Managing Foreign Capital Flows: The Experiences of Korea, Thailand, Malaysia and Indonesia

by

Yung Chul Park*
Chi-Young Song**

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*Korea University and Korea Institute of Finance
**Korea Institute of Finance

I. Introduction

During 1990-94, a large volume of foreign capital surged into developing countries in Asia. According to IMF(1995a), these countries experienced a net inflow of $261 billion during the period, more than twice that for the entire 1980s. It was approximately 50 percent of total capital inflows into all developing countries.[1]

However, much of the inflow in the 1990s has been portfolio investment, a contrast to the 1980s. While the share of foreign portfolio investment in total net inflow was 8 percent

[1] Asian developing countries include Asian NIEs, ASEAN and other Asian countries except Japan.

on average during 1983-89, it rose to 24 percent during 1990-94. Net foreign portfolio investment increased from $10 billion during 1983-89 to $63 billion during 1990-94. Still, even in the 1990s, FDI has been the most important source of external financing in these countries. The net inflow of FDI markedly increased from $36 billion during 1983-89 to $117 billion during 1990-94, accounting for 45 percent of the total net inflow. (For developing countries in the Western Hemisphere, portfolio investment represented 66 percent of the total net capital inflow during 1990-94, while FDI represented 30 percent during the period.)

A number of developments in these economies and in the industrial economies have been suggested as causes of the inflow. East Asia including China has been the most rapidly growing and dynamic region in the world. The higher demand for capital, arising from the need to sustain a high rate of investment, and favorable growth prospects have attracted a large amount of foreign investment in this region. Such investment has become easier as East Asian economies have deregulated their domestic markets and liberalized capital account transactions. Domestic financial reform and financial-market opening have greatly facilitated foreign investment in domestic securities. Finally, the decline in interest rates and the international diversification of the portfolios of institutional investors in the industrial countries also have contributed to increased capital flows.

The capital inflows in foreign direct and portfolio investment have been crucial to supporting a high rate of investment and GDP growth in Indonesia, Malaysia and Thailand. At the same time, however, inflows of speculative short-term capital have undermined macroeconomic stability because they have resulted in large swings in key financial variables including the exchange rate. Some countries have, therefore, resorted to direct control

measures to dampen short-term capital movements.

This paper analyzes the experiences of managing capital flows in four East Asian countries with different economic and institutional structures: the four countries are Indonesia, Malaysia, South Korea, and Thailand. They have been the major recipients of foreign capital in Asia. Compared to the entire 1980s, the amount of net capital flows to these four countries during 1990-94 doubled, totalling $144 billion and accounting for about 55 percent of total net capital flows to Asian developing countries.

The next section outlines the nature of capital flows in these countries. This is followed by an examination of the process of and driving forces behind liberalization of the capital account. Macroeconomic effects of and policy responses to capital inflow are then analyzed. We then consider some of the policy measures that were implemented and other measures that have been contemplated for the efficient management of capital inflow.

II. Trend and Composition of Foreign Capital Flows in the 1990s

II-1. Korea

Korea began to witness a surge in the inflow of foreign capital in 1991. The large interest rate differential between domestic and foreign financial markets coupled with the favorable prospects of the economy has made Korea one of the most attractive markets among emerging economies to foreign investors, and the capital account decontrol triggered a massive inflow. The total net inflow during 1990-94 was $32.1 billion, more than ten times the total

for the 1980s.

However, considering the size of the economy, the magnitude of the flow has been relatively small compared to other East Asian countries. The capital account surplus between 1990 and 1994 averaged only 2.0 percent of GDP, compared to 10.6 percent for Thailand, 9.3 percent for Malaysia, and 4.9 percent for Indonesia. Part of the difference is attributable to Korea's tighter control of capital movements. Mainly, however, it is because of a relatively smaller current account deficit -- in other words, Korea's investment-saving gap has been narrower compared to the three other countries (see Figure 1).

In the 1990s, the main capital flow into Korea was portfolio investment (see Figure 2.1). Net foreign portfolio investment increased from just $29 million in 1989 to $3.2 billion in 1991, and peaked at $11.0 billion in 1993. The cumulative amount during 1991-94 was $27.2 billion, accounting for 88 percent of the total foreign capital inflow during the period.

FDI had been the main source of inflow in the second half of the 1980s, but it peaked in 1991. In the first half of the 1990s, Korea became relatively less attractive to foreign corporate investment because of large increases in production costs. Long-term foreign loans recorded a net outflow as loan repayments continued. (See Park (1995) for a more detailed discussion of foreign capital flows into Korea in the 1980s and 1990s.)

The increase in portfolio investment in the 1990s was due primarily to relaxation of rules on overseas issuances of securities by domestic firms and the opening of the Korean stock market. A decrease in world market interest rates resulting from the recession in the developed countries urged Korean firms and banks to mobilize the cheaper foreign funds available in the international capital markets. At the same time, low interest rates in the

industrial economies provided strong incentives for the international investors to increase their holdings of securities in the emerging markets including Korea.

Opening of the Korean stock market in January 1992 accelerated the inflow, but issuances of securities in international financial markets continued to be a significant portion. From the first quarter of 1992 through to the third quarter of 1995, the cumulative inflow of foreign capital related to overseas issuances of securities by domestic firms and banks amounted to $19 billion, accounting for approximately 62 percent of the total inflow of portfolio investment. In particular, the dominance was pronounced during 1994-95, when the Korean stock market performed poorly. Between October 1994 and June 1995, a net outflow of $634 million was recorded in the net inflow of nonresident investment in the Korean stock market.

II-2. Thailand

Thailand has seen a large increase in foreign capital inflow since around 1988. The net inflow of foreign capital increased from $1 billion in 1987 to $3 billion in 1988 and skyrocketed to $14 billion in 1993. The cumulative net inflow was $66 billion during 1988-94, more than eight times greater than the cumulative amount during 1980-87.

Figure 2.2 depicts the trend of foreign capital inflow in each group; long-term loan, FDI, portfolio investment and other foreign investment (OFI). It shows that OFI, which is the sum of short-term borrowing by commercial banks and nonresident baht account deposits, has been a major source of foreign capital inflow except for 1991. Its amount has increased

significantly since 1988 mainly due to the large increase in nonresident baht account deposits except for 1994 and especially during 1991-93. They represent about 70 percent of the cumulative inflow of OFI during 1991-93. Reasons for this include the fact Thailand offers higher interest rates than industrial economies and the government has allowed exporters to receive payments from nonresident baht accounts. Foreign exporters were more inclined to receive payments through the nonresident baht account in order to minimize their foreign exchange risk. Additionally, foreign investors have used these accounts as a parking place for funds before making other investments, especially portfolio investment, as the Thai stock market showed improvement. In 1994, an increase in commercial banks' short-term borrowing prompted by establishment of the Bangkok International Banking Facilities in 1993 (discussed later) accounts for most of the inflow of OFI.

FDI has decreased from a peak of $2.4 billion in 1990. An important reason for this is the country's poor infrastructure, which has lowered potential returns on investment. A general decline in global FDI during 1990-91 and intense competition from developing countries such as China, Vietnam, and India are additional causes. It should be noted that Malaysia, which has relatively good infrastructure and a somewhat more skilled labor force, has maintained substantial FDI despite these factors. A high interest rate differential boosted long-term borrowing from abroad, especially during 1989-91.

Foreign portfolio investment showed a drastic rise in 1993, jumping from $750 million in 1992 to $5.5 billion in 1993, and accounted for more than one-third of the total net inflow of foreign capital. The sharp increase was due to renewed confidence in the Thai stock market among foreign investors after the general election in September 1992, the higher

interest rate differential between Thailand and the industrial economies, and increased stability of the baht. The strong global trend of investing in emerging markets by international institutional investors was also an important cause. In 1994, however, portfolio investment greatly decreased as rising interest rates in industrial economies narrowed the interest rate differential.

II-3. Malaysia

In Malaysia, the surge in foreign capital inflow started in 1989 when the inflow moved to $1.3 billion from an outflow of $0.9 billion in 1988. The inflow jumped to $4.7 billion in 1991 and to $10.9 billion in 1993. The cumulative inflow was $26 billion during 1989-93, compared to $17 billion during the 1980s.

Figure 2.3 depicts the trend of long-term loan, inward FDI, and other foreign investment (OFI) in Malaysia. It shows FDI was the principal source of inflow during the second half of the 1980s and until 1992, accounting for about 86 percent of the total net inflow during 1989-92. Sustained fast economic growth with sound economic fundamentals was the main factor driving FDI during this period; deregulation of inward FDI and introduction of incentives also contributed. Malaysia lifted or relaxed restrictions on foreign ownership and types of FDI, as well as simplified approval procedures. Generous tax incentives, including total exemption of corporate and income taxes in certain cases, were also introduced. External factors include the continued appreciation of the Japanese yen and rapidly rising labor costs in the Asian NIEs.

Figure 2.3 shows other foreign investment (OFI), negligible until 1990, began to increase significantly in 1991, and in 1993 it exceeded FDI. For Malaysia, OFI includes portfolio investment and commercial banks' short-term external liabilities which are largely associated with their short-term borrowing and nonresidents' ringgit account. It amounted to $5.3 billion in 1993, more than two and a half times the 1992 level. It also should be noted that in 1993, there is an errors and omissions entry of $4.0 billion in the capital account, much larger than in previous years. Aziz (1994) says this was closely related to the inflow of foreign portfolio investment.

The increased inflow of portfolio investment and commercial banks' borrowing was attributed to a large gap between domestic and foreign interest rates, the promising prospects of the Malaysian economy, and the improved performance of the domestic stock market partly related to privatization of several state enterprises.

In early 1994, the Malaysian government implemented several administrative measures in order to curb the inflow of short-term speculative capital. As a result, OFI recorded a large net outflow.

II-4. Indonesia

Indonesia has experienced massive inflows of foreign capital since 1990. The inflow increased from $3.6 billion in 1989 to $6.8 billion in 1990 and to $7.1 billion in 1992. The cumulative amount during 1990-94 was $34 billion, compared to $25 billion during 1982-89.

Long-term loan was the principal form of inflow throughout the 1980s and until 1993

(see Figure 2.4). During 1990-93, it amounted to $16 billion, representing about 57 percent of the period's total net inflow of foreign capital. While most borrowing during the 1980s was by the public sector, the level of borrowing by private firms and banks has increased substantially since 1990. During 1990-93, the net inflow of long-term loan raised by private and public sectors was $12.4 billion and $3.3 billion, respectively, while the corresponding figures were $0.5 billion and $20.2 billion for the period between 1982 and 1989. Removing the ceiling on foreign commercial borrowing by banks in 1989 and high domestic interest rates in the early 1990s are the principal factors in the increase in private borrowing. The introduction of a swap facility with Bank Indonesia, the central bank, also helped.

Indonesia's dependence on long-term loan has been greater than that of Korea, Malaysia, or Thailand. Indonesia's access to international capital markets has been limited due to the low credit rating of its domestic firms. Deregulation of inward FDI and an improved economic outlook have helped increase the flow of FDI. Still, Indonesia has not been able to secure enough FDI to fill as much of the investment-saving gap as the other East Asian countries such as Malaysia. This is attributable to poor infrastructure and low-quality labor. Accordingly, Indonesia had to rely on loans with government guarantees.

However, the loan portion of the total capital inflow fell in the 1990s, while that of FDI and portfolio investment rose compared to the 1980s. While FDI and portfolio investment made up only 12 percent and 7 percent, respectively, of total inflow during 1982-89, their shares increased to 23 percent and 21 percent during 1990-93. Finally, the amount of inward FDI exceeded that of long-term loan in 1994.

Most of foreign portfolio investment in Indonesia has been made through the stock

market in which foreign investors were allowed to participate in 1987. Increased portfolio investment in the early 1990s is closely related to deregulation of domestic capital markets such as the simplification of requirements for listing on the stock exchange and the establishment of OTC market. The bullish stock market and the large interest rate differential between Indonesia and industrial countries resulted in a large inflow of portfolio investment in 1993. Since 1993, with improved credit rating of Indonesian firms, issuances of Indonesian securities in international capital markets have increased.

III. Liberalization of the Capital Account

III-1. Korea

Since the early 1960s, developments in the current account dictated the way capital controls were implemented. For example, if the current account deteriorated, restrictions on capital outflows were tightened while those on inflows were loosened.

In the first half of 1980s, the current account continued to be in deficit although the size of the deficit was steadily decreasing. The Korean economy had difficulties in attracting foreign capital because of high country risk relating to political instability and the continued depreciation of the Korean won. In an effort to ease the difficulties, the government tightened regulations on capital outflows mainly by restricting residents' overseas investments, and took several measures to ease inward capital movements. In 1981, for example, foreign investors were allowed to participate in the Korean stock market through the investment trust funds

set up exclusively for them and, in 1985, Korean firms were allowed to raise capital overseas by issuing convertible bonds, bonds with warrants, and depositary receipts.[2]

The easing led to a sharp increase in borrowing from abroad by domestic firms and banks and, in 1986, the current account recorded a surplus which continued to expand until 1989. This surplus resulted from the recovery of the world economy and the rapid appreciation of the Japanese yen which improved the competitiveness of Korean exports. Foreign exchange reserves, only $2.8 billion at the end of 1985, reached $12.6 billion a year later and $15 billion at the end of 1989. To reduce what it considered excessive foreign exchange holdings, the government abolished all restrictions on residents' foreign direct investment below $1 million and permitted residents to purchase foreign real estate for business purposes. However, commercial loans to domestic firms, except public enterprises, were not allowed. The issuance of bonds and depositary receipts by residents also was restricted.

In 1990, the current account balance moved into a deficit because of rising domestic wages, real appreciation of the won, and deterioration of the world economy. The current account worsened in 1991, generating a deficit of $8.7 billion which was more than four times the level in the preceding year. The amount of foreign exchange reserves held by the Bank of Korea fell markedly. Facing difficulties in financing the mounting current account deficit, the government once again liberalized the capital account by amending the Foreign Exchange

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[2] The Korea International Trust was the first fund designed specifically for foreign investors. It was established in 1981 by the Hankuk Investment Trust Corp. The Korea Fund, organized under US law and listed on the New York Stock Exchange, was launched in 1984. Others followed, including the Korea Europe Fund (based in Guernesy and listed in London) in 1987 and the Korea Asia Fund (based in Cayman Islands and listed in Hong Kong and London) in 1991.

Management Act (FEMA).

Under the 1991 amended FEMA, those transactions classified as capital inflows were liberalized first, although the positive list system of control -- only those transactions specifically listed are allowed -- remained intact. A negative list system -- only those transactions specifically listed are not allowed -- was adopted for current account transactions. Residents could raise funds by issuing securities abroad under certain conditions. Restrictions on direct investment by nonresidents were almost completely lifted. Most importantly, effective from January 1992, foreign investors were allowed to invest directly in the Korean stock market, although with a number of restrictions, including a 10 percent limit on the percentage of any firm's listed stock that nonresident investors as a group could hold. (The limit was raised to 12 percent in December 1994 and to 15 percent in July 1995.)

As a result of these measures, capital inflows, mainly in the form of portfolio investment, began to surge in 1991. Net foreign capital inflow in 1990 was only $1.3 billion, but increased to $5.7 billion in 1991 and to $9.6 billion in 1993. Net foreign portfolio investment accounted for 51 percent of the increases in total net foreign capital inflows in 1991 and 180 percent in 1993 (a year with negative direct investment). During this three-year period, the cumulative total of the current account deficit was $12.9 billion, whereas foreign portfolio investment amounted to $21.9 billion. The surge in capital inflow resulted in a large surplus in the overall account.

A sudden increase in foreign capital inflow on top of the improvement in the current account threatened the stability of both domestic financial markets and the economy, so several steps were taken to liberalize outward capital movements and thus reduce the overall

account surplus. Domestic institutional investors such as securities firms, insurance companies, and investment trust companies were allowed to invest in foreign securities without any restrictions, and the mode of controlling residents' direct investment abroad was changed from a positive to a negative list system in February 1994.

