

**CAPITAL FLOWS AND THEIR IMPLICATIONS
FOR CENTRAL BANK POLICIES IN
THE SEACEN COUNTRIES**

Min B. Shrestha and Choon-Seng Lim, Vincent



**The South East Asian Central Banks (SEACEN)
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FOREWORD

The SEACEN countries have benefited significantly from the large volume of capital flows in the last two decades. After experiencing a financial crisis in 1997, most of the countries in the region have become increasingly concerned about the effective management of capital flows. Despite the numerous benefits, capital flows may also pose challenges to monetary and financial stability of an economy. Massive capital inflows may complicate the transmission of monetary policy while their sudden reversal may create instability in the financial markets. In light of these issues, this study explores the implications of capital flows for central bank policies and reviews country experiences on managing capital flows in the SEACEN region.

This study finds that both domestic and external factors are responsible for the increased capital inflows in the SEACEN region and that the surge in capital inflows was one of the contributory factors for asset price bubbles and sharp increase in bank credit. Based on the analysis of the composition of capital flows in the SEACEN region, the study argues that due to the increasing share of highly volatile short-term capital inflows, the SEACEN economies are facing the risk of sudden significant capital reversal. The study also puts forth some suggestions to optimise the benefits of capital flows while minimising potential risks. We hope that the findings and suggestions of this study may be valuable reference to central bankers and other policy makers.

This collaborative research was led by Dr. Min B. Shrestha and Dr. Choon-Seng Lim, Vincent, both Senior Economists of The SEACEN Centre, and participated by 14 country researchers from 12 member central banks and monetary authorities. The SEACEN Centre wishes to express its sincere gratitude to the participating member central banks and their country researchers for actively participating in this project and preparing the country papers for their respective countries. They are namely, Ms. Nurhuaida Damit of the Ministry of Finance, Brunei Darussalam; Mr. Yayat Cadarajat of Bank Indonesia; Mr. Raja Syamsul Anwar and Ms. Tan Bee Chin of Bank Negara Malaysia; Mr. Gan-Ochir Doojav of The Bank of Mongolia; Daw Thida Myo Aung of Central Bank of Myanmar; Mr. Bibhu Aryal of Nepal Rastra Bank; Mr. Tanu Irau of Bank of Papua New Guinea; Ms. Sittie Hanisha M. Butocan of Bangko Sentral ng Pilipinas; Mr. P. Pushparajah of Central Bank of Sri Lanka; Mr. Yu Hsiao Yuan of Central Bank of the Republic of China (Taiwan); Mr. Khatharit Sitthikul and Ms. Nasha Ananchotikul of Bank of Thailand and Ms. Ngo Thi Thu Tra of State Bank of Vietnam. The SEACEN Centre also wishes to thank Dr. Ramon Moreno, Head of Emerging Market Issues, Bank for International Settlements,

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

Dr. A. G. Karunasena
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The SEACEN Centre
Kuala Lumpur

June 2009

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EXECUTIVE SUMMARY

The SEACEN economies have liberalised their external accounts and domestic financial markets. The current account is fully convertible in all the countries in the SEACEN region while the capital account is by and large fully convertible in the majority of these countries. Since early 1990s, net capital flow to the SEACEN countries increased steadily until 1996 due to the massive increase in total capital inflows. However, after the financial crisis of 1997, total capital outflows have outweighed total capital inflows resulting in a negative net capital flow.

Both domestic factors such as attractive economic growth, attractive interest rates and large current account deficits and external factors such as low world interest rates are responsible for the increased capital inflows in the region. However, determinants of short-term capital inflows vary from that of the total capital inflows. Notably, short-term capital inflows are found to be inversely associated with domestic economic growth. The effects of push and pull factors on capital flows vary across the countries. Recent experiences of SEACEN countries indicate that the US sub-prime mortgage crisis has led to slower capital inflows in the region while domestic political climate, further liberalisation in overseas investment; and, encouragement to invest abroad have accelerated capital outflows.

The SEACEN region has benefited significantly from the increased capital inflows mainly in terms of increased investment, higher economic growth, favourable external accounts and developed financial markets. However, capital flows have also led to challenges for monetary and financial stability. The recent experience of SEACEN countries shows that capital flows can create asset price bubbles and induce sharp increases in bank credit while outflow of capital results in lower equity prices and depreciation of exchange rates.

Short-term capital inflows are highly volatile and prone to sudden reversals. After 2003, the share of short-term inflow started to become increasingly dominant in the total inflow in the SEACEN region, resembling the pattern of capital flows before the 1997 crisis. Due to the larger share of highly volatile short-term foreign capital, SEACEN economies are again, facing the risk of massive capital reversals. In order to prevent a repetition of the same problems in the future, SEACEN countries need to encourage more long-term capital inflows rather than short-term ones. To safeguard the financial system and the economy from speculative attacks, authorities need to implement more prudent regulations

and cautiously monitor potential areas of such attacks. In order to maintain a conducive monetary stability environment, central banks need to sterilise inflows with appropriate intervention measures.

Freer exchange rates allow for more capital flows in and out of the country. However, in the time of distress, the countries that have a free floating exchange rate regime may suffer from larger capital reversals. Therefore, a managed floating exchange regime may be more advantageous during a crisis.

The financial markets and economies of the SEACEN countries are currently affected by the global financial crisis, due mainly to external factors. In order to minimise further negative impacts of the crisis on various sectors of the economy including capital flows, to speed up the recovery process, and also to explore the possibility of inventing new economic drivers within the region, coordinated policy measures need to be implemented at the national as well as regional levels.

PART 1:
INTEGRATIVE PAPER

Chapter 1

CAPITAL FLOWS MANAGEMENT IN THE SEACEN COUNTRIES

by

Min B. Shrestha and Choon-Seng Lim, Vincent¹

1. Background

The liberalisation of capital accounts and domestic financial markets in the emerging countries has resulted in large surges in capital flows. Various studies have suggested that recipient countries are best placed to reap the benefits of foreign inflows if their economic fundamentals are sound. Capital inflows can finance a higher rate of economic growth but they can also be disruptive as they can lead to rapid monetary and credit expansions, higher inflation, real exchange rate appreciation and unsustainable external debt positions. On the other hand, abrupt reversal of capital flows may bring severe economic consequences.

The SEACEN countries attracted large volumes of capital from developed countries during the 1980s and 1990s. After the financial crisis of 1997, the direction and composition of capital flows have seen a significant change. Based on the past experiences of the cycle of massive capital inflows, sudden reversal and financial crisis, Governments these days are not just courting capital inflows but are concerned about the proper management of such flows. The objectives of capital flows management are to ensure that the financial system is able to intermediate inflows in a sound and safe manner, direct the inflows into the most productive uses, and to limit the adverse impact of capital flows, particularly large and sudden speculative short-term capital flows.

Against the above backdrop, this study aims at examining the overall status of capital flows management in the SEACEN region. The main objectives of this research are to share the country experiences on managing capital flows, in particular short-term capital flows; and to explore the implications of capital flows for central bank policies. The study presents an overview of the recent developments in capital movements and compares the capital flow management policies in the SEACEN countries. Based on its findings, the study suggests some policy measures for effective management of capital flows.

1. Senior Economists, The SEACEN Research and Training Centre

This study in general covers all the sixteen SEACEN countries which include Brunei Darussalam, Cambodia, Fiji, Indonesia, Korea, Malaysia, Mongolia, Myanmar, Nepal, Papua New Guinea, Philippines, Singapore, Sri Lanka, Taiwan, Thailand and Vietnam. However, due to data unavailability, some countries are omitted in various sections of data analysis and empirical investigation. The countries covered are indicated in the respective sections of the discussion wherever relevant. Individual country cases of 12 SEACEN countries are discussed in detail in the accompanying 12 country papers.

This paper, which is the integrative part of this volume, is organised as follows. Section 2 presents the literature survey on the theory and evidence on various aspects of capital flows. Section 3 discusses the general policy frameworks for capital flows in the SEACEN countries. Section 4 examines recent trends in capital flows in the region. Section 5 discusses the impact of ongoing global financial crisis on capital flows. Section 6 outlines the recent policy measures implemented to mitigate the negative impact of global financial crisis. Section 7 analyzes determinants of capital flows. Section 8 discusses the monetary and financial implications of capital flows. Finally, Section 9 presents concluding remarks.

2. Literature Survey

2.1 Determinants of Capital Flows

Economic theories suggest that capital will move from rich to poor countries due to investment opportunities and return differentials (Lucas, 1990; Mishra et al, 2000). Studies show that various push and pull factors work as the determinants of capital flows. Push factors refer to those that lead to capital flows out of the capital exporting country while pull factors refer to the internal factors which attract the capital to the recipient country.

Calvo et al (1993) found that external factors such as declines in US interest rates were the primary determinant of capital inflows to developing countries in the early 1990s. While studying broader samples of emerging markets, Fernandez-Arias (1996) found that global interest rates accounted for nearly 90% of the increase in portfolio investment flows to the average emerging market in 1989-1993. Kim (2000) also poses the similar view that external factors mainly in the form of changes in the foreign interest rate and foreign output determine capital flows.

According to Salt (2002), both external and internal factors are important in determining capital flows but the relative importance of external and internal factors differ across components of the capital account. As documented by World Bank (1997), domestic factors became more important determinants of capital flows in 1993-1995, as rising US interest rates did not interrupt continued flows of capital to developing countries. Kang et al (2002) found that both pull and push factors were important determinants of capital flows in Korea during the 1990s and current account was one of the most important determinants of capital flows.

Bacchetta et al (2000) argue that financial liberalisation and structural reforms which included removal of capital controls, liberalisation of the domestic financial system, trade liberalisation, macroeconomic stabilisation, and privatisation undertaken in recent years in emerging as well as industrialised countries are the fundamental factors behind the increase in capital inflows to developing countries. Mody and Srinivasan (1998) argue that new capital flows tend to go to countries that have received large flows in the past.

2.2 Consequences of Capital Flows

Most of the studies support the view that foreign capital positively affects domestic consumption and investment which in turn leads to higher economic growth (North, 1956; Chenery and Strout, 1966; Calvo et al, 1996; Bosworth et al, 1999; Mishra et al, 2000; Moreno, 2000). The additional capital coming from outside can help increase investments in the economy. Mishra et al (2000) find that a 1% increase in capital inflows to Africa boosts investment by more than 1%. Ito (2000) opines that capital flows to Asia increased investment, which in turn contributed to higher growth in Asian nations and subsequent high growth performances attracted further capital inflows creating a virtuous cycle of capital flows and economic growth.

In addition to increasing consumption and financing rapid rates of investment, capital flows also allow investors to diversify their risks (Calvo et al, 1996; Moreno, 2000). Several studies also suggest that foreign finance may come packaged with expertise and can be a vehicle for technology transfer (Borensztein et al, 1998; Urata and Kawai, 2000; Eichengreen, 2006).

Some studies argue that the productivity and benefits of foreign capital will depend on the pre-existing conditions in the economy. Lucas (1990) finds that new investment is more productive in countries with a skilled workforce and well-developed physical infrastructure. Foreign direct investment helped boost

productivity in Malaysia, Taiwan and southern China but similar impact was not evident in Morocco, Tunisia, and Uruguay (Mishra et al, 2000). Borensztein et al (1998) suggest that FDI can contribute to economic growth only when a sufficient absorptive capability of the advanced technologies is available in the host country. Bailliu (2000) analysed panel data of 40 developing countries over the period 1975-1995 and found that capital inflows can accelerate growth only if the banking sector has reached a certain level of development.

Studies also point out to the differing impact of the foreign capital on the economy depending on the composition. Bosworth et al (1999) document stronger impact of foreign direct investment and weaker impact of portfolio flows and international bank lending on domestic investment. According to World Bank (1996), foreign direct investment is more likely than portfolio investment to go into new projects, increasing demand in capital goods markets and for capital imports. Mishra et al (2000) find that private capital flows in the form of portfolio flows are associated with the development of domestic capital markets, which in turn bolster growth.

Capital inflows may bring various benefits to the economy but it is not immune from negative impact and risks. Several studies have analysed the potential negative impact of capital inflows. Volatility in capital flows may have negative influence as sudden reversal of the capital can be devastating for recipient countries. Moreover, capital flows may also be associated with financial instability and macroeconomic risks.

Lensik et al. (2003) examine the impact of uncertain capital flows on the growth of 60 developing countries during the 1990s. They find that uncertain capital flows have a negative effect on financial market and growth in developing countries.

Various factors may be behind the sudden capital reversal. Milesi-Ferretti and Razin (1998) studied sudden reversals in capital inflows in 86 countries from 1971-1992 and found that both external and domestic factors may cause sudden reversals. External factors that increased the likelihood of capital flow reversals included worsening terms of trade, high US interest rates, and low official transfers to the developing country while domestic factors likely to be associated with a capital reversal included larger current account deficits or foreign borrowing, a smaller ratio of exports plus imports to GDP, lower foreign reserves, and a smaller proportion of concessional debt. A study by Berg and Pattillo (1998) suggests that domestic factors may have played a larger role in the East Asian currency crises of 1997.

Capital flows can increase the vulnerability of a country with weak financial markets to banking and exchange rate crises (Mishra et al, 2000). Kawai and Lamberte (2008) argue that capital inflows could create maturity and currency mismatches in the balance sheets of private sector debtors (particularly banks and corporations), push up equity and other asset prices, and potentially reduce the quality of assets, thereby contributing to greater financial fragility. According to Eichengreen (2006), financial sector weaknesses played a larger role than macroeconomic imbalances in setting the stage for the crisis. Among these weaknesses were poorly regulated banking systems, pervasive connected lending, unreliable bankruptcy and insolvency procedures, and weak creditor rights. Schadler (2008) find that about 15% of the large capital inflow episodes over the past 20 years ended in crisis.

The macroeconomic risks associated with larger capital flows include rapid monetary expansion, inflationary pressures, real exchange rate appreciation and widening current account deficits (Calvo et al, 1996; World Bank, 1996; Bacchetta et al, 2000). The capital inflows can lead to inflationary pressures, especially when they are monetised. Since an inflow of capital also implies a higher demand for a nation's currency, it often means an appreciating exchange rate which may widen the trade deficit to uncomfortable levels (Calvo et al, 1996). Kawai and Lamberte (2008) opine that capital inflows could affect macroeconomic performance in a way not consistent or compatible with domestic policy objectives such as sustainable economic growth with price stability. Bacchetta et al (2000) argue that the capital inflows and outflows themselves generate significant turbulence in emerging market economies and this turbulence in turn affects capital flows.

2.3 Policy Issues and Challenges

Capital flows can boost investment and spur productivity growth when harnessed effectively. Therefore, domestic policy priorities that foster more efficient investment will also attract productive foreign capital (Mishra et al, 2000). World Bank (1996) argues that freer capital flows improve the allocation of capital globally, allowing resources to move to areas with high rates of return while attempts to restrict capital flows lead to distortions that are generally costly to the economy imposing the controls.

Understanding of the relative importance of external or domestic factors in driving capital flows has important implications for policy. If capital flows are driven largely by domestic factors, developing countries can attract a steady and predictable flow of foreign capital and minimise cycles by adopting sound

macroeconomic and financial policies. However, if capital flows are driven largely by external factors, developing countries are vulnerable to unexpected external shocks even if they maintain prudent policies, and they must take measures to insulate themselves (Moreno, 2000).

When the volume of capital flows, especially short-term flows becomes too large, monetary policy becomes difficult (Khan and Reinhart, 1995; IMF, 1995). Therefore, capital importing countries face the challenge of designing appropriate policies that secure the most benefits from capital inflows while maintaining monetary stability.

3. Existing Policy Frameworks

A country's policy framework related to capital flows and the exchange rate regime is crucial in encouraging or discouraging capital flows to and from the country. Current account and capital account liberalisation is taking place at a faster pace and countries are increasingly floating their exchange rates in the SEACEN region. At present, 4 countries have a free floating exchange rate regime and 9 countries have a managed floating regime while 3 countries are maintaining fixed exchange rate regime (See Box No. 1).

Current account is fully convertible in all the countries covered in this study. On the capital account side, it is fully or almost fully convertible in Brunei Darussalam, Indonesia, Korea, Malaysia, Papua New Guinea, Singapore and Taiwan while there are some restrictions imposed in Cambodia, Fiji, Mongolia, Myanmar, Nepal, Philippines, Sri Lanka, Thailand and Vietnam.

Countries where both inflow and outflow of FDI, portfolio and other investment are fully or almost fully allowed are categorised as the countries with fully convertible capital accounts. In the countries where capital account is partially convertible, FDI inflow is allowed while portfolio inflow is allowed in only some of them. Brunei, Cambodia and Myanmar do not have formal capital markets to attract portfolio inflows while in Nepal, the capital market is not opened to foreign investors. Investment abroad by residents is either by and large prohibited or limited in the countries with partial capital convertibility.

Box No. 1: Capital Flow Management Frameworks

<i>Country</i>	<i>Exchange Rate Regime</i>	<i>External Accounts Convertibility</i>
Brunei Darussalam	<ul style="list-style-type: none"> - Currency board system - Singapore currency is the anchor currency - Brunei Dollar is at par with Singapore Dollar. 	<ul style="list-style-type: none"> - Both current and capital accounts are fully convertible. - Foreign investors can lease land but are not allowed to own.
Cambodia	<ul style="list-style-type: none"> - Managed floating system - Exchange rate is set freely by the market but official exchange rate is used for official transactions 	<ul style="list-style-type: none"> - Current account is fully convertible while capital account is partially convertible. - There is no limit for the foreign direct investment and capital flow from overseas - Investment abroad by Cambodian residents exceeding USD 50,000 must be declared to NBC
Fiji	<ul style="list-style-type: none"> - Fixed exchange rate system - Value of the Fiji dollar determined vis-à-vis a basket of currencies 	<ul style="list-style-type: none"> - Current account is fully convertible while capital account is partially convertible. - Exchange controls are used to meet the objectives of low inflation and a comfortable level of foreign reserves.
Indonesia	<ul style="list-style-type: none"> - Free floating system 	<ul style="list-style-type: none"> - Both current and capital accounts are fully convertible. - Bank Indonesia employs prudential measures governing foreign transactions, including foreign borrowing, derivative transactions and net open position.
Korea	<ul style="list-style-type: none"> - Free floating system-Exchange rate basically determined by the market 	<ul style="list-style-type: none"> - Both current and capital accounts are fully convertible. - Negative list system adopted under which the authorities control capital transactions in certain areas.
Malaysia	<ul style="list-style-type: none"> - Managed floating system - Exchange rate of the <i>ringgit</i> determined based on a basket of currencies. 	<ul style="list-style-type: none"> - Both current and capital accounts are fully convertible. - Foreign currency borrowings by residents above a specified limit require prior permission - Both residents and non-residents are free to remit abroad own funds. Non-residents are free to repatriate any amount of capital, profits and income earned in Malaysia.

Mongolia	<ul style="list-style-type: none"> - Managed floating System - Official exchange rate of <i>togrog</i> against the USD is set daily by the Bank of Mongolia 	<ul style="list-style-type: none"> - Current account is fully convertible while capital account is partially convertible. - Investment by private corporations in export promotion, use of advanced technology, and the exploration of natural resources are encouraged - Sales or issue of capital market securities, money market securities, derivatives and other instruments locally by nonresidents are prohibited - Nonresidents can purchase local bonds and other debt securities and commercial credits to and from nonresidents are allowed
Myanmar	<ul style="list-style-type: none"> - Managed floating system - <i>Kyat</i> officially pegged to SDR and exchange rates of all major currencies determined based on their value against SDR 	<ul style="list-style-type: none"> - Current account is almost fully convertible while capital account is partially convertible. - Foreign Investors can setup their business either in the form of wholly foreign-owned or a joint venture and repatriation of capital and profits is allowed through banks after payment of taxes and other prescribed funds.
Nepal	<ul style="list-style-type: none"> - Flexible exchange rate for convertible currencies and fixed exchange rate for Indian currency 	<ul style="list-style-type: none"> - Current account is fully convertible while capital account is partially convertible. - Foreign direct investments except in certain areas are allowed but require prior approval. - Nonresidents may invest in equity shares up to 25% of the capital of the Nepalese companies; residents are not allowed to make investments abroad; repatriation of profit earned from investment does not need approval.
Papua New Guinea	<ul style="list-style-type: none"> - Managed floating system 	<ul style="list-style-type: none"> - Both current and capital accounts are fully convertible. - All private capital account flows, must be approved by BPNG

		<ul style="list-style-type: none"> - All private capital account contracts to acquire or deal with an asset within or outside PNG and to open foreign currency accounts outside PNG require approval
Philippines	<ul style="list-style-type: none"> - Free floating system - Exchange rate determined by market forces 	<ul style="list-style-type: none"> - Current account is fully convertible while capital account is partially convertible. - Policies and measures aimed at strengthening country's external position and reducing country's vulnerability to sudden reversals of capital flows are adopted.
Singapore	<ul style="list-style-type: none"> - Managed floating system characterised by basket, band and crawl framework 	<ul style="list-style-type: none"> - Both current and capital accounts are fully convertible. - No restrictions on inflow and outflow of funds including repatriation of profits, dividends and capital abroad. - No exchange control formalities or approvals required for any forms of payments or capital transfer.
Sri Lanka	<ul style="list-style-type: none"> - Free floating system 	<ul style="list-style-type: none"> - Current account is fully convertible while capital account is partially convertible. - Investment abroad by residents permitted on a case by case basis and foreign investment in government Treasury Bond is permitted up to 5% of the outstanding Treasury Bond amount.
Taiwan	<ul style="list-style-type: none"> - Managed floating system - Exchange rate determined by supply and demand in the foreign exchange market 	<ul style="list-style-type: none"> - Both current and capital accounts are fully convertible. - Only limited restrictions remain on short-term financial transactions involving the conversion of the NTD. - Domestic company can freely conduct inward and outward remittance up to USD 50 million and such limit for residents is USD 100 thousand and nonresidents can remit up to USD 100 thousand per transaction.

Thailand	<ul style="list-style-type: none"> - Managed floating system - Value of <i>Baht</i> largely determined by the market force 	<ul style="list-style-type: none"> - Current account is fully convertible while capital account is partially convertible. - Residents are encouraged to invest abroad in order to promote more balanced capital movements.
Vietnam	<ul style="list-style-type: none"> - Managed floating system - Forward exchange rate is determined on the differential between the prime interest rate of VND and that of the FED 	<ul style="list-style-type: none"> - Current account is fully convertible while capital account is partially convertible. - Foreign investors can invest in Vietnam through capital contribution and purchase of shares of the domestic enterprises - Enterprises and economic agencies are allowed to borrow from foreign borrowing sources.

Source: "Exchange Rates and Capital Flows in the SEACEN Countries", *SEACEN Occasional Papers No. 46*, 2008, and "Monetary and Financial Stability in the SEACEN Region", *SEACEN Occasional Papers No 49*, Forthcoming, 2009.

In general, the objective of capital flow management frameworks have been to attract high volumes of foreign capital and discouraging the capital outflows. There has been a surge in capital inflows in most of the SEACEN countries during 1980s and 1990s. However, the financial crisis of 1997 has taught a valuable lesson in that countries should encourage more long-term capital inflows since short-term capital are prone to sudden reversals. Lately, SEACEN countries are increasingly allowing and encouraging their residents to invest abroad.

4. Trends in Capital Flows until 2007

Data on capital flows show that net capital flow has become negative post 1997 in SEACEN region due to the increase in capital outflow. As a result of the distress created by financial crisis of 1997, there was massive decline in both the total inflow and total outflow of capital. Capital inflow as well as capital outflow picked up after 2002 but the rate of increase in total outflow exceeded that of the total inflow resulting in a negative net capital flow.

Figure 1: Total Capital Flows

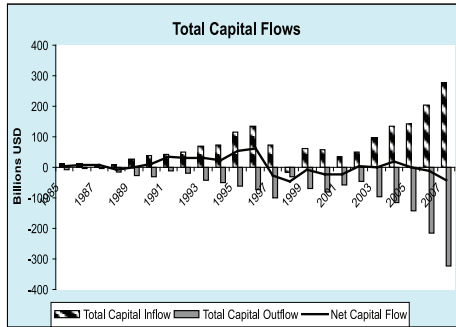


Figure 2: Composition of Inflow

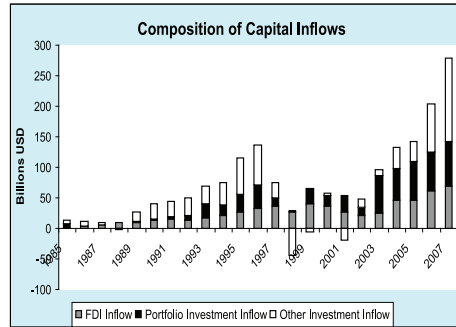


Figure 3: Composition of

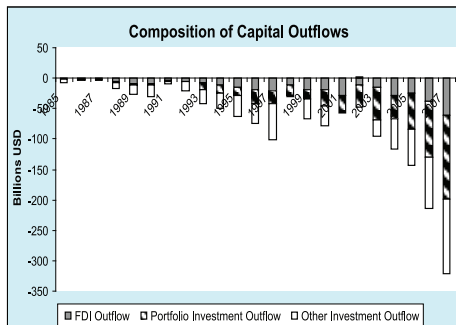
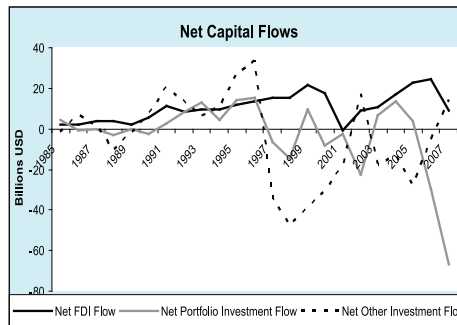


Figure 4: Net Capital Flow



Out of the total capital inflow of USD 278 billion received in 2007 by 11 SEACEN countries² included in the study, USD 69 billion came as direct investment, USD 73 billion as portfolio investment and USD 136 billion as other investments. On the outflow side, portfolio investment held the largest share. Out of the total outflow of USD 321 billion, total portfolio investment outflow was USD 139 billion, other investment outflow was USD 122 billion while FDI outflow was USD 60 billion. Net FDI has been comparatively stable and positive while net portfolio flow and net other investment flow have remained mostly negative and highly volatile during the study period.

2. These countries include Cambodia, Indonesia, Korea, Malaysia, Nepal, Philippines, Singapore, Sri Lanka, Taiwan, Thailand and Vietnam.

Figure 5: FDI Flows

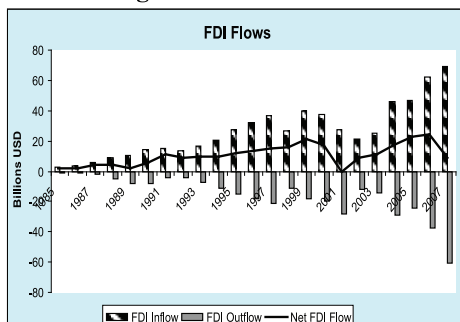
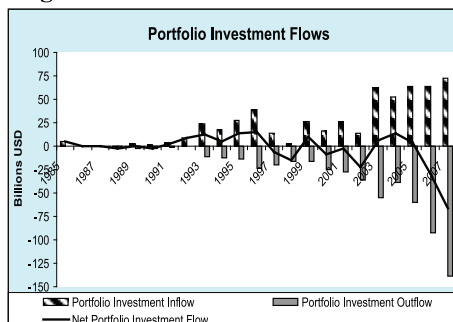


Figure 6: Portfolio Investment Flows



Composition-wise, the breakdown shows that both FDI inflow and outflow have increased after 2002 (Figure 5). Portfolio investment inflow remained stable while outflow increased significantly in the recent years (Figure 6). Other investment inflow fluctuated highly after the Asian financial crisis until 2005 and has since recorded a significant increase in 2006 and 2007. Other investment outflow started to see a persistent increase since 2003 (Figure 7).

Figure 7: Other Investment Flows

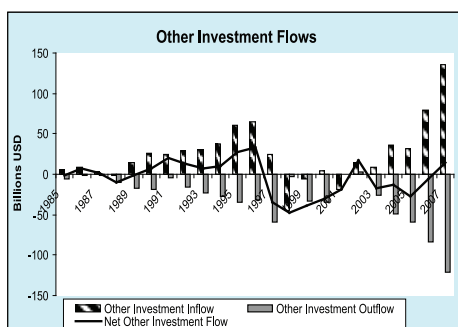
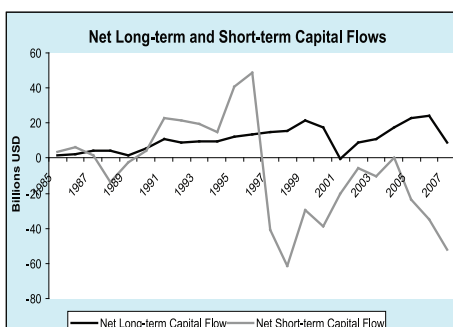


Figure 8: Term-wise Net Capital



In terms of maturity, FDI is long-term capital while portfolio investment and other investment are short-term capital. The term-wise breakdown shows that net long-term capital, which is identical to net FDI flow, has remained positive and comparatively stable while net short-term capital flow has fluctuated highly and continued to remain negative after the financial crisis of 1997 (Figure 8).

Both short-term capital inflow and outflow have increased by a higher rate than long-term capital inflow and outflow in the recent years (Figures 9 -12). Short-term capital inflow amounted to USD 208 billion in 2007 compared to a

long-term inflow of USD 69 billion. Similarly, short-term capital outflow was USD 261 billion compared to the long-term outflow of USD 60 billion in the same year.

