interest rates,[98] which dampened investments and attracted more interest-elastic-short-term capital inflows which eventually only end up in rupiah-denominated assets. The slowing down of bank lending resulted in imbalances in economic growth, emanating mainly from the external non-oil/gas sector.

98. The time deposit in March 1991 reached 27 percent.

As the high domestic interest rates became public concern, BI decided to relax its monetary stance by reducing the discount rates on SBIs and SBPUs progressively. By 1992/1993 the decline in international rates gave BI the opportunity to reduce interest rates further. It stepped up the purchase of SBPUs to increase liquidity in order to spur the growth of bank lending but the interest rate differential remained relatively high.[99] At the same time, the central bank was concerned about the adverse effect of short-term capital inflows. OMO were intensified with outstanding SBIs more than doubled at Rp23.0 trillion at the end of March 1993 compared to Rp11.2 trillion at the end of March 1992. As the interest rate differential again widened in 1993/1994, due to lower global interest rates, BI also saw the need to make interest rates on SBIs discount rate more market-determined. The stop-out-rate (SOR) system was introduced whereby BI determined the quantitative target for SBI to be sold in auctions at discount rates. Again to encourage banks to expand credit, the central bank relaxed several regulations under the May 29, 1993 Deregulation Package. BI also wound down its OMO with total outstanding SBIs at end of March 1994 amount to Rp19.8 trillion. However, with its slightly relaxed monetary policy, BI has to constantly remain cautious as the continuous surge in capital inflows was having a potential expansionary effect on money supply. For example, SBI discount rates declined significantly by 5.5 percent in June 1994 but as inflation loomed, the discount rate was raised by 2 percentage points during the third quarter.

In the first quarter of 1994/1995, a surge in currency speculation with heavy buying into the U.S. dollar triggered a large outflow of funds. At the same time, inflows were reduced mainly through portfolio investments and borrowings by foreign exchange banks. Another stream of outflow occurred in the last quarter, due to the contagion effect of the Mexican crisis.[100] To fob off currency speculation and to discourage speculative capital inflows, BI modified the rupiah intervention bands several times during the course of the year by widening the bid-ask spread for foreign exchange dealings with the central bank from Rp20.0 to Rp30.0 and from Rp30.0 to Rp44.0 in September 1994

99. During the year, the three-month deposit rate declined from 21.3 percent to 15.8 percent.

100. BI spent US$580 million to intervene in the foreign exchange market. See Bank Indonesia (1994/1995b), p.23.

and June 1995, respectively. The spread between the selling and buying rates of rupiah against the U.S. dollar also widened with an intervention band in the range of Rp66.00.[101]

By 1994/1995, the situation was very much the opposite of what had happened earlier. Despite the generally tight situation, the earlier efforts by BI to increase bank credit began to yield positive results. There was a marked increase in the growth of bank lending but this time around, the central bank was concerned about the possible complication of excessive lending to the property and the speculative sectors. It used moral suasion. Discount rates for SBIs and money market securities gradually rose after the third quarter, climbing as high as five percentage points to 12.3 percent in March 1995 to reflect a reasonable differential between the domestic rates and the offshore rates. BI by then decided to scale down its OMO and as a result, the total outstanding SBIs at the end of March 1994 declined from Rp19.8 trillion to Rp11.2 trillion at the end of March 1995. As the situation warranted it, BI also decided to give more leeway to banks. The overall net open position (NOP) and the NOP for off-balance sheet were relaxed with the ratio raised by 5 percent to 25 percent of bank capital. The NOP per currency was also lifted to give banks the discretion in managing their currency exposure.

As the effects of the Mexican crisis ebbed, economic growth in 1996 reached 7.8 percent with capacity utilisation in many sectors reaching high levels. Commercial banks once again showed strong credit expansion of 26.3 percent. OMO were reactivated which resulted in a contractionary impact of Rp0.5 trillion compared to an expansion of Rp10.4 trillion in 1994/1995. The investment swap facility was terminated but swap transactions with banks may still be carried out with BI's discretion. BI also once again engaged in moral suasion to discourage excessive lending to unproductive sectors. It is interesting to note that for the first time since the surge, in February 1996, BI resorted to the use of statutory reserve requirement by raising the ratio by 1 percent to 3 percent of demand deposit. The ratio was further raised to 5 percent effective April 1997. The intervention band of rupiah-U.S. dollar was also raised twice, from Rp66 (3 percent) to

101. To fend off speculative attack, BI conducted bilateral arrangement with monetary authorities of Malaysia, Singapore, Thailand, Hong Kong, Australia, and the Philippines through securities repurchase agreement.

Rp118 (5 percent) in June 1996 and to Rp192 (8 percent) in September 1996. During the last quarter of the year, the auction of SBIs was intensified which resulted in a contractionary effect of Rp10.1 trillion. In March 1997, in an effort to impose stricter controls, regulations for commercial offshore borrowings (COB) of both banks and non-bank institutions were amended. Among the new regulations, banks receiving COB with a maturity of less than two years were required to maintain a daily loan balance not exceeding 30 percent of capital. In addition, at least 80 percent of COB received in the current year was to be used for export credit. Short-term (up to two years) loans up to a maximum of US$20 million per creditor or depositor were exempted from the ceiling, but were, nevertheless, subject to 30 percent of bank capital. For better monitoring, borrowers were also required to submit quarterly reports of their offshore borrowings to the Ministry of Finance and BI.

## 4.2 Malaysia (1989-1996)

Malaysia liberalised its economy and to some extent its financial sector as early as 1970. By the early 1990s, there were hardly any restrictions, with inflows of funds freely permitted and the outflow of funds monitored only for statistical purposes. Thus, for the past two decades, capital inflows were a common feature in the Malaysian economy.

However, it was only in 1989 that Malaysia started to experience exceptionally large capital inflows which peaked during 1991 to 1993. During the surge, the current accounts were in deficits and with the exception of 1994 and 1995, the balance of payments in surpluses. Large short-term capital inflows were flowing into the stock market and the ringgit perceived to be undervalued. It was thus not surprising that in 1993, Malaysia has the fourth largest equity market in Asia with capitalisation about four times its GNP. In 1989, the bulk of the inflows comprised entirely private capital inflows and the long-term capital accounts registering, for the first time after two years, a net inflow of RM3.2 billion. The net inflows more or less doubled for the next few years, ranging between RM10.3 to RM15.6 billion during 1992 to 1996. The inflow of foreign direct investment also registered strong unprecedented growth throughout. In 1989, it increased sharply by RM3.3 billion to a record level of RM5 billion. By 1991, it hit the RM10 billion mark before reaching its peak in 1993 registering RM13.4 billion. In

1989, the net short-term capital accounts also reverted to a net surplus of RM0.8 billion, mainly due to the inflows of commercial bank capital compared to a net outflow of RM2.9 billion in 1988.[102]

By 1992, for the first time, net inflows of short-term capital exceeded those of long-term. In that year, the net short-term capital inflow was RM12 billion. In an environment of large interest rate differential, commercial banks found it advantageous to increase their offshore ringgit borrowings. The stock market staged an improved performance in the second half of that year. In 1993, net short-term inflows peaked and the surplus increased by 15 percent to RM13.9 billion. Large positive flows were also recorded in 'errors and omissions', reflecting the inflows of funds for portfolio investment which were not fully accounted for in the capital accounts. Towards the end of the year, expectations of a stronger ringgit led to bouts of exchange rate speculation and another round of short-term capital inflows. In contrast, it is interesting to note that in 1994, an outflow of short-term flows of RM7.9 billion was recorded, due to the policy stance of limiting such inflows, a reversal in interest rate differential due to higher global interest rates as well as a less buoyant local bourse. 1994 also saw the capital accounts record a deficit of RM4 billion after a consecutive five years surplus. This brought the overall balance to a deficit of RM8.3 billion.

In 1995, the contagion effect of the Mexican crisis did not significantly affect Malaysia, the majority of the capital outflows had already occurred earlier, in response to the measures taken by the central bank in 1994. In fact, a larger surplus of net long-term capital was recorded and net short-term capital inflows reversed to a surplus of RM734 million. In 1996, long-term capital continued to register larger surplus while net inflow of private short-term capital recorded a surplus of RM11.2 billion. This was mainly due to better market sentiments on the prospects of the Malaysian economy as well as a larger interest rate differential. Foreign direct investment remained strong at RM14.4 billion.

Bank Negara Malaysia (BNM) faced a policy dilemma. As the central bank's main objectives were to cool down the economy and to alleviate inflationary pressures, it has to consistently pursue tight mon-

102. Short-term capital inflows were relatively insignificant until the mid-1980s.

etary policy. However, short-term capital inflows were continuously drawn by the relatively high domestic interest rates. The openness of the capital accounts and the perception of an undervalued ringgit worsened the situation. Unlike most countries, Bank Negara's initial response to the surge in 1989 was to increase the statutory reserve of commercial banks and it has since employed this instrument frequently. However, the increment in the reserve requirement was stepwise and gradual. BNM was able to effectively use this instrument because the initial level of the reserve requirement was relatively low. The initial increase of 1.0 percentage point for commercial banks and 1.5 percent for finance and merchant banks by 1.5 percentage brought the overall ratio to 4.5 percent. Subsequently another increase during the year raised the reserve ratio by another 1.0 percentage point. According to BNM estimates, RM1.8 billion of excess liquidity was absorbed from the system. Furthermore, direct borrowing by the central banks absorbed an equivalent of RM4.4 billion and a further RM0.8 billion was siphoned off through the sale of government papers. As a result, interest rates started to firm up accompanied by a strong appreciation of the ringgit of 4 percent across the board.

With another record level of inflows coupled with the large monetary hangover from 1989, BNM decided not to bid up domestic interest rates in order not to attract short-term inflows. In 1990, it reactivated the Money Market Operations Account (MMO), an account which the government maintained with the central bank. Government deposits with the banking system that matured during the year were withdrawn and centralised in the MMO account. BNM again attempted to reduce the money multiplier by increasing the statutory reserve requirement of banking institutions by 1.0 percentage point to 6.5 percent. The central bank also borrowed funds directly from the market and lengthened the maturity structure of these borrowings. In spite of all these measures, strong demand credit remained the main source of monetary expansion in 1990. In the following year, another round of increase of the reserve requirement raised the ratio by another 1.0 percentage point absorbing about RM1.1 billion of excess liquidity. However, interest rates again firmed up during the year prompting banks to borrow ringgit funds from abroad. Concerned about the consequences of excessive foreign borrowings, BNM imposed an implicit tax on foreign borrowings by redefining the eligible base for the purpose of calculating statutory reserve and liquidity requirement ratios to include all outstanding ringgit received through swaps transactions with non-residents including off-

shore banks.[103] This new base was also applicable to outright borrowings from non-residents, including offshore and new borrowings of branches of foreign banks operating in Malaysia, not sourced through swaps with the central bank. Subsequently, money supply growth slowed down at end of 1991 to around 15 percent compared to 18.2 percent in 1990 and 20.6 percent in 1989.

In 1992, the central bank again raised the statutory reserve requirement by one percentage point to 8.5 percent to absorb about RM0.8 billion of excess liquidity. A daily limit swap transaction which was not trade-related with non-residents was imposed. All non-commercial related transactions by foreign customers were subjected to a limit of US$2 million per name per day and an aggregate of US$4 million per day. To complement the above measures, RM15.1 billion was absorbed through direct borrowings by the central bank in the money market. In the last quarter of 1992, the central bank reaffirmed its tight monetary stance by encouraging the Employee Provident Fund (EPF) to place its excess funds with the central bank equivalent to RM6.7 billion at the end of 1992. However, the continuous stream of capital inflows caused the ringgit to appreciate across the board in terms of the composite basket. The ringgit appreciated by 5.6 percent, with the largest appreciation of 29.1 percent against pound sterling. Throughout the year, with the increased liquidity as well as the expectations of an appreciating ringgit, domestic interest rates were constantly subject to downward pressures but the interest differential remained relatively high.

The year 1993 was considered the most liquid and BNM once gain employed an array of instruments. One of the most potent actions was to borrow short term directly from the market. This action directly absorbed RM27 billion of excess liquidity. The prolonged excess liquidity situation resulted in the central bank exhausting its holdings of Malaysian Government papers,[104] which prompted the central bank to

103. For Bank Negara Malaysia, the rationale for the redefinition of the eligible liabilities is because these funds are part of the ringgit deposit liabilities and therefore, should also be subject to the statutory reserve requirement. (Comments from Bank Negara Malaysia.)

104. The favourable fiscal position of the government, together with continued privatisation, resulted in smaller issue of the MSG. The fiscal budget was in surplus at 0.2 percent of GNP.

issue the first series of its own paper, the Bank Negara Bills (BNB) on February 1993. During the course of the year, ten such series of the BNB papers were issued, mopping up a net total of RM6 billion. Another paper introduced by the central bank was the Malaysian Savings Bond (MSB). Even though the MSB was issued mainly to promote saving, about RM0.9 billion was absorbed from individuals. In addition, surplus fund of the EPF and government deposits equivalent to RM38 billion were locked in with the central bank. In 1993, the contribution of the external sector was extremely large, with the net increase in reserves of the central bank amounting to RM29.2 billion while bank external liabilities (excluding deposit by foreigners) increased by 7.4 percent to give a net impact of RM21.8 billion on the money supply. BNM reported a net operating loss in 1993, attributable to the large quasi-fiscal costs.

In early 1994, as Malaysia's relatively high interest rates were causing inflows of speculative capital, the authorities had to introduce several short-term measures. BNM again redefined the eligible liabilities base of banking institutions in order to capture all foreign funds inflows. It also set an upper ceiling of each individual banking institution for net non-trade related external liabilities. This measure placed a direct limit on the absolute amount of foreign funds which banking institutions received from foreign parties. As a result, net external liabilities of the banking system declined from a peak of RM35.4 billion in early January to RM10.3 billion by the end of 1994. Commercial banks were also required to deposit an amount equivalent to the ringgit funds of foreign banking institutions in non-interest bearing vostro accounts held at BNM. Albeit with exception, the vostro balances were subject for a short period to statutory and liquidity requirements.