Even though many controls on foreign exchange and cross-border capital transactions were removed or relaxed, the foreign exchange system was still subject to severe criticism for being too restrictive. Among other things, the rigid controls were claimed to undermine the international competitiveness of domestic firms. In response to these complaints and foreign pressure for further deregulation, the government unveiled a new Plan for Foreign Exchange System Reform in December 1994. The Plan attempts to completely liberalize the current and capital account transactions (with a few exceptions) and to develop an efficient domestic foreign exchange market over a five-year period divided into three stages. It espouses a gradual liberalization process, with the actual speed of liberalization adjusted to the state of the economy. A focal point of the reform is adoption of the negative list system in more areas. Removal of restrictions on capital outflows is given a higher priority than liberalizing inflows. Capital account transactions closely related to investment in the real sector is deregulated prior to cross-border financial transactions (see Korea Ministry of Finance and Economy (1994) and Korea Institute of Finance (1994) for more details).

Implementation of the first stage of the capital account liberalization, focused on the decontrol of capital outflow, began in February 1995. Among other things, the limit on the amount that domestic pension funds can invest in overseas securities was abolished and domestic residents for the first time were allowed to hold overseas deposit accounts.

Korean policymakers have been reluctant to liberalize the capital account rapidly. There is considerable concern that devastating macroeconomic instability would result from the sudden opening up of financial markets. In contrast, efficiency gains to the economy from liberalization are considered to be relatively small, possibly even insignificant, and at best realized in the long run.

In a number of countries, capital account liberalization has increased the volatility of financial markets, including the foreign exchange market. Furthermore, little is known as to how a small, semi-open economy such as Korea, in a disequilibrium characterized by a domestic interest rate twice as high as that in international financial markets, would move to a new equilibrium if restrictions on capital account transactions are removed suddenly and completely. At present, domestic financial markets are underdeveloped and domestic financial institutions have little competitive advantage over their foreign counterparts.

III-2. Thailand, Malaysia, and Indonesia

Unlike Korea, these countries liberalized capital account transactions earlier and more aggressively. Given their low saving rates, they needed a large amount of foreign capital to promote economic growth. To attract more foreign capital, they actively deregulated inward foreign direct investment and cross-border financial transactions as capital inflows decreased sharply after the Latin American debt crisis in 1982.

III-2-1. Foreign Direct Investment

The inflow of foreign direct investment (FDI) to these countries has risen markedly since the late 1980s, attracted by strong economic performance and helped by the removal of restrictions and introduction of incentives. While cumulative inflow of inward FDI in Thailand was $2 billion during 1980-87, it increased to $12 billion during 1988-94. Total inward FDI in Malaysia was $23 during 1988-94, compared to $7 billion during 1980-87. For Indonesia, the numbers are $2 billion for 1980-87 and $10 billion for 1988-94.[3]

Thailand had lifted many restrictions on inward FDI during the 1970s, mainly through the Alien Business Law of 1972 and the Investment Promotion Act of 1977. These two acts basically espouse the negative list system. In the latter half of the 1980s, the Thai government broadened and speeded up the liberalization process in order to attract more foreign capital and thereby help sustain the country's rapid economic growth. While restrictions on inward FDI in import-substitution industries were largely lifted in the 1970s, the deregulation of inward FDI in the 1980s and 1990s focused on export industries, with the expectation that the expansion of labor-intensive export industries would boost employment and help reduce the current account deficit.

In 1991, foreign investors were allowed to own 100 percent of a firm that exported all of its output. Additional incentives for FDI in export sectors, such as tax abatement or exemption, were introduced. The government also introduced incentives to nonresidents who

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[3] The Japanese firms have been the most active foreign investors in these countries. The sharp appreciation of the yen vis-a-vis other major currencies after the Plaza Accord in 1985 drove many Japanese firms to move production facilities to South East Asian countries to take advantage of their lower wages and natural resource costs. Japan accounted for 40 percent of total inward FDI in the three countries during 1990-92.

invested in exporting activities outside of Bangkok. These included a five-year exemption from tariffs on imports of raw materials for foreign companies that located in "remote areas" and exported more than 30 percent of their output. In contrast, only a one-year exemption is given companies locating in the Bangkok area.

Foreign companies establishing in outlying areas can receive exemption from the corporate income tax for up to eight years. The maximum imports tariff rate was reduced from 100 percent to 30 percent as of January 1, 1995. With the help of these deregulatory measures, annual inward FDI in Thailand increased from $0.4 billion in 1987 to $2.4 billion in 1990, although it has declined some since 1991.

In Malaysia, much of the liberalization of inward FDI took place during 1985-87. In 1985, as an incentive to encourage the transfer of advanced technology to the domestic industries, the Malaysian government permitted nonresidents to own more than half of companies considered high-tech. The Promotion of Investment Act of 1986 provided various incentives for foreign investment in manufacturing, agriculture and tourism. These included simplification of the investment process and raising the limit on the percentage of a joint-venture that nonresidents could own. Since 1987, nonresidents have been allowed to wholly own companies that export at least 80 percent of their output and to purchase domestic real estates for business purposes with funds brought in from abroad.

Starting in 1989, foreign firms could issue corporate bonds in the domestic securities market. In the same year, legislation was passed to protect the copyrights of nonresidents for 25 years. These measures helped increase annual inward FDI from $0.7 billion in 1988 to $2.3 billion in 1990 and to $5.2 billion in 1994.

In Indonesia, from the 1970s until the mid 1980s, the bulk of inward FDI was concentrated in the oil and gas sector. This meant ever-greater dependence of the economy on these industries. In an effort to develop a more balanced industrial structure and promote manufactured exports, Indonesia actively began to liberalize inward FDI in the non-oil-and-gas sector. In 1985, the approval process for inward FDI was considerably simplified and, in the following year, nonresidents were allowed to establish joint ventures in the non-oil-and-gas export sector. Initially, maximum nonresident ownership of joint-ventures that exported all of their products was set at 80 percent. The limit was raised to 95 percent in 1987. More importantly, a negative list system was adopted in managing inward FDI in 1989. The minimum amount of inward FDI was gradually reduced from $1 million and was abolished in 1994.

In 1994, foreign investment was allowed in previously barred sectors such as telecommunication, ports, railways, and nuclear power. During the early 1990s, most remaining restrictions on foreign ownership were removed so that by 1994, 100 percent ownership was possible in most industries. With help of these measures, the amount of inward FDI increased from $0.6 billion in 1987 to $1.5 billion in 1991 and then to $2.0 billion in 1994.

III-2-2. Portfolio and Other Investment

Along with the deregulation of FDI, the three countries also speeded up the liberalization of cross-border financial transactions throughout the 1980s and early 1990s for

the purpose of diversifying sources of foreign funds and encouraging development of their domestic financial markets.

Thailand began to accelerate liberalization of cross-border financial transactions in the mid 1980s. The government created two funds for foreign investors in Thai securities, the Bangkok Fund in 1985 and the Thailand Fund in 1986, and allowed ten more funds during 1987-90. In 1987, in response to the foreign-ownership limit having been reached for so many companies, the Stock Exchange of Thailand established an Alien Board where foreign investors can trade such stocks among themselves. (In general, foreign investors are restricted from holding more than 49 percent of a Thai company's total listed shares, but the limit varies by industry. For example, a 25 percent limit applies to banking.)

The Bangkok International Banking Facilities (BIBF) was launched in March 1993 with the expectation they would lower the borrowing cost of foreign capital and develop Thailand as a regional financial center. BIBF is Thailand's version of an offshore financial market, in which commercial banks with BIBF licenses are allowed to carry out lending (out-in) and other international and investment banking activities as well as traditional offshore banking (out-out). In 1993, 47 commercial banks were granted BIBF licenses. This included 32 foreign banks, 12 that already had been operating in Thailand and 20 newcomers. (See Tivakul and Svetarundra (1993) and Vichyanond (1994) for more details on BIBF.)

Malaysia allowed foreign investors to participate directly in its domestic stock market in 1973 when the Kuala Lumpur Stock Exchange was established. (As of 1995, a foreign individual cannot hold more than 30 percent of the listed shares of any one company, and those wishing to hold more than 15 percent or 5 million ringgit worth must obtain approval

from the Foreign Investment Committee.) Since 1985, foreign securities companies have been allowed to open branches and, since 1986, to invest in local securities firms. In 1987, the maximum amount of residents' overseas borrowing in foreign currency that could be raised without central bank's approval was increased from 100 thousand ringgit to 1 million ringgit.

In 1988, foreign stock brokerage firms were allowed to increase their equity shares in local brokerage firms from 30 percent to 49 percent. During 1987-89, three investment trust funds for foreign investors were established to promote foreign participation in the local stock market. Malaysia opened Labuan International Offshore Financial Center in 1990.

Indonesia, in an attempt to facilitate more capital inflow, embarked on active liberalization of cross-border financial transactions in the mid 1980s. Foreign investor participation in the domestic stock market was first allowed in 1987, with a 49-percent limit on ownership of companies. The government allowed nonresidents to establish joint-venture securities firms with residents in 1988, and the ceiling on foreign commercial borrowing by banks was removed in 1989. The purchase of bank shares by nonresidents, initially banned, were allowed up to 49 percent in 1992.

It should be, however, noted that there have been recent changes in capital account liberalization policies of South East Asian countries. A number of measures have been adopted to reduce the volume and volatility of short-term flows as the massive inflow of foreign capital over a short period of time was seen as destabilizing their economies. Malaysia and Indonesia imposed quantitative restrictions on capital inflows, while Thailand sought to deregulate outflows.

Thailand chose to liberalize outflows rather than to restrict inflows. By liberalizing

foreign exchange controls in three stages from 1990 through 1994, most restrictions on outflows were removed. Previously, the outflow of capital was tightly controlled and there were almost no restriction on inflow. The first round of the liberalization process in May 1990 focused on deregulation of current account transactions. The second (April 1991) and third rounds (February 1994) saw most of the controls on capital outflow transactions lifted. For example, in 1991, the government allowed Thai investors to freely transfer domestic capital up to $5 million for direct investment and removed the requirement that repatriation of investment first be approved. In 1994, it raised the maximum amount of capital that could be taken out of the country to Vietnam and bordering countries to 500,000 baht (about $20,000). Among the remaining restrictions, purchase of foreign securities and real estate by residents needs approval from the Bank of Thailand.

The Malaysian government in 1991 made outstanding ringgit received through swap transactions with nonresidents subject to a reserve requirement. In 1992, the total amount of borrowing in foreign currency from domestic banks by a resident was limited to 1 million; previously there was no maximum. In early 1994, the government also implemented administrative controls to discourage the inflow of foreign capital, especially speculative short-term capital. These included prohibiting the sale of short-term money market instruments to nonresidents, commercial bank swaps, and forward transactions on the bid side with foreign customers. The first has proved to be most successful in curbing the inflow of short-term capital (IMF (1995a)).

Indonesia adopted several measures in 1991 to discourage overseas borrowing. Bank Indonesia, the central bank, reduced its swap operation by lowering an individual bank's limit

from 25 percent to 20 percent of capital, raising its swap premium by 5 percentage points, and announcing that future swap operation could be undertaken only at its initiative. Limits were imposed on offshore borrowing by state-enterprises and commercial banks, and all state-related overseas commercial borrowing had to obtain prior approval from the government. In the same year, a debt management team was organized to supervise foreign loan transactions.

IV. Macroeconomic Effects of Capital Inflows and Policy Responses

IV-1. Inflation, Real Exchange Rate and Financial Market Volatility: an Overview

The effects of capital inflows on a recipient country's economy depend on the size and composition of the inflows, the foreign exchange rate system, developments in domestic financial and capital markets, and the availability and flexibility of economic policy measures. Usually, a surge in capital inflows causes the nominal and real exchange rate to appreciate and the current account to deteriorate. It may also lead to an increase in monetary aggregates, thus giving rise to a higher inflationary pressure.

Figure 3 compares the average inflation rate (measured by CPI) and depreciation rate of the real effective exchange rates in the second half of 1980s with those of the first half of 1990s when these countries witnessed a surge in foreign capital inflow. Inflation rate increased in all four countries in the 1990s compared to the previous period. However, this was not necessarily a result of foreign capital inflow. Obviously, a more sophisticated and

extensive econometric study is required to establish the causality between a higher rate of inflation and foreign capital inflow in these countries.

Most Latin American countries experienced an appreciation of the real exchange rate in the 1990s as a consequence of capital inflows (Mathieson and Rojas-Suarez (1993)). For these four Asian countries, however, real effective exchange rates depreciated, on average, in the 1990s.

The difference in the movement of real exchange rates is closely related to the composition of the aggregate demand. In Asian countries, investment as a share of GDP generally showed a rising trend during the period of capital inflows. In Latin America, investment fell and consumption rose, especially during 1990-91. Differences in the behavior of government consumption are also a factor (see Khan and Reinhart (1995), Leiderman (1995), and Calvo, Leiderman and Reinhart (1994)). In response to capital inflows, Asian countries maintained a fiscal discipline. Usually, public consumption is more biased toward non-traded goods than private consumption.

The stability of these countries' real effective exchange rates in the 1990s has been also greatly affected by the steep nominal appreciation of the yen against the US dollar, coupled with the stability of the four countries' nominal exchange rates against the US dollar. This brought about a sharp nominal depreciation of their currencies against the yen. Given that Japan is a major trading partner, this generated a substantial downward pressure on their real effective exchange rates. However, there was only a small influence on the real effective exchange rates of Latin American countries, as their trade with Japan is relatively less important.

The movement of foreign capital in massive amounts may increase the volatility of domestic financial markets, including the foreign exchange market. To examine whether

financial markets have become more volatile compared to the pre-capital-inflow period, GARCH variance has been estimated. Figures 4.1 to 4.4 depict the GARCH variance of the rate of change in weekly average nominal exchange rate in each country.[4]

The figures do not show any clear evidence that the volatility of the exchange rate increased during the period of capital inflows (1990s) compared to earlier periods. This presumably is due to the similar exchange rate policy adopted by each country in the face of a surge in capital inflows. The response has been to maintain the international price competitiveness of exports by preventing a rapid appreciation of the nominal exchange rate or even inducing depreciation through intervention in the local foreign exchange market.

The movement of the won-dollar exchange rate has become more volatile since early 1995, as seen in Figure 4.1. This could be explained by government's refraining from intervention in the local foreign exchange market, which suggests volatility may have been suppressed by intervention until 1994.

Figure 4.4 displays a high and persistent volatility of the rupiah-dollar rate from the second half of 1990 through the first half of 1991. This was because the Indonesian government pursued depreciation of the rupiah more actively than before as the current account deficit unprecedentedly increased during that period.

The increased volatility of the ringgit-dollar rate in early 1994 was closely related to

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[4] The GARCH variance (h_t) of the rate of change in the weekly average exchange rate of the local currency against the US dollar (R_t), is estimated by the following model:

$$R_t = a + bR_{t-1} + u_t$$

where $u_t / \Omega_{t-1} \sim N(0, h_t)$, and

$$h_t = w + \alpha u^2_{t-1} + \beta h_{t-1}$$

capital flows. The Malaysian government imposed several direct measures in early 1994 to curb the inflow of speculative short-term capital. This prompted foreign investors to withdraw investments from Malaysia, which led to a large depreciation of the ringgit over a short period of time.

Figures 5.1 to 5.4 show the GARCH variance of weekly stock returns in each country. An increase in foreign participation in a stock market may raise volatility (Folkerts-Landau, Schinasi and others (1995) and IMF (1995a)). Domestic investors in emerging markets sometimes follow the strategies of foreign institutional investors who are considered to have more advanced skills in stock investment, thereby amplifying any volatility. However, there is no strong evidence in the data that opening of these countries' stock markets or the inflow of capital during the 1990s resulted in increased volatility. This is consistent with the results of Kim and Singal (1995) and the IMF (1995a). Indeed, the volatility of stock returns in Korea tended to decrease after the stock market opening in January 1992 (see Figure 5.1).

However, the figures do show that the presence of more foreign capital can weaken the stability of a stock market for at least a short period of time. From late 1993 into early January 1994, a massive inflow of foreign capital contributed to a rapid rise in stock prices on the Kuala Lumpur Stock Exchange, and in the first half of 1994, an outflow of foreign capital led to a rapid fall in stock prices. These resulted in an increased volatility of stock returns in Malaysia (see Figure 5.3). The Thai stock market saw a sudden outflow of foreign funds (related to the Gulf War) in the second half of 1990, and the Thai and Malaysian stock markets in early 1995 witnessed quick withdrawals of foreign investment prompted by the

Mexican crisis. Such flows caused an increase in volatility of stock returns, which can be seen in Figures 5.2 to 5.3.