Figure 9: Term-wise Capital Inflows

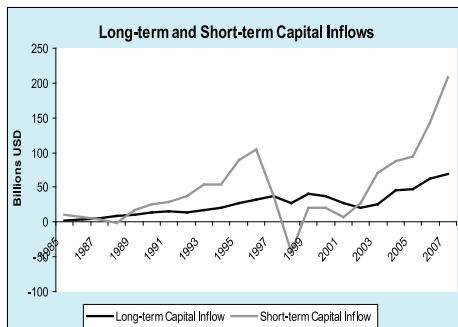


Figure 10: Term-wise Capital Outflows

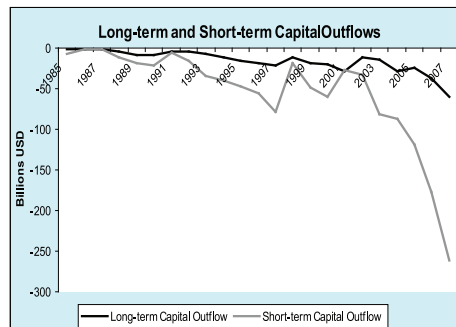


Figure 11: Long-term Capital Flows

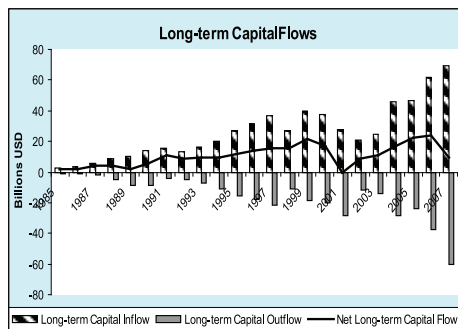
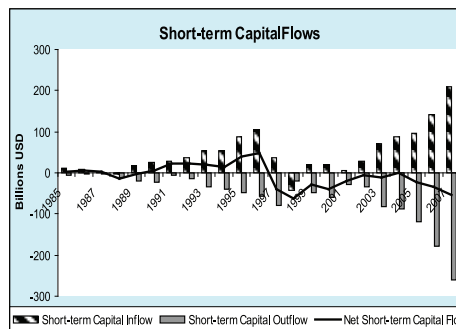


Figure 12: Short-term Capital Flows



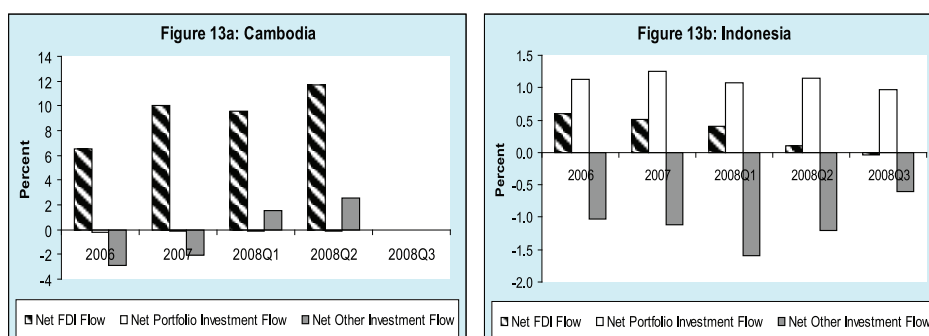
Thus, it can be seen from the data that the SEACEN region is becoming net capital exporter in terms of aggregate flows after the 1997 financial crisis. However, this amount also includes the capital movement that had taken place within the region. The composition of capital flow has also gone through a significant change. In the recent years, short-term capital has taken a larger share in both capital inflow and outflow resembling the pattern of capital flows before 1997.

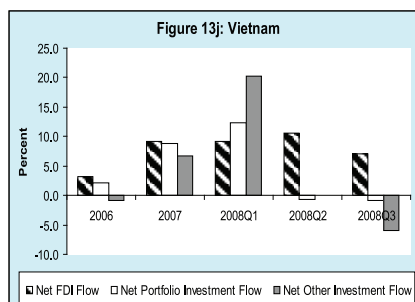
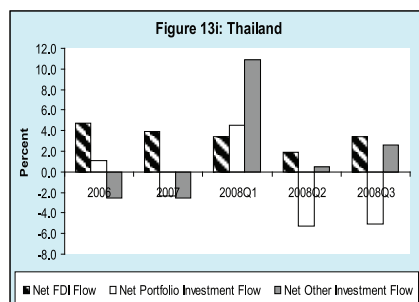
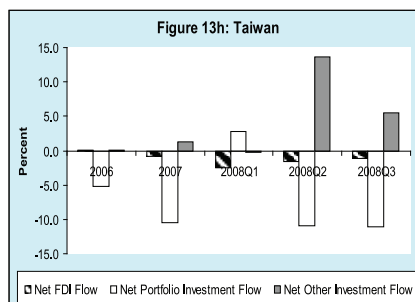
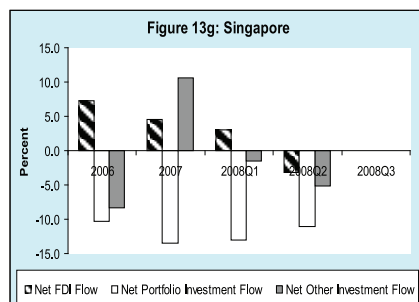
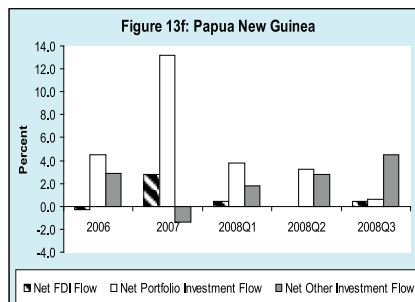
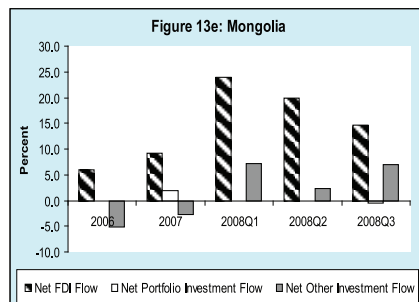
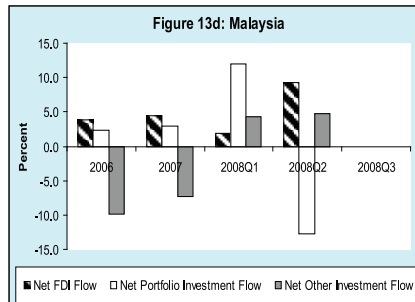
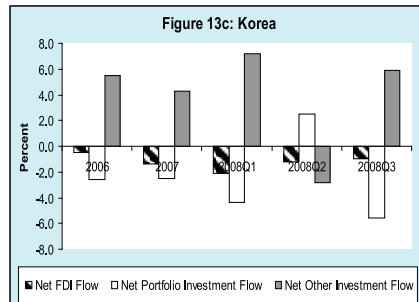
5. Global Financial Crisis and Capital Flows

The global financial crisis that originated from the US subprime mortgage crisis in August 2007 has started to affect the capital flows in the SEACEN region. Countries having financial markets that are highly integrated with the global market appear to be facing deeper impacts. Due to the deleveraging by foreign investors, capital inflows have slowed down and instead capital reversal is taking place.

The latest figures of 2008 reveal that net FDI flow as a ratio of GDP has slowed down in Indonesia, Mongolia, Papua New Guinea, Thailand and Vietnam in the first nine months of 2008 while it has become negative in Singapore in the second quarter of 2008 (Figure 13 and Box No. 2). However, net FDI continued to increase in Cambodia and Malaysia in the second quarter of 2008. Korea and Taiwan, which are among the net capital exporters in this region and had a net negative FDI flow, also show a slowdown in 2008.

Figure 13: Net Capital Flows to GDP Ratio in Selected SEACEN Countries*
(in percent)





* Countries selected based on data availability; data for 2006 and 2007 are in annual frequency and for 2008 in quarterly frequency; 2008Q3 data not available for Cambodia, Malaysia and Singapore.

Data Source: SEACEN Occasional Papers No. 49, Forthcoming.

Box No. 2: Recent Trends in Capital Flows

<i>Country</i>	<i>Trends</i>
Cambodia	The surge in capital inflows which began in 2005, continued in 2008. The share of FDI flows in total inflows has risen sharply in recent years. There is no portfolio flow in Cambodia due to the absence of a capital market.
Indonesia	After the Asian financial crisis, foreign capital flows to Indonesia mainly consist of portfolio flows. During the first six months of 2008 also, capital flows was dominated by net portfolio investment. Net other investment flow continued to record a net outflow in 2008. As an impact of ongoing global financial markets turmoil, Indonesia has experienced increased capital outflows, which has led to a significant fall in the Jakarta composite index. The yield of government bond saw a sharp rise in September-October 2008 but dropped significantly afterwards. Moreover, portfolio readjustment of rupiah instruments by foreign investors resulted into a depreciation of rupiah by 10 percent.
Korea	The current account turned negative in Q1 and Q2 2008, resulting from the sharp reduction in trade surplus due to high oil prices. The financial account balance deteriorated as foreign investors sold off equity in the stock market and banks began to repay their foreign-currency borrowings.
Malaysia	In the first half of 2008, the financial account recorded a net inflow of RM13.4 billion. Direct investment outflow reached RM20.8 while direct investment inflow stood at RM20.7 billion resulting into a marginal net outflow. Portfolio investment recorded a net outflow of RM3 billion due to the liquidation of both debt and equity securities by foreign investors. However, other investment recorded a net inflow of RM16.4 billion reflecting mainly net placement of deposits by foreign banks in the domestic banking system.
Philippines	The capital and financial account recorded a sizeable increase in net inflows, aggregating US\$1.2 billion in the first semester of 2008, from US\$144 million in the same period in 2007. The direct investment flow in the first half of the year reverted to a net inflow of US\$742 million net inflow from a net outflow of US\$1.4 billion a year ago. The other investment account recorded a net inflow of US\$643 million in the first semester of 2008, a turnaround from the net outflow of US\$632 million a year ago. The portfolio investment account posted a net outflow of US\$191 million during the first half of 2008, a turnaround from the US\$2.3 billion net inflow recorded in the comparable quarter in 2007.
Singapore	While Singapore continued to record net outflows from the financial account, the magnitude of such flows moderated in the first half of 2008 to S\$2.4 billion, compared with S\$17 billion over the same period last year. In terms of the major components of capital flows, portfolio

	investment registered a net outflow of S\$13 billion, while direct investment and other investment showed a net inflow of S\$4.6 billion and S\$5.6 billion respectively.
Taiwan	During the first half of 2008, the current account registered a surplus of US\$8,495 million and US\$6,493 million in the first and second quarter of 2008, respectively. In the same period, direct investment registered a net outflow of US\$2,568 million and US\$1,516 million, respectively. With respect to portfolio investment, residents' portfolio investment registered a net outflow of US\$6,377 million and US\$7,141 million in the first and second quarter of 2008, respectively. Non-residents portfolio investment, on the other hand, stood at a net inflow of US\$9,313 million in the first quarter of 2008 but it turned into a net outflow of US\$3,609 million in the second quarter of 2008. As for the financial derivatives, a net inflow of US\$821 million was recorded in the first quarter of 2008 compared to a net outflow of US\$35 million in the second quarter of 2008. Meanwhile, other investment recorded a net outflow of US\$242 million in the first quarter of 2008 compared to a net inflow of US\$13,142 million in the second quarter of 2008. Overall, the financial account registered net inflows of US\$947 million and US\$841 million in the first and second quarter of 2008, respectively.
Thailand	Net capital inflows to Thailand continued to be positive until 2007 and the first half of 2008. However, in the third quarter of 2008, net capital inflows registered a deficit mostly due to a reversal of capital inflows from portfolio and other investments, while FDI inflows remained relatively stable. The portfolio outflow declined markedly in 2008 due to the global financial turmoil, while FDI outflow remained quite resilient to the external shocks and continued to register relatively large net outflow in 2008. As for other investments, two items that have been major components in this category are changes in bank swap positions and hedging by residents. During 2006-2008Q2, the net outflow under this category largely reflected bank outflow associated with the increase in foreign holdings by the banking sector to square their foreign asset positions as a result of being a counterparty to the BOT's swap agreements. This amount more than offset bank inflow due to an increase in the FX hedging ratio by exporters against currency appreciation. The opposite was happening in the third quarter of 2008 when the Baht started to depreciate due to a capital reversal by non-residents.
Vietnam	In the first nine months of 2008, foreign capital flows continued to increase in Vietnam, the majority of which was medium and long-term capital. FDI in the first nine months registered at US\$ 57 billion, which was five-fold compared to that in the same period of 2007. The reimbursed FDI increased by 13.2% and was recorded at US\$8.1 billion, of which foreign reimbursement accounted for US\$ 5.67 billion. The downturn of the Vietnam Stock market led to the decrease of portfolio investment inflow. The net portfolio investment inflow decreased by 65% to US\$ 1.6 billion compared to that in 2007. In general, the structure of foreign capital flows in Vietnam still remains highly stable given the medium and long-term capital including FDI, ODA as well as medium and long-term commercial borrowings which accounted for 72% of total inflows, as compared to 58% in 2007.

Source: SEACEN Questionnaire Survey, December 2008

Among the three components of capital flows, the portfolio investment flow has been affected the most by the global financial crisis. Decreased inflow and increased outflow in portfolio flow has resulted into a decreased net portfolio inflow in Indonesia and Papua New Guinea while it has become negative in Malaysia, Thailand and Vietnam in 2008. In Singapore and Taiwan, the net portfolio outflow has slowed down while it has fluctuated in Korea in the same period (Figure 13).

Net other investment flows in Cambodia, Malaysia and Papua New Guinea remained stable but fluctuated highly in Korea, Mongolia, Singapore, Taiwan, Thailand and Vietnam in the first nine months of 2008.

6. Recent Policy Measures to Manage Capital Flows

The negative impact of the global financial crisis has been felt in 2008 by the majority of the SEACEN countries. Capital inflows are slowing down and capital reversal is increasing due to the liquidation of assets by foreign investors to deleverage their parent companies. This has put downward pressures on the domestic currencies of the SEACEN countries and has also been associated with declining foreign exchange reserves due in part to central bank intervention to increase foreign currency liquidity.

With a view to minimise the negative impacts of the ongoing global financial crisis, central banks and the governments of the SEACEN countries have implemented various policy measures. Key policy measures include lowering interest rates to ease the effect of the financial market turmoil and avoid a severe contraction of economic activity; banning short-selling and implementing a circuit-breaker to contain the mounting pressure on equity markets; enhancing existing repurchase agreement facilities through relaxed valuation and a broader list of acceptable collateral; intervention of the foreign exchange market; policy coordination between government and the central bank to mitigate financial market panic; shoring up market confidence through timely communication on developments and policy changes; implementing deposit insurance to fully guarantee deposits in the banking system; and, coordinating at regional level to share information, discuss emerging developments, and pool resources, particularly foreign exchange reserves (See Box No. 3 for detail).

Box No. 3: Policy Measures Implemented Recently

<i>Country</i>	<i>Trends</i>
Cambodia	New measures introduced by the National Bank of Cambodia included increasing the reserve requirements and imposing a cap on bank lending. These measures are aimed to reduce excess liquidity in the banking system and to limit banks' exposure to the real estate sector. Since the measures have been effective only in July, it is still premature to give a good assessment of their impact. However, there are some indications that the level of bank excess liquidity has been reduced.
Indonesia	Indonesia has implemented several policies in 2008 to manage capital flows. One of them is the intensified policy coordination between the government and Bank Indonesia which includes setting an auto rejection of transactions when prices fall below 10% to mitigate the fall in the stock market. Meanwhile, the Indonesian government has committed to buy back government bond (SUN) to improve liquidity. Furthermore, to reduce potential losses, Bank Indonesia and the Indonesian Institute of Accountants gave freedom to holders of securities to establish a fair value for securities, including SUN-owned by banks. Also, in an attempt to ensure sufficient liquidity in the economy, the Indonesian government has placed its fund in state owned banks, while Bank Indonesia lowered the reserve requirement ratio for both domestic currency and foreign currency deposits.
Korea	The Korean government, that is the Ministry of Strategy and Finance, held the South Korean currency down on behalf of exporters. The results were not as the government has anticipated as depreciation of the won did not improve the current account but instead raised consumer prices.
Malaysia	The Ministry of Finance and Bank Negara Malaysia jointly announced pre-emptive and precautionary measures to maintain the stability of the Malaysian financial system in October 2008. These measures include full guaranteed of all <i>ringgit</i> and foreign currency deposits with banks and financial institutions until December 2010; extension of access to Bank Negara Malaysia's liquidity facility to insurance companies and <i>takaful</i> operators; reduction in corporate income tax rate; fine-tuning of customised tax and non-tax incentives to promote specific industries; generous tax incentives and flexibilities to invest and operate in the 5 economic corridors; and reduction or improvement in processes, procedures, legislation and human resources in the public sector to reduce costs of doing business.
Philippines	The BSP has been implementing various measures to ensure the soundness and stability of the banking sector, strengthen the public's trust and confidence in the financial system, and guard against systemic risks that could arise from a sudden stop or reversal of capital flows. The measures implemented include ensuring adequate peso and dollar liquidity by enhancing existing peso repo facilities, establishing the US\$ repo facility, maintaining a presence in the spot and swap markets by selling dollars,

	<p>reducing reserve requirement and providing directed relief to banks. These measures along with the concerted efforts in the regional and international fronts by central banks and financial agencies have helped stabilised the financial markets. The peso recovered from a 22-month low of ₱49.58/US\$1 on 28 October 2008 to ₱48.08/US\$1 on 6 November 2008. The benchmark Philippine Stock Exchange Index reached a four-year low of 1,704.4 index points on 28 October 2008, but recovered subsequently.</p>
Sri Lanka	<p>The Government has opened the Rupee denominated Treasury bill market for foreign investors since May 2008 and are permitted to invest up to 10% of the value of Treasury bills outstanding at any given point of time through the primary market. Domestic Banks are allowed to accept time deposits from nonresidents in foreign currencies. Similarly, migrants' transfers have been relaxed by allowing a transfer of foreign exchange equivalent to US\$150,000. These new series of initiatives are designed to promote international investor confidence, secure comparative advantages by moving to global financial markets and to further mobilise foreign savings to address the country's domestic savings-investment gap.</p>
Taiwan	<p>In March 2008, the Financial Supervisory Commission (FSC) allowed insurance companies to issue policies denominated in US dollar; the Executive Yuan relaxed the calculation base of domestic firms' direct investment ceiling in Mainland China; and the FSC raised insurance company's foreign investment ratio of its insurance funds from 35% to 45%, and allowed them to invest in foreign private equity funds and overseas real estates. In July 2008, the government allowed Mainland Chinese to invest in domestic industries and securities market. And in October 2008, the government announced the full deposits insurance scheme that covers foreign exchange deposits. This will attract residents not only to maintain but also to attract foreign deposits back into Taiwan.</p>
Thailand	<p>The key policies in 2008 included the removal of the unremunerated reserve requirement (URR) measure which was implemented in December 2006 to discourage short term speculative inflows. In March 2008, when the Baht movement became much more stable and the economic growth momentum became more stable, the BOT decided to remove the capital flow regulation measure. Additionally, further capital liberalisation aimed at promoting private portfolio investment abroad to reap more international diversification benefits was carried out by increasing the limit on overall outflow by qualified institutional investors from US\$10 Billion to US\$30 Billion in March 2008. Initially, the actual outflows increased in response to the increased limit but it slowed down sharply in Q3 of 2008 due to the unfavorable conditions in the global financial markets and higher risk aversion of Thai investors.</p>
Vietnam	<p>Key measures implemented by Vietnam in 2008 in order to manage capital flows include expansion of daily trading exchange rate band to realise a flexible exchange rate regime in line with the demand and supply for foreign currencies in the market as well as to prevent speculations; and adjustment of prime interest rate, discount rate and refinancing rate to cope with the negative impacts of the international financial crisis on Vietnam's economic growth.</p>

Source: SEACEN Questionnaire Survey, December 2008

7. Determinants of Capital Flows: Empirical Test

As discussed earlier, capital flows are determined by various internal and external factors. In order to examine the determinants of capital flows (CF) in the SEACEN region, empirical tests are conducted employing the following model.

$$CF = a + b_i X_i + d_i Z_i + u \quad (1)$$

where,

X_i – set of internal variables (pull factors), and

Z_i – external variables (push factors)

The internal factors that may work as the pull factors for capital flows include economic growth rate, interest rate, inflation level, current account balance, stock price index, exchange rate volatility, credit rating, trade openness, investment environment, and so on. Similarly, potential external factors that work as pull factors for capital flows include economic growth rate of developed countries and interest rates prevailing in those countries. Understanding the relative importance of internal and external determinants of capital flows is critical in the implementation of appropriate policies to maintain a favourable level of capital flows. If capital flows are driven largely by domestic factors, developing countries can attract a steady and predictable flow of foreign capital and minimise cycles by adopting sound macroeconomic and financial policies. However, if capital flows are driven largely by external factors, developing countries are vulnerable to unexpected external shocks even if they maintain prudent policies, for which they must take measures to insulate themselves (Moreno, 2000).

Since data on all these variables are not available for the study period and also since the inclusion of too many variables is not appropriate, selected key variables are included in the model as follows:

$$CAPIN_t = \beta_0 + \beta_1 RGDP_t + \beta_2 RIR_t + \beta_3 CAGDP_t + \delta_1 WGDPR_t + \delta_2 WRIR_t + e_t \quad (2)$$

where,

$CAPIN$ – capital inflow composed of FDI inflow, portfolio investment inflow and other investment inflow to GDP ratio

- RGDPR* – real GDP growth rate
- RIR* – real interest rate proxied by one year time deposit rate minus inflation rate
- CAGDP* – current account to GDP ratio
- WGDPR* – world real GDP growth rate proxied by the average real GDP growth rate of US and Japan
- WRIR* – world real interest rate proxied by average deposit rate minus average inflation rate of US and Japan

In the above equation, α is the intercept, β_1 , β_2 and β_3 are the coefficients of internal variables (pull factors) and δ_1 and δ_2 are the coefficients of external variables (push factors). Coefficients β_1 and β_2 are expected to have positive signs while signs of the coefficients β_3 , δ_1 and δ_2 are expected to be negative.

Capital flows are composed of both long-term and short-term investments. The determining factors of short-term capital flow may be different than those of long-term flow. In order to analyse specifically the determinants of short-term capital inflows, following model is employed.

$$SCAPIN_t = \alpha_1 + \beta_4 RGDPR_t + \beta_5 RIR_t + \beta_6 CAGDP_t + \delta_3 WGDPR_t + \delta_4 WRIR_t + e_t \quad (3)$$

where,

SCAPIN – short term private capital inflow (composed of portfolio inflow and other investment inflow received by banks and others) to GDP ratio

The independent variables (pull factors and push factors) are same as in equation (2). In the above equation, α_1 is the intercept, β_3 , β_4 and β_5 are the coefficients of pull factor variables and δ_1 and δ_2 are the coefficients of push factor variables. Regarding the sign of coefficients, β_4 and β_5 are expected to be positive while β_6 , δ_3 and δ_4 are expected to be negative.

In this study, annual data of 1977 to 2007 period has been employed. The data are compiled by taking the average of 10 SEACEN countries which include Fiji, Indonesia, Korea, Malaysia, Nepal, Philippines, Singapore, Sri Lanka, Taiwan,

and Thailand. The data for all the countries except Taiwan are taken from International Financial Statistics database, December 2008. The Taiwanese data have been taken from various issues of the Monthly Financial Statistics published by the Central Bank of the Republic of China (Taiwan).

A widely used procedure for analysing the time series data is the cointegration test. Prior to conducting the cointegration test, it is essential to check each time series for stationarity. If a time series is non-stationary, the regression analysis done in a traditional way will produce spurious results. Therefore, the unit root test is required to be conducted first.

Perron (1989) showed that in the presence of a structural break in time series, many perceived non-stationary series were in fact stationary. Perron (1989) re-examined Nelson and Plosser (1982) data and found that 11 of the 14 important US macroeconomic variables were stationary when known exogenous structural break is included. Perron (1989) allows for a one time structural change occurring at a time T_B ($1 < T_B < T$), where T is the number of observations. Traditional tests for unit roots such as Dickey-Fuller, Augmented Dickey-Fuller and Phillips-Perron are viewed to have low power in the presence of structural break. Perron (1989) models cannot be applied where such breaks are unknown. To solve this problem, Zivot and Andrews (1992), Perron and Vogelsang (1992), and Perron (1997) among others, have developed unit root test methods which include one endogenously determined structural break.

The unit root tests conducted following Perron 1997 models and Augmented Dickey-Fuller models are presented in Table 1. SCAPIN and RGDPR are shown to be stationary by both Perron 1997 and ADF models but there is no agreement in the results for CAPIN, RIR, CAGDP, WGDPR and WRIR. Both of these models indicate that the variables included in equation (2) and (3) are of mixed order of integration.

Table 1: Unit Root Test Results

Variable	Perron 1997			Augmented Dickey-Fuller	
	IO2 Model	IO1 Model	AO Model	With intercept	With intercept and trend
CAPIN	Stationary	Stationary	Nonstationary	Nonstationary	Nonstationary
SCAPIN	Stationary	Stationary	Stationary	Stationary	Stationary
RGDPR	Stationary	Stationary	Stationary	Stationary	Stationary
RIR	Nonstationary	Nonstationary	Stationary	Nonstationary	Nonstationary
CAGDP	Stationary	Stationary	Nonstationary	Nonstationary	Nonstationary
WGDPR	Stationary	Stationary	Nonstationary	Stationary	Nonstationary
WRIR	Stationary	Stationary	Nonstationary	Stationary	Nonstationary

Note: Results have been determined at 5 percent significance level.

While plotting the data in graph, CAPIN is seen to have gone through a structural break in 1998 (Figure 14). However, there is no distinct structural break in SCAPIN (Figure 15).

Figure 14: Total Capital Inflow

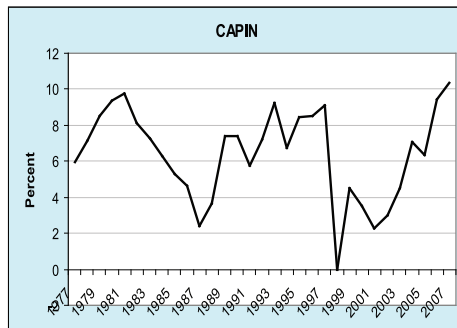
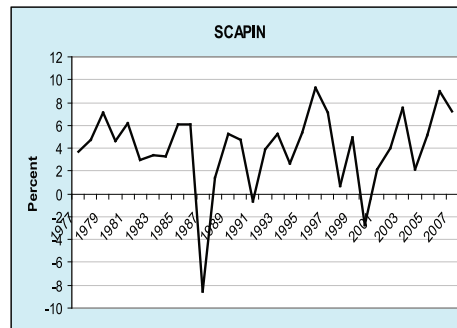


Figure 15: Short-term Capital Inflow



In order to capture the known structural break in CAPIN, a dummy that takes value of 0 until 1998 and 1 after 1999 will be included in equation (2) following Perron (1989). However, there will be no dummy variable in equation (3) as there is no distinct structural break in SCAPIN.

Since the variables in the equation are of mixed order of integration, the standard cointegration tests such as Johansen (1991; 1995) cannot be employed as these tests require all the variables to be of equal order of integration, which is I(1). Therefore, the OLS based autoregressive distributed lag (ARDL) method is employed to analyse the cointegration among the variables in the model. This method can be applied irrespective of whether the regressing variables are I(0) or I(1) (Pesaran and Pesaran, 1997). From the ARDL model, a dynamic error correction model (ECM) also can be derived which integrates the short-run dynamics with the long-run equilibrium without losing long-run information.

The ARDL method estimates $(p+I)^k$ number of regressions in order to obtain optimal lag length for each variable, where p is the maximum number of lag to be used and k is the number of variables in the equation. As the data used in this study are in annual frequency, 3 is selected as the maximum lag (p) to be used³. The model can be selected using the model selection criteria like Schwartz-Bayesian Criteria (SBC) and Akaike's Information Criteria (AIC). In this study, models are selected based on SBC as it is known to be parsimonious.

The ARDL model for equation (2) is as follows:

$$\begin{aligned} \Delta CAPIN_t = & \beta_0 + \sum_{i=1}^p \chi_i \Delta CAPIN_{t-i} + \sum_{i=1}^p \delta_i \Delta RGDP_{t-i} + \sum_{i=1}^p \varepsilon_i \Delta RIR_{t-i} + \sum_{i=1}^p \phi_i \Delta CAGDP_{t-i} \\ & + \sum_{i=1}^p \varphi_i \Delta WGDPR_t + \sum_{i=1}^p \gamma_i \Delta WRIR_t + \lambda_1 RGDP_t + \lambda_2 RIR_t + \lambda_3 CAGDP_t \\ & + \lambda_4 WGDPR_t + \lambda_5 WRIR_t + \lambda_6 D_{CAPIN_t} + u_t \end{aligned} \quad (4)$$

In the above model, D_{CAPIN} is the dummy variable that captures the structural break in *capin*. The null hypothesis is $\lambda_1 = \lambda_2 = \lambda_3 = \lambda_4 = \lambda_5 = \lambda_6 = 0$, which means the non-existence of the long run relationship. The key statistics of the ARDL based cointegration test are presented in Table 2 and 3.

3. Foreign investors' decision to invest in a developing country is generally based on the analysis of macroeconomic performance and other environment factors of the past few years and even after making the decision, some time may elapse before the foreign investment actually flows to the country. Therefore, a longer lag is preferred in the model. However, because of the limited observations available, regression with more than 3 lag is not feasible in this study.

Table 2: ARDL (2,3,3,2,3,3) Model Long Run Results
Dependent Variable: CAPIN

Regressor	Coefficient	Standard Error	T-Ratio
β_0	-2.8463	1.8620	-1.5286
RGDPR	1.0313	0.2375	4.3419 ***
RIR	1.2129	0.2670	4.5426 ***
CAGDP	-0.6897	0.1336	-5.1612 ***
WGDPR	1.5510	0.2920	5.3123 ***
WRIR	-3.1858	0.5245	-6.0742 ***
D_{CAPIN}	4.6537	1.2180	3.8207 **

*** Significant at 1% level

** Significant at 5% level

Table 3: ARDL (2,3,3,2,3,3) Model ECM Results
Dependent Variable: DCAPIN

Regressor	Coefficient	Standard Error	T-Ratio
Db	-5.0438	3.2129	-1.5698
DCAPIN(-1)	0.7495	0.2802	2.6753 **
DRGDPR	0.7683	0.1334	5.7581 ***
DRGDPR(-1)	-0.3802	0.2558	-1.4863
DRGDPR(-2)	0.1768	0.1534	1.1530
DRIR	1.2894	0.3002	4.2954 ***
DRIR(-1)	0.1818	0.2322	0.7830
DRIR(-2)	0.3194	0.1294	2.4691 ***
DCAGDP	0.6262	0.1853	3.3796 ***
DCAGDP(-1)	1.1610	0.2888	4.0197 ***
DWGDPR	1.0621	0.3423	3.1032 **
DWGDPR(-1)	0.6720	0.2320	2.8970 **
DWGDPR(-2)	0.3714	0.2063	1.8002 **
DWRIR	0.1084	0.5969	0.1816
DWRIR(-1)	3.7457	0.9477	3.9526 ***
DWRIR(-2)	1.7387	0.3920	4.4355 ***
$DD_{CAPIN}(-1)$	8.2465	2.4727	3.3350 ***
ECM	1.7720	0.3485	5.0846 ***

*** Significant at 1% level

** Significant at 5% level

The long-run statistics of the ARDL model tests show that real GDP growth rate, real interest rate, world real GDP growth rate are positively associated with capital inflows while current account to GDP ratio and world real interest rate are inversely associated with capital inflows in the SEACEN region (Table 2). All these results are statistically significant at 1% level. The coefficient of ECM (Table 3) indicates to a short-run dynamics that the shock or the deviation from the long-run equilibrium is adjusted back in less than one year time (about 7 months).