In 1994, recognising that a liberal policy on capital inflows at zero cost was no longer viable, the central bank resorted to capital controls. All residents were prohibited under the Exchange Control Act 1953, from selling short-term monetary instruments to foreign participants. The definition of short-term monetary policy instruments included Bank Negara bills, Treasury bills, government securities, including Islamic Securities, housing corporation (Cagamas) bonds with remaining maturity of one year or less, bankers acceptances and negotiable instruments of deposits to non-residents. Subsequently, it also included private debt securities (including commercial papers but excluding securities convertible to ordinary shares) with remaining maturity of one year or

less.[105] Commercial banks were not permitted to undertake non-trade related swaps (including overnight swaps) and outright forward transactions on the bid side with foreign participants. However, they were allowed to hedge their trade-related foreign exchange contracts with non-bank domestic customers. This was to prevent offshore parties from establishing a speculative long forward position at a time when the ringgit was perceived as undervalued. Once again, the statutory reserve requirement of the banking institutions was raised from 8.5 percent to 9.5 percent and to 10.5 percent in May 1994 and again for the eighth time since 1989 to 11.5 percent in July 1994. The three increments absorbed about RM4.8 billion of excessive liquidity. Several of the short-term measures were withdrawn when money supply moderated during the latter half of 1994 following a gradual unwinding of speculative flows.

As noted earlier, the contagion effect of the Mexican crisis of 1995 did not significantly affect Malaysia, as most of the capital outflows have already occurred earlier, in response to the many measures taken by the central bank in 1994. BNM decided to scale down its sterilisation operations as short-term inflows has moderated to a pre-1989 low. However, it remained cautious by continuing to issue Bank Negara Bills (BNBs), accepting deposits in the inter-bank market, maintaining accounts for surplus vostro accounts of the banks and centralising federal government deposits with the central bank. Total outstanding BNB rose from RM4.1 billion at the end of 1994 to RM6.2 billion at the end of 1995 as the use of government papers were limited given the favourable position of the fiscal budget. The statutory reserve requirement was left untouched in 1995. However, in 1996, BNM twice raised the reserve requirement by one point each time to 13.5 percent. As a result, statutory reserves of the banking institutions placed with the central bank rose by RM156.1 billion in 1996. Meanwhile, total outstanding BNBs rose to RM7 billion before declining to RM4 billion at the end of the year. The federal government continued to centralise its excess funds in the central bank.

### 4.3 Philippines (1992-1996)

In 1991, the Philippine government started to embark on a new 18-month stabilisation stand-by arrangement with the IMF. By August

105. This measure was lifted on 12 August 1994.

1992, the country adopted major economic liberalisation programme which were seen as path-breaking. Full-scale exchange rate liberalisation was implemented to cut costs as well as to improve the operational efficiency in the foreign exchange market. Surrender requirements were totally lifted and all quantitative purchase restrictions on the current account transactions were removed. Furthermore, exporters and producers were now able to access foreign deposit loans, an alternative source of cheaper financing. All outward investments were also liberalised. In the same year, the peaceful national and local elections, representing the first democratic transfer of political power in two decades restored stability and confidence to the economy. By 1992, the country has also successfully concluded four rounds of debt rescheduling and implemented various market based debt swaps covering commercial bank notes. Another round of significant foreign exchange liberalisation programme was launched in 1993. Among the measures that affected capital flows as the relaxation of full and immediate repatriation of foreign investment including profit remittance. Moreover, Foreign Currency Deposit Units (FCDUs) have been authorised to grant medium- to long-term loans to the service sector without prior approval from the Bangko Sentral ng Pilipinas (BSP) provided such loans be serviced using foreign exchange sourced from outside the banking sector.

Private bonds also became an equally importance source of financing. A major development in 1993 was the automation of the Manila Stock exchange and the Makati Stock Exchange which eliminated arbitraging opportunity between the two exchanges.[106] In 1993, among the East Asian countries, the Manila Composite Stock Index was the performer, with the index rising by 154 percent.[107] During 1993-1994, the peso appreciated significantly. However, the central bank saw the appreciation as more of a challenge to exporters to be more productive and efficient. By 1995, ten foreign banks were given licences to operate in the Philippines on a full-scale basis. In 1996, 11 more banks were granted FCDU licences which resulted in the increase in loans to residents by 103.1 percent. During the year, four foreign banks were also given licences to operate offshore banking.

106. The World Bank (1996), p.69

107. ibid., p.69.

It is interesting to note that for the Philippines, the onset of the surge in capital inflows was during the period where the economy was on the recovery path. Inflation was moderate and this had given the authority much more flexibility in pursuing monetary policy. For instance, there was less of a need to keep the domestic interest rates high. As pointed out earlier, the Philippines has also allowed some adjustments through real exchange rate appreciation, thus lessen the dependence on OMO to sterilise capital inflows.

In 1992, a net capital inflow of US$1.7 billion was recorded. This was less than what was recorded in 1991 due to a purchase of the US$469 million collateral required for the issuance of new Philippines bonds under the 1992 Commercial Bank Financing Package. The repayment of medium and long-term loans registered an increase due to a US$1.26 billion debt buyback operation in May 1992. The short-term capital account registered a net inflow of US$660 million, reflecting the increase in the availment under the trade facility. However, 1992 signalled the beginning of the surge in capital inflows, due to the sustained increase in foreign investment by 12.5 percent to US$736 million. In the following year, capital inflows registered 35 percent increase to US$2.3 billion. The medium- and long-term loan also registered a more than three-fold rise to US$3.6 billion due to lower medium- and long-term loan payments. About US$3 billion of inflows of long-term bonds were recorded, representing conversions of bank debt outstanding in December 1992 as part of the final phase of the Commercial Bank Financing Package. Foreign investors also responded positively to the Eurobonds flotation of several Philippines corporations, amounting to US$865 million while net portfolio investment increased by more than five times to US$897 million. However, short-term capital accounts turned into a net outflow of US$1.0 billion due to higher payment of short-term loans and lower utilisation of advance of exports.

By 1994, there was a major shift in the source of financing from foreign loans to foreign investments. This was reflected by the surplus in the medium- and long-term loan which fell by nearly US$800 million while the net inflows of foreign investment picked up to US$1.6 billion, doubled the 1993 level. The increase in foreign investments was due mainly to higher portfolio investment, reflecting the bullish trend in the Philippines stock market, withdrawal of foreign investments abroad and new foreign investment in the Philippines.

In 1995, net foreign investment continued to surge to US$2.4 billion, advancing by more than half from the 1994 level. Short-term capital account balance reverted to a US$56 million deficit. However, portfolio investment continued to dominate the inflow of foreign capital comprising about 77 percent of the total inflows. In 1996, net capital flows continued to surge, doubling the 1995 flows to US$8.97 billion, due mainly to the increase in the net availments of medium- and long-term loans, a larger net short-term capital inflows and the substantial positive change in the commercial banks' net foreign assets. About half of the inflows of medium- and long-term loans came from bonds flotation. Net foreign investments declined by US$544, due to a decline in portfolio investments and a decrease in direct equity investments. However, short-term capital account reversed to a surplus of US$512 million in 1996.

To sterilise the inflows, the central bank conducted open market by issuing central bank bills to complement borrowings under the reverse repurchase facility. Overnight reverse purchase agreements were used to smooth out large fluctuations in liquidity. In 1992, Treasury bills amounting to P44.8 billion were issued to support the central bank's open market operations. The government also continued to maintain a substantial level of deposit with the central bank. The peso strengthened significantly in real effective terms against major trading partners but interest rates exhibited a general downward trend. In the following year, open market operations were again intensified during the third quarter to mop up the surge in liquidity caused by the withdrawal of national government deposits with the central bank. The Bangko Sentral also acquired a large volume of government securities to retire its own debt instrument as under the new structure, the BSP was not allowed to issue any debt instruments except in cases of extraordinary movement in price levels.[108] When it was seen that inflation was contained, reserve requirement was reduced in an effort to reduce interest rates. However, the government's fiscal deficit was 28.8 percent higher than last year.

In 1994, the central bank utilised the BSP holdings of Treasury bills in which it acquired in December 1993 from the Treasury to neutralise the expansionary impact of BSP dollar purchases. With the peso again

108. The central bank was replaced by a more independent central Monetary Authority, the Bangko Sentral ng Pilipinas (BSP) in 1993.

generally strengthened in 1994, the BSP took several steps. It encouraged Philippines borrowers to repay their foreign obligations whose maturities fall within the next 1-2 years. In addition, it also promoted domestic investment in Philippine international bond issues by residents. Furthermore, prior approval requirements were needed on all forward transactions with residents. It also limited foreign loan approval including FCDU loan, to exclude direct and indirect exporters and public sector borrowers. In addition, allowable oversold foreign exchange position limit of commercial banks was reduced from 15 percent to 5 percent of unimpaired capital. Initial public offering-issuing companies (IPO) were also required to notify BSP within five days of the receipt of the foreign exchange raised through stock issue outside the Philippines. However, reserve requirements on all type of deposits were reduced. A volatility band was established in which the exchange rate was allowed to fluctuate by 1.5 percent above or below the average exchange rate of the previous day's afternoon transactions. In spite of the measures, the exchange rate appreciated 2.6 percent against the U.S. dollar over the 1993 average. As the real effective exchange rate (REER) appreciated by 7.3 percent, BSP sought to stabilise the market by stepping up its foreign exchange purchases by US$2.93 billion, representing about 40 percent of the total volume transactions. Meanwhile, the cash operation of the national government yielded a surplus in 1994, the first time in twenty years.

In 1995, the sale of BSP's Treasury bills holdings and borrowings under the reverse repurchase windows were used extensively to keep the levels of monetary aggregate on track. BSP also continued to lower the reserve requirement by 2 percentage points on peso deposit and deposit substitute liabilities of banks. To scale down currency speculation, banks' allowable overbought foreign exchange position was reduced to 20 percent from 25 percent while their oversold position was increased to 10 percent from 5 percent of banks' unimpaired capital. The BSP also improved the monitoring of foreign capital inflows by implementing a weekly summary of portfolio flows based on a survey covering eight custodian banks, which accounts for 90 percent of the actual portfolio inflows. The reverse repurchase windows were again used extensively to keep money supply substantially below the programme level in 1996. The BSP also reduced its borrowing and lending rates by 21 times in order to reduce the interest rate differential. Withdrawal of the government's deposit balance with the central bank also was kept below the programme level. In 1996,

bilateral repurchase agreements with Bank of Thailand, Bank Negara Malaysia, Bank Indonesia, Monetary Authority of Singapore and Bank of Japan were finalised.

## 4.4 Thailand (1988-1996)

Thailand first experienced surges in capital inflows in 1988, relatively earlier than most countries. Thailand initiated its adjustment programme in the early 1980s, in time to provide a relatively stable macroeconomic environment for the surge in capital inflows.[109] As in most SEACEN countries, during the entire period, Thailand's rapid economic growth, averaging over 10 percent with exports expanding at a great pace led to a rapid increase in demand in external financing for its domestic investment. The capital inflows into Thailand were extremely large, reaching 12.3 percent of its GDP for two consecutive years, in 1990 and 1991.[110] In March 1993, the Bangkok International Banking Facilities (BIBF) were established with the aim to mobilise funds from abroad and lend the funds to Thai and non-Thai residents. At the end of 1993, 35 banks have commenced their BIBF operations. Thailand, like Malaysia pursued consistently tight monetary policy throughout but unlike Singapore, the authority preferred to maintain a stable exchange rate in order to avoid the adverse effect on exports.[111]

The first year of the recent surges saw net private capital inflows increased by three times, due directly to the tight liquidity condition which led to an increase in overseas borrowing. As a result of massive relocation of foreign production bases into Thailand, net direct investment increased by four times. In the same year, the surplus in the short-term capital grew by more than 60 percent, owing to a doubling in the value of baht accounts owned by non-residents. In the following year, net private capital inflows reached a record level of B159.4 billion, an increase of over 100 percent. The main reason was the acceleration of foreign borrowings due to the exemption of the withholding tax on interest paid on foreign loans with maturity of not less than 3 years.

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109. Nijathaworn (1993), p.23.

110. The World Bank (1997b), Table 4.1, p.175.

111. This policy preference has put constraints on the effective use of interest rate as an instrument to control credit.

By 1990, short-term inflows began to gain prominence as the share of the long-term capital declined to 35 percent of the total net capital inflows compared to 76 percent in 1988. Net foreign borrowing and direct investment contributed 49 percent and 24 percent respectively to the total net capital inflows. The first round of exchange liberalisation at the end of May prompted an increase in portfolio investment but during the second half, portfolio investment was severely affected by the Gulf War. Overall, in 1990, portfolio investment declined by 68 percent with the share to total net private inflows fell from 23 percent in 1989 to 5 percent in 1990.

In 1991, foreign direct investment and long-term borrowing slowed down after three years of massive inflows but short-term capital in the form of short-term loans and non-resident baht accounts continue to rise sharply. The relatively high domestic interest rates also prompted net foreign borrowing to increase by 23 percent which accounted for 53 percent of the total net private capital inflows. Overall, net private capital recorded a surplus of B268.2 million, up by 12.5 percent. The second round of foreign exchange deregulation was introduced on 1 April 1991 but this has little effect on portfolio investment as it declined significantly to B1 billion from a surplus of B21 billion in 1990, due to the less buoyant growth in the stock market.

By 1993, the ratio of net short-term capital inflows to total net capital inflows rose to 70 percent. Net borrowings by the private sector registered a decline due to its direct borrowing by issuing debt instruments. However, short-term loans accounted for 56 percent of the total net foreign borrowings. The widening interest rate differential also caused the non-residential baht accounts to record a net surplus of B109 billion, up 98 percent. 1994 saw a surge of borrowings by commercial banks, particularly BIBFs which generally replace private direct borrowings. About 99 percent of this flow passed through the commercial banking sector. Foreign direct investment, however, recorded a decline in surplus due to the establishment of BIBF which prompted an acceleration in loan repayment to subsidiary companies with a view to shift their source of fund to BIBF.

During the Mexcian crisis of 1995, Thailand continued to experience net private capital inflows, reaching B523.6 billion, up 73.5 percent. Capital inflows through the banking sector registered a surplus of B279.7 billion, of which B202.4 billion was associated with the out-

in operation of the BIBFs. The stronger yen prompted FDI to increase by 50 percent to B49.7 billion. However, investments in the real estate, which include house and condominiums accounted for 42.1 percent of total FDI. Non-residential baht accounts also registered a surplus of B87.9 billion, up 71.9 percent.