Figures 6.1 to 6.2 show the GARCH variance of weekly interest rate (yield on three-year bank guaranteed corporate bonds for Korea and three-month interbank interest rate for Malaysia). In case of Korea,.large increases in volatility can be seen from late 1990 through 1991, from mid 1993 to mid 1994 (except in late 1993), and in 1995. The first is mainly related to domestic interest-rate liberalization and the second reflects the introduction of Real Name Financial System in August 1993 along with the liberalization of domestic interest-rate. The third is partly attributable to an increase in foreign capital inflow. For Malaysia, the volatility of the interest rate was very high for two years before the surge in capital inflow in 1989. Since then, however, the volatility has tapered off considerably although it rose sharply in 1994 when the monetary authorities eased their commitment to stabilizing the interest rates through sterilization.

Faced with a surge in the inflow of foreign capital, the four countries have sought to stabilize the exchange rates of their currencies in order to protect export sectors. Simultaneously, they have used monetary sterilization to absorb the excess liquidity resulting from the increases in net foreign assets. Strong fiscal discipline has been also maintained, especially in Thailand. The remainder of section IV looks at the effects of foreign capital inflows on the economy of each country and evaluates the effectiveness of the economic policy responses.

IV-2. Macroeconomic Effects and Policy Responses

IV-2-1. Korea

Since the mid 1960s, Korea's economic growth has been propelled by the rapi expansion of exports and investment arising from increases in foreign demand. Reflectin this export-oriented development, the degree of openness (exports plus imports as a percentag of GDP) has been very high since the mid 1980s.

The country's policymakers have been very careful not to allow the competitivenes of Korean products to fall behind competitors in other countries. Between 1990 and 1993 the foreign exchange rate policy was geared to maintaining a weak won regardless of whethe the overall balance was in surplus or deficit. As a result, the Korean won depreciated eve when a large capital inflow generated an overall account surplus.

The overall account recorded deficits in 1990 and 1991 because of a large curren account deficit (see Table 1). This was accompanied by a depreciation of the won agains the US dollar. Since 1992, the won has been experiencing strong upward pressures as a resul of large overall surpluses. Both a large increase in foreign capital inflow and improvemen in the current account have contributed to this. Despite the surpluses, the won continued t depreciate until the end of 1993, implying that the Bank of Korea actively intervened. Thi can be seen from the $8.6 billion increase in the Bank of Korea's net foreign assets durin 1992 and 1993, when the overall account surplus was $11.4 billion.

Since 1994, the won has steadily appreciated against the US dollar, mainly becaus

of the marked appreciation of the yen-dollar rate, which has led to a large depreciation of the real effective exchange rate of the won since 1992. Between 1992 and the second quarter of 1995, the real effective exchange rate depreciated 28 percent, entirely accounted for by the yen's appreciation against the dollar. The strong yen has contributed to a sharp increase in export earnings and thus meant that the central bank could let the won appreciate some without risking erosion of the price competitiveness of Korean exporters. The large capital inflow and export expansion resulted in an overall account surplus of $2.8 billion in 1994. Although the surplus was large, so long as the yen remained strong, the Bank of Korea did not consider it necessary to intervene in the foreign exchange market.

As to monetary policy, it appears that the Bank of Korea resorted to active sterilization to counter the effects of foreign capital inflows on the money supply. Foreign exchange market intervention increased the holdings of foreign assets by the central bank, thereby increasing the money supply -- which is the most carefully monitored intermediate target of monetary policy. To offset the increase, the monetary authorities required financial institutions to purchase monetary stabilization bonds (MSBs). Kim (1991) calculates that the Bank of Korea sterilized about 90 percent of the increase in net foreign assets during the 1980s.

Figure 7 shows changes in the net domestic assets and net foreign assets of the Bank of Korea from 1986 to 1994. The amount has changed considerably even after the market average exchange rate system (MARS) was adopted in 1990. This implies the bank continued

to intervene to stabilize the foreign exchange rate. The intervention was most active during 1992-93 because of the large increase in foreign portfolio investment. The figure also shows that changes in NFA and NDA have been inversely related to each other, suggesting the Bank of Korea has actively engaged in mopping up increases in the money supply resulting from its foreign exchange interventions.

Due to sterilization, Korea's money supply growth has been kept under control. As seen in Table 1, it has been decelerating continuously since 1990 and inflation rate as measured by the CPI has also been falling. While Korea has avoided serious inflation, interest rates have risen gradually since 1993 due to the crowding-out effect of the massive sterilization. The wide interest rate gap between Korea and the industrial economies, which has been a major reason for capital inflows, has persisted.

Sterilization through sales of MSBs has other costs besides giving rise to higher interest rates: an increase in interest payments on MSBs is likely to produce inflationary pressure. Indeed, interest payments on MSBs explain more than 70 percent of the increase in the monetary base since 1990. The Bank of Korea thus faces significant difficulties in further use of sterilization to manage foreign capital inflows.

IV-2-2. Thailand

Thailand has maintained fast economic growth since the late 1980s, with real GDP increases averaging 8.3 percent annually during 1988-94. It is often stressed that the rapid

growth of the Thai economy was largely due to the inflow of foreign capital that began in 1988. The inflows played a significant role in financing a high rate of investment when domestic savings were increasing slowly.

At the same time, Thailand has had to deal with adverse effects on its economy related to the large inflow of foreign capital. A high priority has been given to the exchange rate stability (Nijathaworn and Dejthamrong (1994) and Nijathaworn (1995)). The baht-dollar rate has been more or less fixed since 1989. With Thailand's pursuit of export-led growth, maintaining price competitiveness for its exports has been crucial. A stable exchange rate has enabled the economy to continue to attract the foreign capital needed to maintain a high rate of domestic investment. However, the government's firm commitment to keep the nominal exchange rate stable has added to the burden borne by the monetary sterilization used to mop up the excess liquidity arsing from the increase in foreign assets of the central bank as a result of intervention in the foreign exchange market.

Since November 1984, the baht has been linked to a multiple-currency basket while it was pegged to US dollar previously. The shift of exchange rate regime partly reflected the appreciation of the US dollar in the mid 1980s. Even though the composition of the basket is not disclosed to the public, higher weights are likely to be given to the currencies of Thailand's major trading partners -- the United States, Japan, and Germany. The weights are known to be adjusted according to the developments in foreign exchange markets. (According to Euromoney (1995), the weights are 80-85 percent for the US dollar, 8-15 percent for the yen, and 4-10 percent for the Deutsche mark.)

Each business day at 8:00 AM, the Thai Exchange Equalization Fund (EEF) announces

a basic exchange rate for the baht against the US dollar. The EEF will trade unlimited amounts of the dollar with the commercial banks within a 0.02 baht band around this rate until noon. In the afternoon, the dollar is traded only in the interbank foreign exchange market, where the rate for the baht is largely dependent on expectations of the next day's basic rate.

In setting the basic rate each day, the EEF takes into account the current state and future prospects of exports, imports, and domestic inflation, along with developments in the major currencies in international foreign exchange markets. However, most observers conjecture that the current account balance plays a major role in deciding the basic rate. This is reflected in the fact that the nominal rate has been extremely stable since the late 1980s. Thus, during 1990-94, the baht appreciated against the US dollar by only 0.3 percent annually. This was so despite the fact the overall account has shown a large surplus -- attributable to a substantial inflow of foreign capital more than offsetting a large current account deficit (see Table 2).

From late 1980s onward, the increase in net foreign assets has been the major source of increase in the money supply. This excess liquidity was partly responsible for an increase in domestic demand and a high domestic inflation rate (see Figure 8). The CPI increases rose from 2.5 percent in 1987 to 5.9 percent in 1990. Greater domestic demand also contributed to a deterioration in the current account balance, which in turn reinforced Thailand's need for foreign capital. (The current account deficit as a percent of GDP widened to 8.5 percent in 1990 from 0.7 percent in 1987. Although it has since moderated, it has remained above 5 percent throughout the 1990s.)

Fiscal discipline has been the main instrument to manage the inflow of foreign capital (Nijathaworn and Dejthamrong (1994), and Nijathaworn (1995a, 1995b)). The government has tightened fiscal policy in order to reduce domestic aggregate demand and inflationary pressures, as well as to lower the dependence on foreign capital by increasing national savings. The choice of fiscal policy is related to the ineffectiveness of independent monetary policy under a fixed exchange rate system with free cross-border capital movement. It is also related, according to Nijathaworn (1995a, 1995b), to a policy bias (dating to the mid 1980s) toward strict fiscal discipline as the main medium-term means of stabilizing the macroeconomy. Actual government spending on investment is usually slower than budgeted expenditure, which enables the government to achieve a fiscal surplus more easily.

The government was successfully able to restrain its expenditure and, at the same time, improved tax revenue by enhancing efficiency of tax collection and introducing new taxes, including a value-added tax in 1992. As a consequence, the government was able to achieve a fiscal surplus in 1988 and every year since then. During 1988-94, the average surplus was about 3 percent of GDP. As its fiscal position improved, the government repaid foreign debt in an effort to offset the inflow of foreign capital. The strong fiscal consolidation greatly contributed to a reduction in domestic inflationary pressure. In 1991, the government surplus as a percent of GDP peaked at 4.9 percent, which absorbed more than 20 percent of the increase in the money supply.

An important goal of monetary policy in relation to capital inflow has been on monetary sterilization and interest rate stabilization; the Bank of Thailand has used open market operations in an attempt to control excess liquidity resulting from the increase in its

net foreign assets and to reduce the volatility of domestic interest rates. This has been a policy for short-term management of excess liquidity, while fiscal policy has been used for the medium- and long-term.

Frequent open market operations have been necessary because monetary tightening is only effective in controlling liquidity and interest rates in the short run under a fixed exchange rate regime with a wide-open capital account, as in Thailand (Schadler, Carkovic, Bennett, and Kahn (1993)). As a result, domestic interest rates were persistently higher compared to those of the industrial economies throughout the 1990s and this provided an ongoing incentive for foreign capital to flow in (see Figure 9).

Interventions in the repurchase market for government and state-enterprise bonds and issuance of central bank securities have been the main tools of monetary sterilization. Usually, sterilization has been accompanied by window guidance in which the Bank of Thailand persuades commercial banks to restrain domestic credit. Thailand established a repurchase market in 1979 to encourage development of a money market and provide the Bank of Thailand with a new venue for open market operations. (See Kittisrikangwan, Supapongse, and Jantarangs (1994) for more details on the repurchase market in Thailand.) In fact, open market operations through the repurchase market in Thailand are effective only for very short-term liquidity management as participants prefer transactions with maturities of no more than 14 days. In general, financial institutions use the repurchase market for managing excess demand or supply of funds with a very short time horizon.

To overcome this, since 1987, the Bank of Thailand has issued central bank bonds with maturities between 6 and 12 months. It also established a short-term central-bank bond

market in August 1995. Since then, on a weekly basis it has also issued bonds with maturities ranging from 1 to 6 months. This made the bank's injection or absorption of reserve money more effective.

The government also has dealt with the inflow of foreign capital by deregulating the outflow of capital. By implementing three rounds of foreign exchange liberalization since 1990, it removed all restrictions on capital outflows except a few related to portfolio and property investment. This was also accompanied by tighter prudential requirements for the financial sector with respect to capital adequacy, loan loss provisions, and exposure to foreign exchange risk.

As a result of fiscal discipline, monetary tightening, deregulation of capital outflow, and tighter prudential requirements, the growth of the money supply decelerated and inflation has bene stable throughout the 1990s despite the increase in the inflow of capital. The growth rate of M2 fell from 26.7 percent in 1990 to 15.6 percent in 1992 and to 12.9 percent in 1994. The CPI increase went from 5.9 percent in 1990 to 3.5 percent in 1993, but rose to 5.3 percent in 1994. This rise was related to increased production costs. Continued inflow of FDI increased demand for labor and helped overwhelm the limited available infrastructure, causing wages and the cost of infrastructure to rise. The sharp appreciation of the yen against the US dollar was also a factor. The baht depreciated by 10 percent against the yen during 1994.

Increased foreign portfolio investment exposes Thailand's financial markets to external shocks. Foreign buying of Thai stocks were a major factor in a 88 percent increase in the SET (Stock Exchange of Thailand) index in 1993, following a 26 percent increase in 1992.

Foreign investors accounted for 19 percent of the turnover on the SET in 1993 and 20 percent in 1994.

Thailand experienced some turbulence in its stock and foreign exchange markets because of the Mexican crisis. In mid January 1995, a rumor that the government would be forced to devalue the baht due to the widening current account deficit panicked foreign investors into a massive withdrawal of money from Thailand. They purchased about $5 billion in the local foreign exchange market on January 12, driving the exchange rate against the US dollar in the interbank market down by 4.5 percent to 26.3 baht per dollar. The SET index fell by 5 percent during January 12-13.

The EEF began to intervene by selling unlimited amount of US dollars at a fixed rate of 25.04 baht per dollar. A baht-dollar swap facility was also introduced by the Bank of Thailand in an attempt to gain the confidence of foreign investors. Ultimately, the panic subsided and the foreign exchange and the stock market stabilized. Panic did not become a sustained crisis because Thailand's economic fundamentals are basically sound, especially as compared to Mexico. Nonetheless, careful attention should be paid to the fact that a rumor was able to temporarily destabilize the Thai economy.

IV-2-3. Malaysia

Malaysia has maintained a real GDP growth rate between 7 and 9 percent since 1987. This rapid growth has been due largely to a rapid increase in investment, with foreign capital providing an important source of financing for that investment. According to the estimates

by the central bank (Bank Negara Malaysia (1995)), 1 percent increases in real FDI and foreign borrowing resulted, respectively, in 0.111 percent and 0.056 percent growth in real GDP during 1970-93.

Faced with a substantial foreign capital inflow, until early 1994, the government mainly used sterilized intervention in the foreign exchange market to offset negative consequences to the economy from the inflow .

Since 1975, the ringgit has been pegged to a basket of currencies of Malaysia's major trading partners -- principally the United States, Japan, Singapore, Germany, Great Britain, and the Netherlands. Bank Negara Malaysia, the central bank, has intervened frequently in the interbank foreign exchange market to maintain the ringgit-dollar exchange rate within a target range. It has been widely believed that the bank's target rate has been determined by the movement of an undisclosed multiple currency basket.

During 1990-93, despite a large current account deficit, the overall account maintained a surplus as a result of the huge inflow of foreign capital (see Table 3). In particular, during 1991-93, the interest rate differential between Malaysia and the rest of the world began to widen (see Figure 10). At the same time, the market expected the ringgit to appreciate, as it was considered significantly undervalued. These resulted in an pronounced increase in the inflow of foreign capital in this period.

The overall account surplus raised pressure on the ringgit, but Bank Negara Malaysia was able, except in 1992, to stabilize both nominal and real exchange rates by actively intervening in the local foreign exchange market. In fact, the nominal exchange rate of the ringgit depreciated against the US dollar in 1991 and 1993 (see Table 3). The bank is though

to have allowed the ringgit to appreciate in 1992 as the current account balance improved. The active intervention by the bank led to a substantial increase in its foreign exchange reserves: they jumped from $7.4 billion at the end of 1989 to $10.4 billion at the end of 1991 and to $26.8 billion at the end of 1993. These reserves led to increased liquidity and raised inflationary pressures in the Malaysian economy.

To control excess liquidity, Bank Negara Malaysia has often relied on monetary sterilization. The main instruments during 1991-92 were interbank market operations and changes in the statutory reserve requirement (SRR). The bank tried to absorb excess liquidity by taking out loans with maturities of less than 3 months in the interbank market. To restrain lending by banks, it raised the SRR from 6.5 percent to 7.5 percent in 1991 and then to 8.5 percent in 1992. Additional measures were adopted to contain domestic credit expansion. In 1991, the bank added foreign loans related to swaps and foreign borrowing from off-shore financial markets to the list of liabilities subject to reserve requirements. Also, it required deposits of the Employee Provident Fund (EPF), which holds about 20 percent of financial assets in the country, and those of the government to be transferred from private banks to the central bank. Overall, Bank Negara Malaysia absorbed 24 billion ringgit from the banking sector through sterilization measures in 1992, equivalent to 90 percent of the outstanding stock of reserve money.

However, the monetary sterilization resulted in a persistent rise in domestic interest rates until early 1993, leading to a widening gap between domestic and foreign rates. The high interest rate differential and the buoyant performance of the Malaysian stock market attracted additional foreign capital, especially in the form of portfolio investment, thus

necessitating further sterilized intervention. In an effort to increase the coverage and effect of sterilization, Bank Negara Malaysia introduced the Bank Negara Bill (BNB) and the Malaysia Savings Bond (MSB) in 1993. During the year, it absorbed 6 billion ringgit and 1.4 billion ringgit, respectively, with these. Nonetheless, the principal sterilization measure was still intervention in the interbank market, through which 27 billion ringgit, about 45 percent of outstanding reserve money, was absorbed in 1993.