Equation (3) is aimed at analyzing the determinants of short-term capital inflows. The ARDL model for equation (3) is as follows:

$$\begin{aligned} \Delta SCAPIN_t = & \mu_0 + \sum_{i=1}^p v_i \Delta SCAPIN_{t-i} + \sum_{i=1}^p \pi_i \Delta RGDP_{t-i} + \sum_{i=1}^p \varpi_i \Delta RIR_{t-i} \\ & + \sum_{i=1}^p \theta_i \Delta CAGDP_{t-i} + \sum_{i=1}^p \vartheta_i \Delta WGDPR_t + \sum_{i=1}^p \rho_i \Delta WRIR_t + \sigma_1 RGDP_t \\ & + \sigma_2 RIR_t + \sigma_3 CAGDP_t + \sigma_4 WGDPR_t + \sigma_5 WRIR_t + u_t \end{aligned} \quad (5)$$

In the above model, the null hypothesis is $\sigma_1 = \sigma_2 = \sigma_3 = \sigma_4 = \sigma_5 = 0$, which means that there is no long run relationship between SCAPIN and a set of independent variables. The ARDL test statistics of this model are presented in Table 4 and 5.

Table 4: ARDL (3,1,2,1,3,3) Model Long Run Results
Dependent Variable: SCAPIN

Regressor	Coefficient	Standard Error	T-Ratio
μ_0	6.5303	0.5293	12.3383 ***
RGDPR	-0.4470	0.1087	-4.1127 ***
RIR	1.0268	0.1637	6.2739 ***
CAGDP	-0.1717	0.4938	-3.4775 ***
WGDPR	0.8957	0.1712	5.2305 ***
WRIR	-3.2984	0.3352	-9.8414 ***

*** Significant at 1% level

Table 5: ARDL (3,1,2,1,3,3) Model ECM Results
Dependent Variable: DSCAPIN

Regressor	Coefficient	Standard Error	T-Ratio
Dm	21.1638	2.9725	7.1200 ***
DSCAPIN (-1)	1.5025	0.2722	5.5210 **
DSCAPIN (-2)	0.7644	0.1535	4.9811 **
DRGDPR	0.2191	0.2828	0.7747
DRIR	2.0892	0.3873	5.3950 ***
DRIR(-1)	-0.5259	0.3203	-1.6419
DCAGDP	1.4282	0.2685	5.3191 ***
DWGDPR	2.1474	0.5235	4.1022 ***
DWGDPR(-1)	1.5421	0.3572	4.3174 ***
DWGDPR(-2)	1.0456	0.3252	3.2153 ***
DWRIR	-1.4041	0.7034	-1.9961
DWRIR(-1)	8.0390	1.3802	5.8246 ***
DWRIR(-2)	3.7469	0.7906	4.7396 ***
ECM	-3.2409	0.3553	-9.1210 ***

*** Significant at 1% level

** Significant at 5% level

The long run test statistics show that there is a highly significant relationship between short-term capital inflow (SCAPIN) and all the independent variables included in the model (Table 4). However, in contrast to the results of CAPIN (total capital inflow) presented in Table 2, the domestic real GDP growth rate is negatively associated with the short-term capital inflow. This result suggests that when economic growth rate is high, more capital will flow into the country as long-term investment such as FDI while there will be more short-term capital inflows when domestic economic growth is declining. This is in line with the fact that portfolio inflows may come to the country even in low growth situation mainly with speculative motive and on the other hand, when FDI inflow is low, banks and other sectors need to borrow more short-term capital from abroad. According to test results, the effects of domestic real interest rate and world real interest rate appear to be of almost similar magnitude for both total capital inflow and short-term capital inflow. However, current account balance and world economic growth have higher impact on total capital inflow compared to short-term inflow.

ECM statistics presented in Table 5 suggest that the short-run change in all the independent variables except real GDP growth rate (RGDPR) is associated significantly with the change in SCAPIN. The ECM of -3.2409 suggests that the speed of adjustment is very fast and it takes only about 3.6 months to adjust back the deviation from the long-run equilibrium.

The above results are based on the aggregate data compiled by taking the average of 10 SEACEN countries as mentioned earlier. The impact of each individual variable on capital inflows vary across the countries but the above test results do not help in analyzing the determinants of capital inflows in the individual countries. The empirical test results reported in the accompanying country papers, which are summarized in Table 6 below, suggest that domestic real GDP growth rate has a positive impact on capital inflows in all the 7 countries included in the table. Among other factors, country risk and world interest rate are inversely related to capital flows while stock market return affects capital inflows positively. However, the impact of domestic real interest rate, current account balance, exchange rate volatility and world economic growth appear to vary across countries.

Table 6: Determinants of Capital Inflows

(Summary of the empirical results reported in accompanying country papers)

<i>Variable</i>	<i>Indonesia</i>	<i>Malaysia*</i>	<i>Mongolia</i>	<i>Philippines</i>	<i>Sri Lanka</i>	<i>Taiwan</i>	<i>Thailand</i>
<i>Real GDP Growth Rate</i>	+	+P	+	+	+	+	+
<i>Real Interest Rate</i>	-	-F	+				
<i>Current Account Balance</i>	-	+F	+	-			-
<i>Stock Market Return</i>	+	+F +P					
<i>Country Risk</i>	-	-F					
<i>Exchange Rate Volatility</i>		+P		-			
<i>World Economic Growth Rate</i>		-P	+				
<i>World Interest Rate</i>			-	-			
<i>Other variables</i>	In addition to above variables, real effective exchange rate appreciation, liquidity, reserves to short-term debt ratio, contagion and global financial market volatility also affect capital inflows in Malaysia while real interest rate differential and market view of risk are other variables affecting capital inflows in Thailand.						

Note: '+' indicates a statistically significant positive relationship while '-' indicates a statistically significant inverse relationship.

** Country paper of Malaysia reports separate regression results for FDI Inflow and Portfolio Inflow. In the table, F indicates the regression result for FDI Inflow while P indicates the result for Portfolio Inflow.*

The individual country analysis based on a survey indicates that the US sub-prime mortgage crisis, heightened risk aversion of global investors, global liquidity squeeze and uncertainty in financial markets; and, slower global economic growth are the external factors that have slowed down the capital inflows while the political climate of the country, further liberalisation on overseas investment; and, encouragement of sovereign funds to invest abroad are the internal factors that have accelerated capital outflow in the SEACEN region.

Box No. 4: Internal and External Factors Influencing Capital Flows

<i>Country</i>	<i>Factors</i>
Cambodia	External factors influencing capital inflows to Cambodia include Asian economic strength and stability while internal factors: political and economic stability, high and sustainable growth rate over than a decade and improved investment opportunity.
Indonesia	The increased risk of slowing global economy, worsening global financial sector crisis and also the negative outlook on the Indonesia's balance of payments affected the development of capital flows. Slowing global economy and strengthening of the US dollar led to the decrease in international commodity prices, including export commodities of Indonesia. These adverse conditions are perceived to negatively affect Indonesia's balance of payments, especially the current account. Meanwhile, the US subprime crisis triggered capital flight from the developing countries. This resulted in the depreciation of the domestic currencies. Although the rupiah depreciation is quite large, the rupiah exchange rate is relatively more stable when compared to other regional currencies. Conducive domestic economy in addition to tighter monetary policy stance and foreign exchange stabilisation implemented by Bank Indonesia helped to alleviate the pressure on the rupiah.
Korea	The factors which influence recent capital flows in Korea are oil prices and the global credit crunch. Korea's current account is also affected by the fluctuations in the oil prices. Under the global liquidity squeeze, foreign investors have the tendency to withdraw capital from Korea because assets can be redeemed easily in Korea's well-developed financial markets.
Malaysia	The increase in investment abroad by Malaysians in 1st half 2008 reflected diversification of operations and the growing competitiveness of Malaysian companies to become regional and global players. The larger inflows of FDI reflected the sustained attractiveness of Malaysia as an investment destination, supported by the strong economic fundamentals, favorable investment environment. The liquidation of portfolio funds from Malaysia, which continued into the 3Q 2008, was due mainly to the uncertainty on the future direction of financial markets following the heightened global financial turmoil. Global de-leveraging led to tight liquidity in US dollar money markets and forced some global investors to liquidate their profitable investments in the region, including Malaysia, both to obtain US dollar liquidity as well as to offset their losses in the home markets. Global risk aversion has also caused investors to re-allocate their investments into perceived safe and liquid assets, which contributed to the liquidation of their existing holdings in equities and bonds in emerging markets, including Malaysia.

Philippines	Taking out the effect of the substantial rise in capital outflow in 2007 (resulting from the purchase of shares of a foreign power company by a resident), the net capital inflow in the first semester of 2008 comes out lower compared to that in the same period in 2007. The lower inflow is likely a result of the slowdown in the global economy, specifically the country's major trading partners. The decline in risk appetite of foreign investors stoked by the US subprime mortgage problems also contributed to weaker capital inflows. Higher risk aversion affected most emerging market economies, including the Philippines and this was most evident in the trends in portfolio and equity capital flows.
Singapore	The large flow of capital in and out of Singapore reflects the fact that it is a small and open economy, as well as an international financial centre. Singapore's liberal trade and capital regimes, as well as its strong macroeconomic fundamentals, have attracted significant investment flows into the country. At the same time, the government has been investing public sector surpluses abroad, and has also encouraged private entities to develop an "external wing" overseas.
Sri Lanka	The major internal factor that influenced the recent trends in capital flows is the gradual liberalisation of the capital account transactions. Higher growth prospects in some industries in the services sector, especially telecommunication, attracted higher amount of portfolio and FDI inflows. Private sector firms were prompted to borrow externally and foreign investment in government treasury bills and bonds was encouraged due to the recent surge in the domestic interest rates and the stable exchange rate. However, the global international liquidity crisis has influenced some capital outflows specially the foreign investments in Treasury bills and bonds and portfolio investments. However, lower international interest rates influenced the domestic private firms to borrow abroad.
Taiwan	In terms of current account, the surplus mainly came from the goods trade surplus, especially exports to neighbouring Asian countries. With regard to financial account, the net outflow of direct investment is mainly due to large investment in Mainland China where the economy is booming and production cost is lower than that of Taiwan. As for the net outflow of residents' portfolio investment, this is primarily owing to the increased securities investment abroad by nationals, especially life insurance companies. The factors driving the investment are the low interest rate in Taiwan and the 10% increase in the ceiling of foreign investment as a percentage of its insurance funds for insurance companies. Non-residents' portfolio investment turned into a net outflow and this was induced by reduced foreign investment in local stock market where share prices have fallen sharply. Other investment turned into a net inflow, this is attributable to the introduction of foreign funds and decrease of deposits in affiliated overseas branches by the banking sector.

Thailand	From 2006 through the first half of 2008, internal factors that attracted large capital inflow to Thailand were mainly stable economic fundamentals and strong long term growth prospects. Additionally, external factors that contributed to the growth of capital inflow before 2008 included lower yields on assets in major economies, increases in global liquidity, and investors' risks appetite. Plagued by political instability at home, after the first quarter of 2008, capital inflow started to decelerate. Entering the second half of 2008 amidst the global financial turmoil, the reversal of capital inflows could be due to tightening liquidity conditions as well as a higher risk aversion among international investors. Internal factors such as recent relaxation of capital outflow restrictions and external factors such as arbitrage opportunities abroad are the main determinants of capital outflows from Thailand over recent years. A significant portion of portfolio outflows was targeted to invest in Korean sovereign bonds with full FX hedging for yield pickups.
Vietnam	In early 2008, FDI including registered and reimbursed capital increased dramatically. The key reasons were that Vietnam scored high economic growth as compared to regional countries. In addition, the country's investment environment saw considerable improvement. Foreign investors' confidence in the long-term economic prospect was another factor contributing to high increase in FDI in Vietnam in the context of global financial crisis. Medium and long-term external debts of domestic enterprises and FII fell sharply compared to 2007 while short-term external debt was on the increase. This development was due to credit crunch in the US that led to the shrinkage in international financial markets and decrease of liquidity.

Source: SEACEN Questionnaire Survey, December 2008

8. Monetary Policy and Financial Stability Implications of Capital Flows

Capital flows are known to affect monetary and financial stability through various channels in the economy. Capital inflows increase the supply of money in the economy and may result into a soaring inflation if they are monetized. Central banks can use sterilization interventions in order to check the rapid monetary expansion but such sterilization also may induce some costs to the economy. Similarly, capital inflows increase the supply of foreign exchange in the financial system. During the episode of capital inflows, domestic currency continues to strengthen. However, the massive outflow of capital results in volatile foreign exchange market weakening the domestic currency. Swings in capital flows may lead to exchange rate fluctuation whereby exchange rate management becomes difficult. On the other hand, increase in real effective exchange rate may damage the competitiveness of the export sector.

Increased capital inflows reduce cost of capital and also help investors in risk diversification. Short-term capital flows specifically may contribute in financial market development leading to stock market boom and real estate boom. But such flows are known to be highly speculative in nature and vulnerable to sudden reversal. Increased inflows generally push asset prices upward while increased outflows result in lower prices. Surge in capital inflows also may reduce the quality of assets, thereby contributing to greater financial fragility.

Increased capital flows into the Asian economy in 1990s helped spur economic growth but it also became a major cause of the financial crisis in 1997. The recent experience of SEACEN countries shows that capital flows created asset price bubbles, pushed inflation up and brought sharp increases in bank credit while outflow of capital resulted in lower equity prices and depreciation of exchange rates. Increased foreign capital flows make the financial system and the economy, as a whole, vulnerable to external shocks. The possibility of sudden and massive capital reversal creates increased risk and uncertainty in the financial system (See Box No. 5 for detail).

Box No. 5: Policy Implications of Capital Flows

<i>Country</i>	<i>Implications</i>
Cambodia	The implications include booming real estate sector, rising inflation, sharp increase in bank credit. Therefore, the challenges are to maintain low inflation and a sound banking system. The Cambodian banking system has no exposure to the US sub-prime crisis. This is because the sector operates mainly locally and has limited involvement in the international financial markets. However, the country is not totally immune from the recent global crisis from the macro aspect, including FDI, tourism sector, and external trade.
Indonesia	The capital flows to Indonesia are currently dominated by portfolio inflows. Contrary to FDI flows which are more sustainable, portfolio investment is categorised as “liquid flows” and vulnerable to sudden capital reversal. Nevertheless, the portfolio inflows have contributed to increasing the foreign exchange supply to the economy. Historically, data on foreign exchange transactions between domestic banks and others show that excess foreign exchange demand from domestic players is covered by the portfolio inflows. The movement in rupiah exchange rate is also closely related to the daily net flows between the non-resident and domestic bank (cross-border concept), hence fostering the stability of exchange rate.

Korea	<p>Although the global economic slowdown may have an impact, in October 2008, the current account is expected to turn positive owing to the recent plunge in oil prices. Recently, the financial account is in deficit and this is related to the global credit crunch. Global cooperation and bold actions by the Bank of Korea and the Korean government to stabilise the financial markets will alleviate capital outflows. The global credit crunch is a matter of concern. This is the cause of the international financial market unrest and global economic slowdown which has impacted capital flows in 2008. Global cooperation, like the currency swap between the Federal Reserve and the Bank of Korea is expected to stabilise the local financial market and alleviate outflow of foreign capital.</p>
Malaysia	<p>Malaysia has benefited from the continued inflows of FDI, in terms of generating employment, increasing domestic productivity, encouraging the transfer of technology and skills, as well as potential for higher export growth. While there have been large amounts of profits and dividends accruing to foreign investors arising from MNCs' successful operations in Malaysia, the bulk of these earnings was retained for reinvestment in Malaysia. However, the recent outflows of foreign portfolio funds, in tandem with the trend in the regional markets, have resulted in lower equity prices in the domestic capital market. Despite the outflow of portfolio funds, liquidity remained ample in the Malaysian economy, supported mainly by sustained large current account surplus and net inflows of other investment. During the episode of capital inflows, the Malaysian ringgit continued to strengthen, reaching an all-time high since the day it was unpegged. Volatility in the local foreign exchange market rose somewhat but with resulting increased in U.S. dollar liquidity. Subsequently, the reversal of capital inflows has steadily resulted in increased volatility in the foreign exchange market and weakening of the Malaysian ringgit against the U.S. dollar. More importantly, the collapse of Lehman Brothers has exerted an unprecedented escalation of credit and liquidity risks and worsened global de-leveraging activities that later turned into a vicious circle, effectively drying up liquidity of the U.S. dollar.</p>
Philippines	<p>The weaker capital flows, specifically, the reversal in net portfolio flows, have put a dampening effect on the peso and resulted in sharp declines in equity prices in 2008. Nonetheless, the sustained flow of remittances of overseas Filipinos as well as higher export services receipts continue to provide a balancing effect on the domestic currency. Moreover, weaker capital flows in 2008 have so far, been reflected mainly in the large net outflow of portfolio capital. Direct and other foreign investments remain in surplus. The macroeconomic effects of weaker capital flows have also been muted due to the continued resilience of domestic demand, sustained health of the corporate sector, and the dominant domestic financing of investments. However, the threat of a sudden and massive capital flow reversal cannot be discounted, especially in light of the heightened uncertainties in the</p>

	<p>global financial markets. A sustained and massive reversal of capital flows can have substantial effects on the domestic economy similar to those seen during the Asian financial crisis in 1997.</p>
Singapore	<p>The financial outflows are a counterpart to the current account surpluses in the Singapore economy, reflecting the outcome optimising saving and investment decisions by economic agents. Singapore has thus far been successful in intermediating large capital flows. This is supported by its strong economic fundamentals, unique monetary policy framework that is able to cope with both short-term volatility and avoid longer-term misalignments in the exchange rate, and resilience of the financial sector underpinned by a sound regulatory and supervisory framework. The ongoing financial crisis has brought about significant volatility in capital markets worldwide, including in Singapore. In addition, there has been a global squeeze on liquidity and credit. The turmoil would in turn cause volatility in capital flows, especially short-term portfolio flows as well as banking flows.</p>
Sri Lanka	<p>The capital inflows helped the Sri Lanka rupee to appreciate reversing its depreciating trend, particularly after the international bond issue. However, to prevent sharp appreciation of the rupee, the Central Bank has to intervene in the foreign exchange market by absorbing foreign exchange. This process helped the Central Bank to build-up its foreign reserves during the first half of 2008. However, the current global financial crisis is posing a major challenge in attracting new capital flows and Sri Lanka experienced some capital outflows as a result of the crisis. Increased reserves helped cushion sudden capital outflows with respect to foreign investments in Treasury bills and bonds. Emerging vulnerabilities are the potential downside risk to the expected inflow of FDI, portfolio investments and the government and private sector borrowings. The unexpected outflow of capital in forms of Treasury bills and bonds by foreign investors is also a concern.</p>
Taiwan	<p>Free capital flows indicate that the government has embraced financial liberalisation in line with the international trend. The net outflow of direct investment showed a concentration risk of investment in Mainland China and lack of an incentive and friendly domestic investment environment to attract more foreign direct investment and encourage domestic firms to invest in Taiwan. Hence, this will affect employment and economic growth in the future. The volatility of portfolio investment and other investment means the surge of capital inflow may quickly reverse. Thus, to avoid the adverse effect of huge capital flows, in addition to the sterilisation by the Central Bank in its open market operations, financial supervisory institutions must impose stricter regulations on financial institutions and enforce stronger financial market discipline. The US sub-prime crisis has directly or indirectly influenced Taiwan's financial stability and economic growth since it erupted in the third quarter of 2007. Financial institutions, securities firms, securities investments trust enterprises, insurance companies</p>

	<p>and domestic investors have suffered huge losses from overseas investments in mutual funds and financial derivatives, such as CDO or structured notes. Furthermore, for compliance with regulations on capital adequacy and risk management, financial institutions have to sell their assets and to decrease lending, leading to severe credit crunch.</p> <p>The Central Bank has taken various measures, such as injecting liquidity in the money market and foreign exchange call loan and swap market, decreasing the discount rate and required reserve ratio, curbing capital outflows and depreciation of the NT dollar. However, due to consumers' loss in confidence, there were occurrences of bank runs in some banks. The government has since announced a full deposits insurance scheme including interbank lending. A ban on short selling in equity market was also imposed.</p>
Thailand	<p>While inflows are expected to bring benefits in terms of lower cost of capital as well as market development, large inflows into Thailand over the past few years have presented a number of key challenges, particularly with its implications on the exchange rate. During the past few years up until the second quarter of 2008, large inflows, together with current account surplus, have put sustained upward pressure on the Baht. This rapid rate of Baht appreciation, when resulting in an increase in real effective exchange rate, could damage the competitiveness of the Thai export sector which would in turn adversely affect the overall economic stability since the exports make up a large portion of Thai GDP. The BOT thus attempted to alleviate this upward pressure on the Baht by intervening in the FX market. This has led to a large accumulation of international reserves. Though increasing economic resiliency to external shocks, an increase in international reserves could also mean an increase in domestic liquidity which translates to an increase of inflationary pressures. Under an inflation-targeting regime, the BOT normally sterilises the monetary impact of intervention in order to avoid inflationary effects as well as to maintain the policy rate at the level set by the monetary policy committee.</p>
Vietnam	<p>Increased capital inflows to Vietnam contributed to increased investment which promoted economic growth, financed current account deficits and narrowed the difference between savings and investment. In addition, inflows also aided financial market development, especially stock market development while reducing the double mismatch of the banking sector. It also improved market liquidity and encouraged a more effective monetary transmission mechanism. The surplus of capital account remained higher than the deficit of the current account, which caused volatility in foreign currency demand and supply. The macroeconomic and monetary developments became increasingly complicated as a result of immediate changes in investment and deposit behaviours. The swings of capital flows, notably FII caused some turbulence in the USD/VND exchange rate. VND appreciated in the</p>

	<p>first quarter of 2008 but depreciated considerably in the second quarter and only became stable lately owing to SBV's interventions. Exchange rate fluctuations posed negative impacts on imports and exports as well as economic competitiveness. Other than monetary policy and exchange rate management, the selection of monetary policy management targets was also challenged.</p>
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Source: SEACEN Questionnaire Survey, December 2008

9. Concluding Remarks

The SEACEN economies have relaxed the barriers to capital movement and liberalised their domestic financial markets. The current account is fully convertible in all the countries in the SEACEN region while the capital account is by and large fully convertible in the majority of these countries. However, a few countries in the region still exercise some restrictions on capital movement across the border. Starting from early 1990s, net capital flow to the SEACEN countries increased steadily until 1996 due to the massive increase in total capital inflows. After the financial crisis of 1997, total capital outflows have outweighed total capital inflows resulting to a negative net capital flow. Among three components of capital flow, namely, FDI, portfolio investment and other investment, portfolio investment flow has become dominant in both capital inflow and outflow in the recent years.

Empirical results show that both domestic factors such as high economic growth, attractive interest rates and large current account deficits and external factors such as low world interest rates are responsible for the increased capital inflows in the region. However, the effects of these factors on capital flows vary across the countries. The contagion effects of global financial crisis that originated from US subprime mortgage crisis in August 2007, has brought a significant change in the direction and volume of capital flows in the SEACEN region. Recent experience of SEACEN countries indicates that the US subprime mortgage crisis which heightened risk aversion of global investors, global liquidity squeeze and uncertainty in financial markets; and, slower global economic growth are the external factors that have slowed capital inflows while the political climate of the country, further liberalisation on overseas investment; and, encouragement of sovereign funds to invest abroad are the internal factors that have accelerated capital outflow.

Capital flows affect monetary and financial stability through various channels in the economy. Increased capital flow may lead to monetary expansion which

in turn may result into soaring inflation. However, sterilisation intervention by central banks can mitigate such risks. Capital flows also affect asset prices including financial assets and real estate. Increased capital flows into the Asian economy in 1990s in general, helped spur economic growth in the region but they also became a cause of the financial crisis in 1997. The recent experience of SEACEN countries shows that capital flows create asset price bubbles, push inflation up and induce sharp increases in bank credit while outflow of capital results in lower equity prices and depreciation of exchange rates. Increased foreign capital flows, as a whole, make the financial system and the economy more vulnerable to external shocks. The possibility of sudden and massive capital reversal creates increased risk and uncertainty in the financial system.

9.1 Policy Implications

The SEACEN region has benefited significantly from the increased capital inflows mainly in terms of increased investment, higher economic growth, favourable external accounts and developed financial markets. However, the financial crisis of 1997 and also the current global financial crisis have clearly demonstrated the vulnerabilities associated with the capital flows. The 1997 financial crisis erupted mainly due to internal factors while the current financial crisis is due mainly to external factors. In both cases, the slowing down of capital inflows and massive capital reversals were the common factors that generally led to greater financial and economic turbulence. These episodes have clearly indicated the need for the proper management of capital flows.

A lesson learned from the 1997 financial crisis was that countries should encourage more long-term capital inflows as short-term capital inflows are highly volatile and prone to sudden reversals. After the 1997 crisis, the share of FDI inflow started to outweigh the share of portfolio inflow in the SEACEN region which continued until 2003. However, after 2003, the share of portfolio inflow started to become increasingly dominant, resembling the pattern of capital flows before the 1997 crisis. Due to the larger share of highly volatile short-term foreign capital, SEACEN economies are again, facing the problem of massive capital reversals. In order to prevent a repetition of the same problems in the future, SEACEN countries need to encourage more long-term capital inflows rather than short-term ones.

Short-term capital inflows may also lead to speculative attacks. To safeguard the financial system and the economy from such attacks, authorities need to implement more prudent regulations and to cautiously monitor potential areas of

such attacks. Similarly, increased capital flows in general may lead to monetary expansion and inflation. In order to maintain a stable monetary policy environment, central banks need to sterilise inflows with appropriate intervention measures.

Exchange rate regimes to a larger extent, determine the volume and direction of capital flows in an economy. Freer exchange rates allow for more capital flows in and out of the country. However, in the time of distress, the countries that have a free floating exchange rate regime may suffer from larger capital reversals. The experiences of some SEACEN countries have shown that a free floating exchange rate regime is not always the best regime and that during a crisis, a managed floating exchange rate regime may be in more advantageous position.

The financial markets and economies of the SEACEN countries are currently being affected by the global financial crisis. As such, positive developments are less likely in the region until the global market recovers. However, to minimise the further negative impacts of the crisis on various sectors of the economy including capital flows, to speed up the recovery process and also to explore the possibility of inventing new economic drivers within the region, coordinated policy measures need to be implemented at national as well as regional levels. In this regard, SEACEN economies may benefit by establishing a strong regional mechanism for effective policy coordination.

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PART II:
COUNTRY PAPERS

Chapter 2

CAPITAL FLOWS AND THEIR IMPLICATIONS FOR CENTRAL BANK POLICIES IN BRUNEI DARUSSALAM

by

Hjh Nurhuaida Fakhriah Hj Damit¹

1. Introduction

Brunei Darussalam is a small country located on the island of Borneo, with a total land area of 5,767 sq km and over 160 kilometres of coastline along the South China Sea. Recent statistics showed that Brunei's population is approximately 390,000 with the majority being Malay, followed by Chinese (DEPD, 2009). Brunei is governed under a constitution, in which His Majesty the Sultan has executive authority and is assisted and advised by 5 constitutional bodies:- the Council of Succession, the Council of Cabinet Ministers, the Privy Council, the Legislative Council and the Religious Council (Brunei Government, 2009).

Brunei Darussalam's economy is dominated by the oil and gas industry and accounts for more than 90% of its exports and more than 50% of its Gross Domestic Product. Nevertheless, the government sees the need to diversify away from oil and gas and to widen the economic base, including by strengthening the financial and tourism sectors.

Brunei does not have a central bank. However, the functions of a central bank are shared between the departments under the Ministry of Finance. Brunei operates under a currency board system, in which the Brunei Dollar is pegged at parity (one-to-one) with the Singapore Dollar under the Currency Interchangeability Agreement which was signed in 1967.

2. General Framework and Major Capital Flow Management Policies

One of the acts drafted after Brunei Darussalam's independence in 1984 was the Exchange Control Act, in which laws regarding gold, foreign currency,

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travellers' cheques, and payments to and from Brunei Darussalam were promulgated. The Act also prescribed the laws with regard to securities' issues as well as restrictions on imports and exports of notes and securities.

However, the Exchange Control Act was later repealed by the Exchange Control Order of 2000, with effect on 1st July 2000. Since then there have been no formal exchange controls, but the Ministry of Finance retains responsibility for exchange control matters. However, there are also other relevant legislations which are related to capital flows, particularly in encouraging foreign direct investment flow.

For businesses in the private sector, the Brunei Company Act requires that companies incorporated in Brunei to have at least two directors, in which at least one Director should be a Brunei national. A majority of the shareholders in Brunei registered companies must be locals if they are going to bid for government projects or apply for government licenses. However, this should not deter foreign partners from bringing in foreign capital to invest domestically.

Besides that, companies in Brunei are also permitted to obtain loans from non-resident lenders with a 20% withholding tax on the interest paid. However, the government may provide exemption if the approved foreign loan is for the purpose of purchasing production equipment, which is more than B\$200,000. This is just one example of the incentives provided to investors following the enactment of the Investment Incentive Act of 1975 that may influence the flow of borrowings from overseas.

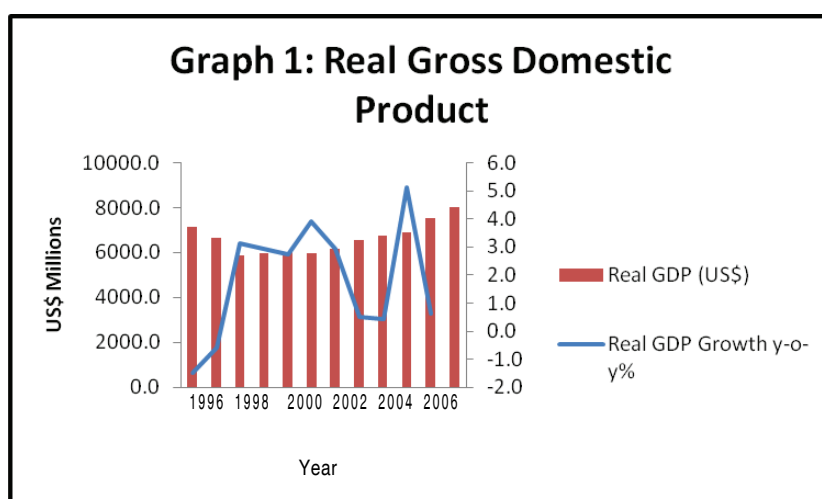
Foreign companies are welcomed to set up branches in Brunei. However, businesses which affect the public directly, such as banks, finance companies, insurance companies, travel agencies and money lender, are required to obtain special licenses from the government and must observe a more stringent set of rules before approval, which includes the amount of capital they need to bring in. These foreign companies, like local companies, are subject to 27.5% corporate tax for the first year and 25.5% for the subsequent years. However, under the Investment Incentive Act, pioneer companies are exempted up to eight years, with an option to extend up to 11 years.