In 1996, the surplus on the net private capital inflows declined by 18 percent mainly due to measures implemented to discourage short-term flows. Meanwhile, the banking sector also registered a lower net capital inflow surplus of B126.8 percent, down by 42.7 percent from last year. The ratio of net capital inflows of the banking sector to those of the non-banking sector shifted to 30:70 in 1996 compared to 54:46 in 1995. However, net foreign direct investment continued to register an increase to B57.4 billion, up 15.1 percent. Direct borrowings from abroad were also up, mainly in response to the restrictive measures imposed on bank borrowing from abroad. However, short-term inflows slowed down in the second half of 1996 and there was a substantial lengthening in the maturity structure of BIBF short-term debt towards a one-year term. This was in response to the introduction of measures to discourage the reliance of short-term capital.

Like most SEACEN countries, the first response of the Bank of Thailand (BOT) was to sterilise such inflows.[112] BOT in 1988 issued its own bonds worth B2.0 billion for sale to commercial banks and the Government Savings Bank.[113] At the same time, regulations to restrict loans to non-productive areas such as real estate speculation, import of luxury goods and individual consumption were imposed. The fiscal balance registered its first surplus in 1988, for the first time in 14 years and since then continued to register fiscal surpluses averaging 3 percent of GDP. In 1990, BOT decided to auction off BOT bonds with one-year maturity worth B13.5 billion. Subsequently, the central bank

112. The Bank of Thailand has also constantly employed moral suasion by conducting meetings with commercial banks to deal with specific issues. This could be done rather effectively, as there were only 15 Thai commercial banks in 1995, with the largest 4 banks controlling more than half of the market share. See Tivakul (1995), p.43.

113. The repurchase market for government and state enterprises was created in 1979 for the purpose of influencing developing short-term liquidity and interest rates. However, the current arrangement does not allow BOT to take the initiative in its OMO. See Kittisrikangwan, Supapongse, and Jantarangs (1995), p.24.

raised the discount rate twice, from 9.0 percent to 9.5 in April and to 12.0 in November to contain inflation. At the same time, the maximum limit of net open foreign asset position of commercial banks ratios of capital funds were raised from 20 percent to 25 percent or an absolute limit of US$5 million, whichever was higher to ease seasonal liquidity. In 1991, BOT auctioned off another set of bonds worth B5.8 billion but this time round, it tried to narrow the interest rate differential by reducing the bank rate from 12 percent to 11 percent in September 1991. By June 1992, ceiling rates on savings, deposit and lending rates were liberalised with saving rate ceilings removed to reduce stickiness in the interest rates. Consequently, commercial banks reduced interest rates six times during the year. By 1993, the sterilisation efforts eased but BOT continued to lower the bank rates twice during the year to 9 percent. Commercial banks and financial institutions were required to submit credit plans to BOT.

As a result of excess liquidity especially during the last quarter of 1994, the BOT wanted to send a clear signal with regards to the preferred interest rates. It raised the bank rate and the discount rate for promissory notes of finance companies and finance and securities companies arising from agricultural, industrial and commercial activities by 0.5 percent. The central bank also required both commercial banks and financial companies, finance and securities companies to observe net foreign exposure limit on net overbought and net oversold. For commercial banks, it was not more than 20 percent and 15 percent, respectively, of total capital funds respectively or US$5 million, whichever was higher. In 1995, the BOT raised its Bank rate again from 9.5 percent per annum to 10.5 percent per annum, effective 3 March 1995. For the first time since the surge, to discourage short-term foreign capital passing through non-baht accounts non-resident baht with maturity of less than one year were subjected to a 7-percent minimum reserve requirement in the form of non-interest bearing deposits with BOT. Previously, the requirement was 2 percent deposits with BOT and the remaining 5 percent in the form of vault cash and eligible securities.

The BOT also encouraged commercial banks to rely less on short-term foreign borrowings by directing a number of commercial banks with high loan-to-deposit ratios to reduce them. In addition, risk-weight methods were used in the calculation of the net foreign exchange position of commercial banks. Credits in foreign currencies

such as those for purchasing vacant lands and for personal consumption were deemed risky and hence assigned a weight of less than 100 percent. However, the BOT allowed commercial banks to incorporate the cash position contracts into the calculation of the net foreign exchange position but sales contracts on put option were still excluded from the calculation of the net foreign exchange positions. The central bank also curbed BIBF out-in credits by increasing the minimum disbursement from US$500,000 to US$2 million except for withdrawals by financial institutions. By 1996, the central bank saw the need to lengthen the maturity structure of external borrowings. Commercial banks, BIBF, finance companies, and finance and security companies were required to maintain a reserve requirement of 7 of their new short-term external borrowings on a gross basis. Also finance companies are required to deposit with the BOT, 7 percent of their short term (less than 1 year) of baht currency external borrowings or deposits from non-residents including promissory notes, bills of exchange and NCDs. With this measure, net inflows into these accounts declined sharply from B31.8 billion per month in the first quarter to only B3.6 billion in the second quarter of 1995. Within the year, two new issues of the BOT bonds consisting of 1-year and 2-year maturities were issued.

# Chapter 4

## Empirical Evidence and Policy Implications

### 1. The Model[114]

An unrestricted VAR[115] is estimated with the following variables: foreign assets (LNFA) and domestic credit (LDC)[116] to capture policy actions of central banks, consumer price index (LCPI), interest rate differential (INTDIF),[117] exchange rate (LEX) in domestic currency units per U.S. dollar and a measure of the quasi fiscal costs (QFC).

As the ordering of the variables in a VAR system is important, the causal ordering of LEX, INTDIF, LCPI, LNFA, LDC and QFC is adopted. With this ordering, it is assumed that exchange rate contemporaneously affect all the variables but is not contemporaneously affected by them. This seems a reasonable assumption as within-month variations of the exchange rate series are unlikely to be contemporaneously affected by the other variables.[118] Placing interest rate differential before the consumer price index is an indication that interest rate is sticky. It contemporaneously affects consumer price index but responds to consumer price index with a lag. Placing LNFA before LDC explicitly assumes that domestic credit contemporaneously responses to a change in foreign assets, reflecting sterilisation operation of the central bank.[119] Finally, it is assumed that changes in the first five variables contempo-

114. There is evidence to suggest that some of the variables included in the VAR contain unit root. Thus, Johansen maximum likelihood tests are not conducted. Indeed an unrestricted VAR in level, using monthly data, with a six common lags is estimated across all models. It is also not unreasonable to assume that differencing such variables in a VAR could result in a possible loss of vital information. See Sims (1980), pp.1-49, and Doan (1992).

115. All variables, except for the interest rate differential and quasi-fiscal costs are estimated in logs. Hence, in term of the impulse functions, the responses represent cumulative response to shocks.

116. Domestic credit is calculated as the difference of the log reserve money and log foreign assets. This allows the taking of logs even when domestic credit is negative. For the case of Philippines, the domestic credit and foreign assets are scaled up by a constant. Foreign assets include net of foreign liabilities.

117. Interest rate differential is taken as the relative differential between the domestic interest rates and the London inter-bank offer rates.

118. Monero (1996), p.26. However, since the exchange rate may be more volatile than the interest rate differential, the causation may be stronger from the latter to the former. (Comments from the Bangko Sentral ng Pilipinas.)

119. ibid., p.27.

raneously affect quasi-fiscal cost but they respond with a lag to policy decisions.

## 2. Empirical Evidence[120]

In Indonesia a shock to the exchange rate, (i.e., depreciation) apparently lead to an increase in foreign assets with a corresponding decrease in domestic credit (see Chart 1). In contrast, in Malaysia, the Philippines, and to some extent Thailand, a shock to the exchange rate is associated with a decline in foreign assets and increase in the domestic credit. Thus, following a shock to the exchange rate, Malaysia, the Philippines and Thailand apparently "lean against the wind."[121] The authorities in these three countries apparently pursue heavy foreign exchange intervention policy. It is interesting to note that in the case of Indonesia, in the longer run, following a shock to the exchange rate, the response of foreign asset tends towards zero. Thus, reserve money oscillates in response to a shock in exchange rate. However, the confidence intervals suggest that the differences in the responses may not be too obvious. Nevertheless, it is also clear that following a shock to the exchange rate, monetary sterilisation operations are not fully successful in these four countries.

The confidence intervals indicate that a shock to domestic credit is associated with a response in foreign assets that is not significantly different from zero (see Chart 2). Thus, there is no evidence to suggest that credit expansion would eventually lead to a depletion of the foreign reserves which eventually leads to the abandonment of the exchange rate peg. However, it is interesting to note that in all four countries, a shock in domestic credit has a positive significance on itself. This may suggest that the authorities are prepared to accept some fluctuations in money supply resulting from a shock in domestic credit.

120. The sample size is as follows: Indonesia (1982.02-1996.12), Malaysia (1988.01-1996.12), Philippines (1988.01-1996.12) and Thailand (1987.01-1996.02). All data are obtained from the International Financial Statistics CD-ROM of the International Monetary Fund. During the sample period, there is the possibility that the above-mentioned countries might have adopted certain financial liberalisation policies which could have affect the empirical results. (Comments from The Central Bank of Taipei.)

121. Monero (1996) has interpreted the case of Korea as "lean against the wind" and Taiwan as "lean with the wind." In the case of Singapore, Spiegel and Monero note that changes in foreign assets are nearly completely offset by domestic credit changes, see Spiegal and Monero (1997).

A shock to foreign assets and the response of domestic credit thereof can be interpreted as the central bank's ability and willingness to control monetary aggregates (see Chart 3). That is, the degree of insulation of monetary controls against exchange rate intervention. In all the four countries, it is clear that from the responses, a shock to foreign assets leads to a decrease in domestic credit. The hypothesis that the response of domestic credit to a shock in foreign asset is zero is robustly rejected.[122] This is no indication of any monetary accommodation to exogenous external shocks. In general, the strong monetary discipline indicates that monetary sterilisation is an important element in all the four countries. In Indonesia, the decrease in domestic credit persisted. This is consistent with the response of reserve money which indicates strong and effective sterilisation, pointing to an almost one-to-one sterilisation of foreign asset changes. In the case of Malaysia, in the short-run, an imperfect sterilisation process is observed. The response of reserve money begins to decrease only after about fifteen months. The sterilisation process in the Philippines is very similar to Malaysia but it is much faster and more effective. Within ten months, a shock in foreign assets is fully sterilised. However, the Thai case is different from the other three countries. A shock to foreign assets has a permanent effect on itself.[123] The persistence in the shock is an indication of Thailand's openness to capital flow. In part, this is consistent with the response of reserve money to a shock in foreign assets which dies out very gradually. After thirty months, the effect of sterilisation is still only partial.

In an inter-temporal framework, the existence of cost constraint means sterilisation today implies less opportunity to sterilise tomorrow. However, sterilisation cost is not a main concern in Malaysia, Philippines and Thailand but it is significant to Indonesia (see Chart 4). Nevertheless, the increasing trend of the quasi-fiscal costs during the inflow period indicates that the cost burden can grow to be relatively large (see Chart 5).

In general, the following can be observed.