Fiscal consolidation was also pursued to manage the augmented money supply resulting from the inflow of foreign capital. Efforts were made to restrain government spending and as a result, the government deficit continued to decrease and then in 1993, the fiscal balance recorded a surplus. Re-regulation of the capital account was also introduced. For example, limits on non-trade-related transactions were imposed on commercial banks in 1992.

Despite monetary sterilization and fiscal restraint, the growth of monetary aggregates accelerated during 1990-93 (see Figure 11). The growth rate of M3, an intermediate target of the Malaysian monetary authorities, increased from 12.8 percent in 1990 to 18.2 percent in 1991, to 19.1 percent in 1992, and to 23.5 percent in 1993. The net increase in foreign assets held by Bank Negara Malaysia accounted for 64 percent of the increase in M3 in 1992 and 75 percent in 1993. M2 was also increasing (see Table 3).[5]

Prices rose faster in the early 1990s than they had in the 1980s. For 1990-93, the annual increase in the CPI averaged 4.0 percent, although it began to moderate in 1993. The comparable figure for 1985-89 was only about 1.4 percent. Given that the growth rate of the Malaysian economy had exceeded the potential rate, the rapid monetary growth resulting

[5] M3 in Malaysia is M2 plus all private sector deposits with finance companies, merchant banks and discount houses.

from the inflow of foreign capital raised the inflationary pressure further. While the potential growth rate is estimated by Bank Negara Malaysia (1995) to be 7 to 8 percent, the Malaysian economy actually grown by higher than 8 percent since 1988. Also, the increase in inward FDI raised wages and the costs of other inputs, magnifying inflationary pressures. In the 1990s, Malaysia has witnessed a sharp rise in asset prices. The stock market has been bullish, partly due to significant foreign portfolio investment. In 1993, the Kuala Lumpur Composite Index rose by 98 percent, generating concern about a speculative bubble.

The inflow of foreign capital destabilized the economy and made the central bank lose monetary control (Aziz (1994)). More importantly, the increase in the inflow of short-term speculative capital, especially in 1993, made the financial markets vulnerable to a reversal in the flow. All these prompted Bank Negara Malaysia to implement six administrative measures in January and February 1994 that could effectively contain the inflow, particularly of speculative short-term capital (see Table 4). These include the prohibition of short-term money market instrument sales to nonresidents, a ban on commercial bank swaps unless trade-related, and tight restrictions on forward transactions with foreigners. Liabilities included in computing statutory reserves (SSR) and liquidity requirements were expanded to cover foreign currency deposits, foreign currency borrowing from foreign banking institutions, and interbank borrowing. Also, the SRR was raised to 9.5 percent (it was raised again in May and July 1995).

There was an immediate response from the foreign exchange and stock markets. The ringgit depreciated rapidly due to an outflow of foreign capital. By the end of February 1994, it had depreciated against the US dollar by 3.3 percent from the end of the previous year.

The Kuala Lumpur Composite Index (KLCI), after recording a new high of 1,314 on January 5, 1994, quickly fell below the 1,000 level, losing at 954 points on March 21, 1994.

From the second quarter, however, the ringgit and stock prices began to stabilize. For the rest of the year, the ringgit displayed an upward trend against the US dollar and the KLCI rose steadily. The markets reflected the improved soundness of the Malaysian economy rather than the inflow of speculative funds: high economic growth and fiscal consolidation continued.

The moderation of inflation in 1993 prompted Bank Negara Malaysia to reduce monetary sterilization in 1994. This led to a fall in interest rates, even while they were rising in industrial countries, narrowing the differential between Malaysia and the industrial countries. Lower interest rate together with administrative measures discouraged the inflow of foreign funds and encouraged the outflow of foreign capital invested in the Malaysian securities.

Finally, the second half of 1994 recorded a net outflow of foreign capital as short-term speculative funds moved elsewhere. This resulted in a deceleration of money supply growth. M3, which grew 23.5 percent in 1993, increased only by 13.1 percent in 1994. The inflation also moderated. The CPI inflation rate (year-on-year rate of change) peaked at 4.4 percent in February 1994, falling to 3.0 percent in June 1994. Also, in the second half of 1994, as the economy showed signs of stabilization, Bank Negara Malaysia lifted some of the administrative measures (see Table 4).

The use of administrative measures is controversial. It is often argued that such measures should be used rarely and only temporarily, as they distort the economy in the long

run and damage a country's reputation. However, direct controls, coupled with a low interest rate policy, were considered helpful in curtailing destabilizing short-term flows of foreign capital and restoring economic stability in Malaysia (IMF (1995a)). It should be also noted that this was possible only because of the sound economic fundamentals of the Malaysian economy.

IV-2-4. Indonesia

Rapid economic growth of Indonesia in the 1990s benefitted from an inflow of foreign capital. However, there were also adverse effects such as accelerating money supply growth. During 1990-91, the economy showed signs of overheating due to a rapid expansion of demand caused by a substantial inflow of foreign capital (Bank Indonesia (1994)). The inflation rate as measured by CPI rose from 6.4 percent in 1989 to 7.8 percent in 1990 and to 9.9 percent in 1991. There also was a deterioration in the current account because of increasing demand for imports: the deficit widened by $3.2 billion between 1989 and 1991, as the ratio of deficit to GDP also rose from 2.5 percent to 4.4 percent (see Table 5).

The inflow of foreign capital increased domestic liquidity and foreign exchange reserves held by Bank Indonesia. Like Korea and Malaysia, the Indonesian government attempted to absorb the excess liquidity mainly through monetary sterilization. It also increased prudential requirements for commercial banks and imposed some direct controls on credit expansion. Despite the difficulties in managing the macroeconomy, the first priority always has been given to maintaining a weak rupiah in order to enhance the international competitiveness of exports (other than oil and gas which account for a quarter

of total exports.) The central bank has intervened in the interbank foreign exchange market to maintain this policy.

Since 1978, the rupiah has been pegged to a basket of the currencies of Indonesia's major trading partners. (Before then the rupiah had been pegged to the US dollar.) Each business day at 3:00 PM, Bank Indonesia announces a selling and a buying rate for the rupiah against the US dollar. The rates are applied to commercial banks' same-day settlement and swap transactions and export draft rediscounting with the central bank. In 1994, the band was widened from 20 to 30 rupiahs. The market rate of the rupiah against the US dollar is determined in the interbank foreign exchange market, with its level reflecting expected changes in central bank rates. Normally, it fluctuates within the central bank's band set in the previous day.[6]

The main factor Bank Indonesia considers in setting its official rate has been the inflation differential between Indonesia and its major trading partners (Bank Indonesia Annual Report (1992/93) and Euromoney (1995)). Given that inflation has been persistently high in Indonesia relative to the industrial economies, the nominal exchange rate of the rupiah has persistently depreciated even when the overall balance was recording a surplus due to the large inflow of foreign capital (see Table 5). The nominal exchange rate of the rupiah showed a steady depreciation of about 4.0 percent annually against the US dollar during 1990-94, while the CPI differential between Indonesia and the United States was 4.8 percentage points. Also, the rupiah depreciated sharply against the Japanese yen in the same period. Consequently, the real effective exchange rate of the rupiah was fairly stable.

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[6] As of April 1995, the Indonesian foreign exchange market was composed of 112 foreign exchange banks and 9 brokerage companies. Commercial banks are subject to limits on their foreign exchange position. As of early 1996, a bank's overall position on a weekly average basis is limited to 25 percent of its paid-up capital.

An exchange rate policy focusing on the stabilization of the exchange rate has been also used to contain the inflow of foreign short-term capital. A persistent depreciation of the rupiah's nominal exchange rate can keep the domestic effective interest rate (interest rate minus expected depreciation rate of the rupiah) lower than it would have been when the rupiah appreciates. This helped reduce the incentive for foreign capital inflow.

However, the policy aimed at maintaining stability of the exchange rate in the face of a massive inflow of foreign capital has led to an increase in the money supply, making the change in net foreign assets an important determinant of the change in money supply. This outcome led Bank Indonesia to pursue monetary sterilization continuously. To absorb excess liquidity, Bank Indonesia relies mainly on sales of short-term central bank securities, Bank Indonesia Certificates (Sertifikat Bank Indonesia, SBI). These were first issued in February 1984. Initially SBIs with maturities of 6 months or less were issued; longer SBIs have been issued since February 1991. Through a daily auction, the bank issues SBIs with maturities ranging from 7 days to 360 days depending on the state of domestic liquidity. Also, the bank also absorbs liquidity by selling money market securities (Sural Berharga Pasar Uang, SBPU) to commercial banks. SPBUs are short-term private securities traded in the money market, including promissory notes issued by banks and their customers and bills of exchange. Bank Indonesia sells SPBUs from its portfolio through auctions when it is necessary to withdraw liquidity.

Monetary sterilization was stepped up as the money supply increased dramatically in 1990. This led to an increase in sales of SBIs and SBPU in the following two years. Net sales of SBIs increased to 9.4 trillion rupiahs in 1991 and 9.6 trillion rupiahs in 1992,

compared to net repayment during 1989-90 (see Figure 12). As a result, the ratio of outstanding SBIs to M1 increased from 6 percent in 1990 to 42 percent in 1991 and 72 percent in 1992. Net sales of SBPUs also began to rise in 1992. The sterilization helped moderate the growth rate of money supply. M2 growth fell from 44.6 percent in 1990 to 17.0 percent in 1991.

Bank Indonesia used several additional methods to control excess liquidity. For one, it would raise the discount rate on export drafts. Direct controls also were imposed on banks to contain credit expansion. For example, a portion of state-enterprise deposits into commercial banks were transferred to the central bank in 1991. Several measures to restrict the inflow of foreign capital were implemented during the course of 1991, as discussed earlier.

These measures and monetary sterilization were more or less successful in moderating domestic demand in 1992. The CPI rose only by 7.5 percent during the year, almost 2 percentage points less than in 1991, and current account deficit was reduced by $1.4 billion. However, the CPI inflation rate rose again to 9.2 percent in 1993 and 8.5 percent in 1994. One factor was the decision by the government to reduce industrial subsidies, which led to the rise in administered prices of a number of commodities produced by state enterprises. These included cement, fertilizer, and oil-based fuels.

Rapid growth of the money supply also was an important source of the inflation (Asian Development Bank (1995)). Since 1993, Bank Indonesia has done less sterilization in order to reduce the burden of interest payments on SBIs (see Figure 12). High domestic price also can be attributed to the persistent depreciation of the nominal exchange rate of the rupiah.

The sharp depreciation of the rupiah against the Japanese yen resulting from the steep appreciation of the yen in international foreign exchange markets, together with Indonesia's policy of maintaining a weak rupiah, caused prices of imported goods from Japan to balloon. From the end of 1992 though the end of 1994, the rupiah depreciated by 33 percent against the yen. The share of Japanese goods in Indonesia's total imports remained at approximately 30 percent. This implies that the exchange-rate stabilization policy had some destabilizing effects on its macroeconomy.

The increase in issuance of central bank securities in the early 1990s tended to raise their discount rates, thus leading to higher interest rates in the Indonesian economy and further widening the gap between home and abroad. In March 1992, the government permitted foreign investors to purchase up to 49 percent of the shares of domestic private and state-owned commercial banks listed on the Indonesian stock markets. Previously, they had not been allowed to buy banks' shares. The larger interest rate differential, coupled with the development and deregulation of the domestic capital market, provided a strong incentive for foreigners to invest in Indonesian securities. As a result, an inflow of foreign portfolio investment -- which is presumed to be short-term and speculative -- has risen sharply.

In an attempt to reduce the inflow of short-term capital, Bank Indonesia began lowering the discount rates of SBIs in 1992 and continued to maintain nominal depreciation of the rupiah. Nonetheless, Indonesia's effective rate of return (domestic interest rate minus depreciation rate of the rupiah) remained high relative to return available in industrial economies (see Figure 13). In addition, international institutional investors' world-wide rush into emerging markets contributed to a flood of foreign portfolio investment, especially after

mid 1993. The proportion of foreign ownership of shares on the Jakarta Stock Exchange rose from 24.0 percent in the 1992/93 fiscal year to 31.0 percent in the 1993/94 fiscal year (ends March 31). Accordingly, the economy became vulnerable to a sudden outflow of foreign capital.

The Mexican crisis in December 1994 shook Indonesia's foreign exchange and capital markets. Rumors of rupiah devaluation linked to the size of Indonesia's large foreign debt (about $87 billion in 1994, the equivalent of about eight times the amount of foreign exchange reserves in the end of 1993) triggered a withdrawal of funds. On December 22, 1994, 2 days after the Mexican government devalued its currency by 15.3 percent, strong demand for the US dollar caused the rupiah to depreciate rapidly against the dollar in the interbank market. On January 13, 1995, the exchange rate of the rupiah rose to 2,223 against the US dollar, 5 rupiah higher than Bank Indonesia's selling rate. Compared to December 22, 1994, the rupiah depreciated by 1.7 percent. In the eleven months before the crisis, the average rate of depreciation had been only 0.3 percent a month.

To restore exchange-rate stability, Bank Indonesia intervened by selling $580 million through spot, forward, and squaring transactions. Simultaneously, it raised its official discount rate by 50 basis points. These measures helped restore confidence that the rupiah would not be devalued more significantly than it had been, so demand for the dollar subsided.

The Indonesian stock market suffered a net outflow of foreign investment and falling stock prices in early January 1995. By the end of January 1995, these had reversed, but the net inflow was slower than prior to the Mexican crisis. Ownership by nonresidents of shares listed on the Jakarta Stock Exchange fell from 31.8 percent at the end of March 1994 to 28.9

percent a year later. A bearish sentiment has continued since the crisis. Moreover, interest rates have shown a rising trend as Bank Indonesia increased discount rates for SBIs, in part to prevent another major exodus of capital.

V. Policy Alternatives for Managing Capital Inflows

To mitigate negative effects from surges of capital inflow, it is essential to enhance the soundness and robustness of the economy. That increases the ability of the system to self-correct. Still, sudden surges in capital inflow can threaten stability of the economy and financial markets, which requires relevant policy measures at least on a temporary basis.

The key policy measure, especially for sustained large inflows, to stabilize both the exchange rate and the money supply has been sterilized intervention. However, sterilization through issuing central bank securities or increases in reserve requirements has shortcomings, particularly when used over long periods of time. It results in quasi-fiscal costs as long as the interest rate on central bank securities is higher than that on foreign exchange reserves.[7] Also, interest payment on these securities increases the money supply and, as a result, can increase inflationary pressure, which in turn causes an appreciation of the real exchange rates. In addition, sterilization may produce a vicious circle of further capital inflow because it widens the interest rate differential between home and abroad. Thus, in the long run, it is not a measure capable of dealing with a continued large capital inflow.

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[7] These costs in Latin American countries have been estimated by Leiderman (1995) to be 0.25 to 0.50 percent of GDP.

In case of a surge in capital flow -- a sharp change in the direction and level of liquid speculative capital -- there is a real potential for destabilizing domestic financial markets. In the current world financial environment, it is becoming less useful to talk in terms of short-term and long-term capital. The speed and ease with which capital in various forms can flow is more relevant. This is partly a function of the capital asset (or liability) as such and partly a matter of the controls and rules applied to it by regulators in a specific market (such as restrictions on movement of certain types of capital). In liberalized financial markets, portfolio investment is generally quite liquid. Korea, Thailand, Malaysia, and Indonesia have experienced substantial inflows of this kind of foreign capital since the early 1990s.

This section takes up policy measures that have been used or considered to deal with undesired consequences of continued capital inflow. These include both macroeconomic policy measures and direct capital controls.

V-1. Macroeconomic Policies

V-1-1. More Flexible Exchange Rate Policy

In the face of capital inflows, all four countries have acted to maintain, even depreciate, their exchange rates, in order to help the price competitiveness of their exports. They have largely succeeded: their currencies have been stable or, in case of Indonesia, even depreciated against the US dollar. At the same time, they have experienced a large current account deficit. (See Tables 1 to 3 and 5.)

A flexible exchange rate policy implies that the exchange rate is allowed to fluctuate according to market conditions. Given that the four countries studied here have a large amount of overall account surplus due to massive inflow of foreign capital, a flexible exchange rate policy would result in an appreciation of the domestic currency. By allowing appreciation, they can reduce the burden of sterilization discussed earlier. Also, unless appreciation is not expected to be persistent, the magnitude of capital inflow might be reduced through a rise in the expected rate of depreciation.