In April 2007, His Majesty the Sultan of Brunei consented to pass the Sungai Liang Authority (SLA) Order for the Brunei Economic and Development Board (BEDB) to handle the needs of the industries at Sungai Liang. With this Act, it provides the SLA to be the single point in granting licenses, approvals and consent in developing the Sungai Liang Industrial Park (SPARK). This will

facilitate faster access and less red-tape for foreign investors to invest in Brunei. Besides SPARK, the BEDB is also planning to develop Muara Island into a deep sea port. It is also studying the possibility of developing it into a manufacturing complex of major industries and an export processing zone for Halal food. All these projects are aimed at attracting more foreign direct investment into the country.

3. Key Macroeconomic Indicators

3.1 GDP Growth Rate

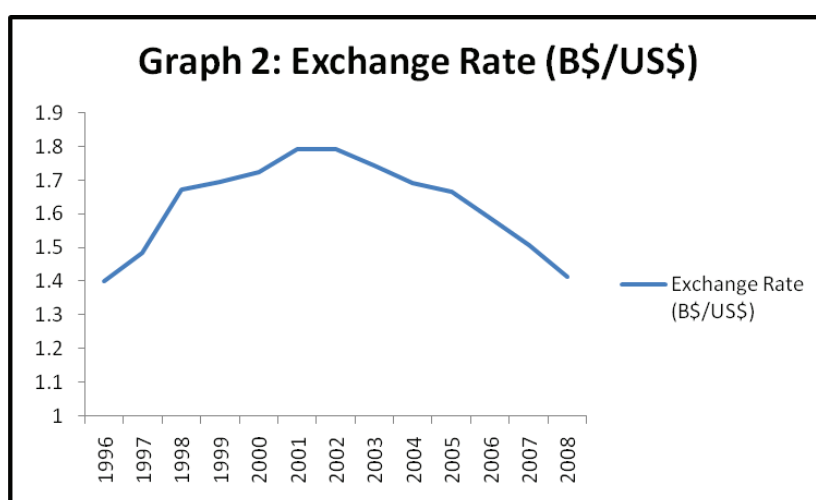


Source: Department of Economic Planning and Development, Brunei

After experiencing negative growth in 1997 and 1998, due to the sluggish performance of the construction industry, Brunei's GDP increased in 1999 by 3.1% with an increase in the mining industry by 10%, compared to a reduction of production by 1.8% in 1998. Since then, Brunei's GDP continued to experience a positive growth albeit in at a decreasing rate from 2003 to 2005 before increasing sharply to 4.4% in 2006. The 0.5% growth in 2004, compared to 2.9% growth in 2003, was due to a slowdown in economic activity in the industrial sector, which comprises 62.5% of the total economic activity (DEPD, 2007).

The positive growth of the industrial sector in 2006 contributed to the 4.4% GDP growth in 2006, which also marked a 7.4% increase in the services sector in the same year, compared to 4.1% increase in the previous year. However, despite an increase of 10.4% in the services sector, the economic growth tapered to 0.60% in 2007 when the industrial sector weakened as the result of an economic slowdown in both the mining and manufacturing sectors, which jointly contributed up to 67.6% of Brunei's economy.

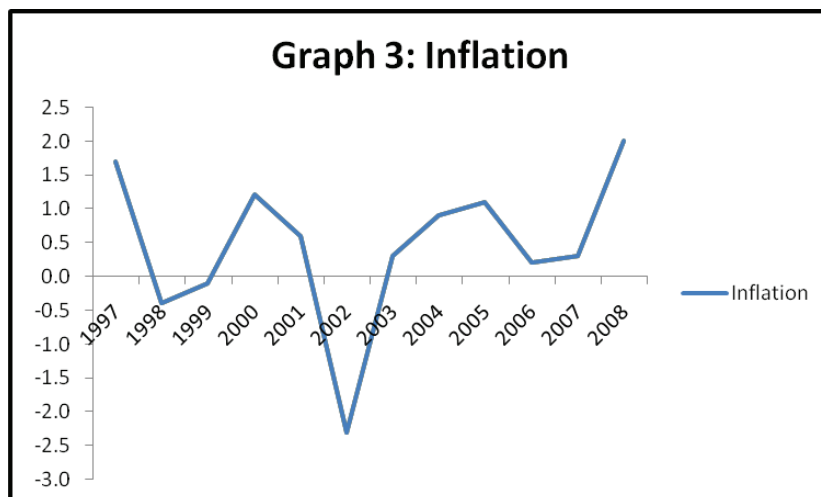
3.2 Exchange Rate



Source: Department of Economic Planning and Development, Brunei; Monetary Authority of Singapore

Under the Currency Interchangeability Agreement 1967, the Brunei dollar is pegged at par with the Singapore dollar. The Brunei dollar has remained relatively stable against the US dollar due to the strong underlying economic fundamentals of the Singapore dollar. Nevertheless, after the Asian Financial Crisis in 1997, the Brunei dollar depreciated to B\$1.7917 in 2001 before appreciating and reaching its peak in June 2008 at B\$1.3616 in the current financial crisis. However, in January 2009, the US dollar strengthened, which if the trend continues, may affect Brunei's income from oil and gas.

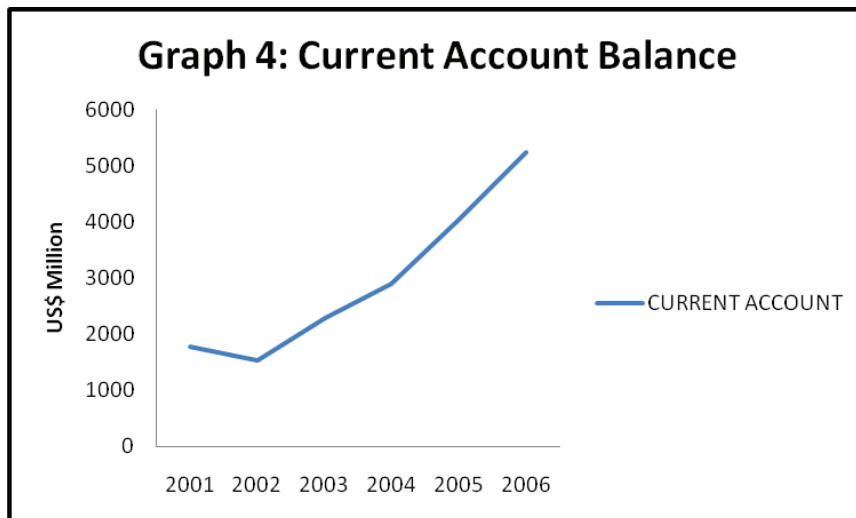
3.3 Inflation



Source: Department of Economic Planning and Development, Brunei

Supported by the Currency Board Arrangement, Brunei's inflation generally moves in tandem with the trend price developments in Singapore. This was also reflected when Brunei experienced a deflation of 2.3% in 2002, when Singapore experienced a deflation of 0.39% in the same year. The decreasing trend of inflation was due to the recession encountered in the late 1990s. Nevertheless, inflation picked up again in 2003 and remained subdued in the 0-1.5% region but increased to 2.9% year-on-year in November 2008. This was a result of relatively higher prices of food and entertainment, increasing at 5% compared to November 2007.

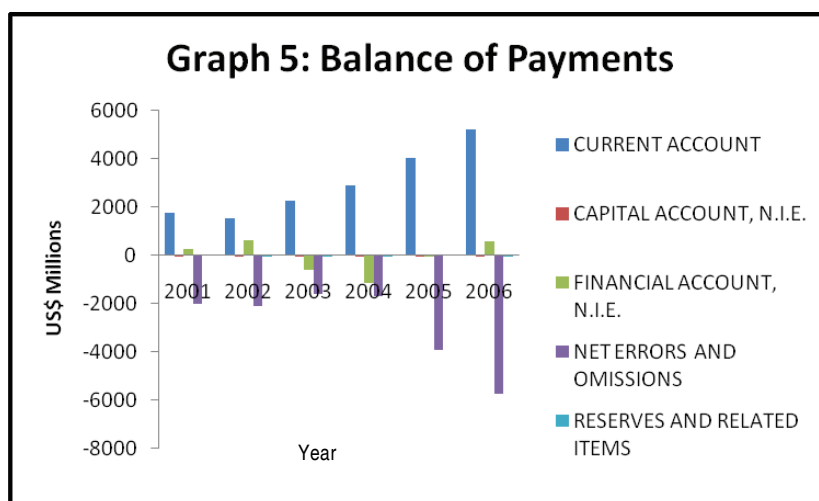
3.4 Current Account Balance



Source: International Financial Statistics

The current account has been showing an increasing trend since 2002 dominated by the trade balance followed by balance on services. Despite an increase in imports for both goods and services, the current account remains in the surplus. Whilst the balance on services continues to be negative, the surplus in the trade balance offsets it. This is mainly due to a relatively higher marginal increase in exports, particularly with the high energy prices contributing to more than 90% of total exports.

3.5 Overall Balance of Payments



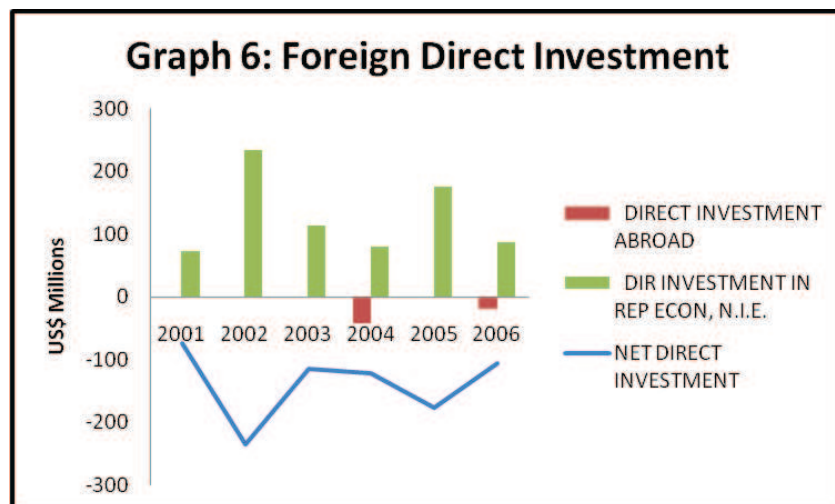
Source: International Financial Statistics

The overall balance of payments is on a rising trend. It is apparent that current account, net errors and omissions dominate. The net capital account recorded is relatively small and is in deficit. It is noted, however, that no data has been collected for capital transfers and acquisition or disposal of non-produced and non-financial assets overseas and, thus, the statistics may not reflect the true nature of Brunei's capital account. Nevertheless, the financial account is further explored in the next section.

4. Capital Flows

Although capital flows do not dominate the overall balance of payments like the current account, they continue to be an important composition of it and will continue to be as Brunei diversifies its economic base away from the oil and gas industry. In this section, the components of the financial account will be discussed and looked at.

4.1 Net Foreign Direct Investment

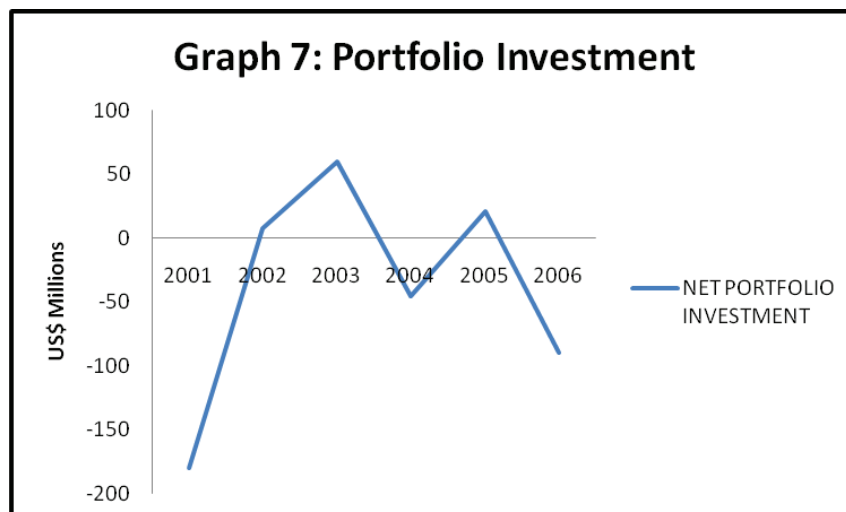


Source: International Financial Statistics

Brunei yearly records a positive foreign direct investment inflow. The major portion of this investment goes to the primary sector, where the oil and gas industry still plays a dominant role in the development of Brunei's economy. The United Kingdom and Netherlands have predominantly been the two largest investors in Brunei as the oil and gas industry in Brunei is mostly managed by Shell. However, in 2006, the United Kingdom and France were the main investors that accounted for 14.5% of total FDI inflows. In 2002, there was an increase in foreign direct investment. This was largely contributed by an increase in investment into the tertiary sector.

With regard to foreign direct investment outflow, the data for 2004 and 2006 are only available in the International Financial Statistics. This may not reflect Brunei's actual foreign direct investment overseas as there have been reports of record-high investment by Brunei in China, as reported by the People's Republic of China's Embassy in Brunei. According to this report, Brunei had invested in 121 projects in China, with an actual investment of US\$34.92 million as at the end of April 2003, compared to 82 projects with an actual utilisation of US\$21.34 million in 2002.

4.2 Net Portfolio Investment

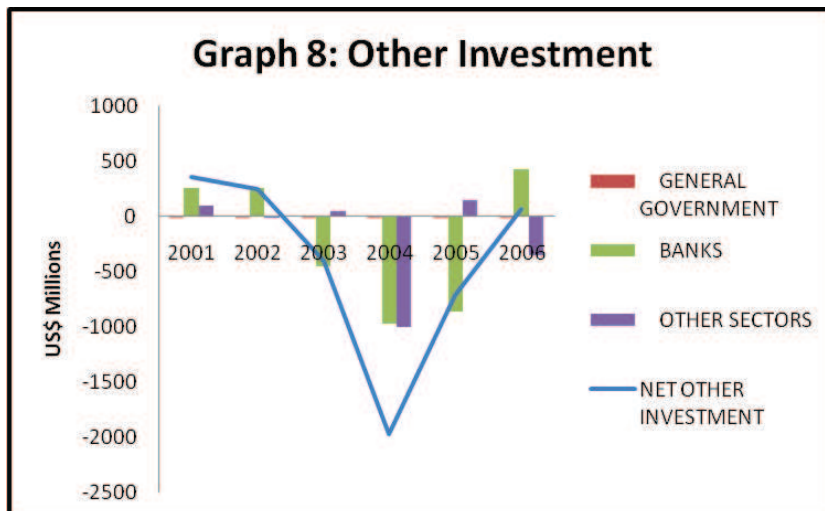


Source: International Financial Statistics

Bank Islam Brunei Darussalam offers equities to the local Public. However, these equities are not offered to non-residents of Brunei. Similarly, the Government of Brunei Darussalam, through the Ministry of Finance, issues short-term Sukuk Al-Ijarah, currently to the local financial institutions only. There is no data available on portfolio inflow.

There is no apparent trend in the portfolio investment made overseas by Brunei residents. However, it was noted that in 2001, the repatriation of equities invested overseas was relatively higher than new investment, with net portfolio investment outflow recorded at US\$180 million. In 2003, on the other hand, new investments were higher than repatriation with net portfolio investment outflow recording US\$60 million. New equities invested overseas were the majority component. Thus, equity investments continue to dominate the portfolio investment flow relative to debt securities.

4.3 Net Other Investment



Source International Financial Statistics

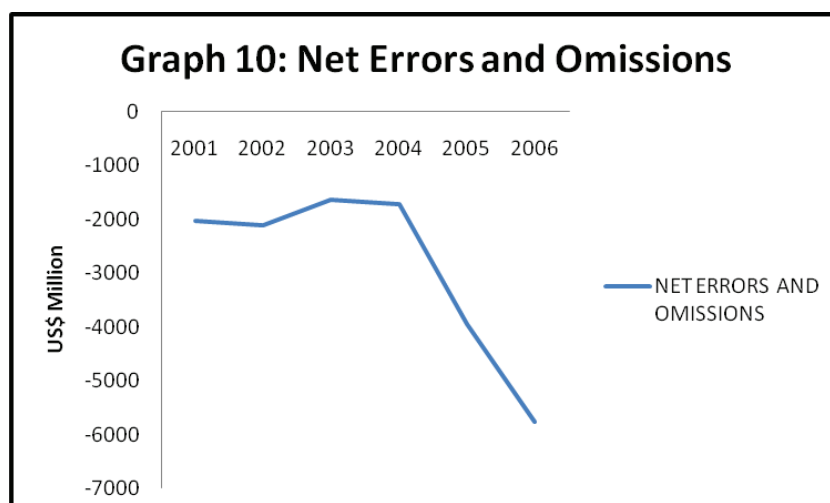
The Government's Investment overseas, which is managed by the Brunei Investment Agency and Brunei's Sovereign Wealth Fund, is guarded under the Brunei Investment Agency Act, where its operations and statistics are not publicly disclosed.

For banks, between 2003 and 2005, relatively high net repatriation of funds back to Brunei was recorded after positive net other investment outflows in 2001 and 2002. However, in 2006, net deposits and investments placed overseas by the local banks was US\$637 million, the highest compared to 2001 and 2002. Repatriation of borrowings and investments from foreign banks to Brunei, however, were relatively lower with net banks investment liabilities the highest in 2003 at US\$73 million. In 2005 and 2006, borrowings and investments from foreign banks were relatively higher at US\$210 million.

The private sector had also recorded high inward repatriation of deposits and investments made overseas of US\$568 million in 2004, compared to only US\$75 million repatriation in 2003. In 2006, repatriation was also higher despite a positive amount invested abroad by the private sector in 2005.

For borrowings from overseas and investments made by foreign private sectors in Brunei Darussalam, it peaked in 2004 with US\$413 million, where subsequently, borrowings continued to be more than repayments and repatriations despite at a relatively lower amount.

4.4 Net Errors and Omissions



Source: International Financial Statistics, International Monetary Fund

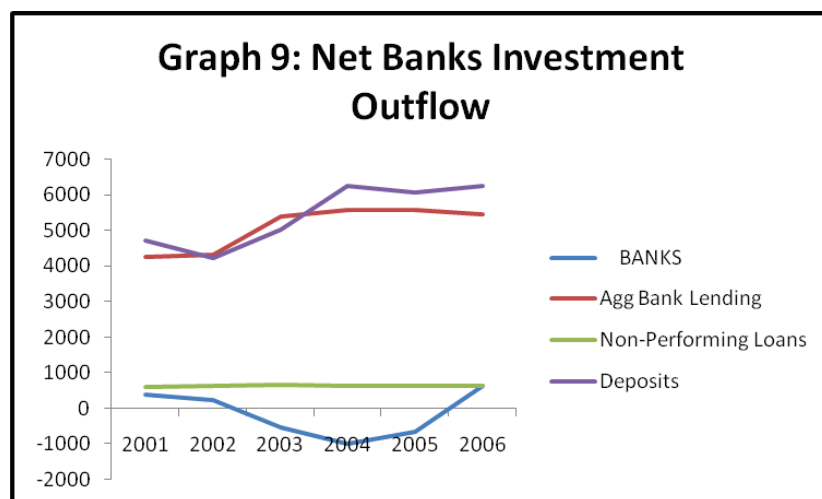
The overall Balance of Payments has shown that whilst the Current Account is dominant, the Financial Account continues to play a role in the transfers of international commercial transactions in Brunei. Between 2005 and 2006, there was an increase by 41% in the Current Account Balance and 92% increase in the Net Capital Flow in the Financial Account. However, it is observed that net error and omissions were high, particularly in 2005 and 2006, dominating other flows. This reduces the predictive power of the data and information gathered.

5. Capital Flows on Monetary Policy

Brunei's exchange rate has remained stable with the Currency Interchangeability Agreement and strong underlying fundamentals of the Singapore dollar. Also, with the repeal of the Exchange Control Act in 2000, access to the market is relatively free. As such, in reference to the Impossible Trinity Theorem, Brunei is not in a position to undertake an independent monetary policy. Although,

in theory, this may lead to volatile domestic output and inflation, statistics have shown that both have remained relatively stable as highlighted in Graphs 1, 2 and 3.

6. Capital Flows on Financial Stability



Source: Financial Institution Division, Ministry of Finance, International Financial Statistic

Looking at the financial stability of Brunei's financial sector, the aggregate bank lending and non-performing loans are analysed against net banks investment outflows. The first observation derived from the graph is that aggregate bank lending decreased while net bank investment outflow by banks increased. Also, it is observed that, prior to 2005, as deposits into the bank increased, aggregate lending increased. Subsequently, aggregate lending decreased despite the rising trend of deposits in the banking system. This may have resulted in the increase in overseas deposits or investments when domestic banks placed their excess liquidity abroad, which they were unable to lend out as much as they could when the Ministry of Finance, through the Financial Institution Division, introduced a loan capping directive in May 2005.

Whilst the loan capping directive was introduced to reduce the level of personal debt and promote the savings culture, the increasing outflow of liquidity overseas as the result of excess liquidity could have been used for investment

domestically. However, relatively less financial investment opportunities are available in Brunei, due to the absence of a vibrant financial market, as compared to Singapore where similar activities can be undertaken with no currency risk.

In 2006, the Ministry of Finance revised the Banking Order, under which directives were issued to assist counteract excessive liquidity being transferred overseas as well as providing ways of ensuring that there is enough short-term liquidity available domestically in times of crisis. Among them are the minimum reserve requirements put in place. The measures include minimum liquid asset requirement, where the authority may require each bank to hold a certain amount of liquid asset as a percentage of their total liabilities and investments; minimum cash balances, where there is a provision to place up to 30% of the bank's deposits and other liabilities with the Authority; and minimum asset requirements, where the Authority may require each bank to hold a minimum amount of specified assets domestically (Banking Order, 2006).

In 2006, Brunei also offered its first short-term Sukuk Al-Ijarah in its bid to further develop the domestic financial system. Since then, there have been 25 issuances over BND1.4 billion, where the Primary Dealers consists of the local banks and local branches of international banks. There is no secondary market for the Sukuk as yet, but the certificates are tradable amongst the Primary Dealers.

Recently, the Ministry of Finance issued a directive by which each local branch of the international banks is required to hold at least BND10 million worth of Sukuk-Al-Ijarah to fulfill the minimum asset requirement (FID, 2009). This is one way to ensure that some of the excess liquidity is maintained locally.

7. Conclusion

Brunei is practicing free capital flow with the repeal of the Exchange Control Act 1984 by the Exchange Control Order in 2000. With this, there are no restrictions on the flow of capital and no formal exchange control issue. Nevertheless, the Ministry of Finance still retains the responsibility pertaining to this area.

Based on the data published, the current account and net errors and omission dominate the Balance of Payments. The current account balance has been on an increasing trend since 2002 and has remained in surplus due to the contribution of total exports. The Financial Account, on the other hand, has been on a decreasing trend since 2002, before increasing again in 2004. The flows are

dominated by the changes in the banking sector. Whilst these changes may reflect that the Financial Account is heavily impacted by the changes in flows in the banking sector, it needs to take into consideration that net errors and omissions are also relatively high.

In light of this, in assumption that there is an impact, financial stability will be of utmost importance. It is noted that there was an increase in outflow from the banking sector when the loan capping directive was introduced in May 2005. The measure was implemented to improve financial stability and increase public confidence in banks in Brunei and indirectly ensure that there are sufficient funds remaining in the country to reduce the risk of any sudden and irregular flows.

There is scope for changes in capital flows, particularly in the financial sector as Brunei diversifies away from the oil and gas industry. Nevertheless, the oil and gas industry will continue to play an important role in the movement of capital flows.

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Chapter 3

CAPITAL FLOWS AND THEIR IMPLICATIONS FOR CENTRAL BANK POLICIES IN INDONESIA

by

Yayat Cadarajat¹

1. Introduction

Indonesia has achieved outstanding economic growth since 1968 which was partly attributed to capital inflows. While capital inflows contribute extensively to economic development as an alternative and/or as a complement to other sources of financing, they carry risk exposure and are full of inherent risks. The 1997 Asian financial crisis is one of the clear examples that failure to manage capital inflows may lead to vast economic damage. This study aims to examine the macroeconomic variables that determine capital inflows to the country and elaborate their implications for monetary policy and financial stability.

Following this introduction, an overview of the capital account liberalisation and the major capital-inflow management policies is outlined in Section 2. The evolution of capital inflows in Indonesia is described in Section 3. Sections 4 and 5 discuss the recent developments of short-term capital flows and monetary policy as well as financial stability. The capital inflow determinants are analysed in Section 6. Finally, the conclusions are drawn and presented in Section 7.

2. Overview of Indonesia's Capital Account Liberalisation

Indonesia has long been known as one of the most open economies in the region and among the developing countries. In April 1970, Indonesia lifted its control on capital account. The sequence of Indonesia's external account liberalisation is somewhat unconventional in the sense that the capital account openness preceded the opening up of the financial sector. In line with the spirit of free foreign-exchange system and broadened financial reforms, Indonesia liberalised its current account in May 1988, as it accepted Article VIII of the IMF, whereas the obligation to repatriate export proceeds was revoked since 1982.

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Prior to the period of economic unrest that began in late 1997, there were four clearly-discernible efforts to attract capital inflows. The first attempt is the deregulation of foreign exchange management in 1970 that resulted in significant changes in the volume of capital inflows. The second and the third attempts took place in 1980s, with the liberalisation of interest rates in 1983 and the removal of entry barriers to the domestic banking sector in 1988. Finally, the foreign investment liberalisation in 1994 led to huge capital inflows preceding the financial crisis of 1997. In the post-crisis, capital flow management policies are mainly marked by financial restructuring and strengthening of prudent capital account management which partly can be regarded as foreign exchange and capital control. All the measures are primarily aimed at improving the business environment and enhancing the development of the domestic financial market as well as the attainment of financial system stability .

2.1 Gradual Liberalisation of Foreign Exchange: 1970 – 1982

This period was marked by the beginning of foreign exchange as well as capital account liberalisation. Indonesia relaxed its tight control on foreign exchange transactions which was imposed by the Foreign Exchange Act, No. 32/1964. Residents were required, among other things, to surrender foreign exchange receipts and are not allowed to hold foreign exchange without the expressed permission of the authorities. The deregulation programmes, aimed largely at accelerating economic recovery and promoting foreign investment, were implemented through the enacting of the Banking Act, 1967 and the Foreign Investment Law, 1967. The programmes covered, inter alia, the liberalisation of foreign-exchange transactions mechanisms by permitting residents to keep a certain fraction of their export proceeds to finance their imports, allowing foreign banks to establish branches or joint-venture banks to increase participation in the foreign exchange market, providing fiscal incentives in terms of tax holidays and free import tariffs to enhance foreign investment, and allowing non-residents to invest up to 30 year-duration.

The Government Regulation No. 16/1970 lifted Indonesia's control on capital account and relaxed the foreign exchange trading system. These foreign exchange reforms included, among other things, freeing the selling and purchasing of foreign exchange, compensation of export proceeds surrendered concurrently by the endorsement to buy foreign exchange in any amount and freeing the holding of foreign exchange receipts from exports of services. Thus, Indonesia nullified its foreign exchange control at a very early stage in the development of its financial system.

2.2 First Financial Reform: 1982 – 1987

The drive in the liberalisation of foreign exchange continued in 1982 through the passing of the Government Regulation No.1/1982 where restrictions on foreign exchange transactions were entirely removed. The regulation invalidated the obligation to surrender export proceeds. Furthermore, banks were no longer required to sell their acquired foreign exchange to the central bank. This can be regarded as an aggressive stage since neither a monitoring system nor reporting obligation of foreign exchange transactions has been established.

This period is also considered to be the starting point of reforms in the financial sector and of a more market-based monetary policy framework. The comprehensive financial reforms of June 1983 have altered drastically the previous financial infrastructures which can be described as a repressed financial system. Moreover, the Central Bank Certificate (Sertifikat Bank Indonesia) and the Discount Facility were introduced in February 1984. This series of reforms incorporated liberalising interest rates, streamlining the central bank's liquidity credit, abolishing credit ceilings and introducing open market operation. Furthermore, in order to promote non-oil exports and economic diversification, gradual liberalisation of foreign direct investment was conducted in 1985 through the simplification of investment procedures and possibility of opening certain closed fields of investment if the entire production is exported.

2.3 Second Financial Reform and Foreign Investment Deregulation: 1988 – 1996

In order to increase financial deepening, the second round of financial reforms was conducted in the late 1980s. The effects of the acceptance of Article VIII were that the branches of foreign banks, which were previously prohibited from managing foreign exchange, could now do so by simply informing Bank Indonesia and the swap premium shifted to market-based determination and the maximum maturity extended from six months to three years. The announcement of the banking-sector reform-policy package in October 1988 (Paket Oktober 1988) was mainly expected to promote the mobilisation of fund and raise the efficiency of the financial institutions. One of the important points was the abolishment of the restriction on the establishment of new private banks. The deregulation and liberalisation of entry to the domestic banking sector shifted Indonesia's fund allocation principles. This was considered the turning point with regard to the domination of the state-owned banks over the private banks in the banking sector and the ascendance of competitive principles in the banking system. These reforms have also increased the efficiency of monetary management and

promoted a more conducive environment for the development of the financial market.

In line with the banking sector liberalisation, financial market reforms were introduced in December 1988 aiming at mobilising more long-term capital flows by encouraging further development of capital market and improving investor confidence. Since then, foreign investors were allowed to own domestic companies by purchasing stocks in the capital market. Further foreign investment liberalisation in 1994 permitted foreign ownership of domestic companies up to 100% for certain categories of investment, and permitted foreign investment in joint ventures in vital sectors such as power generation, ports and telecommunication. All the deregulation and liberalisation packages, combined with the new capital market law in 1995 aimed at strengthening the legal fundamentals of the capital market, including the removal of equity ownership limitation², boosted capital inflows into Indonesia in the first part of 1990s until preceding 1997, when the capital flow reversal began to materialise.

2.4 Recent Major Capital Flow and Exchange Rate Management Policies

Learning from the 1997 financial crisis, the country realised the pressing need for more prudent management of capital flows, especially of the short-term types. Policies, such as improved prudential measures on foreign exchange transactions, better prudential banking supervision, and other policies to further develop financial infrastructures, are mainly designated to maintain financial and monetary stability, which are extremely important to support a more conducive investment climate and attain most advantageous benefits from capital inflows. The central bank has initiated several policies to cushion capital flows and exchange rate volatility, such as foreign exchange intervention and domestic currency sterilisations (open market operation), anti-speculation on foreign exchange measures, and policies related to resident and non-resident transactions.