122. In all cases, the hypothesis that foreign assets does not granger-cause domestic credit is rejected.

123. For the case of the other three countries, these shocks are not significant from zero in the longer run.

Chart 1

Responses to a Shock in Exchange Rate

Responses of one S.D. Innovations

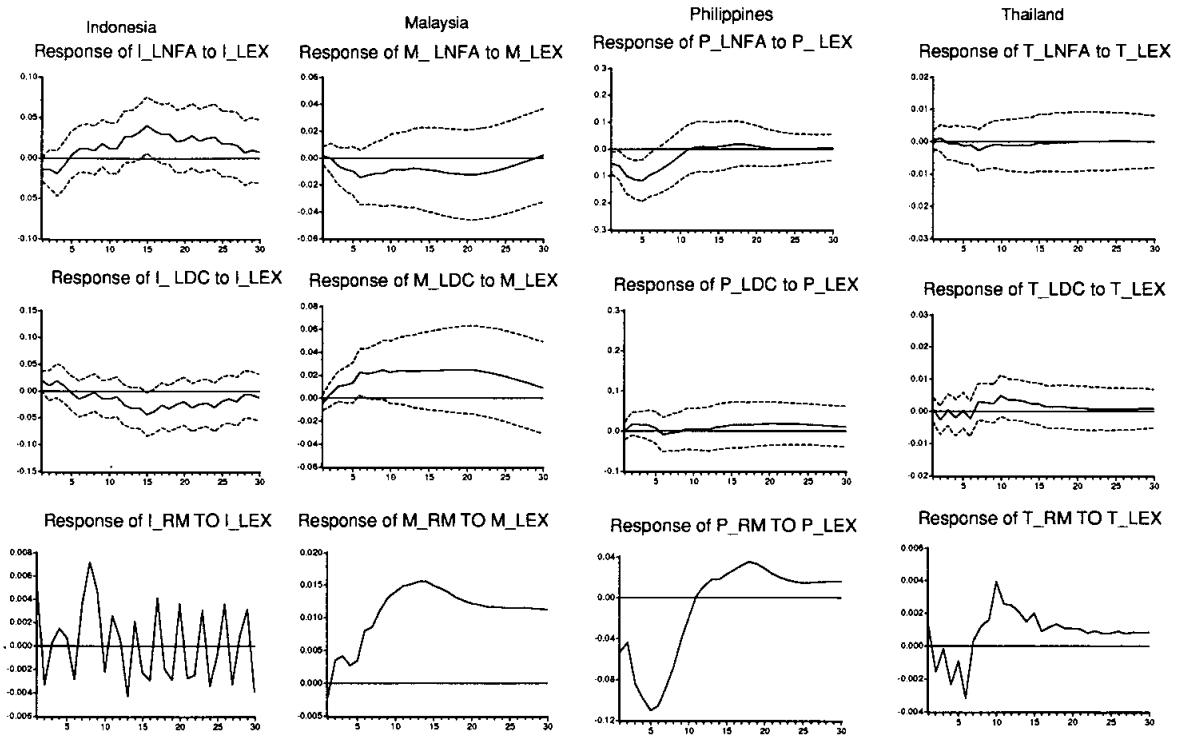


Chart 2

Responses to a Shock in Domestic Credit
Response to one S.D. innovations

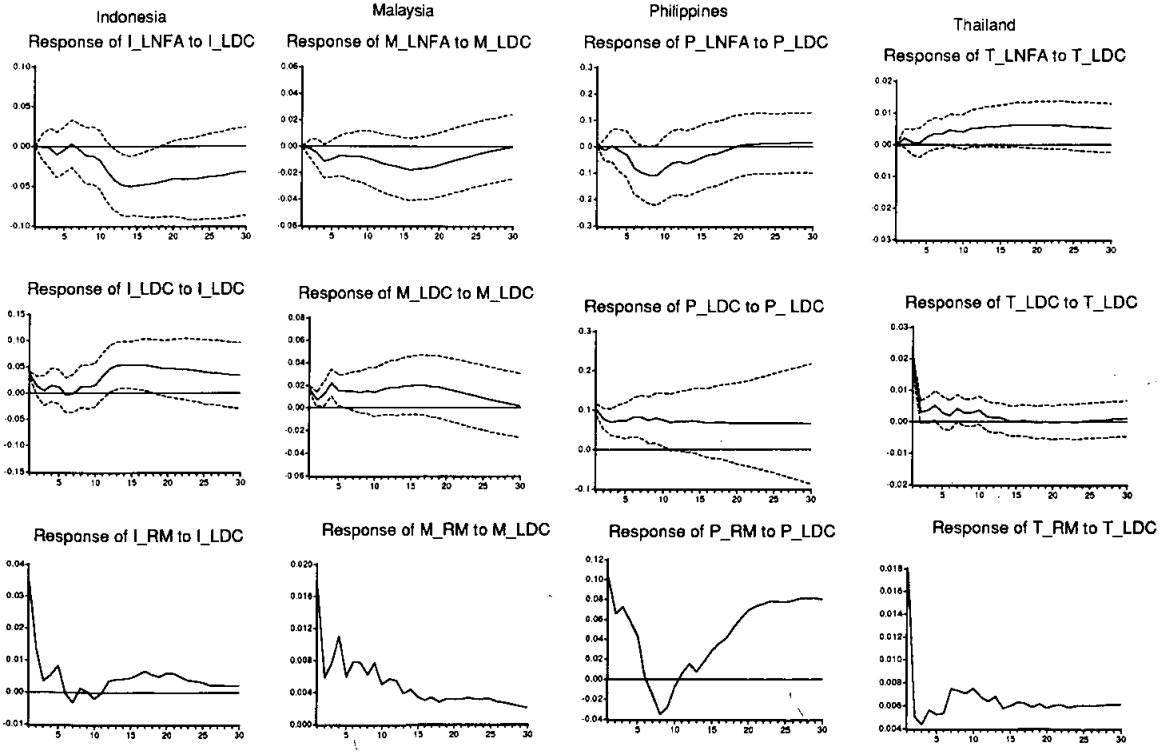
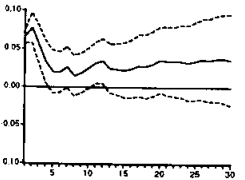


Chart 3

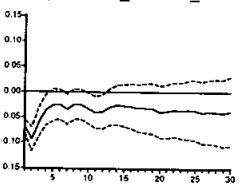
Responses to a Shock in Foreign Assets
Response to one S.D. innovations

Indonesia

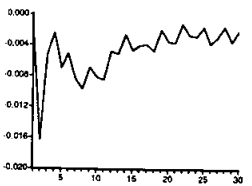
Response of I_LNFA to I_LNFA



Response of I_LDC to I_LNFA

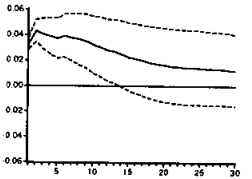


Response of I_RM to I_LNFA

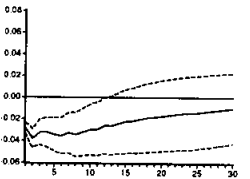


Malaysia

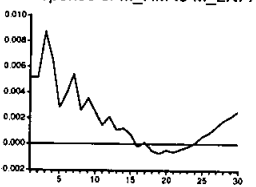
Response of M_LNFA to M_LNFA



Response of M_LDC to M_LNFA

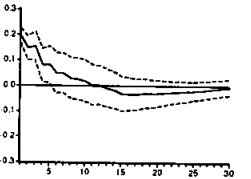


Response of M_RM to M_LNFA

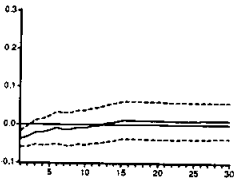


Philippines

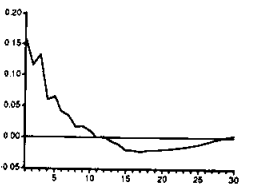
Response of P_LNFA to P_LNFA



Response of P_LDC to P_LNFA

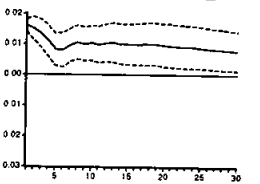


Response of P_RM to P_LNFA

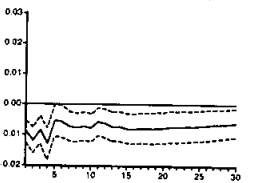


Thailand

Response of T_LNFA to T_LNFA



Response of T_LDC to T_LNFA



Response of T_RM to T_LNFA

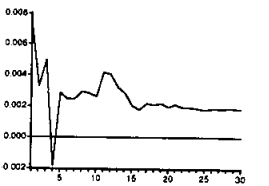
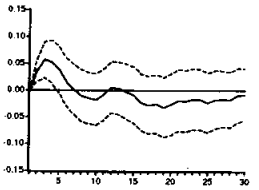


Chart 4

Responses to a Shock in Quasi-Fiscal Costs
Response to One S.D. Innovations

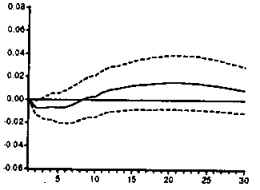
Indonesia

Response of LDC to QFC



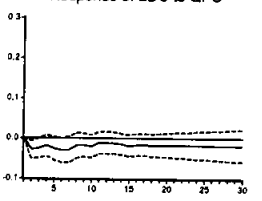
Malaysia

Response of LDC to QFC



Philippines

Response of LDC to QFC



Thailand

Response of LDC to QFC

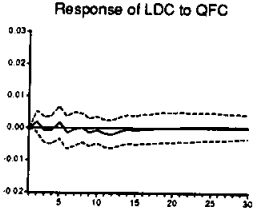
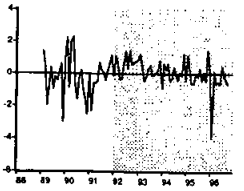


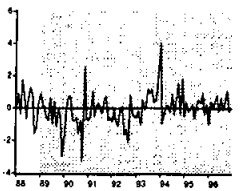
Chart 5

Quasi-Fiscal Costs(normalized)

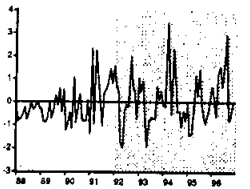
Indonesia



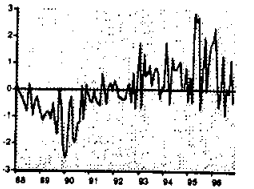
Malaysia



Philippines



Thailand



Shaded areas:Significant surge in net private capital inflows

(i) There are some indications that Malaysia, the Philippines and Thailand operate an active foreign exchange rate intervention policy. However, it is noted that quasi-fiscal costs are not important consideration in sterilisation operation in these three countries. However, the insignificant sterilisation costs do not necessarily mean that central banks are not sensitive to quasi-fiscal costs. Perhaps, this indicates that intervention costs of the central bank have yet to reach critical levels to exert any significant influence on policy decisions.[124] It is interesting to note that despite Bank Negara admitting that sterilisation has made the bank incur heavy costs in its money market operations, it nevertheless has a broader national objective to serve.[125] Nevertheless, fiscal costs could grow to be relatively large if sterilisation through OMO is prolonged.

(ii) Indonesia appears to be more successful in its sterilisation operation while Thailand may be less insulated from foreign asset shocks.[126] Malaysia takes a longer duration than the Philippines for the sterilisation process to be effective and it is remain partial even after 30 months. This could be due to the fact that during the inflow period, the Philippine economy was not considered "overheating" and it was less of a necessity to keep domestic interest rate relatively high. In addition, the Philippines had allowed some degree of real exchange rate appreciation. Thus, as sterilisation is imperfect in most cases, the authorities are prepared to accept some fluctuation in reserve money in order to achieve exchange rate stability. Incomplete sterilisation may eventually result in higher growth rate of broad money which will eventually undermine the central bank's longer-term objective of low inflation.[127]

(iii) It is clear that the effectiveness of monetary sterilisation depends much on the magnitude and persistence of capital inflows. As noted earlier, during the surge, the cumulative inflows was close

124. This is consistent with the findings of Kletzer and Spiegel (1996).

125. Jaffar (1992).

126. This may also reflect the extent of the sterilisation operation. For instance, it is widely recognised that Thailand did not pursue an extensive sterilisation policy. See Spiegel (1995) and Hataiseree (1995).

127. Money supply is found to be a common denominator as the cause of inflation in the SEACEN countries. Lim (1996).

to 50 percent of GDP in Malaysia and Thailand, while the same measure was only 8.3 percent for Indonesia and 22.6 percent for the Philippines. Malaysia and Thailand had also during this period experienced a large influx of volatile short-term capital flows. However, taking all these factors into consideration, sterilised intervention in Malaysia and Thailand has largely been able to prevent excessively significant nominal and real exchange rate appreciation.[128] It is clear that OMOs can be an appropriate response only if the inflows are temporary. Some other more direct instruments will have to supplement OMOs when the inflows are large and persistence.

(iv) In all cases, a shock in foreign assets leads to a decline in domestic credit. However, the converse is not true. Domestic credit creation does not lead to a decline in foreign assets. This may imply that the authorities do allow some fluctuation in the exchange rate and reserve money coming from domestic source but they are not ready to accept similar fluctuations from a shock coming from the external sector.[129]

## 3. Policy Implications

The results suggest that monetary sterilisation is far from perfect. Quasi-fiscal costs can grow to be "non-trivially" large. Thus, it may be necessary to implement other forms of indirect instruments. These may include reserve requirement. In addition, the use of capital controls and the elimination of explicit guarantees can be justified in certain circumstances to tackle the problem of excessive capital inflows at source. In addition, because of imperfect sterilisation, a well-supervised financial system is mandatory to lessen the adverse effects of excessive capital inflows.

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128. In the case of Malaysia, it intervened in the foreign exchange market only to smooth the short-run movement of the exchange rate and the management of the liquidity in the interbank money market was not to fully-sterilise liquidity from the foreign exchange interventions but to influence the level of inter-bank rates (comments from Bank Negara Malaysia). In other words, incomplete sterilisation is because of a deliberate policy not to fully-sterilise.

129. This may loosely imply that the current financial crisis was initiated by the loss of confidence, rather than by domestic conditions. However, note that in this empirical analysis, the data set do not include year 1997.

Malaysia, in particular had extensively used reserve requirement as a means to limit monetary-credit expansion. As reserve requirement, like capital controls, is a highly visible instrument, a change in reserve requirement could be unambiguously interpreted as signalling the central bank' assessment of the economic situation and its future policy stance. Sterilisation by reserve requirement can also lead to less volatility in interest rates,[130] smoothing the path for easier implementation of monetary policy. However, one cannot frequently use reserve requirement on a weak banking system.[131] In the case of Malaysia, commercial banks, at that time, were generally stronger in terms of their financial standing and in fact experienced a higher rate of capitalisation. However, the effectiveness of reserve requirement can be undermined by the rapid increase in the degree of sophistication and development in the bond and equity markets. Evidently, increasing amounts of capital inflows are now intermediated outside the banking system. Similarly, in cases where the 'curb' market or the informal financial market is large, the impact of reserve requirement will be diminished. The level of reserve requirement at the initial phase of capital inflow can determine its effectiveness. If the reserve requirement level is already relatively high, then a *change* in the reserve requirement may induce a more than proportionate increase in the degree of financial disintermediation. For comparison, in the Philippines at the onset of the inflows, the reserve requirement ratio was more than 20 percent compared to a mere of 5.5 percent in Malaysia. This gave the Malaysian authority greater flexibility in utilising reserve requirement as a sterilisation instrument.

Effective supervision is needed to counter the adverse effects of excessive volatile capital inflows on asset quality and financial soundness of the banking system.[132] As the banking system normally interme-

130. Folkerts-Landau, et.al. (1995).

131. Rojas-Suarez and Weisbrod (1994).

132. Central banks must be given consolidate power to supervise both the domestic and offshore operations of the banking system to ensure there is no-mismatch between the two activities. In some SEACEN countries, the two operations are supervised by different authorities making it difficult to access the actual financial position of these financial institutions.

diates a large part of the capital inflows, there is a need to look at the process of credit creation.[133] Imperfect sterilisation improves bank liquidity but credit creation per se may not necessarily lead to serious financial imbalances. However, the excessive liquidity is a warning sign of a possible decline in credit quality. When market discipline is lax, "credit booms often end up in tears."[134] Does the banking system utilise its excess liquidity for productive investments?[135] In the recent Thai crisis, financial institutions intermediated a large part of short-term capital inflows, leading to a surge in lending, especially to the "non-productive" sector of property development. This development eventually underpinned the asset price bubble leading to significant increases in non-performing loans.

It is also generally acknowledged that the banking sector has to become more resilient so as not to impose additional constraints on the monetary authority when dealing with volatile capital flows.[136] That is, a strong financial system can make the transmission mechanism of monetary policy more effective.[137] In addition, a well-supervised and strong banking sector can prevent a possible banking crisis.[138] There-

133. It is interesting to note that Malaysia banks during the inflow period took the opportunity to increase their rate of capitalisation during 1989-1995 despite the fact that there was no significant increase in profitability. Banks in Thailand also increased their capitalisation but their exposure to foreign exchange risk and real estate risk also increased significantly. However, in Indonesia, bank capitalisation decreased by 30 percent while their exchange rate exposure rose by 275 percent. See the World Bank (1997b), pp.251-253.