It would also help reduce inflation by lowering import prices. Because these countries depend heavily on Japanese-produced industrial equipment and intermediate goods, the appreciation of the yen against the US dollar resulted in higher domestic prices through simultaneous depreciation of the domestic currency against the yen. Although by the end of 1995 the yen had weakened against the dollar from its record levels in early 1995, the problem of having a principal market for exports (the United States) different from a principal source of imports (Japan) remains. In an effort to mitigate the effect of the yen rate on domestic prices, the Malaysian government allowed an appreciation of about 4 percent against the US dollar during the second quarter of 1995 (Wuchikomi, Murakami, and Hagiwara (1995)).

When capital inflow is fully absorbed through appreciation of the nominal exchange rate, the real exchange rate also appreciates, and this leads to a large current account deficit. The fact is, if a country adopts a single policy variable such as money supply or exchange rate to absorb the impact of capital inflows, it is likely to experience side effects that are considered undesirable. It is thus better to employ both monetary policy and exchange rate

policies to maintain sustainable growth with price stability. In any case, the integration of domestic and world economy makes it more difficult to manage exchange rates and money supply separately.

Fiscal policy is also a useful tool in dealing with capital inflows. Increasing the government budget surplus can mitigate both inflationary pressure and appreciation of the real exchange rate. Moreover, because a reduction in government expenditure has the same effect as a decrease in demand for loanable funds, it can lower interest rates. Thailand provides an example of successful use of this approach to mitigating the effect of inflows on money supply.

However, heavy demand on the government for investment in infrastructure and social services means it is very difficult to have a large budget surplus in these countries. Furthermore, fiscal policy generally is set on the basis of medium- and long-term considerations, which makes it too slow to allow timely intervention in dealing with short-term speculative capital inflows.

V-1-2. Encouragement of Capital Outflow

Increasing capital outflow can play an important role in dealing with inflows. All these countries have lifted restrictions on capital outflows to directly and indirectly diminish the volume or the potential adverse effects of capital inflow. However, the amount of outflow is still negligible relative to the inflow for all four countries. The main reason is domestic resident's reluctance to invest abroad. This is particularly true for portfolio investment,

because of lower returns and lack of requisite investment skills by domestic financial institutions.

However, central bank swap arrangements could be used to provide additional incentives for domestic residents to make portfolio investment abroad. When foreign reserves accumulate beyond a desired level, the central bank sells some of them to domestic financial institutions in exchange for domestic currency. The buyers are required to invest the acquired funds abroad for a specified period. At the end of the period, the central bank reimburses the buyers for any loss resulting from the interest rate differential between the home and foreign markets, as well as any loss from changes in the exchange rate. Germany used this method to stabilize money supply in the 1970s, and the Philippines, Malaysia, and Singapore also have used it. Since pressure on the money supply from the foreign sector is transferred abroad during the swap period, a swap can contribute to stabilizing domestic money supply and interest rates without issuing central bank securities.

V-2. Direct Policy Measures for Managing Capital Inflow

Employing a mix of monetary, fiscal, and exchange rate policies together with encouragement of capital outflow may not always be enough to counter surges in capital inflow. At such times, government authorities may consider levying a tax on foreign exchange transactions or using such direct-control measures as limiting the amount of domestic currency foreigners can purchase, restricting what banks can borrowing from abroad, and increasing reserve requirements.

V-2-1. Variable Deposit Requirement (VDR)

Imposing a variable deposit requirements (VDR) on incoming capital -- that is, setting reserve levels dependent on an inflow's type and the circumstances -- reduces the volume of inflows. VDRs are similar to the banking practice of requiring compensatory balances on loans as a way of raising effective interest rates. More specifically, they work as an implicit levy on capital transactions which, by increasing their cost, decreases demand.

A VDR is more market efficient than quantitative restrictions but, because it limits domestic firms' access to international financial resources, care is needed in its implementation. FDI generally is long-term investment in the real sector and contributes to domestic economic development; it, thus, is not normally to be discouraged. As a practical matter, it is difficult to impose VDRs on portfolio investment. This leaves only foreign borrowing by residents as an area where a VDR might usefully be used.

The reserve ratio can be adjusted according to the volume of capital inflows, but should be kept constant across maturities. It is also straight-forward to determine the ratio that fully absorbs the interest rate differential between home and abroad. The effective interest rate on foreign borrowing (R') equals the foreign interest rate (R_f) divided by (1 minus the reserve ratio (D)) plus the expected rate of depreciation during the borrowing period (E_x). That is, $R' = (R_x/(1-D)) + E_x$

Substituting the domestic interest rate for the effective rate -- that is, making it as expensive to borrow abroad as domestically -- allows the equation to be solved for the reserve ratio (D). Required reserves would be deposited in non-interest bearing foreign-currency

accounts at the central bank until needed to pay back the loan.

Because a VDR hinders access to foreign financial resources that can enhance the competitiveness of domestic banks and firms, its use should be limited to periods of heavy capital inflow caused by a rapid appreciation of the exchange rate or a substantial increase in interest rate differentials. VDRs have been shown to be effective, at least in the short run, in such cases.

Australia used it when experiencing an overall account surplus but a current account deficit in the early 1970s. A rapid rise in domestic interest rates due to a strict monetary policy generated expectations of an exchange rate appreciation and thus led to massive capital inflows. The government imposed non-interest-bearing reserve requirements on every foreign borrowing over A$10,000. This reduced the amount of inflow. The reserve ratio, initially 25 percent, was adjusted depending on the amount of inflow.

Malaysia, in January 1995, in an effort to curb the inflow of short-term capital, made foreign-currency borrowing from foreign banking institutions subject to a reserve requirement. This is a variant of the VDR with the same reserve ratio being imposed regardless of the volume of foreign borrowing. The requirement, coupled with other restrictions on capital inflows implemented in early 1994, contributed to reducing the amount of incoming foreign capital.

In case of Korea, the legal framework for imposing a VDR is in place, but it has never been used. Its effects on capital inflow undoubtedly would be quite small because foreign borrowing by residents has not been important compared to foreign direct investment and foreign portfolio investment. The government continues to directly restrict borrowing from

abroad by domestic firms and financial institutions. However, when this restriction is relaxed, the volume of such borrowing is expected to rise rapidly.

On the other hand, a VDR would be fairly effective in curtailing capital flows into Indonesia and Thailand, where foreign borrowing by residents has been a large portion of capital inflows. However, the Thai government would probably be reluctant to use a VDR because Thailand has been promoting itself as a regional financial center, and such a move would discourage such a development.

V-2-2. Levy on Foreign Exchange Transactions

Transaction taxes are used in a number of financial markets: for example, by stock exchanges in Korea and Japan, although the rates are very low. Foreign exchange transaction taxes, both explicit and implicit, as a means of deterring short-term speculative capital flows have been extensively analyzed. (Studies include Dornbusch (1995), Eichengreen and Wyplosz (1993), Eichengreen, Tobin and Wyplosz (1995), Felix (1995), Frankel (1995), Garber (1995), Garber and Taylor (1995), and Kenen (1995).) An explicit levy on foreign exchange transactions has been widely debated within the industrial economies and international organizations such as the UN and IMF, but has not been imposed in any country. A currency transaction tax can be implemented worldwide. However, the case for or against a global tax is beyond the scope of this study. In this section, only the practicality as well as desirability of imposing the tax unilaterally by an individual country is examined. There is also the question of whether the tax should be imposed on foreign exchange transactions

related to the current account. Such a tax increases costs for those trading goods and services and thus might cut into the competitiveness of exports. To avoid this problem, the tax should perhaps be confined to capital account transactions, in particular, nonresident investments in domestic stocks, bonds, and other short-term financial instruments. The tax also would have to include financial derivatives because they can mimic conventional financial instruments.

In general, the tax could be levied when foreign investors buy and sell domestic currency in connection with their trading in these financial instruments. Since foreign investors have to exchange foreign currencies into the domestic currency at domestic financial institutions, administration of the tax would not be as difficult as it might appear. Moreover, in many countries including Korea, foreign investors have to register and invest through designated financial institutions, and hence find it much more difficult to avoid the tax than otherwise. It should be noted, however, the tax that may be effective in some countries may not work in others because of the differences in the financial and foreign exchange system.

There are several ways to handle the transaction tax: the tax can be imposed on the seller or the purchaser of the domestic currency, or both. For foreign exchange transactions, it is more effective to levy round-trip taxes. The tax rate can be adjusted depending on the degree of capital market opening and the level of short-term capital flows. It should be noted that the impact of a tax is related to the investment period. For example, when a 2 percent round-trip tax is imposed (1 percent for each buy and sell), the annualized decrease in return on investment is around 0.2 percent over a 10-year period, but for a day trade the decrease is about 124,600 percent at an annual rate.

An implicit levy requires foreign investors to make non-interest bearing deposits at

the central bank when they sell foreign currencies for domestic currency. Examples include Italy during the 1970s and Spain in 1992.[8] Unlike an explicit tax, an implicit tax hampers long-term investments if the deposit period is as long as the investment period. This can be mitigated by having the same deposit period for all transactions, one just long enough to decrease the returns on short-term investments to the point they are unattractive. Care must be taken in deciding the reserve ratio, as it will discourage long-term investment if it is too high, while a too-low reserve ratio will not accomplish the purpose.

Even though a comprehensive and clean currency transaction tax system is introduced, financial markets sooner or later are likely to find ways to evade tax. One of the most likely ways to do so is to increase cross-border transactions, which do not go through the local foreign exchange market. To prevent this, a tax system in which cross-border payment as well as purchase or sale of foreign exchange is taxed can be implemented as suggested in Dornbusch (1995). However, the cost of administering such a system may be too high to make it a realistic tax. As Dornbusch (1995) points out, it will also increase offshore clearing of inflows and outflows, which lowers the effectiveness of the tax system. Additionally, even this system cannot prevent financial markets from evading the tax by developing complicated derivatives.

Foreign exchange transaction tax increases transaction costs, which in theory should discourage the movement of short-term speculative capital. However, many researchers doubt their effectiveness. They argue that empirical studies have failed to demonstrate a relationship

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[8] When the September 1992 European currency crisis hit, Spain, in an attempt to avoid a realignment of the peseta, imposed an implicit levy on the purchase of foreign currencies by domestic financial institutions. (This is the opposite in the direction to the levy considered here.)

between transaction costs and volatility in domestic financial markets. This implies a foreign exchange transaction tax would not decrease the volatility of exchange rates or security prices. Examples of this line of research include Schwert (1993), Hakkio (1994), and IMF (1995b).

Even if it works, the tax has shortcomings. By decreasing the return on domestic securities, it makes them less attractive to foreign investors, and to the extent the tax decreases liquidity (the volume of transactions) it could make the foreign exchange market more volatile. In addition, it raises equity problems if it is applied only to transactions by nonresidents.[9] Korea, Thailand, and Malaysia desire to become international financial centers. That requires liberalization and internationalization of their domestic financial market, and a foreign exchange transaction tax is inconsistent with both.

Nonetheless, a transaction tax might have desired effects if it can be flexibly carried out, with a tax adjusted to the amount of short-term capital flows. It will help lengthen the investment horizon of foreign investors and shift foreign participants in domestic financial markets from trading to investing. Even though it may not be able to reduce volatility of stock or bond prices, it can at least manage the pace of capital flows. (Dornbusch (1995)) The revenue can be used to enhance the stability of the foreign exchange market.

The use of a foreign exchange transaction tax could mitigate the reluctance of developing countries to open their financial markets (Dornbusch (1995)). The Korean government plans to liberalize capital account transactions more aggressively in the future. With a tax in place, albeit at a zero in normal times, it could tell opponents of liberalization

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[9] Dornbusch (1995) argues that foreign exchange transaction taxes, despite having discriminatory characteristics, are an essential instrument in integrating a country into the world economy because they can mitigate the negative externalities of too volatile and large capital flows which interfere with process of domestic goods and financial market opening.

that it has a weapon with which to punish speculators.

Malaysia implemented direct controls on capital inflows in 1994 as the increased inflow of short-term speculative capital undermined the stability of its economy and financial markets. These might not have been necessary if a currency transaction tax had been used.

As was explained in section IV, Thailand and Indonesia experienced turbulence in their financial markets due to sudden outflow of foreign capital prompted by the Mexican crisis. It is, however, expected that they are opposed, or at least reluctant, to impose a transaction tax because they feel it would reduce the amount of capital available for their economic development. In these countries, the need for foreign capital to finance a high rate of domestic investment will continue for some period of time in the future. Rather than inviting difficulties in external financing, Thailand and Indonesia are willing to accept some volatility in capital movements as long as foreign capital overall, whether it is short-term speculative or not, is contributing to economic development. These countries also feel that imposing a currency transaction tax will cause damage to their financial markets, which are still in an infant stage of development, and invite punishment by industrial economies which are major investors in these countries.

VI. Conclusion

Korea has gradually headed into unavoidable capital account liberalization, and its progress is expected to accelerate. This process, if well managed, will contribute to the development and globalization of the domestic economy as well as to the improvement of

domestic financial market efficiency. The inflow of foreign capital has been crucial to supporting a high rate of investment and output in Indonesia, Malaysia and Thailand. In fact, except Korea, it appears that all three East Asian countries are prepared to accept all types of foreign financing regardless of their maturities so long as foreign capital is needed to sustain rapid growth.

The ongoing liberalization of capital account transactions, the growing need for foreign capital, and favorable growth prospects are likely to combine to bring in a large amount of capital in East Asian economies. However, at times, such a growth-oriented policy may suffer from an increase in the volatility of short-term capital flows, which may disturb domestic financial markets and macroeconomic stability as it has in Malaysia. Faced with the instability problem, Malaysia had to resort to direct control measures to dampen short-term capital movements.

Maintaining the soundness and robustness of the domestic economy may be the most efficient way to offset any negative effects of speculative short-term capital, but during times of surges in inflow, governments of the four countries are likely to consider some of the measures to influence the level and characteristics of capital inflows such as taxes on short-term bank deposits and other financial assets, reserve requirements against foreign borrowing, prudential limits on banks's offshore borrowing, and limits on consumption credit as suggested in IMF (1995a). While it has shortcomings, the currency transaction tax would be certainly one of the most effective measures in reducing volatile short-term speculative capital movements.

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<Table 1> **Economic Indicators in Korea**

(unit : %, won, mil. U$)

	87	89	90	91	92	93	94
Growth rate of							
GDP	11.5	6.4	9.5	9.1	5.1	5.8	8.4
CPI	3.0	5.7	8.6	9.3	6.2	4.8	6.2
M2	18.8	19.8	21.2	18.6	18.4	18.6	15.6
Interest Rate[1)2)]	12.6	15.2	16.5	18.9	16.2	12.6	12.9
Nominal Exchange Rate [2)3)]	822.57	671.49	707.76	733.35	780.65	802.67	803.45
(rate of change)	-6.68	-8.20	5.41	3.62	6.45	2.82	0.10
Real Effective Exchange Rate [2)4)]	113.90	99.23	100.00	103.27	111.64	119.07	124.59
(rate of change)	-0.44	-8.17	0.77	3.27	8.11	6.65	4.64
Investment/GDP	29.8	33.6	36.9	38.9	36.6	35.1	35.9
Saving/GDP	35.5	35.7	35.5	35.7	34.5	34.8	34.8
Government Balance (% of GDP)	0.84	0.32	0.06	-1.01	-0.29	0.05	0.18
Current Account(CA)	9,854	5,055	-2,179	-8,728	-4,529	385	-4,531
CA/GDP	7.39	2.29	-0.87	-2.99	-1.48	0.12	-1.19
Capital Account(KA)	-5,843	-3,423	3,881	4,227	8,343	6,879	9,025
KA/GDP	-4.38	-1.55	1.54	1.45	2.73	2.07	2.38
Overall Balance	5,202	2,453	-273.9	-3,741	4,898	6,542	2,822
Foreign Exchange Reserve	3,566	14,978	14,453	13,306	16,640	19,704	25,032

Source : Bank of Korea, *National Account,* various issues.
Bank of Korea, *Monthly Bulletin*, various issues.

Note : 1) Yield on three year bank guaranteed corporate bond.
2) Period averages.
3) Nominal exchange rate of the Korean won vis-a-vis the US dollar.
4) A rise in real effective exchange rate indicates a depreciation of the Korea won.