2.4.1 Intervention and Sterilisation

In order to curb foreign exchange volatility, the central bank introduced Bank Indonesia Regulation (PBI) No. 30/2005 on the third amendment of PBI No.9/2002 on Open Market Operation. This regulation was instituted to enhance the effectiveness of open market operation as an instrument to stabilise the rupiah. With the purpose in smoothing out exchange rate volatility, direct

2. The Minister of Finance Decree No. 179/KMK.010/2003 applied special restrictions to equity ownership of banking business and joint securities companies.

intervention in the foreign exchange money market is carried out in the spot, forward and swap market, where the tenor of the forward and swap transactions is not exceeding seven days. Furthermore, sterilisation in the rupiah money market is conducted to absorb excess liquidity. Thus, generally speaking, the regulation is intended to intensify open market operation in the inter-bank money market due to the high correlation of foreign exchange money market and the rupiah money market.

2.4.2 Anti-Speculation Policies

Regarding the capital flows and foreign exchange stabilisation, Bank Indonesia enacted, among other things, PBI No. 31/2005 on Derivative Transactions, PBI No. 36/2005 on Swap Hedging, and PBI No. 37/2005 on the second amendment of PBI No. 13/2003 on Bank's Net Open Position (NOP) to reduce speculative transactions on foreign exchange. PBI No. 31/2005 prohibits banks from: i) doing foreign exchange or interest rate related derivative transactions without underlying transaction; ii) holding position on derivative transactions of affiliated parties unless the transactions are channelled instantly to other parties, where affiliated parties refer to the regulation of Legal Lending Limit of banks; iii) conducting margin trading of the rupiah against foreign exchange for the benefit either banks or their customers except for credit provision and/or overdraft facilities from bank relatives to the derivative transactions of their customers.

In order to encourage investment in the real sector, PBI No. 36/2005 introduced a swap hedging facility where banks are allowed to enter into swap transactions with Bank Indonesia to hedge investment risks in the real sectors which are partly or entirely financed by external debts. The regulation (PBI No. 13/2003) on NOP is intended to improve banks' management of foreign exchange risks and limit banks from foreign exchange transactions that can potentially trigger foreign exchange instability. Regarding this, the regulation sorts NOP into on-balance sheet and overall NOP, where both are reported in the rupiah presentation at the end of the day or any other specified time with the limit of 20% of bank's capital.

2.4.3 Restrictions and Limitation on Certain Transactions

The other policy to reduce the rupiah exchange rate volatility was released as Bank Indonesia issued PBI No. 14/2005 (improvement on PBI No. 3/2001) on the Restriction of Rupiah Transactions and Provision of Foreign Exchange Loan by Banks. The coverage of the regulation is as follows:

- a. Prohibits banks from doing certain transactions with non-residents including providing rupiah and foreign exchange credits to non-residents, placement of rupiah in the form of deposits or other means in offshore banks, purchasing rupiah-denominated assets issued by non-residents, inter-office accounts in rupiah (domestic branch lending to offshore branches), inter-office accounts in foreign exchange for provision of credits in offshore, equity participation in rupiah, rupiah transfer to an account held by non-residents and/or a joint account in onshore or offshore and rupiah transfer to residents in outside Indonesia.
- b. Limits banks from doing transactions with non-residents including purchasing and/or selling foreign exchange derivative transactions against rupiah without its underlying transaction not exceeding the threshold of US\$1 million (lowered from US\$3 million in PBI No. 3/2001) for each individual transaction or outstanding position for each bank.

In regard to external debts, Bank Indonesia issued regulations concerning bank and non-bank corporate foreign borrowings. PBI No. 1/2005 on Bank Foreign Borrowings requires banks to hold daily outstanding short-term foreign loan position not exceed 30% of their capital. Banks are also required to obtain the approval of Bank Indonesia before entering the market for long-term foreign borrowings and to give reports not exceeding seven working days. Furthermore, PBI No. 7/2008 on Non-Bank Corporate Foreign Borrowings gives conditions to corporate sectors to use long-term foreign borrowing as their source of finance, such as having good financial health profiles as well as international rating, reporting its financial statement and corporate risk management analysis. The regulation also requires corporations to report their outstanding foreign loan positions each semester.

2.4.4 Monitoring of Exchange Rate Transactions

In order to support those capital flow related policies and obtain more accurate data and information concerning capital flows, Bank Indonesia prompted to further improve the foreign exchange monitoring system³. The Online Monitoring System of Foreign Exchange (LLD) was applied in 2000 involving banks, non-bank financial institutions, companies and individuals. Additional to the online monitoring system, Banks Daily Report (LHBU), which was released in 2005, covers all market players' transactions including that of offshore players⁴. This system

3. Act No. 24 /1999 on Foreign Exchange allowed Bank Indonesia to acquire information from residents regarding foreign exchange transactions.

monitors foreign exchange transactions in the money market with only one day time lag and can trace the data up to the individual transactions due partially to the utilisation of the Online Analytical Data Processing (OLAP). The information generated from this system thus can be used as ‘leading information’ towards foreign exchange flows.

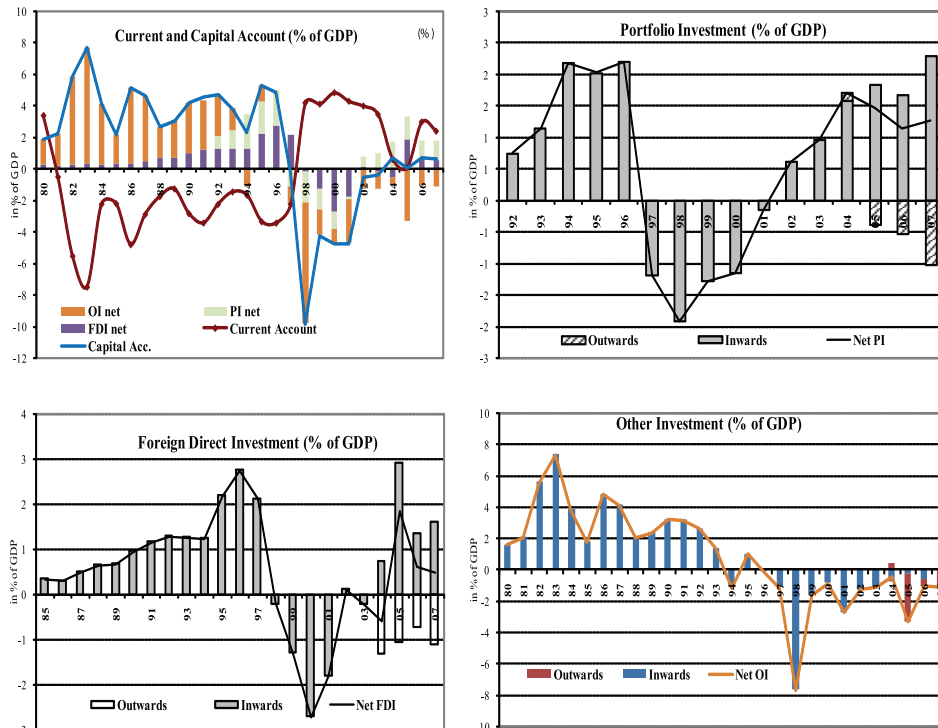
3. Trend in Capital Flows in Indonesia

As shown in Figure 1, prior to the financial crisis, Indonesia recorded current account deficit for most periods except in the period of oil price boom attributed to oil and gas exports. Opposite to the current account, in line with the economic performance, this country maintained capital account surplus mounting to 10.7% of GDP, as the highest, in 1975. The Asian financial crisis has reversed the path of Indonesia’s external accounts. In the post-crisis, while the economy achieved current account surplus, it experienced capital account deficit until 2003 and turned the deficit to surplus in 2004, the first time for Indonesia to record surpluses all together in both current and capital account.

The capital account surplus in the pre-crisis period was contributed variously by its components which were in sync with macroeconomic fundamentals and policies. Figure 1 also shows that, before the 1990s, other investment was dominant over other components of capital flows in contribution to the capital account. In the 1990s up to the financial crisis, capital flows were dominated by FDI and portfolio investment, whereas portfolio investment is the main contributor to the recent capital account surplus.

4. Bank Indonesia Regulation No. 10/2005 on Banks Daily Report was enacted partly in purpose for improvement in the establishment of the Money Market Information System (PIPU) in 1993.

Figure 1
Evolution of Capital Flows and its Components



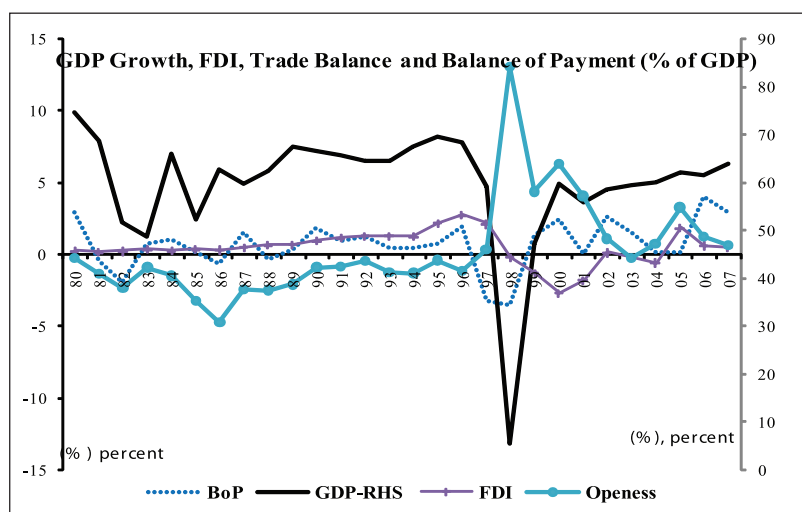
Source: Bank Indonesia

3.1 Foreign Direct Investment

Indonesia has experienced two phases of high FDI inflows since 1980. The first period of high FDI inflows occurred after the first-1985 deregulation of foreign investment which happened to coincide with the flow of Japanese and NIE's FDI to the developing countries. The second period of high FDI inflows took place following the second foreign investment liberalisation in 1994 where the FDI raised up to more than 100% in 1995 from US\$ 2.2 billion in 1994 and reaching its highest point of US\$ 6.25 billion in 1996. The high FDI inflow was attributed to the high economic growth and stability of macroeconomic fundamentals. The development of FDI inflows seems to be in line with GDP growth and the openness of the economy, except in the period of deep financial crisis, which reflects the higher portion of trade in terms of total GDP (Figure 2).

The 1997 financial crisis which resulted in a large depreciation of local currency against US dollar and other currencies led to the difficulty of private sector to repay their external debts. Accelerated debt repayments and limited loan disbursements from affiliated companies as well as low equity investment in relation to FDI inflows caused the deficit to rise from 1998 through 2004, except in 2002. While the economy recorded US\$ 1.9 billion inwards FDI, it still experienced a net FDI deficit in 2004 due to residents' outwards FDI of US\$ 3.4 billion. Furthermore, Indonesia has attained net FDI surpluses in the last three consecutive years which was partly attributed to investments in oil and gas sector and acquisition of domestic companies by non-residents. Moreover, direct investment recently has reached a more preferable level with high capital inflows on one side and growing domestic overseas assets on the other. While Indonesia recorded high inwards FDI, since 2004, the FDI is also characterised by increasing residents' assets overseas. The high outwards FDI of US\$ 4.8 billion in 2007 reveals that domestic companies are relatively competitive against other global competitors.

Figure 2

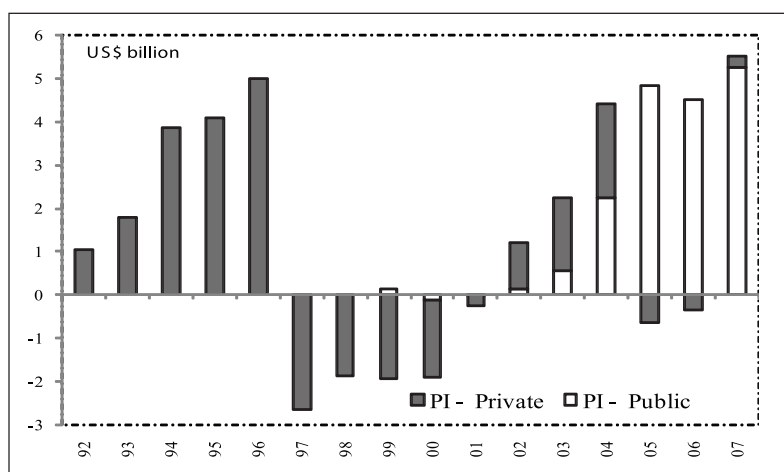


Source: Bank Indonesia

3.2 Portfolio Investment

Since 1992, the performance of portfolio investment, as shown in Figure 3, is marked by domination of the private sector over the public sector in net portfolio investment up until 2003. Prior to 1997, portfolio investment displayed an impressive performance as it recorded high annual average growth of 54% during the time period spanning 1993 through 1996, which was mainly attributed to investment in corporate debt securities. As the financial crisis broke out in Thailand in July 1997, the capital flow reversal, as high as nearly US\$5.4 billion, struck the country in the last quarter of 1997. The portfolio investment, since then, experienced negative net inflows until 2004. Recently, portfolio investment has arrived at a more favorable level where high capital inflows tend to be stable and increasing in amount which indicates that the economy's fundamentals have improved and are sounder.

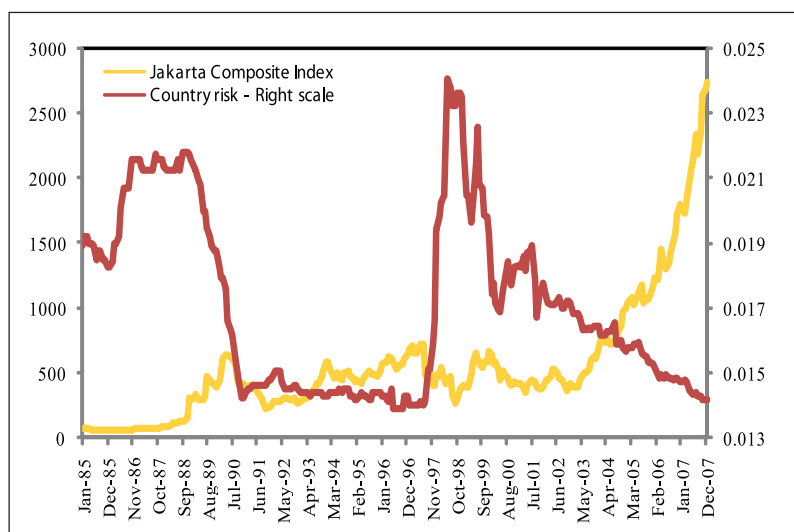
Figure 3
Portfolio Investment; Public vs Private



Source: Bank Indonesia

Prior to the 1997 financial crisis, Indonesia received huge portfolio inflows which peaked at 2.2% of GDP (more than US\$ 5.0 billion) in 1996. This massive portfolio investment inflows were supposed to be attributed to high and sustainable economic growth, less volatile foreign exchange rate, large interest rate differential and very rapid growth of capital market (See Figure 8 for exchange rate development). Those sound macroeconomic fundamentals lowered the country risks and led to greater foreign investor confidence. Part of the portfolio investment is in terms of foreign purchase in the stock market. Figure 4 shows that the development of stock market index went alongside with the composite country risks index, published by International Country Risk Guide (ICRG).⁵ The capital inflow reversal occurred as the financial crisis hit the country in 1997 and recorded net portfolio investment deficit of US\$2.63 billion or nearly 1.2% of GDP. The negative picture of portfolio investment continued up to 2001.

Figure 4
Jakarta Composite and Country Risks Indices



Source: ICRG, CEIC

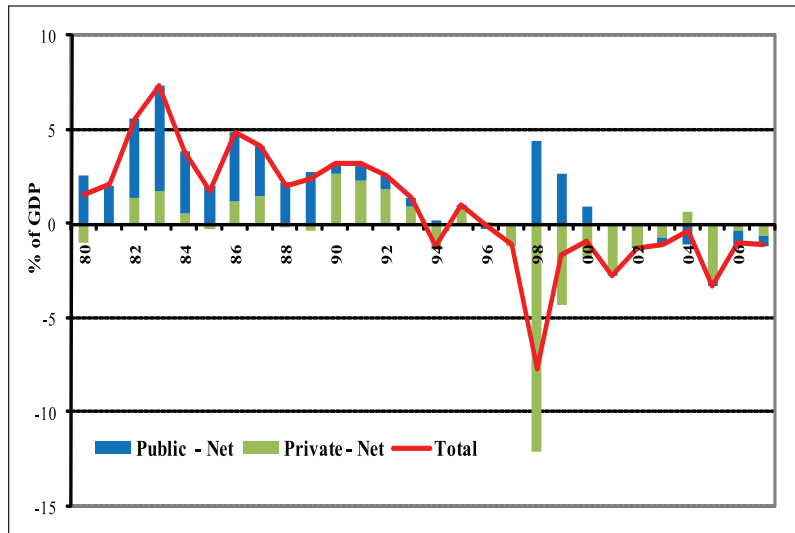
5. The value of the index ranges from 0 to 100, where 100 indicates completely no risks and vice versa. In this case, the value refers to the composite index and $1/\text{index}$ is used as a unit in the Right Scale of Figure 4.

Following the improved macroeconomic indicators, for example, better fiscal sustainability, less volatile exchange rate and expectation of appreciation, higher economic growth as well as lower country risks, portfolio investment surplus was re-attained in 2002. In addition to these fundamental factors, ample global liquidity and low international interest rate in comparison to that of the emerging markets are considered as the other compelling factors. Furthermore, the privatisation programmes of state-owned companies through the capital market were believed to be one of the additional factors in attracting higher foreign investments. The favorable performance of portfolio investment continued to mount up portfolio liabilities to US\$9.8 billion as of 2007. The last, but not the least, important factor in influencing portfolio investment is the extraordinary growth of Indonesia's capital market, which is recently regarded as one of the best in performance in the region. As the result, the net portfolio investment surplus rose to US\$5.5 billion in 2007 from US\$1.2 billion in 2002.

3.3 Other Investment

The profile of Indonesia's other investment has changed from net inflows in the preceding 1994 to recent net outflows. In the decade of the 1980s, other investment was dominated by external government debts. While the role of the government was extremely pivotal in the economic development, as the oil price boom ended and the government could no longer rely on the oil and gas incomes, external debts in terms of project-aid began its role as one of main source of development financing. The increasing private commercial external debts incurred in the first part of 1990s is judged to be one of the major contributors to the prolonged 1997 financial crisis. In the post-crisis era, continuing its unfavorable picture preceding the crisis, other investment recorded net deficit until the recent years.

Figure 5
Other Investment; Public vs Private



Source: Bank Indonesia

Other investment in the 1980s was characterised by long term government external debts with low interest rate and relatively long grace periods. Most of the government foreign debts were mainly in terms of project loan and programme loan which focused on infrastructures and other development agendas. After the ceilings on foreign borrowing by foreign exchange bank and non-bank financial institutions were removed in 1989, the rising amount of private external debts in the early 1990s was mainly in the form of commercial bank borrowing converted to local currency through central bank's swap facility. Concerned that the commercial loans might be excessive, showed up by the domestic economy that started to overheat in 1990 – 1991, indicated by the accelerated inflation and significant increase in interest rate, the government formed a Foreign Commercial Borrowing Management Coordinating Team (PKLN) in 1991. Furthermore, the prolonged 1997 financial crisis is regarded as partly due to the weaknesses of external debt management by the private sector (banking and corporate sectors) which failed to cope with, among other things, currency and maturity mismatches.

The 1997 financial crisis was further aggravated by foreign investors' loss of confidence that led to pressures on the domestic private sector to accelerate their debt repayment with no additional disbursements. Regarding this, private

other investment deficit peaked at nearly US\$12 billion in 1998, when at the same time the government (central bank) took the IMF standing loan (Figure 5). All in all, other investment recently is still in the negative figure due to large private debt repayments and the government debt management strategy which stipulates foreign loan disbursements in particular fiscal year should be less than its repayments, including the speeding up of debt repayment to the IMF.

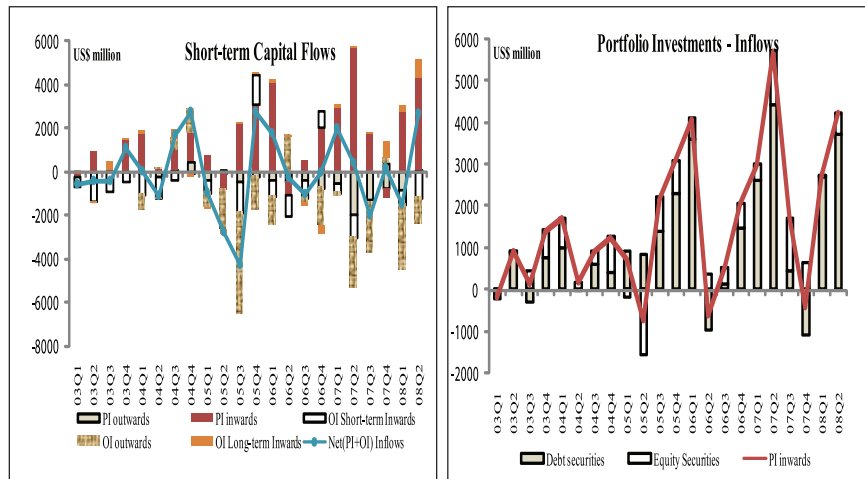
4. Short-term Capital Flows and Monetary Policy in Indonesia

As implied in the impossible trinity, allowing the exchange rate to float and maintaining cross-border capital convertibility complicates the conduct of monetary policy and exchange rate management under the objective of maintaining price stability. Realising that the 1997 financial crisis is an evidence of improper monetary policy in dealing with the impossible trinity, and the surge in capital inflows is one of main source of the problems, policymakers need to be concerned and take some necessary preemptive measures to reduce the possibility of sudden capital reversal, this section analyses the short-term capital flows in the recent years with its embedded risks. The monetary policy reactions are discussed in the last part of this section.

4.1 Short-term Capital Flows in the Recent Years

Figure 6 displays the short-term capital flows which consist of portfolio investment and short-term loan over the past five years. While portfolio investment recorded high net inflow due to the remarkable high performance of the capital market, other investment in the post-crisis era is characterised by persistent negative net inflows, which are attributed to negative net disbursements and growing foreign assets in terms of currency and deposits. Thus, in general, it exhibits a quite volatile net balance of short-term capital flows.

Figure 6
Recent Development of Short-term Capital Flows



Source: Bank Indonesia

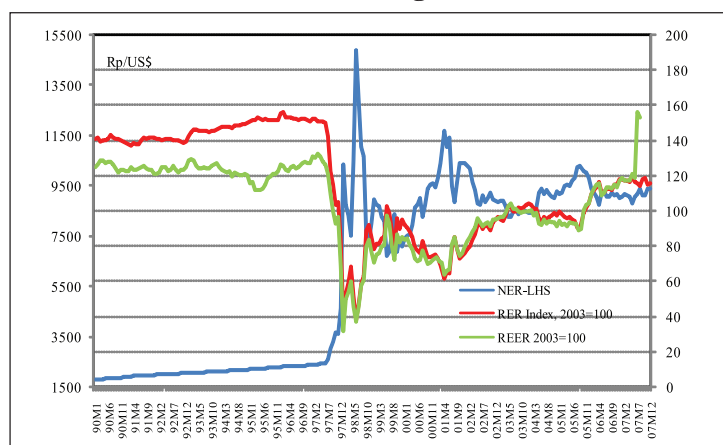
The noticeable performance of portfolio investment in the recent years suggests that Indonesia is one of the emerging markets in the region that has recently received massive short-term capital inflows. The increasing portion of debt securities from the total value of portfolio investment is closely related to the higher interest rate differential in the country in comparison with that of other emerging markets (Figure 6, right panel). Government bonds and Bank Indonesia certificates are the most interesting rupiah outlets (debt securities) that foreign investors are willing to hold as they carry fairly lower risks than those issued by the corporate sector. The high inflows of “hot money” have not only vast monetary implications to the economy, they also suggest the increasing risks of sudden capital reversal.

Expanding capital inflows will directly be reflected in the appreciated nominal exchange rates since it has direct effects on the supply of and demand for foreign exchange in the domestic foreign exchange market. Figure 7 shows the appreciation in real exchange rates (RER) and real effective exchange rate (REER) at the time of relatively stable nominal exchange rate. Figure 8 (lower left panel) exhibits the movement of the rupiah against the US dollar exchange rate that links strongly to the capital inflows associated with the major rupiah-denominated outlets. Figure 8 (upper left panel) also shows how the foreign exchange reserve picks up when the exchange rate moves in narrow bands,

while it drops when the foreign exchange largely depreciates, as occurred, for instance, in the 1997 financial crisis. All in all, it can be seen that the foreign exchange reserves change depending on the direction of capital inflows.

The surging in of capital inflows can also be reflected in the increasing money supply, for foreign exchanges are converted into the domestic currency as soon as the foreign investors purchase local-currency-denominated assets. Furthermore, rising capital inflows when it is connected to the banking sector is usually followed by increasing credit growth. However, the recent high credit growth seems to be isolated from the huge inflows of “hot money.” High domestic credit growth in the last part of 1980s and in the first part of 1990s up to the 1997 financial crisis were attributed to the large inflows of other investment (loan) into the banking sector, while the expanding credit growth in the recent year is associated with negative net inflows of other investments (lower right panel of Figure 8). Moreover, the high growth of money supply theoretically leads to increasing inflationary pressures. In the case of Indonesia, the accelerating money supply growth is not necessary connected to the scaling up of the price level (upper right panel). The empirical study of Bank Indonesia found that there is no clear evidence of strong relationship between monetary aggregates and inflation in the post crisis. Thus, even though capital inflows accelerate the growth of money, it is not always followed by rising domestic credit growth and increasing inflationary pressures.

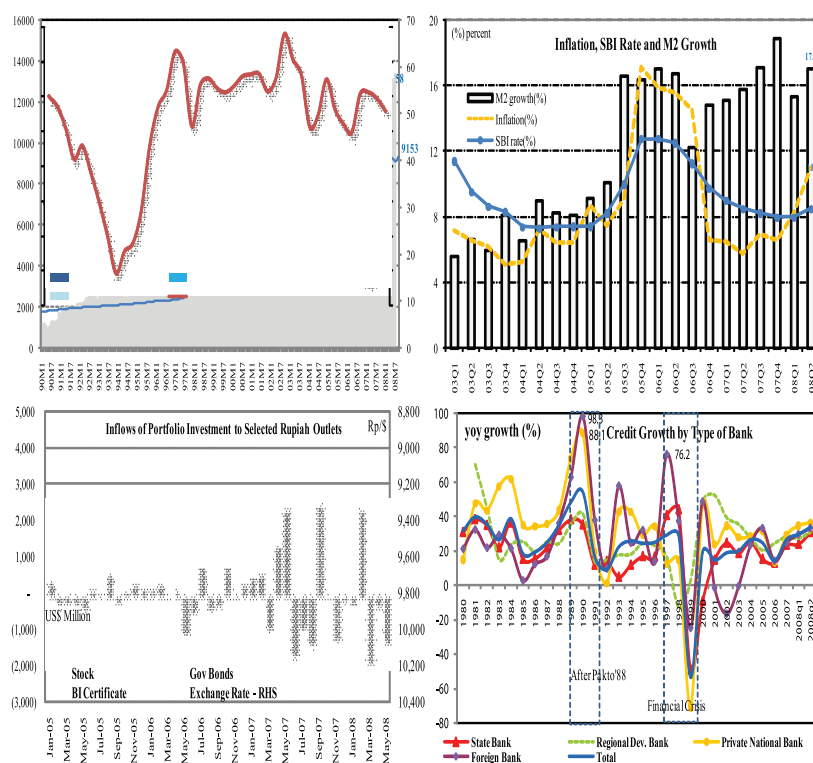
Figure 7
Nominal Exchange Rate (NER), Real Exchange Rate (RER) and
Real Effective Exchange Rate (REER)



Source: Bank Indonesia

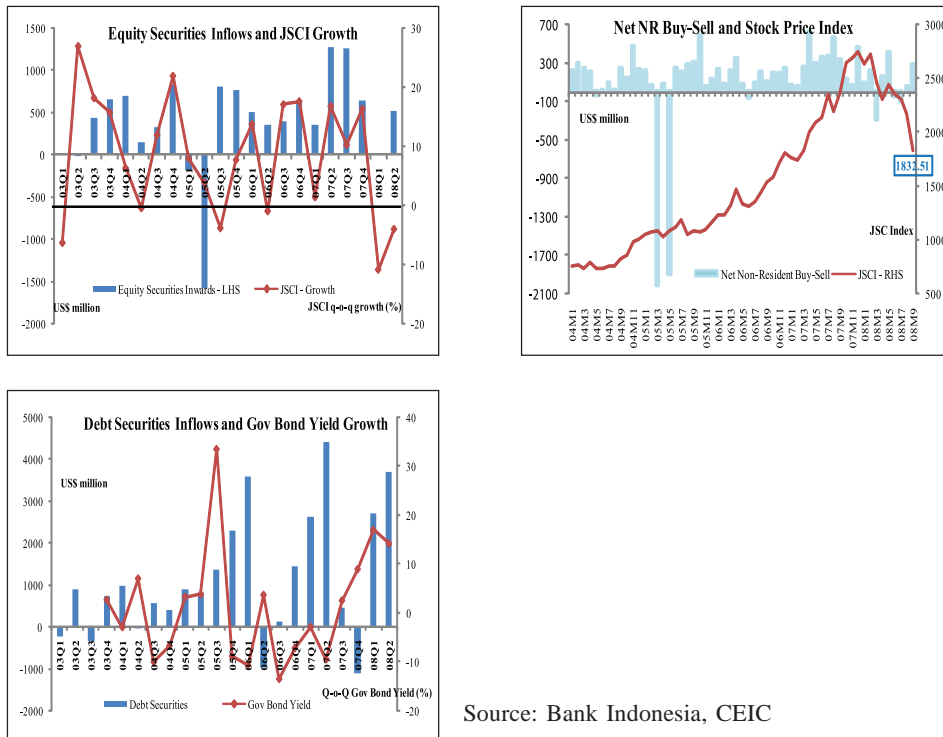
Capital inflows, as it implies an increasing demand for domestic assets, will significantly affect domestic asset prices. Positive non-resident net purchase of stocks listed in the Jakarta Stock Exchange (JSX) is associated with the mounting stock price index (Figure 8, upper right panel). This is confirmed by equity securities inflows (portfolio investment) which exhibit an increasing scale that is in line with allied returns in the stock market (lower left panel). Additional to the equity securities market, changes of yield on debt securities show a relatively close connection to portfolio inflows in debt securities. Yield growth reveals a reduction as there is a surge in capital inflows (upper left panel). Capital inflows, thus, could have resulted in creating a domestic asset price bubble. According to the empirical study of Hardiyanto and Kurniati (2006), persistent asset price bubble is regarded to have been occurred since 2003.