134. Mathieson and Khan (1996), pp.155-160.

135. Goldstein (1995).

136. Sterilisation efforts by the Mexican authorities tapered off because the weak banking sector could not sustained raising interest rates. See Goldstein (1996).

137. Mergers and acquisitions could result in stronger financial institutions making them more responsive to indirect monetary instruments.

138. A well-developed supervision framework may involve the automatic execution of clear action plans that entail more stringent conditions as the financial position of an institution deteriorates. However, the authority should avoid spelling out clearly in advance the circumstance in which it will intervene to assist ailing financial institutions. This so-called "constructive ambiguity" which leaves some doubt on financial guarantees can reduce moral hazard as it encourages market participants in the financial markets to be more responsible. See Crocklett (1995). On the other hand, "any ex-ante announcement by government not to support the financial institutions lacks credibility" because of political pressure to assist ailing financial institutions. Noted by Crockett (1997).

fore, strengthening prudential supervision deserves top priority as sterilised intervention is often imperfect and it is only an asymmetric policy, which provides short-term relief in the case of excessive inflows, but it is rapidly ineffective in the case of outflows when foreign exchange reserves fall to zero.[139]

Eliminating some form of implicit and explicit government guarantees on capital inflows can be used to tackle the problem at source, i.e., to deter discriminatory capital inflows.[140] For example, in the case of explicit guarantees given on direct lending to private firms, internalising the cost of the guarantees may reduce the inflow of external borrowings. However, there is no easy way of removing such guarantees. Implementing greater exchange rate flexibility is one way to transfer some risk premia to market participants in order to reduce "arbitrage" capital inflows. The other advantage of a greater flexibility exchange rate regime is that the appreciation of the real rate is through nominal rate and not inflation.[141] In cases where the current accounts are financed by sustained long-term capital inflows, it is desirable to allow some real appreciation of the exchange rate through the nominal rate. A rather extreme option is to let market forces determine the equilibrium exchange rate but this may generate excessive volatility in the exchange rate. A more practical way is to stabilise the exchange rate within a desirable band.

From the empirical evidence, excessive capital inflows can render any form of sterilisation ineffective in the long run. It may be desirable to introduce some form of controls to stem speculative capital inflows at source. Capital controls may be justified on the ground that they have both tangible and 'placebo' effect which can immediately calm down markets during speculative attacks.[142] It is also envisaged that capital controls may eventually lead to a sustained shift in the composition of capital inflows. However, the timing of implementation is an issue as it is often difficult to determine the exact nature and magnitude of capital inflows. Preferably, capital controls should be implemented

139. Reisen (1996).

140. Implicit guarantees can take the form of a fixed nominal exchange rate.

141. In addition, greater flexibility also enables greater autonomy in the conduct of domestic monetary policy.

142. Bakker (1996), p.257

swiftly upon detecting such speculative inflows because if the timing is imperfect, capital controls can undermine investors' confidence resulting in a sudden massive outflow.

Capital controls should be short-term in nature and be implemented as the last option. Subsequently, they should then be progressively disbanded as the situation warrants. Also, advancement in the financial markets has made it harder to monitor compliance and prolonged capital controls often only lead to investors finding means to circumvent them. Thus, implementing capital controls is not a permanent solution as without complementary fiscal and monetary policies, capital controls are only a *second-best* policy.

Fiscal measures can play a major stabilising role in complementing OMOs the longer-run. Prudent fiscal policy can reduce the lag response in interest rates and eliminate the downward rigidity in interest rates. Also, a tighter fiscal policy can also help to reduce current account deficits. Current account deficits, financed by capital inflow can in the long run severely undermine macroeconomic stability. Lower interest rates and higher income due to the surge in capital inflow often make fiscal position appears stronger than it is supposed to. Thus, it is recommended that for countries where the private savings rates are low, fiscal surpluses are necessary.[143] Nevertheless, because of impact lags associated with fiscal policy, the effect of tightening fiscal policy may not be evident in the short run and this may induce the authority to lose sight of its ex-ante objective. However, it is clear that adequate tight monetary and fiscal policies can prevent run-away inflation, a phenomena normally associated with increase spending during surge in capital inflows.[144]

A direct measure to enhance monetary sterilisation more effectively through OMO is to further develop the money market. Despite the relatively well-developed financial markets, the secondary markets for government securities in the SEACEN countries are rather thin. The array of instruments available is still very limited. But some measures

143. Crocklett (1995).

144. In the last two decades, long-term capital inflows have always been associated with economic growth even though it is difficult to determine whether the causation is from capital inflows to economic growth or otherwise.

have been taken. For example, the appointment of principal and accredited dealers to underwrite primary issues of government treasury bills, the issuance of bills with different maturities, in particular those of shorter term in order to diversify the instruments' availability and the usage of a competitive bidding system for these securities. In addition, to discourage short-term inflows, the authority may want to create low-coupon, local currency, long-term bonds exclusively for foreigners.[145] Further development of a secondary market for government securities can gradually reduce the size of the captive markets turning it into a virtuous cycle.

In conclusion, the first-best policies can add to confidence and credibility but it is what the market perceives that really matters. Asymmetric information can lead to responses such as herd behaviour which unable to distinguish the basic economic fundamentals. The "supply and demand side" of information involves consumption and dissemination. Information gathering involves economic cost and therefore greater transparency and timeliness in the dissemination of economic data are necessary to minimise the distortion of information and to provide greater incentives for information-challenged investors to gather and analyse information. Furthermore, any misinterpretation can be quickly corrected by up-to-date information. As long as information is accurate and not premature, disclosure can help to ward off any possible financial crisis due to contagion effect. For example, in Indonesia, one of the main causes of the current financial crisis is the lack of data availability and transparency of private capital inflows.[146]

On the other hand, the authority, which often possesses informational advantages, must ensure that the transmission of its policy signals is clear and consistent. Also, in assessing the economy, short-term indicators such as monetary aggregates, inflation and market liquidity can be distorted by persistence short-term inflows. Therefore, a wider array of potential indicators, such as investment, production and capacity utilisation can serve as useful long-term indicators. These long-term

145. Dornbusch and Park (1995).

146. Miranda S. Goeltom (1998).

indicators can also give the authority a better assessment of the economy. As full liberalisation becomes inevitable, it is mandatory for the authority to improve the monitoring and surveillance of capital inflows so that timely and appropriate steps can be taken. This will reduce the tendency to pursue unnecessary arbitrary stop-go policies to deal with capital inflows.[147]

147. However, stop-go policies may be effective as in the case of capital controls. The recent financial crisis has shown that market participants may not be rational, thus necessitated the use of selective capital controls. (Comments from Bank Negara Malaysia).

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Appendix A

## KEY POLICIES

### BANK INDONESIA (BI)

*1980/1981* (1) Continuation of more liberal ceilings on credit expansion to regulate flow of bank credits.

(2) The expansion of 36.2% of domestic liquidity lowered (than previous years, 39.6%) due to large contractionary impact of government budget. As a result, CPI rose by 15.85% compared to 19.13% in 1979/80.

*1981/1982* (1) Deterioration of balance of payments (BOP) due to world economic recession (lower growth rate of receipts from oil corporate tax).

(2) Measures to boost exports of non-oil commodities:
- relaxation of export credit terms,
- provision of export credit guarantees and insurance facilities,
- simplification of export procedures, and
- easing of foreign exchange regulations for exports.

(3) only 9.8% increase in CPI despite a 60% rise in domestic fuels:
- stability in food prices,
- declining price of imports, and
- appreciation of rupiah against several strong currencies outside the US dollar.

*1982/1983* (1) Deficit in BOP led to a decline in foreign exchange reserves.

(2) Fiscal and monetary measures:
- reduction of subsidies (by raising prices of fertiliser, insecticide, fuel (by 52%)); reduction of expenditures,
- tighter monetary policy to minimise money supply growth by realigning the exchange rate of rupiah from 702.5 to 970 per US$; while maintaining the managed float exchange system, and
- ceiling on the expansion of bank lending at 32.7% (compared to 36.1% the previous year).

*1983/1984* (1) New tax policy to reduce dependence on oil and gas revenues, and to support growth of domestic industries.

(2) 1 June 1983 Monetary Policy - Deregulation in banking sector:
- reduce dependence on Bank's refinancing facilities - state banks to establish own credit policies and removal of credit ceilings and other requirements, and
- free to set own rates on time deposits.

*1984/1985* (1) To streamline and increase trade in Money Market Securities (SBPU):
- appointment of a non-bank financial institution (NBFI) to act as securities house, and
- rediscount rate at 20.5% per annum.

(2) In August/September 1984, disruption in interbank call money market (speculation that US dollar might increase; heavy dependence on funds of interbank call money market) - lower interest rate of the interbank call money market by:
- fixing the eligibility of banks to obtain funds from this market to 7.5%, and
- a special credit liquidity with maturity of one year.

*1985/1986* Persistent world economic slowdown, weakening oil prices, protectionism in industrial countries. Measures taken:

(1) reduce interest rate without discouraging savings or causing capital outflows by reducing discount rate of BI Certificate (SBI) and SBPU (expected only gradual decline in lending rates); and,

(2) improve open market operations (OMO) by:
- increasing the frequency of issuance of SBI,
- raising the maximum level for SBPU rediscounting,
- extending the maturity of SBPU,
- lowering the nominal value of SBPU, and
- increasing the upper limit for the utilisation of interbank funds.

*1986/1987* (1) Sharp decline in oil prices, weak world economic growth, structural weakness in Indonesian economy:
- larger current account deficit, and
- decrease in foreign exchange reserves.

(2) Cautious expansionary monetary policy by maintaining interest rate levels on monetary instruments to encourage economic activity and fund mobilisation, and to support efforts to improve BOP position:
- 12 September 1986 - devaluation of rupiah by 31% against US dollar,
- 25 October 1985; 15 January 1987 - deregulation to promote non-oil exports, and
- revoke the ceiling on swap facilities to BI - to encourage capital inflows.

*1987/1988* (1) Especially during the first quarter, tight monetary policy to curb speculation on rupiah:
- raising rates on SBI and discount facilities,
- raising rediscount rates of SBPU, and
- gradual lowering of ceiling on SBPU.

(2) Efforts for a secondary market for SBI and SBPU - to increase utilisation of commercial papers as source of funds.

(3) Monetary policy to maintain price stability and alleviate pressures on BOP - control on money supply and interest rates through OMO - to meet a desired monetary target.

*1988/1989* 27 October 1988 Policy Package - To promote mobilisation of funds from the public - for the finance of economic activities, non-oil/gas export promotion, improving efficiencies in financial sector, favourable climate for development of capital markets, and a more effective monetary management:
- promotion of money market securities with SBI with longer maturities;
- lower reserve requirements, from 15 percent to 2 percent;
- time and savings deposits classified as current liabilities;
- permitted establishment of new banks;
- encouraged banks to introduce more attractive savings schemes;
- easing of requirements to become a foreign exchange bank; and,

- regulation on net open position for foreign exchange banks and NBFIs - difference between foreign exchange assets and liabilities limited to no more than 25% of equity.

*1989/1990* 29 January 1990:

- Introduction of new measures to improve credit system - encourage mobilisation of funds from the public; and,
- to encourage small- and medium-scale industries (SMIs) - 20% of all loans from all domestic banks to small-scale businesses.

*1990/1991* (1) June 1990:
- Efforts to curb inflation (through the phasing-out liquidity credits and by conducting contractionary OMO) led to, in the short run, the tightening of domestic liquidity, marked increase in sales of SBI, and a jump in the discount rate from 11.33% in March to 19.95% in November 1990.
- In the fiscal area, ceilings were introduced on each of the Treasury's deposits maintained with banks. The regulation that deposit money banks should immediately transfer all tax receipts to BI was reinforced.

(2) Uncertainties during late 1990/91 due to the Gulf Crisis led to a large outflow of foreign exchange. To maintain monetary stability, 27 February 1991 Policy was implemented to tighten the money supply:
- Rp. 8.1 trillion from state-owned enterprises' and agencies' deposits with domestic banks was converted into special SBI worth Rp. 9.9 trillion at 22.0% annual discount rate and a 1-year maturity,
- special money market securities (SBPU) worth Rp. 6.1 trillion was purchased for Rp. 7.2 trillion, and
- measures were also taken to improve effectiveness of OMO in both directions.

(3) At the end of February 1991, a new set of measures were introduced to promote a sound development of banking system. The introduction of new capital adequacy requirements aimed to encourage banks to consolidate their financial conditions and to be more cautious in managing their operations.

*1991/1992* (1) In March 1991, a substantial amount of time deposits held by state enterprises was converted to SBI to slow monetary expansion

(2) February 1992 Policy Package:
- an extension of the October 1988 package,
- improve bank management, new banks, new services offered by banks, and
- capital adequacy ratio (CAR) and loan-to-deposit ratio (LDR).

(3) An increase in domestic interest rate was needed to control excessive domestic demand. International rates were moving down and this widening differential increased foreign borrowings. The monetary authority loosened the policy by buying SBPU and reducing the SBI discount rate - to drive down domestic rates of interest.

(4) A Committee (Foreign Commercial Borrowings Mamagement Coordinating Team) was formed to coordinate the management of foreign commercial borrowings (with some exceptions such as foreign borrowings in the context of trade with maturity less than one year, borrowings to finance private firms that are not related to public entites)

(5) Outstanding SBIs stood at Rp11.2 trillion

(6) BI limits swaps facilities. Discourage external borrowings by imposing a restriction of short-term borrowings not exceeding 30 percent of a bank's capital

(7) Better monitoring of off-balance sheet transactions by imposing the restriction that net difference between off-sheet assets and liabilities to maximum of 20 percent of a bank's capital

*1992/1993* (1) Reduce the discount rates on Bank Indonesia certificates (SBI) and money market securities (SBPU) by 5.5 - 8.0 percentage points, and stepped up the purchase of SBPUs.

(2) Allow banks to discount SBPU to meet their liquidity needs.

(3) Adopt the Stop-Out Rate (SOR), a quantitative target system, in the SBI auction with the aim of attaining "market determined" SBI discount rates. Designated

21 commercial banks as primary dealers with the obligation of buying all SBIs offered in each auction.

(4) Introduce the Jakarta Interbank Offered Rate (JIBOR) as an interbank reference rate.

(5) Issue licenses for the operation of brokerage firms dealing in rupiah and foreign exchange markets.