<Table 2> **Economic Indicators in Thailand**

(unit : %, mil. US$)

	87	89	90	91	92	93	94
Growth rate of							
GDP	9.5	12.2	11.6	8.1	7.6	8.9	8.5
CPI	2.5	5.4	5.9	5.7	4.1	3.5	5.3
M2	20.4	26.3	26.7	19.8	15.6	18.4	12.9
Interest Rate[1)2)]	9.50	9.50	12.25	13.67	8.88	8.63	8.46
Nominal Exchange Rate[2)3)]	25.72	25.70	25.59	25.52	25.40	25.32	25.15
(rate of change)	-2.2	1.6	-0.5	-0.3	-0.5	-0.3	-0.7
Real Effective Exchange	103.5	101.8	100.0	101.0	102.6	105.6	106.1
Rate of Baht[2)4)]							
(rate of change)	7.6	-4.9	-1.8	1.0	1.5	3.0	0.5
Investment/GDP	27.9	35.1	34.1	42.0	39.5	39.5	40.0
Saving/GDP	27.4	31.6	32.6	34.3	33.8	34.3	34.2
Government Balance	-0.7	3.5	4.9	4.0	2.5	1.8	1.87
(% of GDP)							
Current Account(CA)	-366	-2,498	-7,281	-7,571	-6,355	-7,047	-8,419
CA/GDP	-1.2	-3.8	-8.7	-8.6	-6.0	-5.6	-6.0
Capital Account(KA)	1,062	6,599	9,098	11,759	9,797	11,246	14,246
KA/GDP	3.4	10.1	10.9	13.4	9.3	8.9	10.2
Overall Balance	945	5,029	3,235	4,618	2,925	3,907	4,169
Foreign Exchange Reserve	3,906	9,641	13,247	17,287	20,012	24,078	28,884

Source : IMF, *International Financial Statistics,* various issues.
Bank of Thailand (1995), *Annual Economic Report 1994.*
DRI (1995), *World Markets Executive Overview,* Fourth Quarter.

Note : 1) Maximum rate offered by commercial banks on three- to six-month savings deposits.
2) Period averages.
3) Nominal exchange rate of the Thai baht vis-a-vis the US dollar.
4) A rise in real effective exchange rate indicates a depreciation of the Thai baht.

<Table 3> **Economic Indicators in Malaysia**

(unit : %, mil. US$)

	87	89	90	91	92	93	94
Growth rate of							
GDP	5.4	9.2	9.7	8.7	7.8	8.3	8.7
CPI	0.8	2.8	3.1	4.4	4.7	3.6	3.7
M2	7.2	16.1	12.8	14.5	19.1	22.1	14.7
Interest Rate[1)2)]	6.5	6.6	6.8	7.3	8.1	7.4	5.5
Nominal Exchange Rate[2)3)]	2.52	2.71	2.71	2.75	2.55	2.57	2.62
(rate of change)	-2.4	3.4	0.0	1.7	-7.4	1.1	1.9
Real Effective Exchange Rate of Ringgit[2)4)]	89.6	98.7	100.0	104.4	98.0	102.1	105.4
(rate of change)	9.2	-0.9	1.3	4.38	-6.1	4.2	3.2
Investment/GDP	23.2	28.6	31.3	35.9	33.5	35.0	38.5
Saving/GDP	31.1	29.0	29.1	26.8	30.1	30.8	32.0
Government Balance (% of GDP)	-7.7	-3.3	-3.0	-2.0	-0.8	0.2	-0.5
Current Account(CA)	2,575	315	-870	-4,183	-2,167	-2,809	-4,147
CA/GDP	7.9	0.4	-2.3	-9.1	-3.4	-4.1	-6.5
Capital Account(KA)	-1,537	1,330	1,786	5,623	8,743	10,798	1,511
KA/GDP	-4.7	1.7	4.7	12.2	13.7	15.9	2.4
Overall Balance	1,119	1,230	1,953	1,238	6,615	11,343	-3157
Foreign Exchange Reserve	7,055	7,393	9,327	10,421	16,784	26,814	24,888

Source : IMF, *International Financial Statistics,* various issues.
Bank Negara Malaysia (1995), *Annual Report 1994*
DRI (1995), *World Markets Executive Overview,* Fourth Quarter

Note : 1) Yield on long term government bond.
2) Period averages.
3) Nominal exchange rate of the Malaysian ringgit vis-a-vis the US dollar.
4) A rise in real effective exchange rate indicates a depreciation of the Malaysian ringgit.

<Table 4> The Chronology of Administrative Measures in Malaysia

Measures	Date Implemented	Date Lifted
(1) Increase in statutory reserve requirement of commercial banks, finance companies and merchant banks 8.5 % → 9.5 % 9.5 % → 10.5 % 10.5 % → 11.5 %	January 3, 1994 May 16, 1994 July 1, 1994	
(2) Inclusion of all funds sourced abroad in the eligible base for computing statutory reserve requirement and liquidity requirement	January 16, 1994	
(3) Placement of limits on non trade-related external liabilities of banking institutions[1]	January 17, 1994	January 20, 1995
(4) Prohibition of residents' sales of short-term monetary instruments to non-residents[2]	January 24, 1994	August 12, 1994
(5) Transfer of the ringgit funds of foreign Banking institutions held in commercial banks' non-interest bearing foreign vostro account to Bank Negara Malaysia	February 2, 1994	May 16, 1994
Inclusion of vostro balances in the eligible liability base for reserve and liquidity requirement	February 16, 1994	August 16, 1994
(6) Prohibition of commercial bank's swaps and outright forward transactions on the bid side with foreign customers[3]	February 23, 1994	January 20, 1995

Source : Bank Negara Malaysia (1995), *Annual Report 1994*.

Note : 1) Non FDI-related external liabilities are also subject to ceilings.

2) The restriction is applied to highly liquid instruments including Bank Negara bills, Treasury bills, Malaysian Government securities, Cagamas bonds and notes, BA and negotiable instruments of deposits (NID) with remaining maturity of one year or less. From February 7, 1994,-private debt securities with remaining maturity of one year or less except convertible bonds were also subject to the restriction.

3) This measure was intended to prevent overseas investors from establishing a speculative long forward position of the ringgit when it was expected to appreciate.

<Table 5> **Economic Indicators in Indonesia**

(unit : %, mil. US$)

	87	89	90	91	92	93	94
Growth rate of							
GDP	4.9	7.5	7.2	7.0	6.5	6.5	7.3
CPI	9.3	6.4	7.8	9.4	7.5	9.2	8.5
M2	22.4	39.8	44.2	17.0	20.2	22.0	20.2
Interest Rate[1]	17.50	18.58	18.53	21.18	21.13	16.35	12.99
Nominal Exchange Rate [2][3]	1,643.9	1,770.1	1,842.8	1,950.3	2,129.9	2,087.1	2,160.8
(rate of change)	28.2	5.0	4.1	5.8	4.1	2.8	3.5
Real Effective Exchange Rate[2][4]	100.0	100.8	100.0	104.7	108.4	111.5	114.3
(rate of change)	34.1	-4.0	-0.8	4.7	3.5	2.9	2.5
Investment/GDP	31.4	35.2	36.1	35.5	35.9	33.2	34.0
Saving/GDP	28.1	32.7	31.7	31.1	33.4	31.5	31.5
Government Balance (% of GDP)	-1.0	-2.1	0.4	0.5	-0.6	0.5	0.6
Current Account(CA)	-2,098	-1,108	-2,988	-4,260	-2,780	-2,016	-2,790
CA/GDP	-3.3	-2.5	-4.4	-4.4	-2.5	-1.7	-2.5
Capital Account(KA)	3,481	2,918	4,495	5,697	6,129	5,772	3,819
KA/GDP	5.5	6.6	6.6	5.9	5.4	4.9	3.6
Overall Balance	630	495	2,251	1,528	2,070	594	784
Foreign Exchange Reserve	5,483	5,357	7,353	9,151	10,181	10,988	11,820

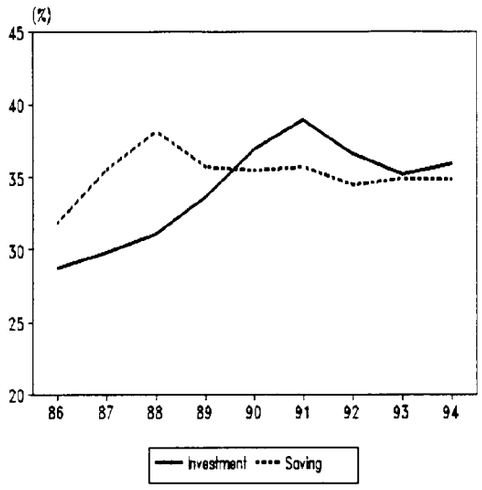
Source : IMF, *International Financial Statistics,* various issues.
Bank of Indonesia, *Financial Statistics,* various issues.
DRI (1995), World Markets Executive Overview, Fourth Quarter.

Note : 1) One-year time deposits rates in commercial banks(end of period).
2) Period averages.
3) Nominal exchange rate of the Indonesian rupiah vis-a-vis the US dollar.
4) A rise in real effective exchange rate indicates a depreciation of the Indonesian rupiah.

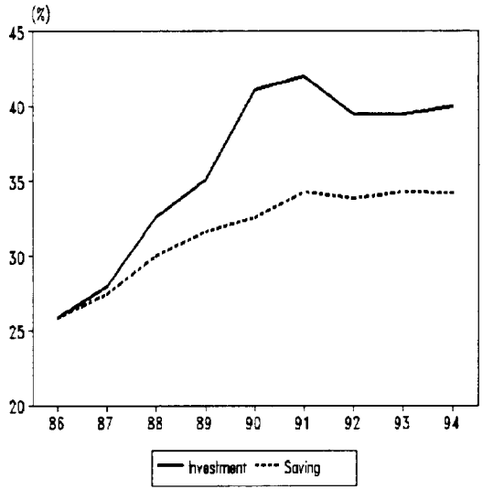
< Figure 1 >

Trend of Investment and Saving
(Percent of GDP)