Figure 8
Selected Macroeconomic Indicators



Source: Bank Indonesia

Figure 9
Capital Inflows and Asset Prices



Source: Bank Indonesia, CEIC

4.2 Monetary Policy Reactions

Regarding the surge in capital inflows, how much capital inflows are enough for the economy? Large capital inflows, while they benefit the host country, if not managed appropriately can have a detrimental impact on the economy, including greater exchange rate appreciation, excessive money supply growth, which in turn increases inflationary pressure and heightened risks of domestic asset price bubbles and sudden capital reversal. Concerning on the possibility of those undesirable pressures, therefore, the central bank is required to manage “the impossible trinity” under the monetary policy framework to achieve all the monetary and economic objectives. There are some available tools that can be used in managing capital inflows, such as open market operation (market intervention and sterilisation), interest rates adjustment, and “limited” capital control.

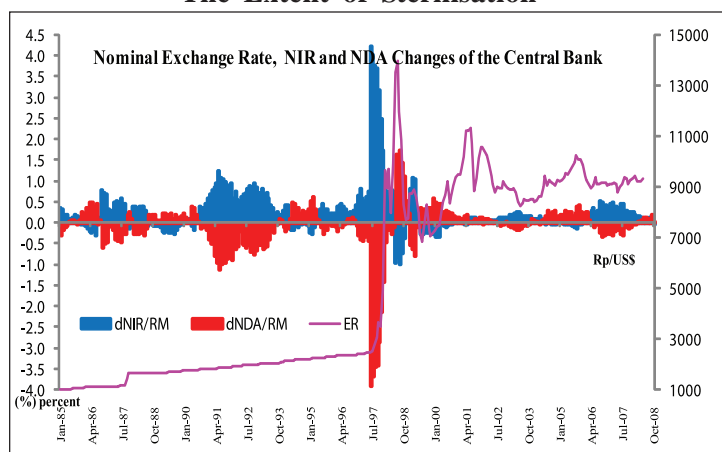
In the post 1997 financial crisis, Indonesia adopted a floating exchange rate regime. Bank Indonesia has allowed the rupiah to adjust to the market mechanism and associated macroeconomic fundamentals. Short-term capital inflows in the recent years have grown significantly and contribute to exchange rate instability. In addition, short-term capital inflows for the purpose of currency speculation have largely contributed to more rapid rupiah appreciation than those economic fundamentals could bear. In order to curb the exchange rate from unexpected sharp appreciation associated with growing capital inflows and the possibility of sudden reversal, the central bank carries out foreign exchange market interventions which result in the accumulation of foreign exchange reserves and increasing domestic liquidity. Additional to market intervention, the monetary authority has constituted regulations on anti-speculation and regulation that could be considered as capital control as well as developed foreign exchange transaction monitoring systems (as explained in the previous sections).

Reserve accumulation associated with capital inflows has monetary implications, for instance, increasing domestic liquidity. When the central bank conducts market interventions, it must choose whether to finance it by raising the reserve money base, which could potentially cause inflationary pressures, or by reducing its net domestic assets, which sterilises the impact on the domestic liquidity. Regarding excessive domestic liquidity resulting from large capital inflows, Bank Indonesia carries out open market operation to sterilise the foreign exchange intervention. Despite the pressures caused by portfolio inflows, positive net foreign purchase of domestic assets has enhanced the size and liquidity of the domestic asset market as well as contributed in supplying foreign exchange to the domestic foreign exchange market. A greater and more liquid domestic asset market would provide greater support for effective open market operation. In order to increase the effectiveness of open market operation in the money market, Bank Indonesia regulation No. 30/2005 on Open Market Operation has given a legal basis known as the Fine-tune Operation (FTO) where Bank Indonesia can control the daily domestic liquidity through overnight interest rate which can direct the movement of the interbank interest rates around BI's rate bands. BI rate adjustment is usually taken to maintain price stability with consideration to other fundamental macroeconomics indicators. Domestic liquidity management operations are also carried out by the central bank through credit policy, such as adjustment in reserve requirement, productive asset write-off reserve, etc.

Figure 10 shows the extent of sterilisation that the central bank conducted up to the recent years. A positive net international reserves (NIR) change is related to foreign reserves inflows, whereas a negative net domestic asset (NDA)

change is associated with reduction in domestic assets held by the central bank. The figure also shows the nominal exchange rate movement which is associated with the conduct of foreign exchange market interventions and domestic money market sterilisations.

Figure 10
The Extent of Sterilisation



Source: Bank Indonesia

Figure 11
Rolling Regression of β Coefficient

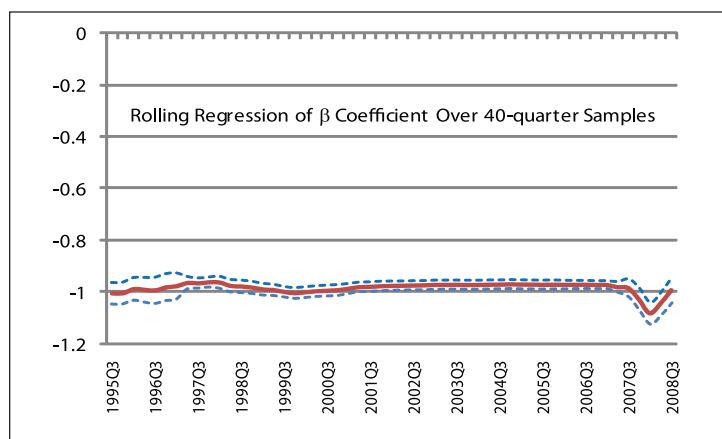


Figure 11 displays the rolling regression of sterilisation coefficient over 40-quarter samples, where the value ranges from -0.96 to -1.08, suggesting the degree of sterilisation is around full sterilisation⁶. Assuming that the demand for money is stable, this implies that (under the monetary approach to the balance of payment) the expansion of domestic credit at the growth rate of GDP would increase the demand for money. Full sterilisation suggests that the central bank allowed domestic credit to fully accommodate greater demand for money attributed to GDP growth, but avoided any credit acceleration caused by stashing foreign reserves.

Reserve accumulation to a level deemed sufficient and the capital inflows management from the perspective of monetary and/or financial stability became a critical issue for emerging economies like Indonesia. Several indicators are considered to be useful in analysing the fragility of monetary and financial stability. M2/reserves ratio measures the gap between liquid domestic assets (that can be converted into foreign currency-denominated assets) and the stock of foreign reserves available to meet demand for domestic assets. Debt to reserve ratio is another indicator that is important in connection to reserve adequacy to cover external debts. The indicators in Table 1 imply that the current ratio of foreign reserve is much better than before the onset of the 1997 financial crisis (for discussion on such indicators see, for example, Kaminsky, Lizondo and Reinhart, 1998).

6. Following Aizenman and Glick (2008), we estimate the degree of sterilisation by a simple OLS regression of the central bank's change in NDA on the change in its NIR, where change is measured over four-quarter, and scaled by four-quarter lag of reserve money stock. To control for other explanatory variables, Z, that might induce the demand for money, we incorporate nominal four-quarter GDP growth rate in the right side of the equation: $\Delta NDA = \lambda + \beta \Delta NIR + Z$.

The coefficient of sterilisation $\beta = 0$, corresponds to no sterilisation. A unitary coefficient, i.e., $\beta = -1$, implies full monetary sterilisation of the foreign reserve assets, whereas the coefficient in between these level, $-1 < \beta < 0$, represents partial sterilisation, and $\beta < -1$ corresponds to tighter monetary policy.

Table 1
Selected Reserve Indicators

End of Period	M2/reserves	Private short term debt/reserves	Private long term debt/reserves	Total private debt/reserves	Total debt/reserves
1996	6.85	0.20	2.67	2.87	5.76
1997	5.98	0.29	3.94	4.23	8.01
2003	3.10	0.06	1.43	1.49	3.87
2004	3.12	0.09	1.42	1.51	3.91
2005	3.47	0.16	1.31	1.47	3.94
2006	3.56	0.15	1.09	1.24	3.13
2007	3.12	0.20	0.78	0.98	2.49
2008q1	2.91	0.22	0.76	0.98	2.56
2008q2	3.09	0.23	0.75	0.98	2.55

Source: Bank Indonesia

5. Capital Flows and Financial Stability in Indonesia

Capital flows can create a risk to financial stability through currency and maturity mismatch of assets and liabilities in the financial sector. In the case of Indonesia, assessment on financial system stability implies an evaluation on banking sector soundness and capital market resilience due to their domination over other component of financial system, such as multifinance, insurance, etc., in term of size and contribution to the development of the country. This section reviews the recent developments of the banking sector and capital market with consideration to capital flows and their implication for financial stability. The general framework for achieving and maintaining financial stability would be discussed in the last part of this section.

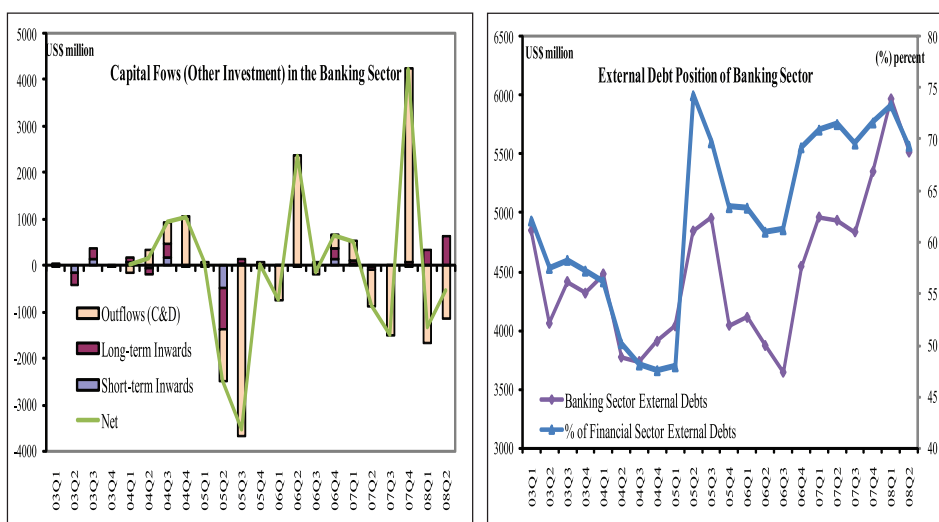
5.1 Capital Flows in the Banking Sector

The recent development of capital flows in the banking sector represents a fairly volatile net inflow. Regarding the liability of the banking sector, this recent period is characterised by positive inflows, except for 2003 and 2005, where debt repayments were recorded higher than its disbursements. On the assets side, the capital outflows mostly correspond to currency and deposits of domestic banking sector that are held by foreign bank to support cross-border transactions either for the banks or for their customers. The overall net inflow

variation shown in Figure 12 represents mostly the behavior of domestic banks' liquidity management of foreign assets. The figure also displays the reduction in debt stock in 2004 and 2006 is associated with debt repayment in 2003 and 2005. Positive capital inflows in 2007 are also clearly reflected in the figure of the external debt stock.

The impact of capital inflows in the banking sector can directly be seen in the domestic credit expansions. As shown in the previous section (Figure 8), the acceleration of domestic credit in the recent years is not so high as that of credit after bank business liberalisation (October 1988) and before the onset of the crisis when the credit growth of private national banks and foreign-joint venture banks are extremely high. In general, the lower value of capital inflows into banking sector in the recent years in comparison with that in the last 1980s up to the financial crisis contribute mainly to the lower domestic credit expansion. Higher recent credit growth, thus, are primarily supported by domestic saving.

Figure 12
Short-term Capital Flows in the Banking Sector and their Debt Position



Source: Bank Indonesia

5.1.1 Banking System Soundness

Considering the two aforementioned channels that transmit the impact of capital inflows to financial sector stability, banks with high capital adequacy ratio (CAR) and good assets qualities (indicated by low rate of non-performing loan (NPL)) are believed to be fundamental for banking system soundness. Banks with high capital ratio (higher than that of required ratio) are assumed to be able to absorb all reasonable amount of loss, whereas banks with good assets qualities imply that they are exposed to lower pressures of financial loss either related to risks associated with capital inflows or other risks. Table 2 exhibits both ratios in the recent years and of that before the 1997 financial crisis. Despite the high credit growth this recent year (around 30%), the average CAR of the banking sector is far higher than required (8%) with lower NPL of 3.4% at the end of August 2008. This implies that banking sector is now relatively strong to handle credit risks, interest rate risk, and currency and maturity mismatch risks.

Table 2
Capital Adequacy Ratio and Non-Performing Loan (in percent)

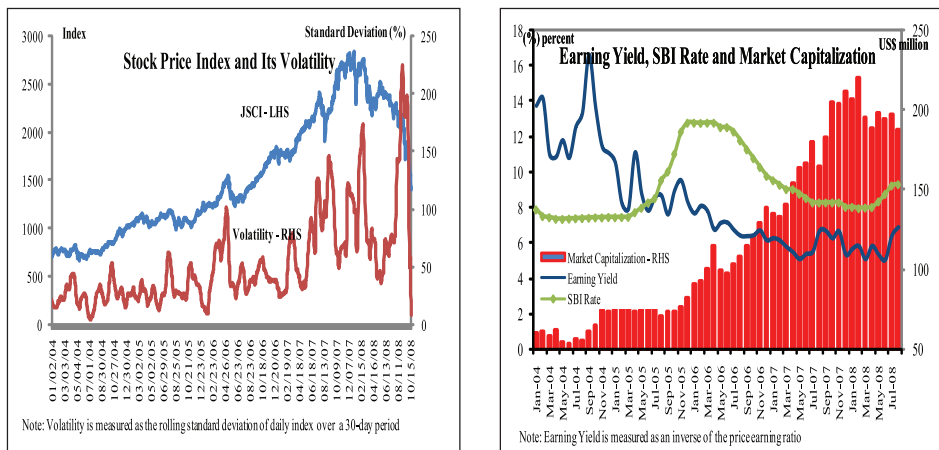
Period	CAR	NPL
1996	11.8	9.5
1997	9.2	8.1
1998	-15.7	53.8
2007	19.3	4.1
Jun-08	17.6	3.5
Aug-08	17.1	3.4

Source: Bank Indonesia

5.2 Capital Market Development

Figure 13 shows the recent development of the capital market in Indonesia. The remarkable performance of the stock price index since 2004 is associated with the relatively high growth of market capitalisation. However, this noticeable performance of the capital market was coupled with high volatility of the stock price index which has been increasing significantly since the subprime scandal burst in the second part of 2007. While the volatility was intensified, the earning yield of the stock market has been lower than the BI rate since July 2005, which indicates that foreign investors are attracted more to capital gain than earning yield (dividend).

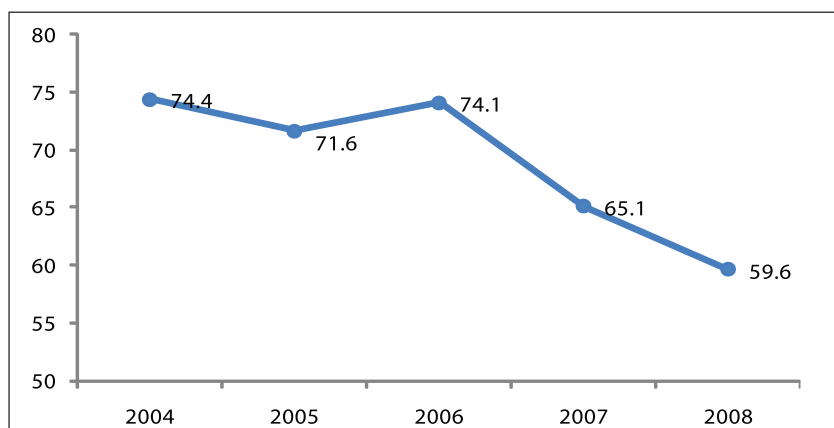
Figure 13
Selected Stock Market Indicators



Source: Bank Indonesia, CEIC

The development of the capital market is relatively close to that of the global financial market due to the relatively significant role of foreign investors in shaping Indonesia's capital market performance. This implies that the capital market, besides benefiting from ample global liquidity, is exposed and quite prone to external shocks and more sensitive to global financial instability than that of Malaysia, Singapore, Thailand and The Philippines. This is viewed to be connected with the foreign ownership limitation of listed companies which is higher than in those countries (Indonesia allows foreigners to own listed companies up to 100% (non-banking sector) as in the previous section, while in Malaysia, Singapore and Thailand foreign investors are allowed to own only up to 49%, whereas in the Philippines up to 51%). Figure 14 shows the average foreign ownership in Indonesia's stock market, which exhibits a significant decline from 74.1% in 2006 to 59.6% in 2008 (up to September 2008) due to the global liquidity problem following the subprime scandal.

Figure 14
Average Foreign Ownership in the Stock Market



Source: Indonesian Central Securities Depository (KSEI)

6. Determinants of Capital Flows

As the above analysis has shown, foreign direct investment flows are less volatile than that of portfolio investment and other investment which are highly unstable. This section investigates the factors that determine capital inflows into the economy and verifies the things that influence short-term capital inflows and FDI inflows decisions. The analysis conducted in this paper is estimated based on the Pesaran *at al* (2001) autoregressive distributed lag (ARDL) regression model.

6.1 Data, Estimation Model and Methodology

The data of the analysis are quarterly data that span from 1985Q1 to 2007Q4. Some of the data are obtained from the International Financial Statistics (IFS) that is published by the International Monetary Fund (IMF), such as exchange rate, interest rate, inflation and US GDP. The US GDP growth and US T-Bill are used as proxies to world economic growth and world interest rate, respectively. The nominal interest rate data are converted into real term by simply subtracting the current inflation rate from it. Real GDP, capital inflows and current account per GDP ratio are obtained from Bank Indonesia and Statistic Indonesia (Badan Pusat Statistik – BPS), whereas the country risk data employed is the composite country risk index published by ICRG.

The empirical model of capital inflows used in this analysis is constructed in the form:

$$Cap_t = a_0 + a_1CA_t + a_2Y_t + a_3r_t + a_4Y^*_t + a_5r^*_t + a_6JCI_t + a_7CR_t + \varepsilon_t \quad (1)$$

where Cap is capital inflows which consist of foreign direct investment, portfolio investment and other investment. The estimation will be conducted to the equation of total capital inflows (Cap), short-term capital inflows ($Caps$) and foreign direct investment inflows (FDI). Short-term capital inflows consist of portfolio investment and other investment inflows. CA means current account to GDP ratio which hypothetically has a negative sign. While Y and r represent real domestic GDP and real interest rates, Y^* and r^* correspond to real world GDP growth and real world interest rate. Both real GDP are estimated in the form of natural logarithm. The explanatory variable of CA , Y and r were regarded as the pull factors to international capital inflows, whereas Y^* and r^* were considered to be the push factors. JCI is changes of natural logarithm of stock (Jakarta Composite Index) prices which represents return on investment in the stock market. This implies that higher return in the domestic stock market leads theoretically to increasing capital inflows. CR stands for country risk index which is estimated in the form of $1/index$. Thus, lower country risk is expected to attract higher capital inflows.

Several econometric procedures have been developed to investigate cointegration among the questioned variables. With regards to univariate cointegration approach, the most popular method is that of Engle and Granger (1987) and the modified OLS process of Phillip and Hansen (1990). The Johansen's (1996) full information maximum likelihood technique is one of the most popular methods in testing multivariate cointegration. Recently, a single cointegration approach, well-known as ARDL initiated by Pesaran *at al.*(2001) has impressed increasing number of researchers. It is necessary to note that the ARDL approach to cointegration has convinced econometric advantages in comparison to other single cointegration procedures as follows: i) The ARDL approach can cope with the endogeneity problems and inability to test hypotheses on the estimated coefficients in the long run as can be found in the Engle Granger method (Pesaran and Shin, 1999); ii) it is able to estimate both the long-run and short-run parameters of the model simultaneously. The short-run parameters are \sqrt{T} -consistent with the asymptotically singular covariance matrix and the ARDL-based long run estimators of the long run coefficients are super-consistent (Pesaran and Shin, 1998); iii) it can test for the existence of long-run relationship between variables in level regardless of whether the regressors' state of stationarity are purely $I(0)$, purely $I(1)$, or partly integrated (Pesaran and Shin, 1999); iv) the ARDL approach has far superior properties for the small sample

in comparison to that of multivariate cointegration. (See e.g. Narayan (2005) for discussion on the econometric advantages of the ARDL method.)

The ARDL approach consists of two steps for estimating cointegration (Pesaran et al. 2001). The first step is to test for the existence of the long-run relationship among variables, whereas the second step is to estimate the long-run and short-run coefficients in the same equation. The test investigates the null hypothesis of having no cointegration or long-run relationship among variables in the equation, $H_0: a_9 = a_{10} = a_{11} = a_{12} = a_{13} = a_{14} = a_{15} = a_{16} = 0$, it is tested against the alternative hypothesis $H_1: a_9 \neq a_{10} \neq a_{11} \neq a_{12} \neq a_{13} \neq a_{14} \neq a_{15} \neq a_{16} \neq 0$ by comparing the computed F -statistics to the F -statistics provided in Pesaran and Pesaran (1997). If the computed F -statistics exceeds the upper critical value then the H_0 is rejected. If the F -statistics is below the lower critical value then it entails no cointegration. However, if the F -statistics is in between the lower and the upper bounds then it suggests that the test happens to be inconclusive.

The equation (1) is represented in the ARDL model as follows:

$$\begin{aligned} \Delta Cap_t = & a_0 + \sum_{i=1}^n a_{1i} \Delta Cap_{t-i} + \sum_{i=0}^n a_{2i} \Delta CA_{t-i} + \sum_{i=0}^n a_{3i} \Delta Y_{t-i} + \sum_{i=0}^n a_{4i} \Delta r_{t-i} + \sum_{i=0}^n a_{5i} \Delta Y^*_{t-i} + \sum_{i=0}^n a_{6i} \Delta r^*_{t-i} + \\ & \sum_{i=0}^n a_{7i} \Delta JCI_{t-i} + \sum_{i=0}^n a_{8i} \Delta CR_{t-i} + a_{9i} Cap_{t-1} + a_{10i} CA_{t-1} + a_{11i} Y_{t-1} + a_{12i} r_{t-1} + a_{13i} Y^*_{t-1} + \\ & a_{14i} r^*_{t-1} + a_{15i} JCI_{t-1} + a_{16i} CR_{t-1} + v_t \end{aligned} \quad (2)$$

The ARDL approach estimates $(p+I)^k$ number of regressions to find the optimal lag for each variable, where p is the maximum number of lag and k is the number of variables in the equation. Following Pesaran and Pesaran (1997), we use 4 lags as the maximum lag since the quarterly data is employed. The optimal model is selected using Schwarz Bayesian Criteria (SBC) due to the finding of Pesaran and Smith (1998), based on Monte Carlo empirical evidence, that SBC is preferable to Akaike Information Criteria (AIC) as it minimises the lag length to maximise the observation's degree of freedom. Hence, this analysis uses SBC in selecting the optimal lag for each variable in the model.

The conditional ARDL-related error correction model (ECM) can be obtained as the long-run relationship has been established. The general form of the ECM estimation is constructed as in the equation (3).

$$\Delta Cap_t = a_0 + \sum_{i=1}^n a_{1i} \Delta Cap_{t-i} + \sum_{i=0}^n a_{2i} \Delta CA_{t-i} + \sum_{i=0}^n a_{3i} \Delta Y_{t-i} + \sum_{i=0}^n a_{4i} \Delta r_{t-i} + \sum_{i=0}^n a_{5i} \Delta Y^*_{t-i} + \sum_{i=0}^n a_{6i} \Delta r^*_{t-i} + \sum_{i=0}^n a_{7i} \Delta JCI_{t-i} + \sum_{i=0}^n a_{8i} \Delta CR_{t-i} + \lambda EC_{t-1} + \eta_t \quad (3)$$

6.2 Estimation Results

As noted above that the ARDL model is applicable irrespective of whether the variables are $I(0)$ or $I(1)$. Table 3 shows that while some variables such as CA , Y , Y^* , r^* and CR are $I(1)$, the rest are $I(0)$. The results of the ADF test for null hypothesis of unit root in the variables in question presented in that table indicate that the ARDL approach to long-run relationship is more appropriate than other procedures for testing cointegration.

Table 3
Results of the ADF Tests

Variable	ADF	Lag
Cap	-4.165**	0
ShCap	-5.339**	0
CA	-1.902	1
ΔCA	-14.280**	0
Y	-2.069	4
ΔY	-3.79**	3
Y^*	-2.415	2
ΔY^*	-4.392**	1
r	-4.201**	5
r^*	-2.049	1
Δr^*	-5.465**	3
ER	-6.155**	2
CR	-2.758	1
ΔCR	-5.675**	1
JCI	-9.640**	0
RDF	-3.404*	1
FDI	-2.489	1
ΔFDI	-13.677**	0

Notes: ** indicates 1% significance level.

The ARDL method estimates $(4+1)^8 = 390,625$ number of regressions for each model to get the best model selected by SBC. The long-run cointegration and the ARDL-based error correction model of total capital inflows, short-term capital inflows and FDI selected by SBC are respectively shown in Figure 18. In the long run, total capital inflows are influenced by country risk, current account, real interest rates, domestic real economic growth and stock market return. Higher country risk leads to lower capital inflows, whereas greater current account surplus (per GDP) would need more capital inflows to finance it. While domestic economic growth and stock market return have, as theoretically expected, positive impact on total capital inflows, real interest rate has significant negative influence on total capital inflows. This might suggest that foreign investors consider other macroeconomic indicators such as domestic inflation which is relatively higher than other countries in the region as additional factor influencing investment decision into this country.

In the short run, all the long run explanatory variables have significant effects on capital inflows with lower coefficient value. Moreover, the error correction model suggests that 57% of deviation of total capital inflows in the short term from its long-run equilibrium will be corrected so that it will be maintained in its long-run pattern. The significance of the error correction term coefficient also implies that all variables involved in the regression are cointegrated is confirmed.

In the estimation of short-term capital inflows, the cointegration model found that only country risk, current account, stock market return and a dummy for the 1997 financial crisis are statistically significant in influencing short-term capital inflows. Opposite to current account and stock market return coefficients which have less power in affecting short-term capital inflows, country risk becomes more powerful in shaping long run short-term capital inflows. However, domestic economic growth is statistically insignificant in determining short-term capital inflows. This suggests that non-residents who invest in the short-term instruments give more weight on country risk than they who invest for longer period. Furthermore, in the ARDL-based error correction model, the coefficient of adjustment for short-term capital inflows is higher (0.85) than that of total capital inflows.

The long-run model estimation exhibits that FDI inflows to domestic economy is determined by country risk, current account, real interest rate and stock market return. However, in the short run, stock market return is statistically insignificant in affecting FDI inflows. This suggests that part of FDI inflows is in term of acquisition of listed companies through the capital market and in the long term

foreign investors also consider the performance of the existing listed companies. On the contrary, FDI investors would not notice stock market return in the short run due to their long term horizon in investment. However, real interest rate is found to have negative impact on FDI as well as on total capital inflows. In addition, FDI inflows estimation also found lower rate of adjustment (0.37) of short-term deviation from equilibrium compared to both estimation of total capital inflows and short-term capital inflows.

All in all, the composite country risk index is extremely dominant in influencing capital inflows into the Indonesian economy. Investment opportunities created by high economic growth are less powerful than country risk which corresponds to foreign investor views on comparative business risks in each country. This also implies that improvement in all components of country risk, such as political, economic and financial risk, is similarly important in attracting capital inflows.

Table 4
Estimation Results of the ARDL Model

ARDL (1,4,0,0,0,0,0) selected based on SBC Dependent variable : Capin Sample: 1985q1 - 2007q4			ARDL (2,0,0,0,0,0,0) selected based on SBC Dependent variable : Caps Sample: 1985q1 - 2007q4			ARDL (2,0,0,0,0,0,1) selected based on SBC Dependent variable : FDI Sample: 1985q1 - 2007q4		
Regressors	Long Run	ECM ¹⁾	Regressors	Long Run	ECM ¹⁾	Regressors	Long Run	ECM ¹⁾
CA	-0.33*** (-2.805)	-0.19** (-2.582)	Caps(-1)		0.27*** (3.026)	FDI1		-0.23** (-2.120)
r	-0.23*** (-3.266)	0.01 (-0.290)	CA	-0.13** (-2.545)	-0.11** (-2.393)	CA	-0.15** (-2.406)	-0.05** (-2.447)
r1		-0.11*** (-2.780)	r	-0.01 (-0.327)	-0.01 (-0.326)	r	-0.08*** (-2.666)	-0.03** (-2.625)
r2		0.03 (0.628)	r*	0.08 (0.713)	0.07 (0.720)	r*	-0.07 (-0.525)	-0.02 (-0.544)
r3		0.12*** (2.916)	Y	0.02 (0.324)	0.01 (0.320)	Y	0.02 (0.406)	0.01 (0.410)
r*	0.09 (0.412)	0.05 (0.413)	Y*	0.16 (1.059)	0.13 (1.034)	Y*	0.16 (0.945)	0.06 (0.878)
Y	0.21** (2.186)	0.12** (2.156)	CR	-3.309*** (3.111)	-1.89*** (-3.130)	CR	-2.157*** (-2.942)	-0.81** (-2.238)
Y*	0.15 (0.492)	0.09 (0.479)	JCI	0.01* (1.808)	0.01* (1.837)	JCI	0.02* (1.743)	0.002 (0.657)
CR	-2.69** (-1.988)	-1.54* (1.755)	Constant	3.61*** (3.273)	3.08*** (3.187)	Constant	4.08*** (3.377)	1.53** (2.605)
JCI	0.03* (1.822)	0.02** (1.992)	D97q4	-9.77*** (-5.117)	-8.34*** (-7.391)	ECM(-1)		-0.37*** (-3.573)
Constant	4.96*** (2.276)	2.84** (2.024)	ECM(-1)		-0.85*** (-7.651)	R ² Adjusted		0.32
ECM(-1)		-0.57*** (-5.268)	R ² Adjusted		0.65	F-statistics		3.95
R ² Adjusted		0.48	F-statistics		14.36	DW-statistics		1.99
F-statistics		6.51	DW-statistics		2.33			
DW-statistics		2.00						

- *, ** and *** indicate 10%, 5% and 1% significance level, whereas T-ratios are in the parenthesis.

- ¹⁾ Regressors in the Error Correction Models are in the form of first difference. For example, dr = r - r(-1), dr1 = r(-1) - r(-2), dr2 = r(-2) - r(-3), etc.