(6) Raise the rupiah indicative rate from Rp. 6.00 to Rp. 10.00 and the foreign bank note rate from Rp. 8.00 to Rp. 14.00.

*1993/1994* (1) May 29 1993 Deregulation Package:
- Lower domestic interest rates. SBI discount rates were cut by around 7 percentage points to 5.5 %, via the use of OMOs.
- Expansion of banking credit. Several prudential regulations on bank supervision, especially regarding the capital adequacy requirement and bank rating, were relaxed.

(2) Create a new scheme of credit to small-scale business (KUK) through money market securities (SBPU - KUK).

(3) Implement the prudential principle by tightening the legal lending limit and allowance for non-performing assets.

(4) Establish PT Pefindo, an independent rating agency, to issue ratings for debt instruments traded on the money and capital markets.

(5) Sterilize the inflows of capital, which resulted in outstanding SBIs increasing to Rp. 23.2 trillion at end of March 1994

(6) Widen the bid-ask spread for US dollar spot transactions from 0.5% to 1% and for bank notes transactions from Rp. 2.00 to Rp. 3.00.

(7) Stop issuing indicative foreign exchange rates.

*1994/1995* (1) Raise the discount rates for SBIs gradually by five percentage points to 12.3% in March 1995.

(2) Permit the sale SBIs under repo (repurchase agreements) terms.

(3) Employ persuasion with banks to stem excessive credit expansion, especially towards properties and other speculative sectors. Banks are required to submit detailed credit plans to the central bank.

(4) Widen the spread between rupiah buying and selling rates.

(5) Widen the bid-ask spread for foreign exchange dealings with the central bank from Rp20(1%) to Rp30(1.5%) in September 1994.

(6) Streamline the mechanisms for open market operations (OMO).

(7) Raise the maximum overall Net Open Position (NOP) for banks (on- and off- balance sheet assets included, after calculating foreign exchange liabilities and claims) to 25% of bank capital on a weekly average basis. The previous restriction on the NOP per currency of 25% of bank capital was lifted

(8) Embark on a U.S.$580 million intervention in the domestic foreign exchange market through forward, spot and squaring transactions, and raised the money market securities rates by 0.5% in response to the Mexican crisis.

*1995/1996* (1) Introduce new provisions on reserve requirement. Reserve requirement was raised to 3 percent of demand deposit.

(2) Further widening the spread between the selling and buying rates of rupiah against US dollar and introduced an intervention band with a range of Rp66.00.

(3) BI conducted bilateral arrangement with monetary authorities of Malaysia, Singapore, Thailand, Hong Kong, Australia and the Philippines through securities repurchase agreement

(4) Foreign exchange banks were required to increase their capital adequacy ratio(CAR) in phases up to 12 percent with six years.

(5) OMO operations resulted in contractionary impact of Rp0.5 trillion.

(6) Terminate of investment swap facility with BI. but BI may still carry swap transaction with banks may be carried out with BI's discretion.

(7) On December 1995, BI introduced provisions on derivatives transactions. Provisions are designed to limit risks that may be occurred from derivatives transaction.

**BANK NEGARA MALAYSIA (BNM)**

*1980* As countries of the Organisation for Economic Co-operation and Development (OECD) adopted restrictive monetary and fiscal policies to combat the worsening inflationary situation, it became evident that the external sector would not be able to provide any economic stimulus. The policy objectives are to:

- promote domestic (aggregate demand);
- maintain climate of economic stability;
- maintain liquidity at sustainable levels;
- promote domestic savings; and,
- ensure equitable distribution of bank credit.

*1981*

(1) The weakening of the export sector. Both export prices and volume declined due to pro longed recession and high interest rates in industrial countries. Export receipts fell by 6.1%.

(2) Adopte a counter-cyclical policy - A 6.4% rise in aggregate demand (in real terms) mainly due to a 13% increase in public expenditures.

*1982*

(1) Factors: Prolonged world recession; the resulting domestic slowdown; deterioration in BOP; growing strains in the financial position of Government; high interest rates in the past two years; and, emerging need for structural readjustment.

(2) Adopt a flexible set of policies to promote growth while trying to control/reduce inflation in an environment where discretionary stimulative fiscal measures are increasingly limited due to weak financial position of Government:

- a ceiling on the total value of net disbursements of the development budget, and
- request commercial banks and other financial institutions to refrain from using domestic resources to finance the foreign exchange component of large investment projects; instead, encouraged use of funds from overseas manufacturers and their bankers -
  - to minimise the immediate impact of capital outflows

- to conserve domestic credit for finance of productive activities.

(3) October - Banks allowed to lend and syndicate loans in foreign currency (also, encouraged funding by foreign borrowings including accepting deposits from non-residents).

(4) Discourage extension of credit for on-productive and speculative activity through the setting of guidelines for banks in their lending operations.

(5) 27 October - Revision of terms and conditions of BNM's export refinancing facilities - to promote exports of resource-based and other high value-added products by reducing the cost to producers for use of the facilities by 2%.

(6) 1 January 1982 - New capital adequacy requirements for banks where domestic banks are required to maintain a minimum free capital ratio of 4% (paid-up capital and other shareholders' funds, after deducting long-term investment) while foreign banks are to maintain a 4% minimum net working fund ratio.

*1983*

(1) The "two deficits" - "Structural" deficit (public sector); current BOP deficit.

(2) Need for a policy of restrain where close coordination of fiscal and monetary policies is needed to accomplish the following objectives:
- improve public sector's financial position,
- improve national savings - at both public and private sector levels,
- ensure price stability, and
- restore BOP to equilibrium through import reduction and export promotion.

*1984*

Focus on fundamental issues and basic policy stances:
- consolidation of public sector (the fundamental role of public sector as a stimulus for future growth);
- Economic Planning Unit (EPU) to monitor the Off-Budget Agencies (OBAs) - large non-financial public enterprises;
- protection of domestic industries (1985 Budget) -
  - higher import duties on tyres, cars, plywood

- cheaper raw materials and electricity for rubber-processing industries,
- external financing requirement and debt management - with favourable conditions, maturity profile of debt lengthened by raising a US$ 600 million Floating Rate Note (FRN) at fine rates, with a 25-year final maturity,
- export promotion and import reduction, and
- resource mobilisation and savings - reduction in personal income tax rates across the board (1985 Budget).

*1985*

(1) A generally expansionary monetary policy against a background of general economic slowdown with near zero inflation
- to stimulate private sector activity, and
- to counteract deflationary impact of lower incomes on bank liquidity without creating disincentives for savings - mobilisation of savings for investment.

(2) 15 April - Statutory reserve ratio of commercial banks reduced from 5% to 4% of total eligible liabilities. Also statutory reserves for merchant banks increased by 1%.

(3) Injection of liquidity in the money market by BNM - commercial banks lowered base lending rates (BLR) in two stages: June and October.

(4) October - The Associations of Banks and Finance Companies agreed to align deposit rates with the two leading domestic banks.

(5) Increased the prescribed ceiling on loan rates to certain priority sectors.

(6) Introduction of New Investment Fund Deposits at lower rates of interest.

(7) Reduction in liquidity requirement by 1.5% effective from February 1986.

*1986*

(1) Liquidity requirement adjusted downwards twice (February and October) to ensure sufficient liquidity.

(2) February - Reserve requirements for finance companies and merchant banks raised to bring them closer to commercial banks'.

(3) July - Essential (Protection of Depositors) Regulation, 1986 brought into effect under Emergency (Essential Powers) Act, 1979 to provide the necessary powers to

investigate, control and act decisively on the deposit-taking activities of cooperatives and all illegal deposit-takers.

(4) Day-one settlement for local cheques deposited in Kuala Lumpur Metro Area. The extension of this clearing system nationwide starting with phase one in January 1987.

(5) December - National mortgage company, Cagamas Berhad, established to promote active secondary market for mortgages - became operational in October 1987.

*1987*

(1) January 1987 announcements:
- effective 1 February,
- deposit rates ( 12 months) to be market-determined,
- "averaging" of liquidity ratios allowed to meet minimum liquidity requirements,
- reduced first-line liquid assets for commercial banks to 8%, and
- reduced Export Credit Refinancing (ECR) rate from 5% to 4% per annum.

(2) BLR of commercial banks and finance companies reduced by up to 0.75%.

(3) New Investment Fund (NIF) - both scope and size enlarged.

*1988*

(1) Background: Strong recovery in domestic economy; favourable balance in both the current fiscal and external payments position. Policy: To preserve price stability and to ensure favourable monetary conditions for the upswing of the business cycle.

(2) As expected, bank deposits failed to grow as rapidly as the increase in loans. Thus exists a resource gap of RM 1.5 billion. By drawing down on excess liquid assets, commercial banks were able to alleviate a portion (RM 0.7 billion) of the RM 3.3 billion loan-deposit gap.

(3) 1 July - BLR of commercial banks reduced by 0.25% for the two lead banks and 0.5% for others. BLR of finance companies reduced by 0.5%. this led to a fall in the average lending rate of 0.78% to 8.95% per annum (the lowest since 1972).

(4) Rebuilding and rehabilitating enterprises to reduce non-performing loans:
   - establishment of Enterprise Rehabilitation Fund to assist Bumiputera enterprises, and
   - banks encouraged to convert part of their loan portfolios into equity.

*1989* Four broad categories of monetary measures:

(1) Managing liquidity
   - statutory reserve requirements raised twice (on 2 May and again on 16 January 1990), and
   - relieve the market of RM 1.8 billion in primary bank liquidity;

(2) Improving credit flow to priority sectors
   - Cash Crop Scheme under NIF - commercial banks required to extend at least 20% loans to Bumiputera community), and
   - new principal Guarantee Scheme (PGS) under the Credit Guarantee Corporation (CGC);

(3) The new Banking and Financial Institutions Act (BAFIA), 1989 - regulatory structure changes to provide more supervisory powers to BNM; and,

(4) Risk-weighted capital adequacy requirement - for a more equitable capital requirement measure among financial institutions.

(5) Introduce a completely computerised on-line interbank funds transfer and the second stage of the nationwide cheque clearing system(SPAN II)

(6) appointed of 18 principal dealers to underwrite primary issues of Malaysian Government securities(MSG) and appointment of seven discount house for Malaysian Treasury bills

(7) Introduce guideline on the issue of private debt securities

*1990*

(1) Reduction in development tax and extension in reinvestment allowances - To promote rapid growth and efficiency.

(2) Income tax reduction - To promote greater productivity and incentive to work.

(3) Incentives of providing for 100% foreign equity ownership extended for one more year - to end-1991, i.e.,

investors who applied to invest in Malaysia up to end-1991 (original schedule was between October 1-end 1990) could be granted 100 % ownership provided the company exports 50% or more its production or employs at least 350 full-time Malaysian workers and if the product does not complete with products manufactured locally for the domestic markets.

(4) Four main categories of monetary measures:
- managing liquidity, curbing rising inflationary expectations and moving towards a market-oriented system of interest rate determination -
  - an increase in statutory reserve requirements to 6.5 percent
  - withdrawal of government deposits from banking system
  - absorbing funds through direct borrowing from market
  - freeing the BLR,
- ensuring adequate credit flow to priority sectors -
  - introduction of new set of lending guidelines
  - establishment of the Special Fund for Tourism and the Abandoned Housing Projects Fund
  - increase allocation for the Loan Fund for Hawkers and Petty Traders
  - establish an Association of Special Loans Scheme (ASLS) for hawkers and petty traders,
- reforms in the financial system -
  - abolition of primary liquid asset ratio
  - allowing certain finance companies to issue negotiable CDs
  - relaxing restrictions on investment portfolio of discount houses
  - establishment of credit rating agency and inter national offshore financial centre in banking and insurance in Labuan, and
- improving the payment and reporting system -
  - introduction of a Scripless Securities Trading System (SSTS)
  - extension of the National Automated Cheque Clearing System to the states of Perak and Sabah
  - cash BOP reporting system.

(5) Launch SPANIII to speed up the clearing of outstation cheques.

(6) Government floated its first yankee bond issue of US$200 million

*1991* (1) Reduction of development tax - Reduced by 1% to 2% for year of assessment 1992; will be completely abolished from 1993.

(2) Rationalisation of incentives (revisions to the Promotion of Investments Act, 1986):

- effective 1 November, companies which applied for and are granted pioneer status would have to pay tax on 30% of their statutory income (previously 100% exemption),
- companies which applied for and are granted investment tax allowance (ITA) on and after 1 November would only be eligible for a maximum allowance of up to 60% of their qualifying capital expenditure (previously 100%). The amount to be deducted would be limited to a maximum of 70% of the statutory income. Any unutilised allowance can be carried forward, and
- those companies which have previously enjoyed the pioneer status and/or ITA would not be granted an extension of any of two.

(3) Promotion of high-risk venture capital companies in new and sophisticated technology:

- unabsorbed expenses can be carried forward, and losses incurred in the disposal of shares or on liquidation can be deducted from aggregate income or total income.

(4) Equity ownership guidelines - Companies with a minimum export-output ratio of 80% would not be subjected to any equity conditions - foreign companies with between 50% to 79% export-output ratio could hold 100% equity:

- if investment in fixed assets is RM 50 million or more, or
- if with at least 50% value-added, provided it does not compete with local producers.

(5) Statutory Reserve Requirements (SRR) raised - 1% to 7.5% effective August.

*1992*

(1) From 1 February, commercial banks and finance companies were allowed to fix their own base lending rates

(2) New measures introduced on credit card operations: mimimum income eligibility at RM24000, mimimum age requirement at 21 and mimimum monthly payment >=10 % of the total outstanding balance.

(3) Adjustment to the SRR raised - 1% to 8.5% effective 2 May - to absorb RM 0.8 billion in excess liquidity.

(4) Daily Limit on Swap Transactions with Foreign Customers (effective 1 June) - All non-trade related transactions with foreign customers (on the bid or offer side) subjected to a daily limit of US$ 2 million per name per day and an overall limit of US$ 4 million in aggregate per day - contain monetary expansion from massive inflows of foreign funds.

(5) Revision of the Hire-Purchase Guidelines on Motor Vehicles (effective 1 April) - Block discounting of new and second-hand passenger cars costing RM 40,000 or less no longer required, to ensure lower- and middle-income groups can afford a lower-priced car.