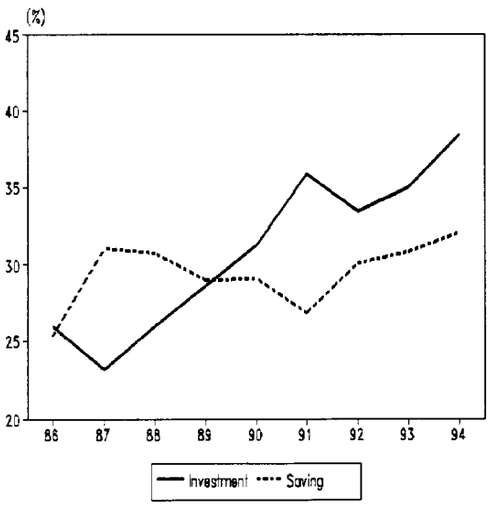
Korea



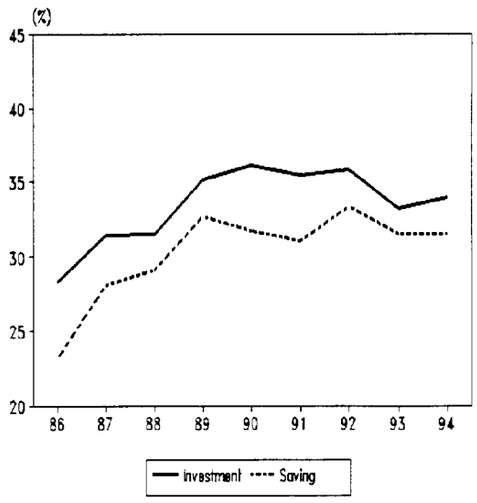
Thilailand



Malaysia

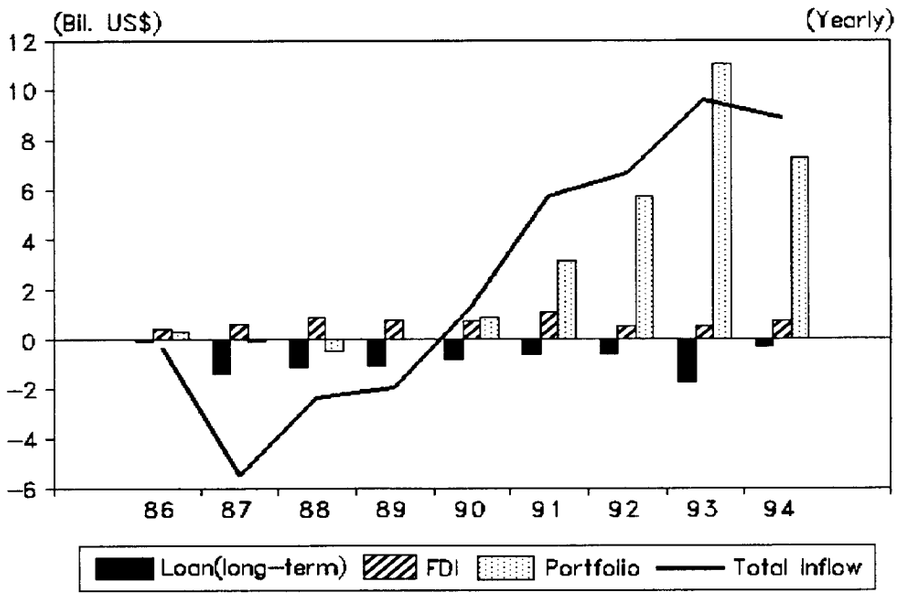


Indonesia

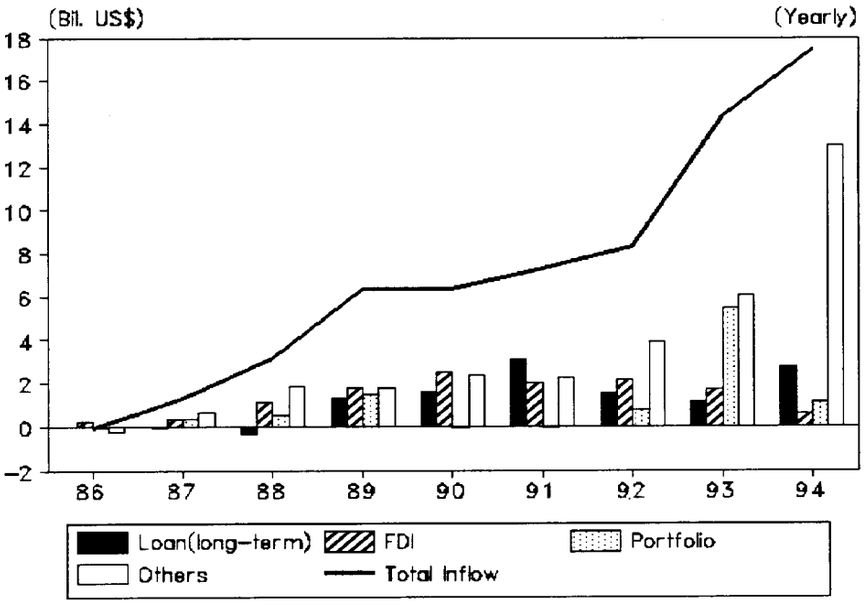


<Figure 2> Trend and Composition of Foreign Capital Inflow

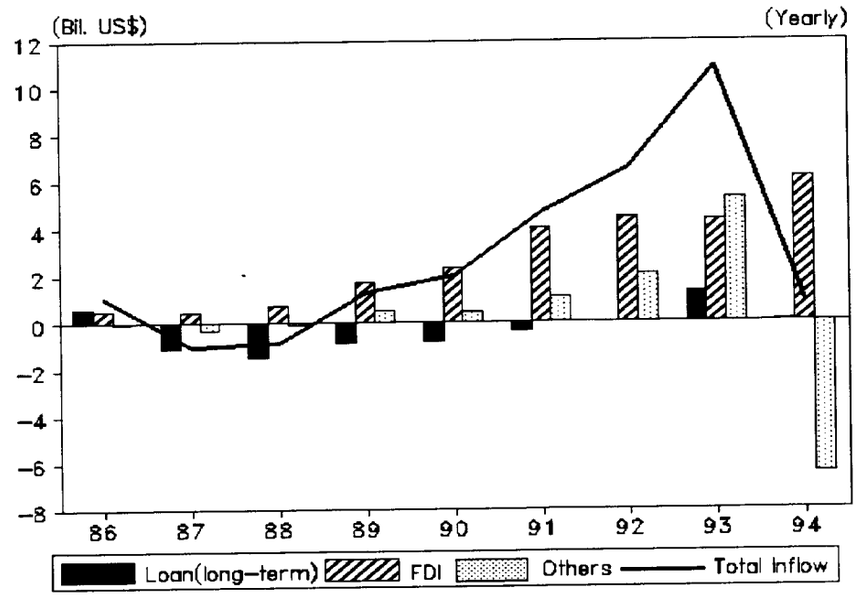
<Figure 2.1> Korea



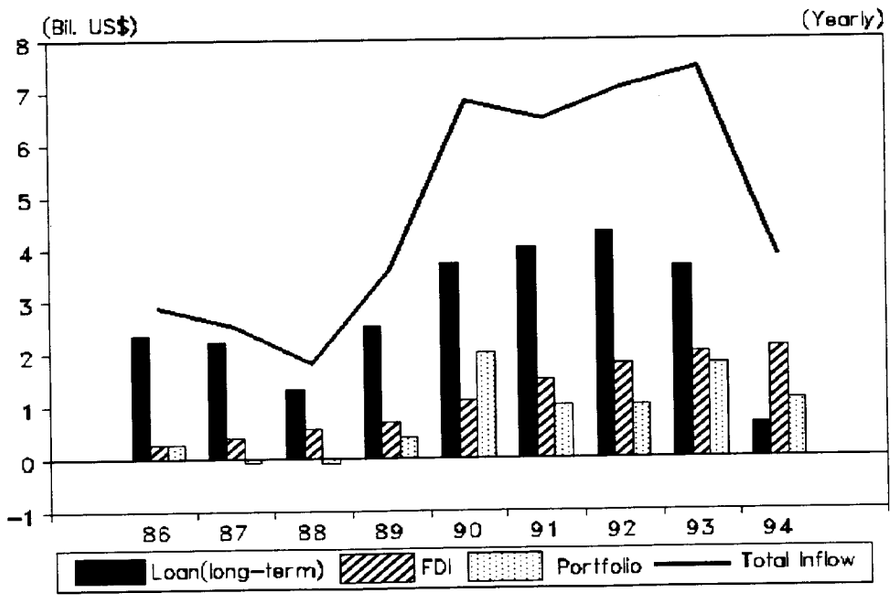
<Figure 2.2> Thailand



<Figure 2.3> Malaysia

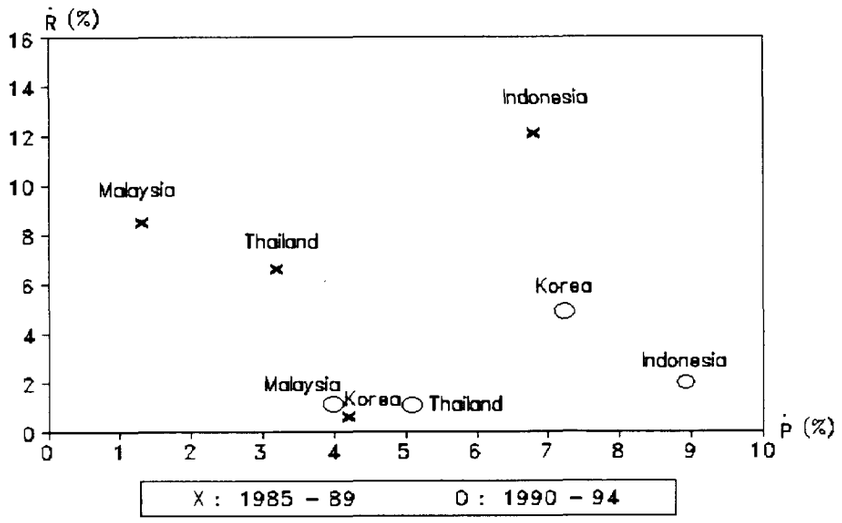


<Figure 2.4> Indonesia



< Figure 3 > Rate of Change in CPI and Depreciation Rate of Real Effective Exchange Rate

W



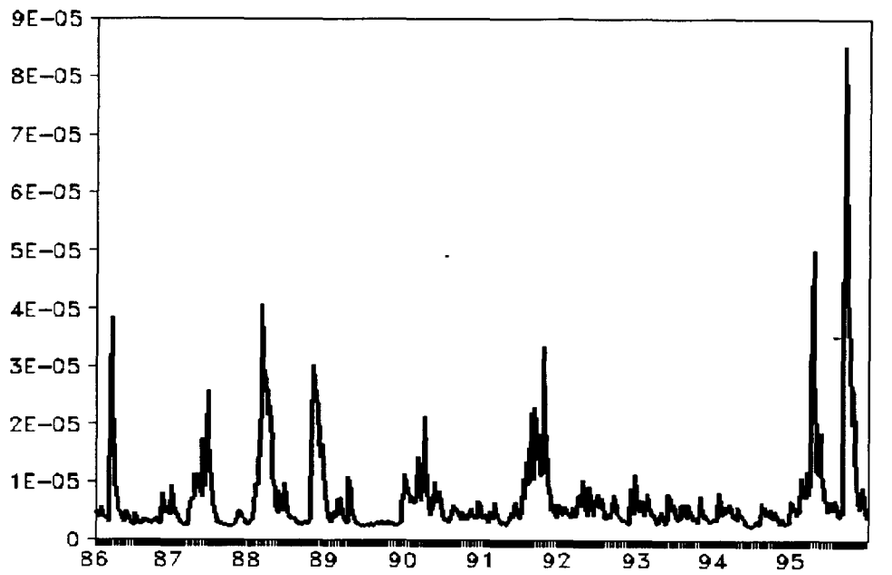
Note : 1) $\dot{R}$ = Depreciation rate of real effective exchange rate

$\dot{P}$ = Rate of change in CPI

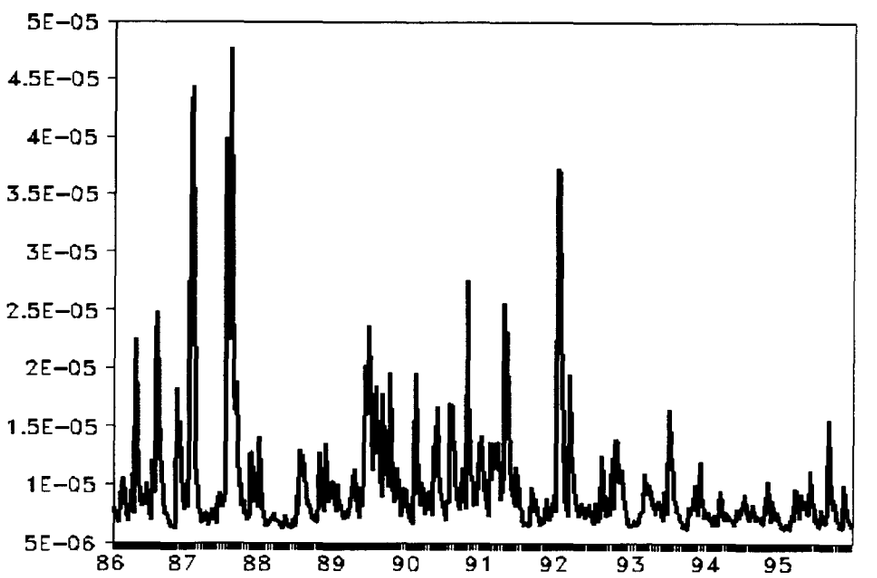
2) The real effective exchange rates for Korea are estimates by the Korea Institute of Finance. Those of other countries are adopted from DRI's *World Market Executive Overview*. The WPI is used to calculate real effective exchange rates of all four countries.

<Figure 4> GARCH Variance of the Exchange Rate

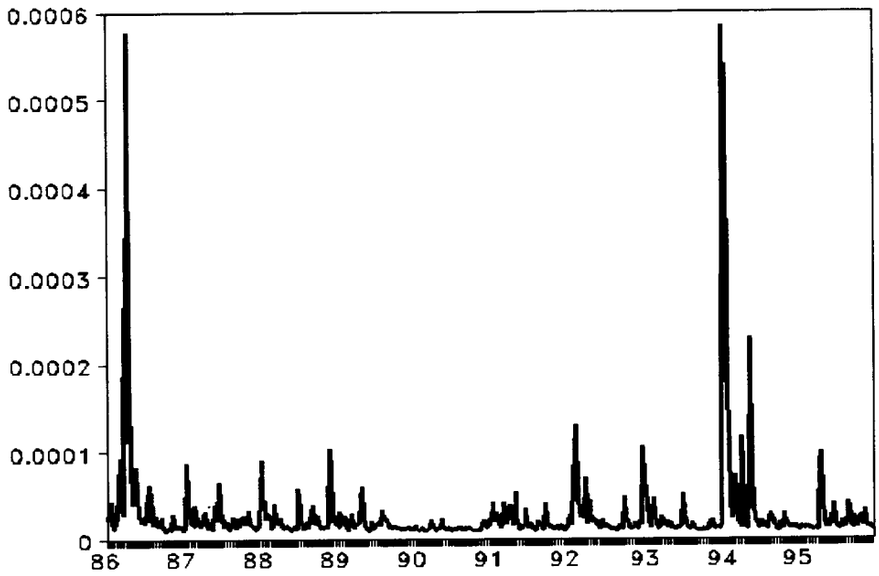
<Figure 4.1> Korea (1986.1 - 1995.12, won-dollar)



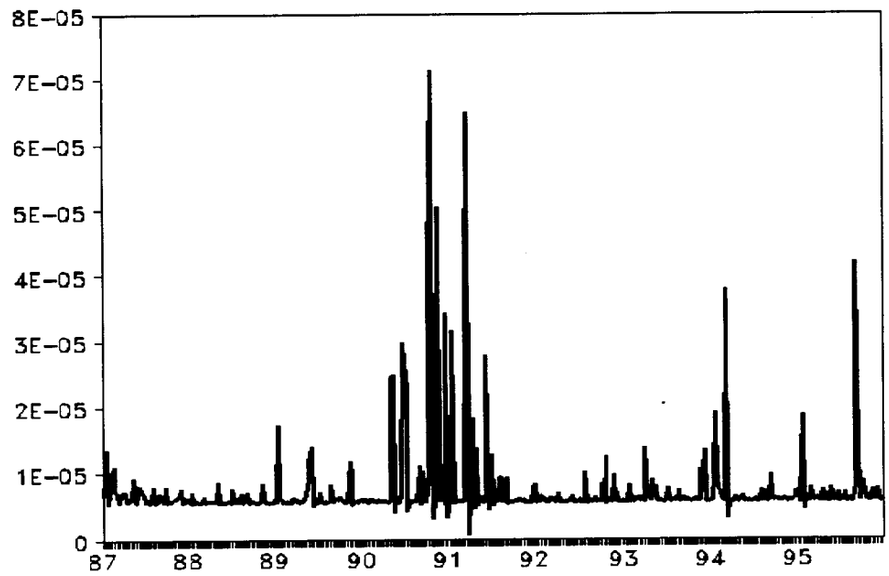
<Figure 4.2> Thailand (1986.1 - 1995.12, baht-dollar)



<Figure 4.3> Malaysia (1986.1 - 1995.12, ringgit-dollar)

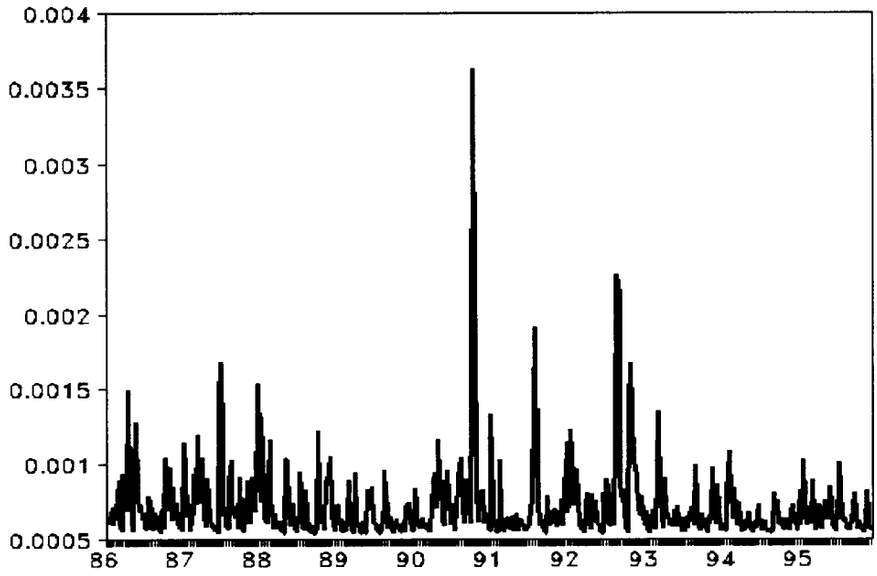


<Figure 4.4> Indonesia (1987.1 - 1995.12, rupiah-dollar)

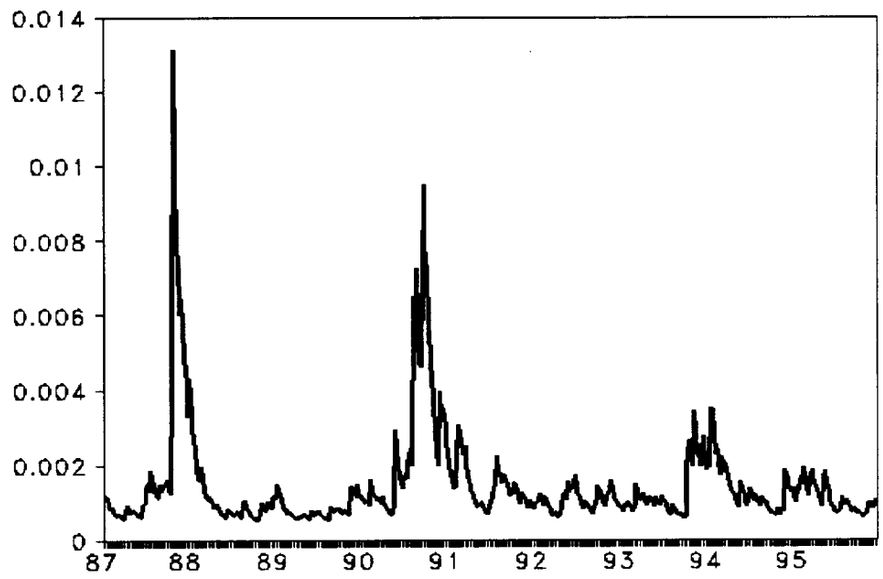


<Figure 5> GARCH Variance of Stock Returns

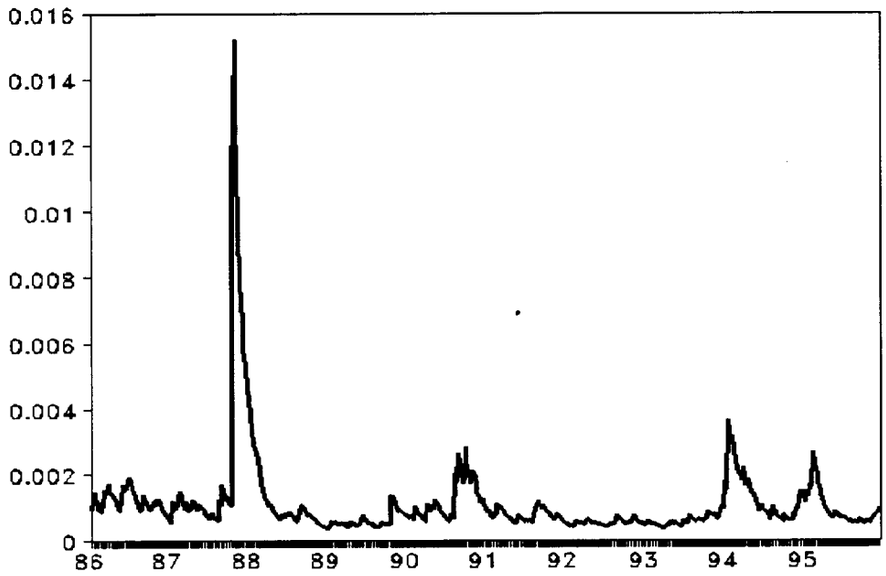
<Figure 5.1> Korea (1986.1 - 1995.12, KOSPI)