7. Conclusion

Indonesia has experienced high inflows of international capital since the early 1980s to the first part of 1990s, attributed to the liberalisation measures. The recent pick-up of the capital inflows, particularly in terms of portfolio investment and foreign direct investment, are supported by significant improvement of the macroeconomic fundamentals. Strong capital inflows created external pressures through excessive exchange rate appreciation. To achieve its monetary objectives, in conducting capital flows, exchange rate and domestic liquidity management, Bank Indonesia carried out foreign exchange market intervention and domestic money market sterilisation. The degree of sterilisation is found to be persistently around full sterilisation.

Foreign exchange market intervention and domestic money market sterilisation have resulted in foreign reserve accumulation. Recent outstanding reserve ratios to external liabilities are found to have improved compared to that on the onset of the 1997 financial crisis.

Capital flows have greater implications for a small open economy, like Indonesia. Capital inflows can have significant impact on the financial stability through currency and maturity mismatch of assets and liabilities in the financial sector. The recent high credit growth seems to be less supported by capital inflows due to lower amount of capital inflows into the banking sector compared to the domestic credit boom in the previous periods. Opposite to the banking sector, recent noticeable performance of capital market is regarded to be closely related to the recently strong capital inflows. The rise of stock price index and market capitalisation are coupled with increasing stock price volatility. This is considered to be attributed to the significant role of foreign investors, which are more interested in capital gain than stock earning yield, in shaping capital market development.

We found that country risk and current account are steadily significant factors that determine capital inflows. Although the stock market return has significant effect on capital inflows, its coefficients are fairly small and insignificant especially in influencing FDI in the short run. Moreover, domestic economic growth which can create investment opportunities is only significant in affecting total capital inflows. This implies, it is especially important that both fiscal and monetary authorities pay more attention to macroeconomic fundamentals and institutional development that can reduce business potential risks in the economy, which, in

turn, can attract more capital inflows when investors are confident about the risks of investing in countries about which they know little. Finally, favorable economic environment can be exceptionally supportive in optimising the benefits of capital-inflow in the seeking of economic prosperity.

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Chapter 4

CAPITAL FLOWS AND THEIR IMPLICATIONS FOR CENTRAL BANK POLICIES IN MALAYSIA

by

Raja Syamsul Anwar and Tan Bee Chin¹

1. Introduction

The Malaysian economy has grown significantly since achieving independence in 1957. Between 1970 and 2007, the economy expanded at an annual rate of 6.78%, which is higher than the global average of 4.34% for the developing countries². Much of the economic success is associated with its outward-oriented strategy, which is manifested in its open policies towards both current and capital accounts. There is no denying that Malaysia's developmental progress has benefited greatly from investment flows in terms of greater diversification, lower financing costs, increased technological transfers, as well as higher levels of investment and increased growth potential. However, at the same time, the small size of the economy meant that the openness to financial flows exposed Malaysia to the risks inherent with such flows, including their influence in accentuating economic cycles, their destabilising impact on financial prices, and the challenges they pose in the conduct of monetary policy and the maintenance of financial stability.

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 2. Authors' own estimates based on data sourced from the International Financial Statistics (IFS). Developing countries refer to countries that are not members of the Organisation for Economic Co-operation and Development (OECD). However, for several countries, real GDP data were either not available or had gaps in the reporting.

This paper aims to develop a deeper understanding of Malaysia's experience in coping with volatile movements of capital over the period 1991 to 2007, which includes key episodes of capital account liberalisation and capital flows management. It progresses as follows: Section 2 presents a historical account of Malaysia's capital account regime and the direct measures introduced to manage capital flows. Section 3 discusses the trend of capital flows in Malaysia for the period 1991 to 2007, followed by a discussion on their determinants in Section 4. Sections 5 and 6 discuss the implications and challenges for monetary policy and financial stability arising from large capital flows in the more recent period. The conclusions are presented in Section 7.

2. Capital Account Liberalisation and Major Capital Flow Management Policies

Malaysia moved to current account convertibility with the acceptance of International Monetary Fund Article VIII in November 1968. With the dismantling of the sterling area arrangement in June 1972, Malaysia substantially liberalised regulations on foreign exchange transactions with all foreign countries on 8 May 1973.^{3,4}

Malaysia liberalised the capital account further in 1987. The liberalisation of 1987 aimed at reducing the cost of doing business and was part of measures to pull the country out of the economic recession of the mid-1980s.⁵ Specifically, a number of exchange controls measures were eased on 1 January 1987. This includes reducing the formalities businesses had to comply with when exporting goods (e.g., raising the threshold for exchange control export declaration) and allowing foreign investors greater access to domestic financing facilities to expand local productive capacity (e.g., raising the limit for offshore loans).

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3. Exchange control in Malaysia was previously linked to the sterling area arrangement. According to the Exchange Control Act, 1953, both current and capital transactions between Malaysia and the Scheduled Territories (defined as former sterling area countries) were not subject to exchange control. Exchange control regulations apply only to countries outside the Scheduled Territories. Capital transactions with non-Scheduled Territories were subject to exchange control. However, regulations were administered liberally with approval normally given for most *bona fide* transaction.
 4. The dismantling of the sterling currency arrangement also led to the adoption of the US dollar as the intervention currency in place of sterling on 24 June 1972, and ultimately the floating of the ringgit on 21 June 1973.
 5. The Malaysian economy contracted in 1984 and 1985 against the backdrop of balance of payments difficulties due to the decline in global commodity prices, as well as sizeable external borrowings and debt service payments by the government.

In the period 1991-93, strong inflows of foreign direct investments (FDI) were accompanied by significant inflows of short-term capital.⁶ The additional liquidity caused by the capital inflows exerted pressure on domestic prices, led to resource misallocation, as well as complicated monetary management. Hence, in January and February 1994, Bank Negara Malaysia introduced administrative measures to discourage short-term investment inflows and reinforce monetary policy autonomy.⁷ These measures were subsequently lifted in August 1994 after the objectives to contain short-term inflows, limit monetary expansion and stabilise the foreign exchange markets had been achieved.

Box I: Summary of 1994 Measures¹

- The 1994 measures were directed entirely at containing speculative activity by discouraging short-term capital inflows.
- The measures included the following:
 - The revision of the eligible liabilities base of the banking institutions for the calculation of the SRR and the liquidity requirement to include all inflow of funds from abroad.
 - The imposition of limits on non-trade related outstanding net external liabilities of banking institutions.
 - Restricting sales of short-term monetary instruments to non-residents.
 - The requirement for commercial banks to place with Bank Negara Malaysia the ringgit funds of foreign banking institutions held in non-interest bearing accounts.²
 - Prohibiting commercial banks from undertaking non-trade related swap and outright forward transactions on the bid side with foreign customers.

¹ Appendix I provides a detailed listing.

² As observed by Tamirisa (2004), this was analogous to the unremunerated reserve requirements on foreign borrowing used by Chile during the 1990's.

6. Appendix provides a listing of capital account measures introduced between 1990 and 2007.

7. As a result of the administrative measures in early 1994, the ringgit depreciated and short-term capital recorded a net outflow of RM8.5 billion in 1994, compared with an average annual net inflow of RM10.3 billion three years before. Nevertheless, the measures achieved the intended objectives to contain short-term inflows, limit monetary expansion and stabilise the foreign exchange market. Despite the outflow of short-term capital, long-term investment flows were unaffected and recorded a net inflow of RM12.9 billion, slightly higher than the RM12.4 billion average in the last three years. Money supply was also effectively contained. M3 fell sharply from 23.5% growth in 1993 to 13.1% in 1994.

In addition to the easing of the measures introduced in early 1994 to manage capital inflows, the liberalisation during 1994-1996 reflected broader efforts to create a freer foreign exchange environment in line with the sustained growth in resident foreign exchange transactions. Measures were undertaken to reduce the cost of compliance, allow small- and medium-scale industries greater access to credit facilities, increase the efficiency of cross-border transactions and encourage the relocation of the operational headquarters of multinational corporations (MNC's) to Malaysia. There was also greater transparency in the prudential rules on foreign borrowings and on the use of domestic resources to fund overseas investment. The objectives of prudential guidelines were aimed at containing the size of the external debt, ensuring companies meet their external obligations and maintaining Malaysia's investment grade in international markets. Measures undertaken during this episode of liberalisation included raising the threshold for foreign borrowings requiring approval, allowing residents to maintain foreign currency accounts with licensed onshore banks and to invest abroad (conditional upon them not having domestic borrowings).

The onset of the Asian Financial Crisis in 1997 disrupted the liberalisation process and introduced a new set of challenges for the management of financial flows.⁸ Despite having relatively strong macroeconomic fundamentals in the period preceding the Crisis, the ensuing panic and uncertainty in regional financial markets manifested in significant withdrawals of portfolio investment from Malaysia.⁹ Between end-June 1997 and end-August 1998, capital outflows had led to more than a one quarter decline of international reserves (about US\$7.2 billion), a 40% ringgit depreciation and a 72% fall of the stock market. To limit speculative pressure on exchange rates, Bank Negara Malaysia imposed limits on ringgit swap transactions with non-residents that were not related to underlying commercial transactions in August 1997.¹⁰ A ban on short-selling of securities listed on the KLSE was also introduced.

8. We do not attempt to discuss the causes of the Asian Financial Crisis as this subject has been discussed extensively elsewhere in the literature. See for example Krugman (1998), Corsetti, Pesenti and Roubini (1998) and Radelet and Sachs (1998), among others.

9. As noted in Bank Negara Malaysia (2000), real GDP continued to grow at about 8% in the first two quarters of 1997, while the Government continued to record fiscal surpluses. The level of external debt was low at 43.2% of GNP, while the current account deficit was reduced to 5% of GNP in 1996 from 10% in 1995 and was expected to improve further. Measures to address the supply constraints in the economy had been taken earlier since 1995 and were beginning to show positive results, with inflation moderating to its lowest level of 2.1% in July 1997.

10. Prior to 1997, the rapid growth of international trade and investment in the 1990s and the availability of ringgit outside Malaysia had led to the development of an offshore market for the ringgit that was based mainly in Singapore. To meet greater demand for hedging instruments, local banks provided forward cover against ringgit to non-residents. This facilitated the arbitrage between domestic and offshore markets, resulting in greater currency volatility.

As the Crisis deepened, a more comprehensive package of selective exchange control measures was introduced on 1 September 1998 with the aim of curtailing ringgit speculation and regaining monetary independence.^{11,12} The ringgit was also pegged to the US dollar at an exchange rate of RM3.80 for one US dollar the following day.

Box II: Summary of 1998 Measures

- The September 1998 exchange control measures were aimed at stabilising short-term capital flows and containing speculation by eliminating access to ringgit by speculators by reducing the offshore market in ringgit.²
- The measures included the following:
 - The imposition of a one-year holding period for non-resident portfolio investment.
 - The introduction of approval requirements for selected ringgit-denominated transactions among non-residents, as well as for resident investment abroad exceeding a certain limit.
 - The disabling of fund transfers among non-residents by prohibiting the crediting of an External Account by another External Account holder.
 - The prohibition on the granting of credit lines to non-resident banks and stockbrokers by banks in Malaysia
 - The requirement for export and import transactions to be denominated in foreign currency and for all export proceeds to be repatriated back to Malaysia within six months.
 - Restrictions on the import and export of ringgit currency notes
- There were no controls on foreign direct investment flows while the current account remained fully convertible.

¹ Appendix I provide a detailed listing.

²These measures supplemented the limits placed on swap transactions that were not related to underlying commercial transactions effective 4 August 1997.

11. Accompanying these measures, the Companies Act was amended to limit dividend payments. The Central Limit Order Book (CLOB) – the offshore market for Malaysian equities – was also closed. Financial and corporate sector reforms were introduced to improve the weak financial institutions and enhance the stability and resilience of the financial system. Prudential regulations and risk-based supervision were also strengthened.

12. Following the imposition of the controls, nominal interest rates were reduced from 10.1% in August 1998 to 3.2% in August 1999. This reduced pressure on non-performing loans which could have increased if interest rates had not fallen as they did. A year into the implementation of the exchange controls, the Malaysian economy recovered from a 7.4% contraction in 1998 to a 6.1% growth in 1999. Inflation fell from 5.7% to 2.7% during the same period. With the more orderly foreign exchange market conditions, the current account surplus rose from RM37.4 billion in 1998 to RM47.9 billion.

In fact, following the 1997 - 1998 Asian Financial Crisis, the capital account liberalisation efforts resumed. Three phases of ensuing exchange control liberalisation can be discerned. The liberalisations in 1999-2002 dismantled the selective exchange controls measures imposed during the crisis. The liberalisations of 2003-2005 and 2007-2008 were intended to both improve the business environment and enhance the development of the domestic financial markets.

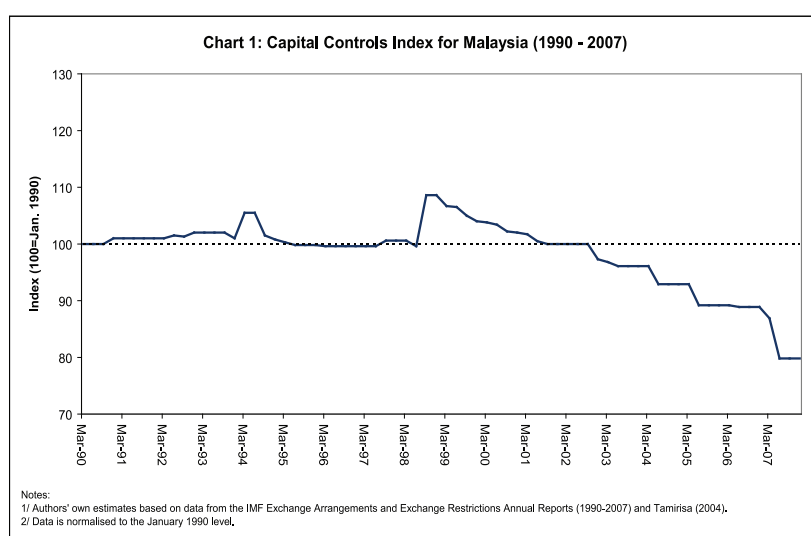
The selective exchange controls imposed in 1998 were subsequently relaxed in stages between 1999 and 2001, with market stability remaining a key consideration. This reflected the intention that such controls would not be a permanent feature.

In line with the objective to continuously improve the business environment, liberalisation measures were announced between 2003 and 2005. The measures were specifically designed to provide greater flexibility for residents to manage foreign exchange risks with licensed onshore banks in Malaysia and boost the development of domestic financial markets. Residents were allowed to maintain foreign currency accounts and invest in foreign currency financial products offered by onshore banks while non-residents were allowed to maintain ringgit and foreign currency account and hedge their foreign currency exposure with onshore banks. The bond market was also opened up to MNCs, multilateral development banks and international financial institutions for issuance of ringgit-denominated bonds.

Due to increased integration with the rest of the world and consistent with the positioning of Malaysia as a leading international Islamic financial centre, further liberalisations were undertaken in 2007 and 2008 to build on the success of the earlier liberalisation efforts. The objectives remain to expand the scope of foreign currency business of onshore banks and expanding the investment horizon and hedging mechanism of residents and non-residents. However, in this round, the banks were accorded a greater degree of independence to undertake foreign currency business and more flexibility to obtain foreign currency and ringgit funds for productive uses.

The Capital Control Index in Chart 1 gives an overview of the evolution of capital account policies in Malaysia between 1990 and 2007. Given the difficulties with taking stock of all the existing capital account restrictions, this paper utilises data on changes to regulations pertaining to capital transactions as outlined in the IMF Annual Report on Exchange Arrangements and Restrictions (1990 – 2007) and Tamirisa (2004). The index was constructed by assigning weights to

the changes in regulations using the scheme applied by Tamirisa (2004). Outright prohibition is given a weight of 1.0. Quantitative limits, approval requirements, and a tax greater than ten percent is given a weight of 0.5, while notification requirements, a tax less than ten percent, and other similar measures are given a weight of 0.2. In addition, we assign a weight of 0.2 for an easing of quantitative limits.¹³ The changes are added or subtracted cumulatively relative to the base period of January 1990. The index captures the tightening of capital controls in 1994 and 1998, as well as the sustained liberalisation between 1999 and 2007.



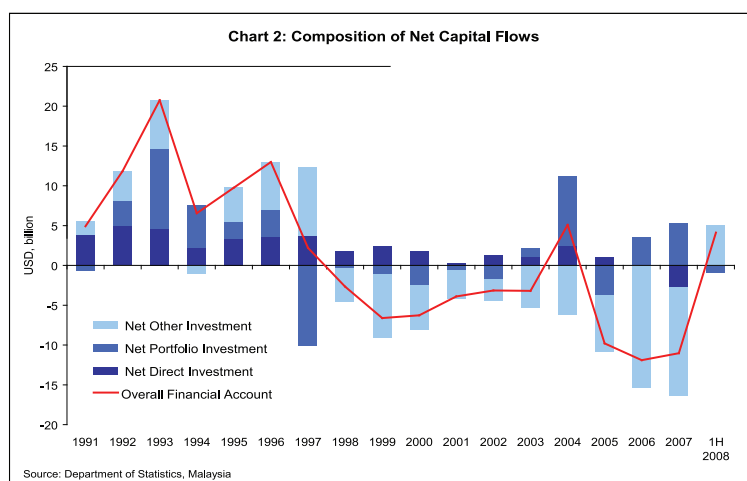
3. Trends of Capital Flows in Malaysia

3.1 Overview

Malaysia was generally a net recipient of capital in the period from 1991 until the onset of the Asian Financial Crisis in 1997 (Chart 2). The marked increase in inflows was a common feature across the region. For most of the

13. The main difficulty in constructing such an index is the conversion of information that is subjective into an objective measure. While the weighting scheme alleviates this problem, it does not eliminate the considerable scope for interpretation.

period, Malaysia registered net inflows in all three investment categories, i.e., direct investment, portfolio investment and other investment, which collectively exceeded 10% of GDP a year. Of significance, direct investment had been consistently a stable source of net inflows, followed closely by other investment (consists predominantly of bank lending and private sector borrowings). Meanwhile, portfolio investment flows were rather volatile. The sharp rise in capital flows from 1991 to 1996 reflected the declining trend of interest rates in advanced countries against the backdrop of slowing growth in their economies¹⁴. During this period, sharp net capital inflows had resulted in sizeable current account deficits. With the already high domestic savings rate, the capital inflows provided additional impetus to domestic investment and economic activity. The strong economic growth performance in turn supported the property and equity markets and perpetuated the capital inflows.



The situation, however, changed in 1997 in the wake of the yen depreciation and slowing regional export growth in 1996, and the devaluation of Thai Baht in July 1997. Fear of broader currency devaluation and sizeable current account deficits in some countries resulted in capital outflows from East Asian countries. In the case of Malaysia, most of the outflows took the form of portfolio investment and other investment. FDI remained resilient even up to the eve of the crisis in 1997. This reflected investor confidence in the long-run prospects of the Malaysian economy.

14. Between 1990 and 1992, the US federal funds rate was reduced from 8% to 3%. The decline of interest rates prompted institutional investors to search for high-yield opportunities in emerging markets (Ito (2000)).

In 1998, Bank Negara Malaysia introduced capital account measures which restricted portfolio investment outflows and moved to a fixed exchange rate regime. From 1998, the general trend has reversed to net capital outflows. This corresponded with the trend shift in the current account. The current account turned from a deficit to a surplus of 12.4% of GDP in the period 1998-2007 following an adjustment in domestic investment to a more sustainable level, which coincided with a more stable exchange rate environment as well as a rapid expansion in global trade. Exports grew strongly, underpinned by electronics and electrical and commodity exports, while domestic investment and imports grew at a slower pace. The surplus allowed the replenishment of reserves and reduced Malaysia's reliance on external capital. A large portion of net outflows was in the form of other investment (which consists predominantly of bank lending and non-bank private sector's trade credits and loans). FDI continued to broadly record net inflows even as overseas investment by Malaysian companies grew larger over the years. Portfolio investment generally recorded marginal net outflows until 2003, subsequently turning into net inflows and increasing in response to global push and domestic pull factors. The following sub-sections elaborate on the developments across different types of investment flows.

3.2 Long-term Investment Flows

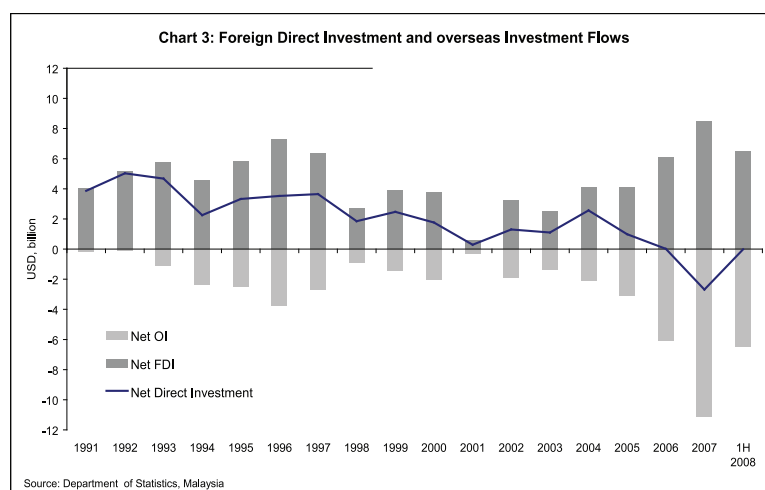
Prior to the Asian Crisis, strong FDI into Malaysia contributed largely to the net inflows in the financial account. The inflows coincided with the relocation of Japanese and New Industrialised Economies (NIEs') export-oriented industries to Southeast Asia (particularly to Malaysia, Indonesia and Thailand) to mitigate the impact of rising labour cost at home and the appreciation of the yen (associated with the Plaza Accord¹⁵ of 1985). In the case of Japan, the outflow of FDI was also stimulated by large current account surpluses and the "bubble economy" in the domestic market, during which the relative abundance of domestic credit combined with the appreciating yen encouraged Japanese firms to invest abroad.¹⁶ For the NIEs, additional impetus was given by the withdrawal of the Generalised System of Preferences¹⁷ (GSP) for their exports in 1988. In addition, on the

15. On 22 September 1985, the finance ministers from the world's five biggest economies - the United States, Japan, West Germany, France and the UK - announced the Plaza Accord. The big-five had agreed to intervene in currency markets as necessary to engineer a depreciation of the US dollar. By the end of 1987, the dollar had fallen by 54% against both the Deutsch mark and the yen from its peak in February 1985.

16. Bayoumi et al. (1996)

17. The Generalised System of Preferences (GSP) allows the importers, the developed economies, to provide duty-free tariff treatment to certain products imported from designated developing countries in order to promote economic growth in developing countries by stimulating their exports.

domestic front, the enactment of the Promotion of Investments Act¹⁸ (PIA) in 1986 further attracted FDI inflows from the US. These inflows moderated after 1997, reaching a low point in 2001 following the collapse of the technology bubble in the United States. Nevertheless, the uptrend in FDI resumed in the following years, underpinned by Malaysia's large and long-standing presence of MNCs in the manufacturing sector. It also reflected the continued favourable domestic investment climate and economic growth prospects. More recently, overseas investment increased significantly, outpacing the growth in FDI. The sustained increase in overseas investment by Malaysian companies reflected their increased capacity and rising interest to venture abroad in search of new and fast-growing markets which offer good returns.¹⁹

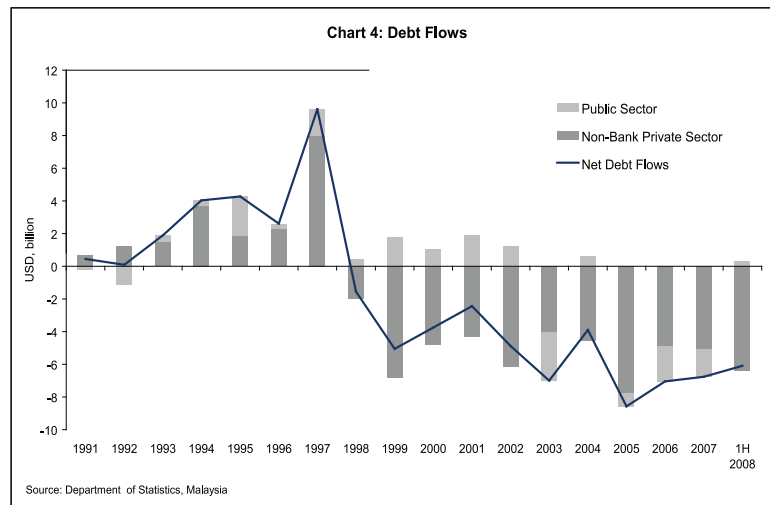


3.3 Debt flows

External borrowings recorded small net inflows in the early 1990s mainly due to public sector repayment of foreign debt (Chart 4). This was in line with measures to rationalise the government's external debt position, following the fiscal expansion in the 1980s.

18. The PIA (1986) offered generous incentives for export-oriented industries with a greater degree of liberalisation and deregulation of trade and investment than previous policies.

19. Between 2003 and 2007, net profits and dividends accruing to Malaysian companies investing abroad rose from 0.5% of GDP to 2.3% of GDP.



External debt flow recorded sustained net borrowings between 1993 and 1997. This episode can be explained by large borrowings to finance private sector capacity expansion and government projects. It was a feature of the physical capital-induced growth of the early 1990s. It could be argued that some of the external borrowings were counterproductive as there are views that the rise in investment during this period was excessive.²⁰

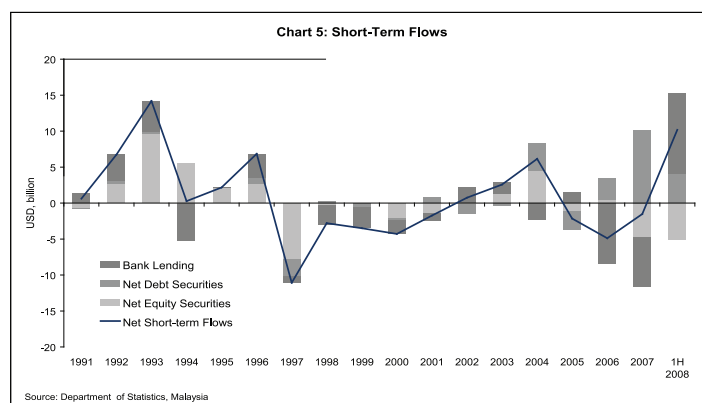
The period of large borrowings ended in 1998 with the onset of the Asian Financial Crisis. Private sector net borrowing reversed to net lending, largely as a result of trade credit extension to importers abroad which is still very much prevalent until today. The public sector, however, continued to record net loan draw-downs until 2002, due to the expansionary fiscal measures to support economic growth and recovery after the Asian Crisis. These borrowings were largely repaid in 2003. In recent years, the trend in public sector debt mostly reflected borrowing or repayment activities by the non-financial public enterprises. In particular, the net outflows of debt (or net repayment) in the period 2005-2007 coincided with the rising profitability of these enterprises.

20. Bustelo (2000) finds evidence of a decline in investment efficiency and capital profitability in Malaysia, South Korea and Thailand. The incremental capital-output ratio (ICOR) displayed an upward tendency in the early 1990s in Malaysia, South Korea and Thailand, indicating a process of declining investment efficiency and falling capital profitability. An increased share of bank lending was directed to speculative investment in real estate, equities, and other financial assets. For instance, real estate exposure of domestic banks was very high (30-40% of total bank lending) in Malaysia and Thailand.

3.4 Short-term Investment Flows

For Malaysia, short-term inflows surged in the early 1990s against an environment of slowing economic activity in the industrial countries, the associated fall in interest rates worldwide, expectations for ringgit appreciation and a period of rapid domestic economic growth in excess of 8% per annum between 1988-92 (Chart 6).²¹ The surge in short-term inflows was also evident in other developing countries – Chile, Hong Kong, Singapore, Mexico, and Korea - which received large international capital flows from the industrialised countries.²²

Inflows of short-term capital were mainly directed at equity purchases. Estimates indicated that net inflows of purchases of stocks and shares increased from RM6.9 billion in 1992 to RM20 billion between January and October 1993.²³ By 1994, Malaysia's stock market capitalisation in relation to GDP was comparable to that of the United States and United Kingdom.²⁴ Capital inflows were also driven by external borrowing by banks, especially in 1991 to 1993. A considerable portion of these external liabilities were raised to cover the commercial banks' forward purchases of foreign exchange from domestic exporters.



21. This is in line with the findings of Calvo et al. (1994) and Frankel and Okongwu (1995), which affirms the role of low world interest rates in driving capital flows into emerging economies in the early 1990's.

22. According to Ishii and Dunaway (1995), there also appears to have been some reassessment of riskiness, particularly of APEC developing countries, owing in part to the solid macroeconomic track records they have established and their generally strong economic performance over the period.

23. Bank Negara Malaysia (1994)

24. Bank for International Settlements (1995)

The pattern of capital flows was a reflection of Malaysia's relatively liberal exchange control regime, which enabled the country to benefit from the global increase in trade and investment in the 1990s. The ease of entry and exit for the Malaysian stock market was confirmed by the 1994 survey by the International Finance Corporation on emerging stock markets that identified Malaysia as one of the markets with the most liberal exchange control system.²⁵ The development of the ringgit offshore markets was also not possible without broad access to ringgit.

Nevertheless, the influx of capital led to a rapid expansion of money supply, causing strains to domestic productive capacity and exerting upward pressure on prices. More importantly, the inflows caused misallocation of resources, which diverted from productive sectors to unproductive sectors, such as the real estate and stock markets. In early 1994, exchange control measures were introduced to discourage short-term inflows and reinforce monetary policy autonomy. Together with the correction in the domestic equity market and the narrowing of interest rate differentials, the measures facilitated the outflow of bank lending during the course of 1994. As a result, the short-term net inflows decelerated significantly from US\$14.2 billion (28% of GDP) in 1993 to US\$0.3 billion (2.8% of GDP) in 1994. The exchange control measures were never meant to be permanent, and were gradually lifted during the second half of 1994 as the objective of discouraging speculative short-term capital inflows was met.²⁶

The respite was brief as short-term capital inflows resumed in 1995 and 1996 against the background of strong economic growth, a reinvigorated stock market and the shift in interest rate differentials back in Malaysia's favour. As a result, between 1995 and 1997, the ringgit was subject to intense upward pressure despite the country running current account deficits during that period. Nevertheless, the conditions changed dramatically in 1997 as the earlier build-up of capital inflows reversed sharply. Short-term capital flows stabilised in the fourth quarter of 1998 following the introduction of the comprehensive package

25. Bank Negara Malaysia (1994)

26. It is noteworthy that by January 1995, when the Mexican crisis occurred, a sizeable proportion of these funds had flowed out, thus limiting the contagion effect of the peso crisis on domestic financial markets.

of selective exchange controls and the fixing of the ringgit to the US dollar in September 1998.²⁷

As conditions normalised after the Crisis, there appears to be a shift in the behaviour of short-term investment flows with other investment forming the bulk of the net outflows. This in large part can be attributed to trade credits extended by Malaysian exporters and increased bank lending abroad, which, in turn, reflected the shift from the prolonged trade deficit prior to the Crisis to the continuous trade surplus since 1998.