(6) 1992 Lending Guidelines (effective 1 April) - To ensure certain priority sectors' continual access to bank credit:

- banks and finance companies required to adhere to a 20% minimum of loans to the Bumiputera community at 31 December 1991. Deadline of compliance 31 March 1994,
- commercial banks required to extend housing loans for owner-occupied houses costing RM 100,000 or less each for at least 75,000 units, with at least RM 4.5 billion; finance companies - 25,000 units at RM 1.5 billion. Deadline of compliance 31 March 1994; with half of the quotas to be complied by 31 March 1993,
- ceiling interest rates at 0% per annum or 1.75% above BLR, whichever is lower - for all existing and new loans for owner-occupied houses valued at RM 100,000 or less, and
- interest subsidy and revised eligibility criteria for housing loans (applicable to loans granted from 2 November 1992).

(7) Centralization of the Employees Provident Fund's excess fund with Bank Negara: amount to RM6.7 Billion at end of 1992.

(8) Limits on swaps—Swaps facilities offered by the central bank to foreign banks was limited to 15 percent of the banks' weighted risk assets.

(9) Inclusion of Ringgit Swaps in Statutory Reserve and Liquidity requirement:
All outstanding ringgit received through swaps transactions with non-resident, including off-shores to be include in the eligible liabilities base. In case of branches of foreign banks, all new borrowings from head office or branches transacted from 26/9/91, not sourced through swaps with the central banks were to be included in the eligible base. Also applies to outright ringgit borrowings from non-resident , including offshores.

(10) Short term direct borrowings by the central bank—absorbed 15.1 billion

*1993* (1) 4 January 1993, the Central Bank set up the Fund for Food Scheme: the Central Bank allocated a sum of RM300 million at maximum period of 7.75 % per annum.

(2) 14 January, the guidelines on hire-purchase loans for purchase of private motor vehicles and the block-discounting of such hire-purchase loans lifted.

(3) 9 February, the Central Bank issued the first series of Bank Negara Bills(BNB). The first issue of RM1 billion attracted bid worth RM4.1 billion while the 2nd tranche worth RM1.5 billion attracted bid worth RM3.9 billion.

(4) Issue lending guidelines for small loan , under the Principal Guarantee Scheme (PGS) of the Credit Guarantee Corporation (CGC): commercial banks are required to ensure that the small-scale enterprises with no collateral or inadequate collateral can continue to have access to bank credit.

(5) Effective 16 February, discounted Malaysia Savings Bond (Bon Simpanan Malaysia) with nominal value of RM 1 billion and a maturity of five years:
- to promote savings,
- to help diversify sources of savings among Malaysians, and

– as a means to channel funds to productive areas.

(6) Enactment of the Future Industry Act, comes into force in 1 March 1993

(7) Introduction of Islamic Banking with interest-free banking scheme in the financial institutions

(8) Establishment of the Security Commission to oversea orderly development of securities, options and financial futures industries

(9) Direct short-term borrowings by the central bank which absorbs RM27 billion of excess liquidity

*1994* (1) Adjustment to Statutory Reserve Requirement—8.5 percent to 9.5 percent in 3 January 1994, to 10.5 percent in 16 May 1994, to 11.5 percent in 1 July 1994: Absorbed an estimated RM4.8 billion.

(2) Effective from base period 16-31 January, eligible liabilities (EL) base of banking institutions was redefined to capture all foreign fund inflows. Required to keep RM 1 billion in additional statutory reserves and about RM 2 billion in additional liquid assets with BNM.

(3) From 17 January, the net non-trade related external liabilities position of a bank, after deducting inflows, is subjected to a ceiling specified by BNM. Subsequently lifted on 20 January 1995

(4) Effective 24 January 1994, all residents are prohibited under the Exchange Control Act, 1953 from selling short-term monetary instruments (those deemed to be monetary policy instruments used by BNM to influence liquidity - Bank Negara bills, Treasury bills (T-bills), government securities (including Islamic securities) with remaining maturity of one year or less, Cagamas bonds with remaining maturity of one year or less, bankers acceptances and negotiable instruments of deposits) to non-residents. From 7 February 1994, the restriction also included private debt securities (including commercial papers but excluding securities convertible to ordinary shares) with remaining maturity of one year or less. August 12, this measure was lifted.

(5) Effective 2 February 1994, commercial banks required to place with BNM the ringgit funds of foreign banking institutions held in non-interest bearing vostro accounts. But commercial banks are allow to deduct

such ringgit funds from the Eligible base. February 16, ringgit fund from vostro accounts included in eligible base of reserve requirement. February 25, the above relaxed to exclude custodian accounts for purpose of trading in stocks and shares, subject to a maximun of RM10 million ringgit and for the purpose other than trading in stocks and shares, a maximum of RM 1 million per foreign banking institutions.

(6) Swap Transaction with non-resident—Commercial banks prohibited to undertake non-trade related swaps including overnight swaps and outright forward transactions on the bid side with foreign currencies (allowable only for hedging trade-related foreign exchange

(7) Reduce transfer to the private sectors, e.g., ECR Refinancing Scheme

(8) Introduction of two-tier regulatory system for commercial banks with Tier 1(minimum shareholder's fund of RM500 million) are allow to operate in a more liberal environment.

*1995* (1) Three board Catagories of monetary and banking measures

(a) Managing excess liquidity

(1) Effective October 1995, the margin of financing (for hire-purchase loans) for the purchase of passengers was lowered to 75%.

(2)Effective 17 October 1995, the margin of financing for the purchase of houses and apartments costing RM150,000 and commercial buildings(Shophouse, shop lot) costing RM300,000 was lowered to 60 percent, with excemption of purchase ofhouses of apartments for own dwelling and shophouses for the conduct of own business

(3)Minimum payments on outstanding balance of a credit card account to increase from 10 percent to 15 percent, with effect from 1 January 1996

(b) Flows of Credit to the Priority Sectors

(1)Issue lending guidelines on New Principal Guarantee Scheme(NPGS), Credit Guarantee Corportion (CGC)

(2)Upward revision of Funding Rate under the Export Credit Refinancing(ECR) Scheme

(3)Reduction of maximum lending rate chargable (from 7.75 % TO 4%) and size of loan (from

RM50,000 to RM10,000) under the Fund for Food Scheme

(c) Financial and Prudential Reforms
(1)Issue Guidelines on Finacial derivatives
(2)New Framework for the Base Lending Rate(BLR) where commercial banks and finance companies are free to quote their BLR anywhere below the ceiling BLR computed for the industry.
(4)Minimum payments on outstanding balance of a credit card account to increase from 10 percent to 15 percent, with effect from 1 January 1996
(5)Extension of a Two-Tier Regulatory System to merchants banks in January 1996

*1996* Effective 1 February 1996, reserve requirement raised to 12.5%. The ratio was raised again in
1 June to 13.5%.
Centralization of governement funds with the central bank
Introduction of a two-tier regulatory system for fincancial companies, effective 1 April.
Announcement of requirement for gradual increases in the minimum amount if the shareholders' funds of financial companies with effect from 1998 to be eligible to participate in the interbank money market.
The activity of the commercial banls of tier-1 banks were extended in July
Introduction of a fully automated system system for tendering to promote efficiency in the secondary market
Subscribe to the Special Data Dissemination Standard(SDDS) to provide up-to-date information on financial developments.

**BANGKO SENTRAL NG PILIPINAS (BSP)**

*1980* Objectives: Target growth rate, contain inflation and BOP deficit.

(1) New financial structure with more varied services and more able to mobilise longer-term funds.
(2) Mid-August, basic rediscounting regulations amended with new ceilings, rates and loan rates.
(3) Open market transactions generally expansionary - directed towards stabilisation and development incen-

tives. During fourth quarter, repurchase rate on Certificates of Indebtedness (CIs) adjusted upwards to align with Rediscount Reference Rate.

(4) Amendments to interest rate policy:
- banks allowed 0.5% interest rate differential to savings and time deposits,
- thrift and rural banks to pay 0.5 higher, and
- float interest rate on loans with maturities of more than four years - where the rate cannot float above a certain reference rate (Manila Reference Rate) plus a margin of not more than 3%.

*1981* Targets: 5.5% GNP growth, inflation u 12%, BOP u $375 million.

(1) In early January, Central Bank's (CB) supervisory powers increased to include supervision of subsidiaries and affiliates of banks and non-banks with quasi-bank functions. Also, CB's capitalisation increased from P= 10 million to P11 billion (PD No. 1771).

(2) Efforts on selling Treasury notes while gradually phase out own CIs.

(3) Effective 1 July, ceilings on interest rates of savings, time and NOW accounts, deposit substitutes and on loans and yields on purchases of receivables with maturities beyond 730 days lifted. Interest rate ceilings short-term loans maintained at 16% and 18% for secured and unsecured loans respectively.

(4) Effective October, definition on short-term loans and purchases of receivables amended from 730 to 365 days.

(5) Starting 1 January 1982, required reserves to be reduced from 20% to 16% over next four years - at 1% reduction per year (please see 1982 #4).

*1982*

(1) Net domestic credits of the monetary system grew by 22% (16.8% in 1981) to P141.3 billion.

(2) In late 1982, lifted ceilings on short-term loan rates - to be effective 1 January 1983.

(3) To complement interest rate deregulation, instituted a prime rate monitoring system - enhance competition through a more perfect information environment.

(4) To prevent excess liquidity build-up, proposed reduction in reserve requirement suspended. However, sched-

uled increase in reserve requirement on long-term deposits continued.

(5) Special rediscounting facilities to finance hydro-systems and dendro-thermal plants.

(6) Paid-up capital requirements of thrift and rural banks increased from P10 million to P20 million.

*1983*

(1) Reserve requirement on short-term deposits raised by 5% on a staggered basis from September to December. Effective 1 November, marginal deposits on all imports subjected to 100% reserve requirement - limits the ability for banks to expand; as compensation, 3% interest on bank reserves up to the minimum deposit reserves required.

(2) Reverse repurchase transactions and sale of CIs - to get rid of excess liquidity.

(3) Rediscount rates aligned with existing market rates.

(4) On 1 January, ceiling on short-term interest rate removed - to encourage competition.

*1984*

(1) April - Reserve requirement against traditional deposit and deposit substitutes raised by 1% to restraint liquidity movements. To compensate, interest rate on reserves raised from 3% to 4% in June.

(2) OMO - Higher interest rates on reserve repurchase agreements, CB bills and T-bills to control liquidity.

*1985*

(1) Effective September, reserve requirement against short-term deposits reduced from 24% to 23%.

(2) Rates of CB bills and term-reverse RPs reduced to influence market rates.

(3) Simplified rediscount system on 29 November:
- eliminated ceiling on bank spreads,
- charged methodology to compute base rate, and
- simplified rediscount structure from 6 to 1 category.

*1986*

(1) May/August - Reserve requirement on short-term deposits reduced total of 2% to 21%; and in December, requirement on long-term deposits reduced from 6% to 5% to enhance availability of funds and to reduce intermediation cost of banks.

(2) Due to excess liquidity after the February Election, OMO (sale) stepped up. Beginning 20 October, to gradually phase out CB bills with maturity dates and to reorganise auction methods of Treasury issues.
(3) Rediscount rate reduced by 2.75% to 10%; 2 phases - September (1%) and December (1.75%).
(4) Auction system of selling government securities (T-bills and notes) resumed 24 October.

*1987*
(1) Efforts to reform government financial institutions - sold one bank and 40% equity to private sector of another.
(2) OMO - Flotations of auctioned T-bills.
(3) Average nominal interest rates on borrowing and lending instruments of banks declined.

*1988*
(1) Reserve requirement remained as set in August 1986.
(2) OMO- Proceed of Treasury Bills in amount of the National Government's deficit financing requirement were deposited with the Central Bank.
(3) 28 October 1988, requirement to purchase special five-year government securities as condition in the opening of new branches lifted in order to foster freer competition.
(4) Nominal interest rates were generally higher, reflecting the combined effects of the acceleration in the inflation rates and the increased effects of the acceleration in the inflation rates and the increased domestic financing requirements of both the private and public sector.

*1989*
(1) Within a span of less than 5 months, from June 23 to November 5, the reserve requirement on deposits and deposit substitutes(original maturity < 730 days) was increased gradually from 5 % to 20 %.
(2) OMO- To supplement Treasury Bills auctions. Reverse repurchases were retorted to in order to contain liquidity growth and for fine-tuning purpose.
(3) Rediscount rate was increased from 10 % to 12 % in June.

(4) Nominal interest rates generally exhibited an upward trend but declined in November. Deposit rates, except savings continued to yield positive real returns.

*1990*

(1) Reserve requirements on bank deposits raised by 5% to 25% at year end.

(2) OMO - Reverse Repurchase (RRPs) agreements (refer to CB's borrowing from banks using CB's holdings of government securities as collateral). In September, CB bills with shorter maturities than T-bills issued to supplement RRPs.

(3) Rediscount rate raised twice (February and September) by a total of 2% to 14% by September.

(4) Gradual increase in nominal interest rates on borrowing reflecting inflationary tendencies, widening National Government (NG) budget deficit and pervasive climate of uncertainty (due to adverse recent developments in domestic and foreign economies).

*1991*

(1) No change in reserve requirements in deposits.

(2) OMO (mainly, RRPs and CB bills) - Build-up of NG deposits in CB due to sale of T-bills and above NG's requirements for deficit financing - facilitate reserve money management.

(3) Nominal rates of interest went down - economic slowdown, appreciation of peso and relative reduction in foreign rates.

*1992*

(1) Reserve requirement (effective 23 March) - Term "chronic deficiency" redefined to mean reserve deficiency for two consecutive weeks only instead of 4. Effective 20 April, period for computing banks' reserve position and penalty on reserve deficiency extended from five to seven days. Decision to reduce reserve ratio by 1% each quarter starting January 1993 up to 22% by end-July 1993 - to reduce banks' intermediation costs.

(2) OMO - Borrowings through RRPs and issuance of CB bills to reduce excess liquidity.