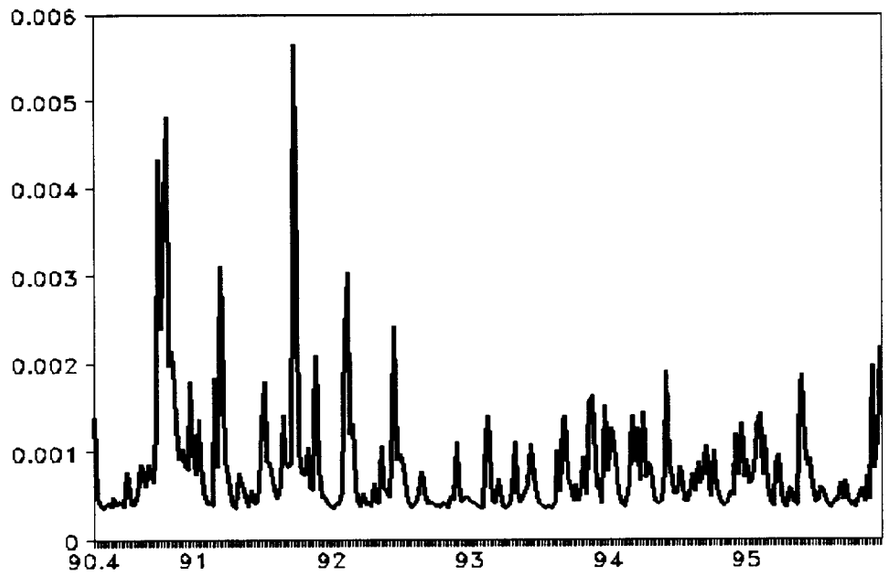
<Figure 5.2> Thailand (1987.1 - 1995.12, SET Index)



<Figure 5.3> Malaysia (1986.1 - 1995.12, KLCI)

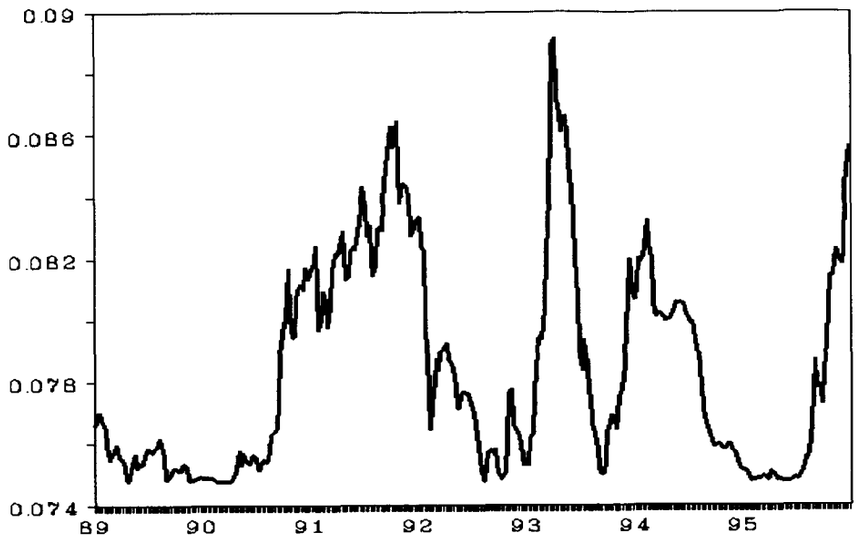


<Figure 5.4> Indonesia (1990.4 - 1995.12, JSE IHSG)



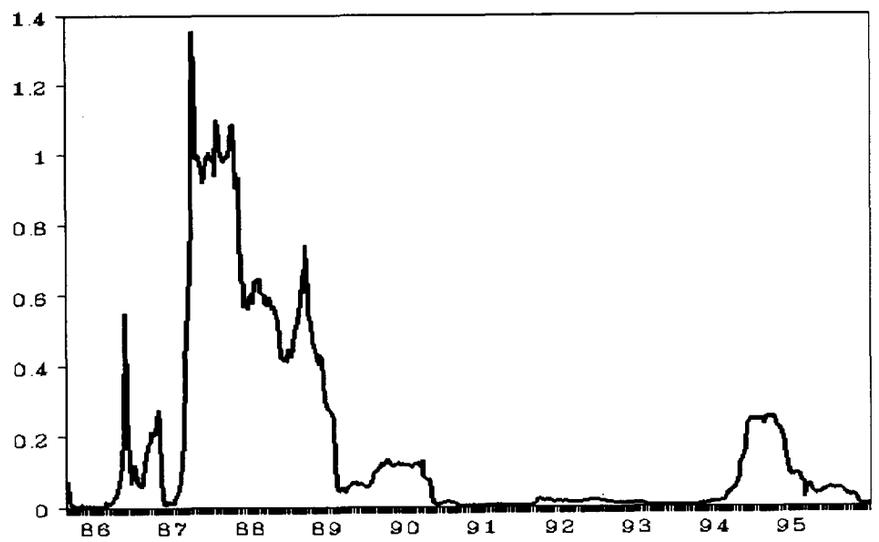
<Figure 6> GARCH Variance of Interest Rate

<Figure 6.1> Korea (1989.1 - 1995.12)



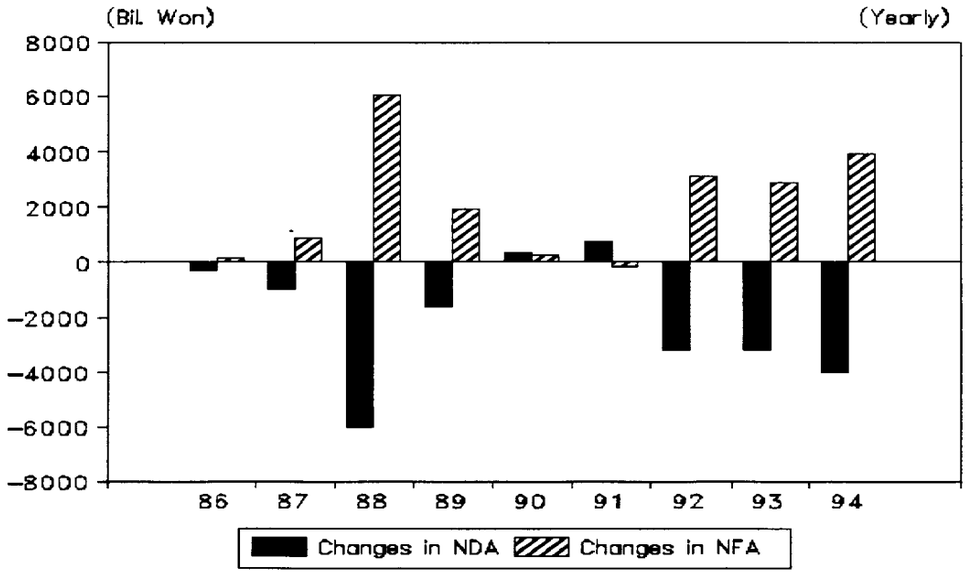
Note : Yield on three-year bank guaranteed corporate bond.

<Figure 6.2> Malaysia (1985.8. - 1995.12)

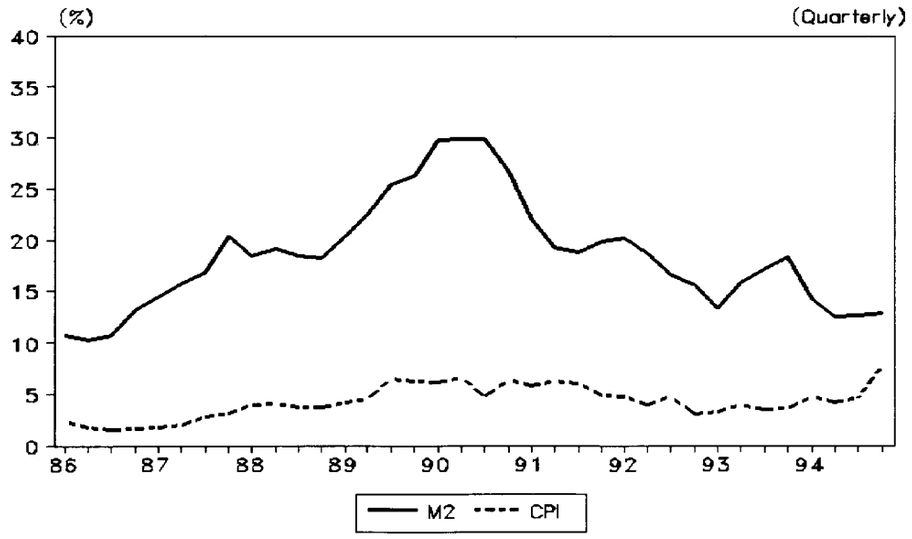


Note : Weighted average of three-month interbank rate.

<Figure 7> Trend of Changes in NDA and NFA in Korea

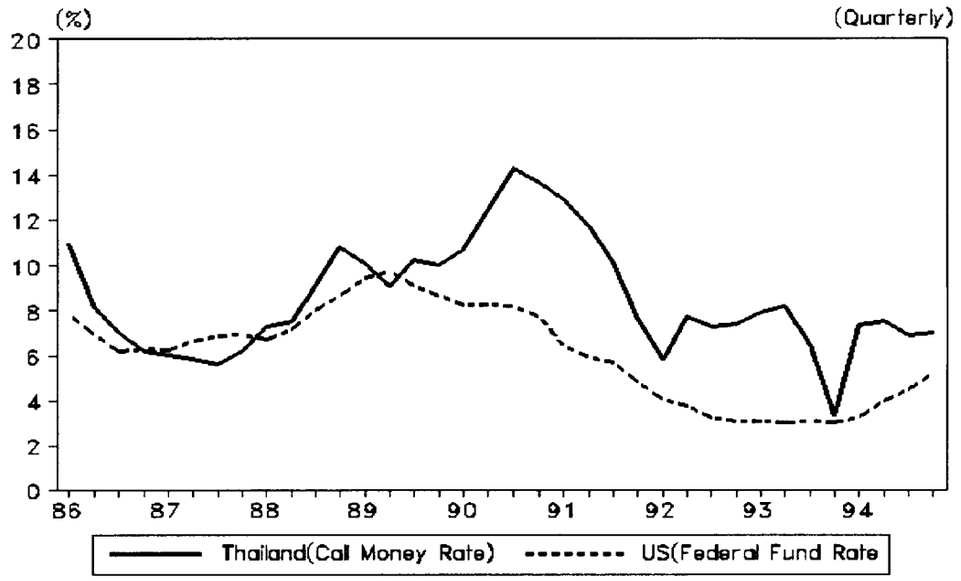


<Figure 8> Growth Rate of Money Supply and Inflation Rate in Thailand

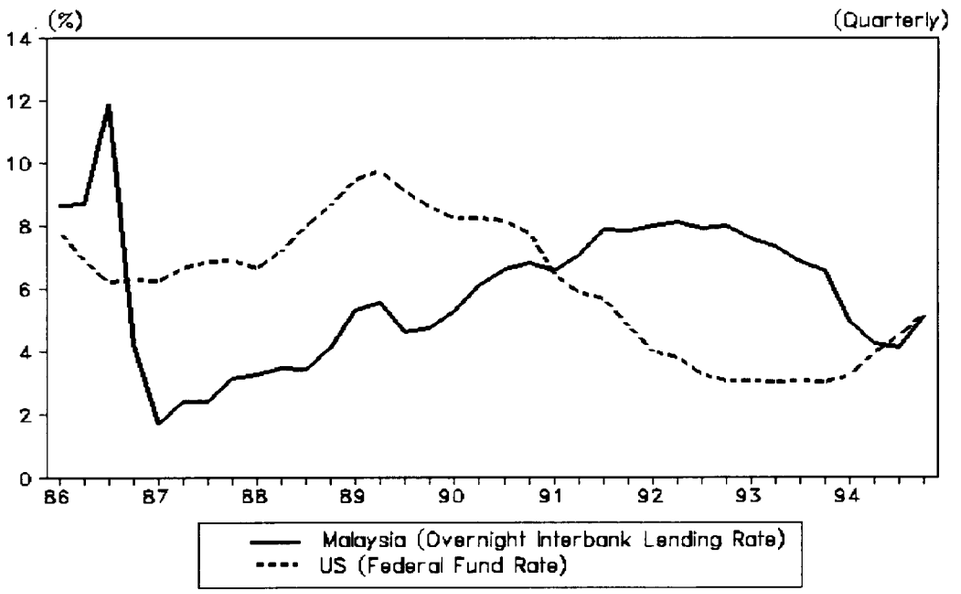


Note : Year-on-year rate of change.

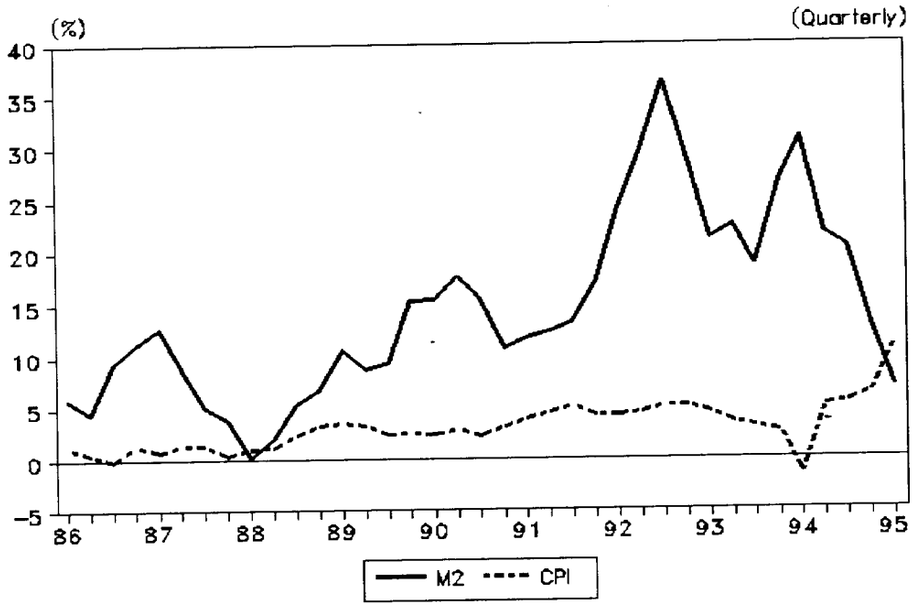
<Figure 9> Trend of Interest Rates in Thailand and U.S.



<Figure 10> Trend of Interest Rates in Malaysia and U.S.

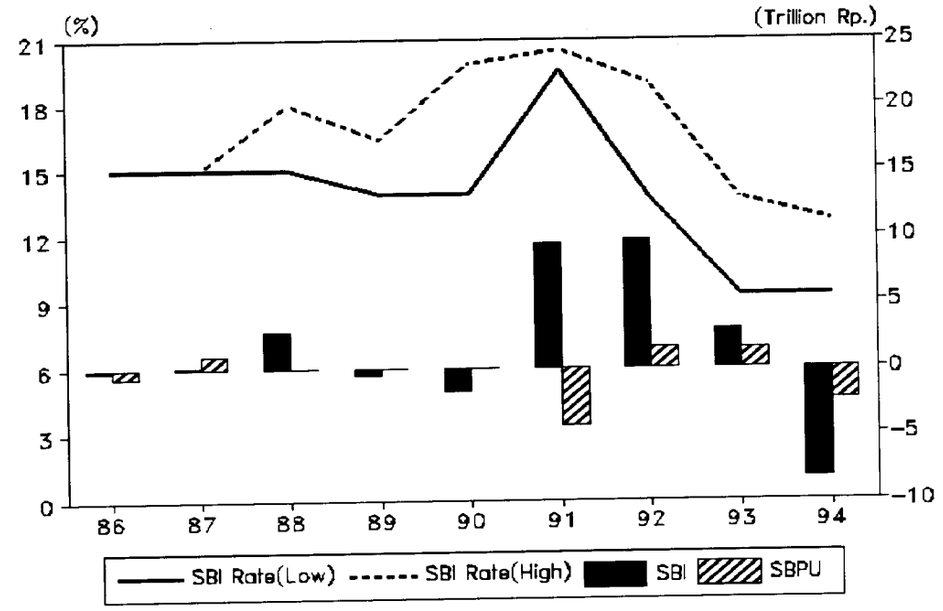


<Figure 11> Growth Rate of Money Supply and Inflation Rate in Malaysia



Note : Year-on-year rate of change.

<Figure 12> Net Sales of SBI and SBPU, and SBI Discount Rate



<Figure 13> Trend of Interest Rate in Indonesia and U.S.