(3) Establishment of Philippine Dealing System(PDS)-Electronic Screen Based Networks

(4) May—Implementation of Commercial Bank Finance Package
(5) US$1263 billion debt byback operation concluded in May
(6) Adjust rediscount rate facility—3 January, rate raised from 14 to 15.5 percent 29 October, rate reducred to 14.3 percent
(7) Reserve Requirements imposed on funds deposited for projects under special financial programs of the Government and international financing institutions wewe abolished

*1993*

(1) Establishment of Bangko Sentral ng Pilipinas (BSP), transfer of certain assets and liabilities from the old central bank
(2) 31 March—Stand-By Argeement (SBA) with the IMF completed
(3) Reserve requirement: This was reduced gradually across the financial sector, except in the case of savings and time deposits of thrift banks and rural banks. For commercial banks, the ratio was cut from 25 % to 22 % in July 30. Effective December 31, banks and non-banks performing quasi-banking functions (NBQBs) were allowed to invest 2 % of their reservable deposits and deposit substitutes in short-term market-yielding government securities through the Central Bank.
(4) OMO- Borrowing under the reverse repurchase facility increased markedly during the third quarter of the year to reduce excess liquidity. The BSP acquired a large stock of Treasury securities which could be used for its OMOs.
(5) CB/BSP rediscount rate: It was reduced first on March 17 from 14.3 % to 12.8 % and again on July 30 to 9.4 %. The rediscount budget was raised from P8.0 billion to P10.0 billion primarily to benefit exporter-borrowers.
(6) FCDUs—Authorize to grant medium and long-term loans to private secor without BSP approval
(7) Imposed 10 percent reserve requirement on prso-dominated common trust fund effective 1 October 1996

*1994*

(1) Reserve requirement: This was reduced further to 19.0% effective August 15. The proportion of required reserve balances to be banked with BSP was also reduced to 55 %.

(2) OMO- The sale of BSP's Treasury bills and reverse repurchase agreements were actively used to contain base money and domestic liquidity growth arising from BSP's purchases of U.S. Dollar.

(3) Rediscounting: BSP rationalized its rediscount window through removal of fixed spreads and adoption of market-based rediscount rates across all types of eligible papers. The rediscount rate was revised to 1 % below the 91-day T-bill rate, subject to resetting every three months. This led to a fall of the rediscount rate to 8.304 %.

(4) Interest Rate Policy: The banking system was allowed to pay interest on demand deposits subject to several requirements.

(5) Financial Structure Policy: The combined capital accounts of banks and NBQBs were raised from P50 million to P250 million. Restrictions on the entry of foreign banks were greatly eased with the enactment of Republic Act No.7721 on May 18, which sets out three permitted modes of entry for foreign banks. The Philippine Postal Savings Bank and Banco Filipino were reopened on July 21 and July 1 respectively.

*1995*

(1) Rediscount rate—Adjustment maked monthly at 1 % point below the 91-Treasuey bill rate of the last auction of the preceding month.

(2) Legal reserve requirement was lowered from 17 point in December to 15 % effective 31 May

(3) Extensively sterilization—sale of BSP holdong of Treasury bills average P117.9 billion and borrowing under ther reverse repurchase facilities which aversge p226 billion to sterize BSP direct purchase of foreign exchange amount to US 3.4 billion.

(4) Bank's allowable overbough foreign exchange position was reduced to 20 percent from 25 percent while oversold position was increased from 10 percent from 5 percent of the banks' impaired capital.

(5) Repurchase Agreement with Hong Kong Monetary Authority

*1996*

(1) Successful completion of the second and third review of the country's economic program under a three year Extended Fund Facility
(2) Introduction of 10-year Treasury Bond
(3) Creation of the National Commission on Savings
(4) 11 FCDUs' licences granted to 11 banks and 4 foreign banks were given licence to operate the offshore banking facility
(5) Continue to carry out OMO using Repurchase agreements and sale of BSP's holding of government securities
(6) Finalize bilateral Repurchase Agreements with Bank Indoneisa, Bank Negara Malaysia, Monetary Authority of Singapore, Bank of Thailand, Bank of Japan

**BANK OF THAILAND (BOT)**

*1980*

(1) Restructuring of interest rates led to a severely tight money situation.
(2) Deposits up by 3% while the maximum loan rate charged by finance companies by 5%.
(3) Mid-March - Increase in bank rate on borrowings in excess of the prescribed ceiling to 14% for the first tier; end-March - for the second tier to 17.5%.

*1981*

(1) January - Revised BOT's loan rates; July - 1% upward adjustment of interest rates on deposits and loans - to mobilise domestic savings and to relieve the tight money situation in the first three quarters.
(2) Temporary exemption of withholding tax for foreign loans until year end - to induce capital inflows and ease domestic liquidity.
(3) Mid-September - An exchange rate swap arrangement introduced.
(4) Development of repurchase market for government bonds.

*1982*

(1) 27 February - Withholding tax rate on interest income received raised to 12.5%.

(2) 22 April - Increased second-tier bank rate to 17%, bond rates 17% and rediscount rate on promissory notes of finance companies 15%.
(3) 10 August - Bank rate reduced to 14% and 16%.
(4) 24 august - Bank rate reduced to 13.5% and 15%.

*1983*
(1) Reduction of domestic interest rates and on ceiling loan rates in response to high domestic liquidity and relatively lower foreign interest rates.
(2) 1 May - Capital-risk asset ratio of commercial banks reduced from 8.5% to 8.0%.
(3) 1 December - Increase in bank rates - to restrict liquidity.

*1984*
(1) First three quarters, continuing restrictive monetary policy to slow down expenditure and to alleviate trade and current account deficits. Fourth quarter saw measures introduced to promote priority sectors.
(2) 6 March - Increased ceiling rates of loans by 1.5%.
(3) 14 November - Reduced bank rates by 1%.

*1985*
Objectives: Stability and flexibility to the financial system; and, promotion of priority sectors. Through less restrictive policy:
(1) change in loan policies of financial institutions, and
(2) adapting the interest rate structure to economic circumstances.

*1986*
Objectives: Boost growth and investment; official financial assistance; and, improve stability and financial position of financial institutions. Through a less restrictive policy:
(1) Interest rate measures -
- reduce bank rate three times - 4 March, 9 July and September - to boost investment
- lowering refinancing rate on promissory notes three times
- lowering interest rate ceiling,

(2) Strengthen financial institutions - banks required to contribute 0.1% of deposits into Financial Institutions Development Fund,
(3) Reduce excess liquidity -
- increase amount of a bank's foreign assets allows

- added two more maturities for bond repurchases, and

(4) Promote exports - improvement in refinancing facilities, including refinancing rates.

*1987*

(1) Credit diversification and assistance to priority sectors, e.g., agriculture reduced interest rates, increase penalty rate, increase promissory notes and refinancing rates.

(2) Counter measures to the excess liquidity situation:
- 7 April - relaxed regulations on export refinancing facilities,
- 26 May - B2,000 million worth of bonds issued and sold - absorb B100,000 excess liquidity, and
- banks allowed to participate in low interest joint credit extension scheme for traders of agricultural products.

*1988*

(1) Promote rural development.

(2) Provide assistance to agricultural sector.

(3) Measures to support exporters of rice and other agro-products.

(4) Improve financial assistance to priority economic sectors:
- lower refinancing rates for small exporters and small industries, and
- reduce penalty rate.

(5) Counter measures to excess liquidity:
- issue bonds worth B2,000 million with 1-year maturity and 6% interest rate, and
- regulations to restrict loan of funds to non-productive areas.

*1989*

(1) Expanded coverage of rural credits to include savings, cooperatives and credit unions, credits to Thais working abroad (travelling expenses), and credits for rural investment projects approved.

(2) Maximum amount of credits to small-scale rural industries raised.

(3) Regulations on credit allocation especially to non-productive sectors and for hoarding or speculative purposes.

(4) Removal of time deposits rates (one year or more) as of 1 June - to mobilise savings.

*1990*

(1) Inflation measures:
- raised interest rates twice,
- reduced credit line to individuals under overdraft facility,
- increase credits to priority sectors, and
- curb credits to economically unproductive sectors.

(2) Absorb liquidity (23 March) - Issue bonds worth B13.5 billion at coupon rate of 9.125% with 1-year maturity.

*1991*

(1) Regulation on credit allocation - to promote priority sectors.

(2) B5,800 million bonds auctioned on 1 March to absorb liquidity.

(3) September - Bank rate reduced from 12% to 11%.

(4) 13 December - Issued guidelines to expand scope of activities of financial institutions.

(5) Savings rate ceilings to be removed (8 January 1992).

*1992*

(1) Savings rate ceilings remove on 8 January 1992.

(2) Relaxation on bank branch openings.

(3) 1 June - Ceiling rates on financial companies' and credit foncier companies' borrowings, deposits and lending removed.

(4) 24 March - Banks permitted three new types of business:
- management, issuance, underwriting and trading of debt instruments, and sale of mutual funds, secured debentures, securities,
- providing economic, financial and investment information services, and
- providing financial advisory services.

*1993*

(1) Reduce the bank rate and the refinancing rate on financial companies' promissory notes arising from businesses on agriculture, manufacturing, and commerce by one percentage point to 10 % per annum on June 1 and by another percentage point to 9 % on September 17.

(2) Direct commercial banks to announce:
- the lending rate charged to prime customers (Minimum Loan Rate: MLR),
- the rate charged to prime retail customers (Minimum Retail Rate: MRR) calculated from the average cost of the six-month fixed deposit,
- the maximum margin to be charged on top of the MRR and
- their deposit rates for both general and prime customers.

(3) Relax some regulations on International Banking Facilities especially for foreign commercial bank branches pertaining to required maintenance of assets, capital maintenance, ratio of commitments to capital and liquidity reserve requirement.

(4) Abolish the bond holding requirement for branch opening on May 17.

(5) Reduce the risk weight of assets related to the Industrial Finance Corporation of Thailand (IFCT) from 100 to 20 %.

(6) The ratio of risk assets to capital for commercial banks will be raised to not less than 7.5 % with the first tier capital accounting for not less than 5 % on April 1 1994. These figures will be raised further to 8 % and 5.5 % respectively on January 1 1995. For foreign commercial bank branches, the ratio will be increased correspondingly, first to 6.5 % and then to 6.75 %.

(7) Implement the Bank for International Settlements (BIS) standard for the capital adequacy requirement of commercial banks.

*1994* (1) Raise the base interest rate and the discount rate (refinancing rate) for promissory notes of financial and securities companies arising from agriculture, industrial and commercial activities by 0.5 % to 9.5 %, effective September 7

(2) Adopt the average cost of all types of deposits in the computation of the Minimum Retail Rate (MRR). Directed commercial banks to announce interest rates by writing to customers and posting the rates in their premises

(3) Impose the Bank for International Settlements (BIS) standard on the capital adequacy requirement of financial companies

(4) Introduce three measures that affected the capital adequacy requirements of commercial banks and finance companies:
- the risk weight of the country's Export-Import Bank set at 0.2
- the credit conversion factor for guarantee on the repayment of loans for the purchase of assets resulting from the securitization business set at 1.0
- assets and contingent liabilities of the Bangkok International Banking Facilities (BIBF) of foreign bank branches need not be included as risk assets

(5) Increase commercial banks' reserve provision for doubtful debt from 50 to 75 % from the accounting period ending 30 June 1994, and then to 100 % from the accounting period ending 31 December 1995

(6) Arrange for the separation of finance and securities businesses under the provision in the Act on the Undertaking of Finance Business, Securities Business and Credit Foncier Business

(7) Arrange for the operation of Provincial International Banking Facilities. Banking units with a PIBF license would operate international banking facilities for provincial baht lending and other provincial international banking activities, such as the business of foreign exchange against baht with authorized banks or other PIBFs

(8) Relax several regulations on PIBFs relating to capital requirement, liquidity requirement, single lending limit and ratio of total funds to contingent liabilities to any persons

*1995*

(1) Effective 3 March 1995, the BOT raised its Bank Rate from 9.5 percent per annum to 10.5 percent.

(2) The calculation for Minimum Retail Rate (MRR) was changed by using interest payments on all types of deposits in the preceding one month, instead of the preceding three months. Commercial banks required to submit MRR calculation to BOT on a monthly basis.

(3) Effective August 1995, non-resident baht deposits with maturity less than 1 year are subjected to a 7 percent minimum reserve requirement in the form of deposits(with no interest) with BOT.

(4) Commercial banks were directed to reduced high loan-to-deposit ratios to work to reduce them

(5) BOT modified the net foreign exchange position limit imposed on commercial banks. (a) Employed a risk-weight method to compute commercial banks credits in foreign currencies (b) Allow commercialbanks to incorporate cash position of options contracts into the calculation of the net foreign exchange position, according to a pre-determined formula.

(6) Require commercial banks to submit reports on the management of risk associated with foreign exchange trading and deratives operation

(7) Commerical banks with BIBF licenses are required to set provisions for doubtful debts 75 percent of the doubtful as of 30 June 1994 and 100 percent as of 31 December 1995.

(8) Curbing out-in(lending in foreign currencies in Thailand) credits: Effective 18 October 1995, Mimimun disbursement amount from BIBF out-in lending from US$500,000 to US$2 million, except for withdrawls by financial institutions.

*1996*

(1) Requirement on credit reporting for financial institutions. Commercial banks, BIBFs, large financial companies, and finance and Securities Companies are required to provide reports on credit plans

(2) Effective 23 June 1996, commericl banks and BIBFs are required to maintain liquidity reserve in the form of deposits at the Bank of Thailand averaging no less than 7 percent of new short-term foreign liabilities including non-residen deposits with maturity of less than one year.

(3) Finance companies and finance & security companies subject to 7 percent reserve requirement on short-term borrowings and deposits from non residents

(4) Regulation and issuance on Bank of Thailand bonds regarding the type, maturity periods, outstanding limits and the number of instituitons participating in the

auctions was issued. Two new series were issued, consisting of 1-year and 2-yeat maturities.

(5) Regulation on the purchase of bonds under the agreement to repurchase were issued to make provision for intraday liquidity Facility

(6) Modifying the repurchase market mechanism by replacing the Dutch auction with the continuous matching system

(7) Announcing criteria for foreign commercial banks appying for BIBF licences and additional branch openings of exisitng foreign banks

(8) Raise the capital-to-risk asset ratio and reserves against doubtful debts.

(9) Tighten the calculation for net foreign exchange position of finance companies.

(10) Relax the measure on credit for hire-purchase of passenger cars.

Sources: Member central bank and monetary Authorities, ***Annual Report,*** Various issues