During the fixed exchange rate period, portfolio investment generally recorded a net outflow until 2003. The key drivers for the net outflows were geopolitical developments and concerns by market participants over the sustainability of the ringgit peg following the weakening of the Japanese yen. The weakness of the US dollar and expectations for a revaluation or unpegging of the ringgit resulted in sizeable inflows of portfolio investment into Malaysia in 2004 and the first half of 2005, and to a lesser extent, increased foreign deposits in the banking system in 2003 and 2004. However, the sizeable portfolio inflows reversed in the second half of 2005 following the unpegging of the ringgit. This culminated in a net outflow for 2005 as a whole.²⁸

Short-term capital movements recorded net outflows in 2006 and 2007. The net outflows also reflected the sizeable increases in banking system external assets in 2006 and 2007 arising from increased diversification of portfolios and greater access to foreign currency from domestic sources. To a lesser extent, this trend reflects the more liberal exchange control environment prevailing after 2005, which afforded greater flexibility for residents to invest abroad. However,

27. Although there are mixed views over the effectiveness of the controls on short-term capital outflows, there is some evidence in the literature to suggest that the controls imposed by Malaysia did achieve, in varying degrees, their intended purpose. For example, Kaplan and Rodrik (2001) suggest that Malaysia's recovery was faster and less painful compared to Korea and Thailand. Edison and Reinhart (2001) concludes that the controls in Malaysia achieved their objectives of greater interest rate and exchange rate stability and Tamirisa (2004) found that controls on portfolio outflows and on bank and foreign exchange operations facilitate reductions in the domestic interest rate. What cannot be disputed is that the controls were effective in containing the internationalisation of the ringgit, thus depriving speculators of their main source of financing for their speculative activities. For a cross-country perspective on the use of capital controls, refer to Ariyoshi et al. (2000).

28. The ringgit link to the US dollar was severed on 21 July 2005. Subsequently, the ringgit would be managed against a basket of currencies. There is no predetermined path for the exchange rate, with intervention operations mainly to minimise volatility.

more recently, the trend has changed to net inflows due to net placement of deposits by foreign banks in the domestic banking system.

4. Determinants of Capital Flows

In this section, we provide the results of our empirical investigation into the determinants of investment inflows to supplement the observations made in the preceding sections. We approach the issue by distinguishing between two sets of factors affecting capital movements. The first are country specific or pull factors. The second are global or push factors.²⁹

The pull factors are attractors which reflect domestic opportunity and risk. This paper considers eight types of pull factors. These are economic activity, the rate of return, the balance of payments, the exchange rate, institutional quality, capital market imperfections, trade openness and economic vulnerabilities.

Strong domestic economic activity and growth performance tend to lead to higher investment rates as expected profitability increases. Domestic output is also a proxy for market size and hence economic opportunities and potential sales. In this regard, we expect a positive sign for the coefficient on the economic activity variable. We use real GDP to represent economic activity.

If country risk and liquidity considerations are the same across countries, capital flows will be attracted to countries with the higher rate of return. In this paper, we consider the role of real interest rates and stock market returns in attracting portfolio investment inflows. In the case of FDI, the rate of return is proxied by real interest rates, the relative marginal productivity of capital (MPK), differentials in sovereign bond yields and the incremental capital-output ratio (ICOR).^{30,31} High domestic interest rates, MPK and sovereign bond yield differentials are expected to lead to more FDI inflows. In contrast, a higher ICOR will lead to less investment because it implies less efficiency in the

29. An alternative is the dichotomy between the supply and demand for capital. See, for example, Felices and Orskaug (2008).

30. In this paper, we considered the MPK relative to the United States, Japan, and the average of the two. A high MPK relative to other countries should lead to more investment inflows. We follow Lipschitz *et al* (2002) and derive the relative MPK from a common Cobb-Douglas production function $Y_t = AK_t^\alpha L_t^{1-\alpha}$. With a given output per worker relative to the capital exporting country, and assuming that $\alpha=1/3$, we can derive the relative capital per worker and ultimately the MPK.

31. The ICOR is calculated by taking the ratio of gross fixed capital formation relative to the change in GDP.

utilisation of capital. The difference in expected signs on the coefficients is due to the different definition of the variables. Generally, however, higher returns results in more inflows.

The balance on the current account has implications on the direction of capital flows. A current account deficit requires a capital account surplus to offset the deficit.³² Specifically, it requires a capital inflow (net new borrowing) from the rest of the world to finance the deficit. In this case, the current account balance is expected to be negatively related to investment inflows. Alternatively, a current account deficit that is seen to be rising towards unsustainable levels can also be an indicator of economic vulnerability. Unsustainable current account deficits accompanied by macroeconomic instability and structural weaknesses can degenerate into an external crisis. In this case, the relationship is positive whereby a current account surplus increases investment while a deficit reduces capital inflows. We control for this effect by including the ratio of the current account balance relative to GDP in our empirical exercise.

Real exchange rate appreciation means a less a competitive economy. Hence a stronger exchange rate would lead to less investment inflows, implying a negative sign on the exchange rate coefficient. Recent experience, however, suggests that the relationship may be positive if an exchange rate appreciation fuels expectations for further appreciation. In this paper, we use an economy-wide exchange rate, which is the real effective exchange rate as provided by the International Monetary Fund.

Another dimension is exchange rate volatility. The common belief is that greater exchange rate volatility would deter investment inflows. This is consistent with the interpretation that investors are averse to currency risk. Another interpretation is that greater exchange rate volatility is also an indicator of financial instability. In both cases, the expected sign on the exchange rate volatility coefficient is negative. Conversely, greater volatility in itself may be an inducer for capital inflows if investors are not averse to currency risk, and if the expected payoff from exchange rate movements is large. In this scenario, the sign could be positive. In this paper, exchange rate volatility is defined as the standard deviation of the daily returns for the trade-weighted nominal effective exchange rate, which is multiplied by the square root of 253 to annualise it (since there are 253 trading days in a year).³³

³² This stems from the identity that $CA = -KA$, where CA is the current account balance and KA is the capital account balance.

³³ This is a common way of estimating the volatility parameter for the purpose of pricing options contracts (Zhang, 1997).

Institutional quality encompasses aspects such as the legal structure, security of property rights, government tax and incentives structure, the degree of corruption, whether a country is member of a free trade area or currency area, whether a country shares a common language, and the level of capital and financial market development, among others. Malaysian time series data for most of these variables are limited.³⁴ As a second best, we approximate institutional quality with financial market size and liquidity, as defined by the ratio of stock market turnover relative to market capitalisation. A well developed and liquid financial market allows investors easy access to domestic investment opportunities and allows them to liquidate their investments quickly. As such, it can be expected to have a positive effect on investment inflows.

Restrictions on capital flows are generally expected to have a dampening effect on capital inflows. Restrictions on capital movements prevent capital flows from exploiting differentials in rates of return. For example, taxes on capital inflows or outflows reduce the incentive to invest by reducing the rate of return. Imposing new restrictions on capital flows would raise investor concern that they cannot repatriate their money and also give rise to future policy uncertainty. In this paper, the restrictions on capital flows are proxied by a capital controls index.³⁵

Openness to trade or external exposure makes inputs more efficient. Greater openness to trade facilitates the economy's adoption of more efficient production techniques. Foreign investors are also attracted by countries with lower trade barriers because they are not faced with extra production and distribution costs. This suggests a positive relationship between openness and capital inflows. However, it may also be the case that high tariffs could lead to more direct investment in an attempt to establish presence and market share. Trade openness is defined as the sum of exports and imports relative to GDP.

The final pull factor we consider here is country risk. The risk of investing in an economy increases with the intensification of macroeconomic vulnerabilities and political instability. These, in turn, raise investor expectations on the prospect for economic and financial crisis or political unrest. Investment inflows are thus expected to react negatively to higher investor perceptions of country risk. We

34. For example, data coverage for Malaysia in the World Bank and the International Finance Corporation co-publication *Doing Business* starts from 2004. In any case, such information is usually gathered from survey data and hence is seldom available at quarterly frequencies.

35. Refer to the earlier discussion on page 7.

proxy economic vulnerabilities and country risk with the Economist Intelligence Unit (EIU) country risk index and the ratio of international reserves relative to short-term external debt.³⁶

Push factors comprise external events that drive capital flows to a country or divert them away. This paper considers four types of push factors. These are global economic activity, the global rate of return on capital and financial investments, the role of contagion and global risk aversion.

Strong global economic activity increases the expected profitability in other economies. This diverts capital flows away from the domestic economy because of better investment opportunities abroad and implies a negative relationship between global economic activity and capital inflows. However, strong global economic activity could also mean that there are more funds available for investment abroad. In this case, the sign on the global economic activity coefficient may be positive. In this paper, global economic activity is proxied by U.S. real GDP.

Investment flows will be attracted to high global rates of return on capital and financial assets. The global rate of return is also a measure of global liquidity. In both instances the global rate of return is expected to be negatively related with investment flows into Malaysia. For our empirical exercise, the global rate of return is proxied by U.S. interest rates and stock market returns.

As noted by Hernandez *et al* (2001), the clustering of flows during the episodes of large private capital flows toward developing countries suggest that some form of contagion could have occurred. Contagion implies that capital inflows to a country should coincide with capital inflows in other countries which are perceived as being similar or as having real economic linkages. However,

36. The EIU country risk index is a simple average of indices representing sovereign risk, currency risk and banking sector risk. This makes the EIU index our preferred measure of economic vulnerability and country risk. However, we also ran the portfolio investment and foreign direct investment regressions with the ratio of reserves to short-term term external debt in its place for robustness (see the discussion on the estimation results below). It should be noted that the EIU index series for Malaysia started from the first quarter of 1996. We extended the series back to 1991 using the Standard and Poors sovereign foreign currency ratings based on the scheme used by EIU to compare bond ratings with the index.

the relationship can be negative if countries are instead treated as close substitutes. We construct a proxy for contagion that is conceptually similar to Hernandez *et al* (2001).³⁷

Global appetite for risk can be expected to influence movements of short-term capital flows. A common proxy for global market risk aversion is the Chicago Board Options Exchange Volatility Index (VIX) index.³⁸ The VIX index is a measure of expectations of near-term volatility, which is, in turn, assumed to be inversely related to risk appetite (i.e., greater volatility lowers global appetite for risk). Over the past decade, there were several episodes of heightened global volatility, as indicated by sharp spikes in the VIX index. As noted by Cairns *et al* (2007), these episodes occurred in August 1998, September 2001, June-July 2002 and May 2006. In emerging Asia, the May 2006 episode saw heavier net sales of equities by non-residents than in earlier episodes. As such, we can expect a negative relationship between higher global financial market volatility and short-term capital inflows.

Formally, the importance of push and pull factors in explaining capital inflows are investigated by estimating the following equation:

$$CF = \alpha + \beta_i X_i + \delta_i Z_i + u$$

Whereby;

CF denotes capital inflows

a is a constant

X_i is a vector of domestic or 'pull' factors

Z_i is a vector of external or 'push' factors

b_i is a vector of coefficients to be estimated

37. Specifically, we use a weighted average of capital inflows to Indonesia, Korea, Philippines and Thailand. The weights are apportioned based on the degree of similarity of a particular country with Malaysia across six macroeconomic indicators, namely, the annual inflation rate, the current account balance, the stock of international reserves, the stock of foreign debt, the rate of economic growth and total exports. The variables are measured either in percentage points or as a share of another relevant economic variable (GDP, exports or imports). The degree of similarity is measured as the inverse of the numerical difference between a regional country and Malaysia for an economic indicator.

38. The Chicago Board Options Exchange Volatility Index (VIX) is a measure of expectations of near-term volatility, as conveyed by S&P 500 stock index option prices.

d_i is a vector of coefficients to be estimated

u is a residual

The dependent variables considered are gross inflows of foreign direct investment and portfolio investment. The data for these variables were sourced from the Cash Balance of Payments Reporting System (CBOP) of Bank Negara Malaysia.³⁹ Other data were sourced primarily from the International Financial Statistics, and where necessary, supplemented by national sources, Bloomberg, the United Nations Population Information Network, the World Trade Atlas and the Joint BIS-IMF-OECD-WB External Debt Hub, as well as the authors' own estimates.⁴⁰ Estimation was constrained to the period between the first quarter of 1991 and fourth quarter of 2007 because of the limited availability of data on gross flows.

Augmented Dickey-Fuller unit root tests indicate that the two dependent variables are integrated of order one or I(1).⁴¹ The explanatory variables considered are at most I(1). The Trace and Maximum-Eigenvalue test statistics from Johansen Cointegration tests, however, indicate the presence of cointegration between the dependent and explanatory variables at the 5% significance level.⁴²

We adopt the conventional general-to-specific procedure to estimate a parsimonious model. For portfolio inflows, the dependent variable is initially specified as being a function of the contemporaneous and one-period lagged observation of the explanatory variables. This is to reduce the likelihood of omitted variables. At the same time, the one-period lag is assumed to be adequate given that portfolio flows appear to respond to short-term developments. In the case of FDI inflows, the dependent variable is initially specified as being a function of the contemporaneous and four-period lagged observations of the explanatory variables. The four-period lag specification is adopted given the strategic nature of FDI decisions. Dummy variables were also included in the FDI equation to account for sizeable inflows arising from merger and acquisition activities in the latter part of the sample.

39. The Department of Statistics, Malaysia, only publishes data on a net basis.

40. This applies particularly to the construction of the Capital Controls Index, the alternative measures for the relative marginal productivity of capital, the incremental capital output ratio, and the measures of exchange rate volatility.

41. As noted by Sarno and Taylor (1997), given that the dependent variable is I(1), there must be at least one I(1) variable among the explanatory variables. If not, the estimated equation will be mis-specified.

42. Results for the unit root and cointegration tests are not reported.

The final specification for both the portfolio investment and FDI equations includes a lagged dependent variable.⁴³ The inclusion of the lagged dependent variable suggests some persistence in capital inflows. For example, in the case of portfolio inflows, every US\$1 billion received in the previous quarter will, on average, see an inflow of US\$0.65 billion in the current quarter.⁴⁴ The lagged dependent variable also allows us to interpret the estimated equations as a partial adjustment model.⁴⁵ For convenience and space considerations, here we report the long-run representation of the final portfolio investment and FDI equations.⁴⁶

The results in Table 1 indicate that in the long term (i.e., when the partial adjustment dynamics have completed) portfolio investment inflows are affected by both pull and push factors. In terms of pull factors, portfolio investment inflows are affected positively by domestic economic growth, REER appreciation and NEER volatility, domestic stock market performance and liquidity, as well as the ratio of reserves to short-term external debt⁴⁷. Conversely, portfolio inflows are negatively affected by capital controls and contagion. With regard to global push factors, portfolio investment inflows are affected negatively by strong global economic activity and stock market performance, as well as increases in global financial market volatility. It is noteworthy that the signs on the REER appreciation and NEER volatility coefficients are positive. The positive relationship between portfolio inflows and exchange rate changes and volatility could reflect that in the past, investors expect an initial currency appreciation will be followed by further appreciation. The negative sign on the coefficient for the contagion variable indicates that in the past, an increase in portfolio investment into countries

43. In the case of the portfolio investment equation, omission of the lagged dependent variable noticeably reduces the explanatory power of the model and results in problems with serial correlation.

44. This is based on the coefficient of 0.65 on the lagged dependent variable in the estimated portfolio inflows equation.

45. In the case of a partial adjustment model, the lagged dependent variable reflects the speed of adjustment of capital inflows toward its desired level. The long-run coefficients for the explanatory variables are derived by assuming that recorded capital inflows are equal to their desired levels (i.e. $C_{Ft} = C_{Ft-1}$). If we denote the coefficient of the lagged dependent variable as $gt-1$, we can calculate long-run coefficients for the explanatory pull and push variables as $b_i / (1- gt-1)$ and $d_i / (1- gt-1)$.

46. The more detailed estimation results are reported in Appendix III and IV.

47. Estimation was initially conducted with the EIU Index as the measure of country risk and vulnerability. This specification yielded a positive sign for the EIU Index coefficient, suggesting that portfolio inflows increased with higher country risk. The exchange rate variables also became insignificant. Ultimately, we chose the specification with the ratio of reserves to short-term external debt as our final equation because of its slightly better explanatory power.

that are similar to Malaysia was associated with less portfolio inflows. This suggests that investors could well be discerning in allocating funds across similar countries. However, this does not imply that investors are discerning when it comes to portfolio outflows.⁴⁸

In contrast, the result in Table 1 indicates that FDI inflows are largely driven by pull factors. FDI inflows increase with the ratio of the current account to GDP, FDI inflows to similar countries, and stock market liquidity. FDI inflows decrease when the domestic rate of return rises, when the REER appreciates, when capital controls are tightened and when country risk increases. All the coefficients have the expected signs except for the rate of return. Using other measures to proxy for the rate of return, such as Malaysia's marginal productivity of capital relative to the US and Japan (both individually and as a simple average of the two), the incremental capital-output ratio for Malaysia and yield differentials for long-term bonds also returned a 'wrong' sign.⁴⁹ However, we suggest caution in interpreting the results for the FDI equation. We could not obtain well-behaved residuals for the various FDI equation specifications. Even the final FDI equation specification chosen suffers from non-normality in the residuals.

Table 1: Determinants of Capital Inflows

Determinant	Proxy	Portfolio Inv.	FDI
		(USD, mil)	(USD, mil)
		Estimated Coefficient ^{1,2}	
Pull Factors			
Domestic Economic Activity	Domestic Real GDP (RM million)	0.6	..
Current Account Balance	Ratio of Current Account Balance to GDP (Percent)	-	23.7
Domestic Rate of Return	Domestic Short-Term Money Market Interest Rate (Percent)	-	-80.5
Exchange Rate	REER (Quarterly Change, Percent)	740.3	-39.1
Exchange Rate Volatility	NEER Volatility (Quarterly Change, Percentage Points)	1313.4	..
Institutional Quality	Stock Market Liquidity (Percent)	1251.7	2.3
Capital Account Restrictions	Capital Controls Index (Percent)	-523.1	-24.5
Country Risk and Vulnerabilities	Ratio of Reserves to Short-Term External Debt (Percent)	6.9	..
Country Risk and Vulnerabilities	EIU Index	-	-33.7
Domestic Financial Market Returns	KLCI Returns (Percent)	134.8	..
Push Factors			
Global Economic Activity	U.S. Real GDP (USD billion)	-10.1	..
Global Financial Market Volatility	VIX (Quarterly Change, Percentage Points)	-425.5	..
Global Financial Market Returns	S&P 500 Index Returns (Percent)	-466.54	..
Contagion	Capital Inflows to Similar Countries (USD million)	-0.1	0.8

Notes:
¹ Reported coefficients are the sum of the coefficients from the portfolio and foreign direct investment regressions reported in Appendix III and IV
² Coefficients from the estimated equations have been adjusted to their steady-state levels by dividing the coefficient of the explanatory variable by one minus the coefficient of the lagged dependent variable. Where necessary, adjustments were also made to re-scale the log-transformed variables.

48. It would be interesting to test this conjecture. The experience during the Asian Financial Crisis and in recent years certainly suggests that investors are less discerning when it comes to taking their investments out (i.e., herding).

49. In the case of the ICOR and the long-term bonds yield differentials, the variables were found to be insignificant and dropped from the respective equations.

5. Capital Flows and Monetary Policy

The period 2004-2007 saw the return of large scale portfolio flows into Malaysia. Malaysia was not unique in this sense as the trend was prevalent across the region, and emerging markets more generally. The weakening of the US dollar amid low US interest rates precipitated the search for higher investment returns elsewhere. On the domestic front, the positive prospects for economic growth and the strong performance of the corporate sector, as well as the deepening of the domestic bond market, enhanced the attractiveness of Malaysian assets. Inflows were also driven by expectations for a possible realignment of regional currencies.

Unlike the sustained net inflow of portfolio investment in the early 1990's, recent inflows have shown to be prone to sharp and sudden reversals. Although portfolio investment for 2005 as a whole recorded a small net inflow, higher frequency data indicates that net inflows were sizeable in the first half of the year. However, following the move to a managed float exchange rate regime on 21 July 2005, portfolio investment recorded a substantial net outflow as expectations for ringgit appreciation subsided.

In the first half of 2006, foreign portfolio inflows returned in view of the strong fundamentals and attractiveness of Malaysian financial assets. These inflows reversed following the global financial market correction in May 2006, but resumed in the second half of 2006 and into the first quarter of 2007, reflecting increased foreign interest in the domestic stock market. Again, however, the portfolio inflows was interrupted by several external market developments, including the Shanghai market correction in February 2007 and heightened global market uncertainty following the US sub-prime mortgage problem in July and August.

The sizeable movement of financial flows complicated monetary policy, as well as monetary and exchange rate management. The objective of monetary policy in Malaysia has always been the attainment of sustainable level of economic growth with price stability. Operationally, this entails the simultaneous attainment of internal (output is at potential such that there are no price pressures) and external balance (exchange rate is in line with underlying fundamentals) in order to provide an environment conducive for sustainable economic growth.

At the first instance, the sizeable build-up of capital inflows in 2004 and the first half of 2005 in anticipation of currency revaluation exerted tremendous upward pressure on the exchange rate. In view of the fixed exchange rate

system prevailing at the time, Bank Negara Malaysia intervened in the foreign exchange market to maintain the ringgit's parity with the US dollar. Between September 2004 and September 2005, reserves increased by US\$24 billion. However, portfolio investment recorded a substantial net outflow as expectations for ringgit appreciation diminished after the move to a managed float exchange rate regime in July 2005. In the last quarter of that year, international reserves fell by about US\$10 billion as Bank Negara Malaysia intervened to mitigate the downward pressure on the ringgit.

As foreign exchange market conditions normalised in early 2006, the resumption of portfolio inflows renewed upward pressure on the ringgit. While Bank Negara Malaysia is not averse to a stronger exchange rate, there is concern over the potential impact of the rapid pace of appreciation, as well as the possibility of sharp and sudden reversals, on domestic financial markets and the economy more generally. To address this concern, the central bank intervenes in the foreign exchange market to smooth the extremities while preserving the underlying trend. Intervention has been two-way. The build-up of reserves since the move to the managed float merely reflects the dominance of periods of inflows relative to outflows.

An important element in ensuring the effectiveness and efficiency of central bank intervention operations is the ability to segregate stable long-term flows from the flows that are easily reversible. In view of the important role of capital flows in the Malaysian economy, Bank Negara Malaysia has developed several internal reporting systems to enhance its surveillance and monitoring of capital account transactions. The monitoring systems on capital flows include the Ringgit Operations Monitoring System (ROMS), the Cash Balance of Payments Reporting System (CBOP) and the Quarterly External Asset and Liability (EAL) Survey. The ROMS provides information (near real-time basis) on cross-border flows which affect the international reserves of the Bank. The CBOP provides detailed data on all cross-border flow of funds between residents and non-residents transacted through the banking system, inter-company accounts and overseas accounts. The Quarterly External Asset and Liability (EAL) Survey provides detailed information on overall flow and stock of external assets and liabilities of the economy, including the potential claims or servicing obligations. Together, these systems provide the Bank with in-depth knowledge on the composition, size, source and currency exposure of capital inflows and outflows, and facilitate timely assessment of risks.

To prevent the expansionary impact of external operations from driving interest rates below the targeted level, the central bank sterilises the foreign

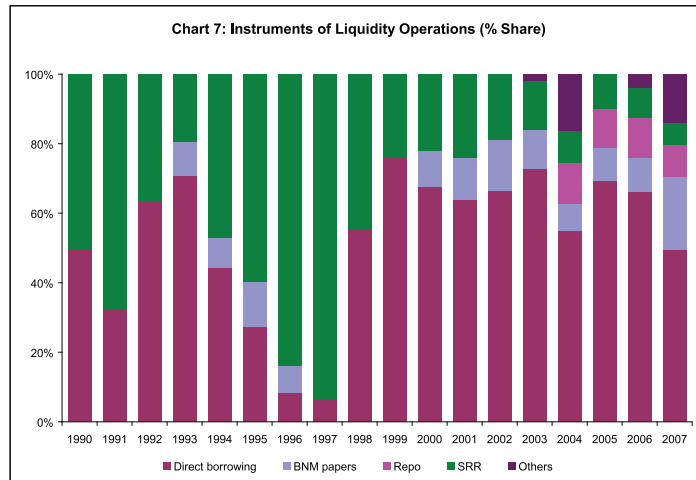
exchange intervention through money market operations.^{50,51} It should be noted that monetary policy has always been focused on domestic considerations. Despite the strong portfolio investment inflows, Bank Negara Malaysia raised the benchmark Overnight Policy Rate (OPR) three times between 2005 and 2006 by a total of 75 basis points. This reflected the need to normalise monetary conditions after a prolonged period of low interest rates and restrain nascent inflation pressures. Given these considerations, sterilising the inflows was an effective means to limit the impact of large and rapid capital movements on domestic monetary conditions and the economy more generally.

In view of the increasing size and erratic nature of portfolio investment, a larger and more liquid domestic asset market would facilitate monetary operations and minimise disruptions associated with large movements of investment flows.⁵² To this end, considerable efforts have been made to further enhance financial market development. The introduction of new money market instruments, including the Bank Negara Monetary Notes (BNMN) and Islamic money market instruments have improved liquidity management, deepened and broadened the conventional and Islamic money markets and enhanced the capacity of the financial system in absorbing capital inflows. Significantly, the size of the domestic bond market has increased by more than 4 times since 1998, while the proportion of private debt securities in the bond market is approaching the 50% level. As a result, Malaysia has managed to ride out the recent periods of turbulence in international capital markets without any serious disruptions.

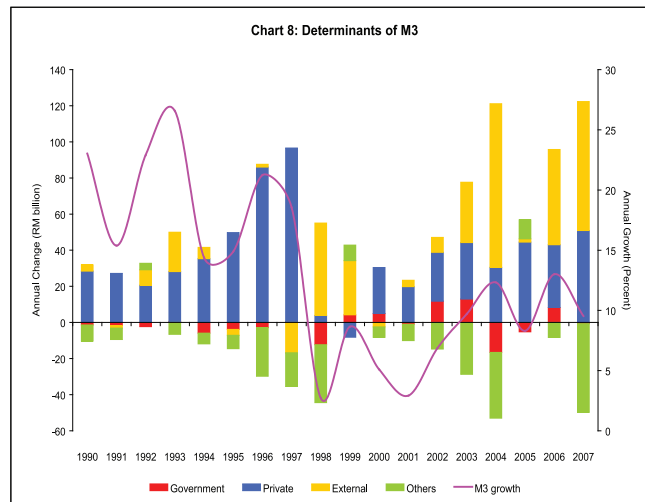
50. In April 2004, Bank Negara Malaysia moved to a new interest rate framework which operationally targeted the overnight interest rate.

51. Although there are views that the combination of intervention and sterilisation could involve significant fiscal costs (especially when the interest rate differential is in favour of the domestic currency), the point is moot. Central banks surveyed by Neely (2001) unanimously reject the notion that profitability is a consideration in intervention, suggesting that cost considerations are superseded by other motives,

52. Despite the challenges posed by portfolio investment flows, the increase in non-resident activity has also had a positive impact on Malaysian financial markets as capital inflows have contributed to the increase in the size and liquidity of the Malaysian asset markets.



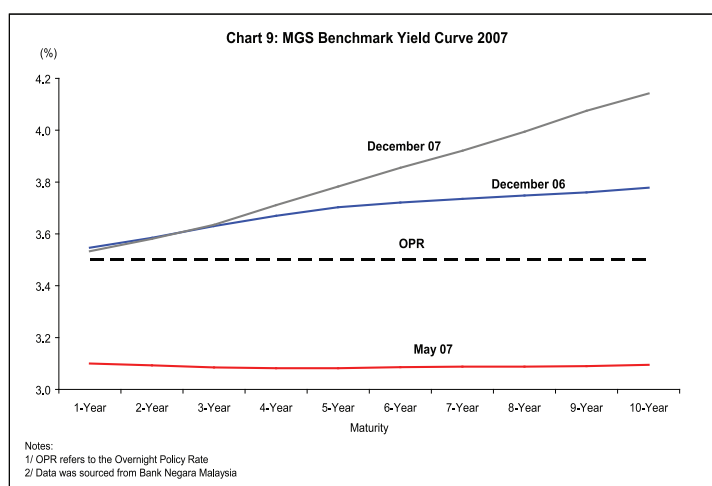
The improved ability to absorb the sizeable investment inflows has enabled Bank Negara Malaysia to effectively contain the growth of money supply and limit the impact on overall economic activity. This is in contrast to the situation in the early 1990's when inflows became the main source of M3 expansion (Chart 8).⁵³



53. In the early 1990s, Bank Negara Malaysia faced the dilemma of conflicting policy objectives arising from the contractionary monetary stance to control inflation and the need to maintain low interest rates to discourage the inflow of speculative funds. In 1993, this dilemma became more acute in the face of massive capital inflows making it increasingly difficult to contain the growth in money supply to control inflation.

It is noteworthy that large capital flows have not diminished Bank Negara Malaysia's influence over interest rates. As noted earlier, Malaysia's interest rate policy has always been based on the central bank's assessment of the prospects for inflation and economic growth. Being a small and highly open economy, close attention is focused on external factors and their potential implications on domestic stability. While large capital inflows have played a role in influencing the level of short-term and long-term rates in the bond market, Bank Negara Malaysia's efforts in promoting the depth and breadth of the financial markets, especially the bond market, have enhanced Malaysia's resilience and capacity to better manage and absorb external shocks and volatility. Nonetheless, shocks driven by short-term volatility in the global financial markets may still result in fluctuations in the short-term bond yields. This, however, does not imply any reduction in Bank Negara Malaysia's ability to influence domestic interest rates. Market fundamentals, as determined by the level of the Bank's policy rate, would still exert a significant influence on the eventual shape and level of the yield curve.

For example, in May 2007, expectations of an appreciation of the ringgit resulted in significantly higher short-term capital inflows into the shorter end of the bond market, not only pushing yields (across the maturity spectrum) below the level of the OPR but also causing the yield curve to flatten (Chart 9). However, with the Bank Negara Malaysia policy rate unchanged, the fundamentals of the money market remained the major determinants of short and long-term rates. The yield curve has since returned to an upward sloping yield curve with yields settling above the OPR level.



6. Capital Flows and Financial Stability

Financial system vulnerabilities are built up over time while the ability of the financial system to cope with significant stress and external shocks is dependent on its initial conditions. In this regard, Bank Negara Malaysia's policies towards maintaining financial stability has aimed at enhancing the strength and resilience of the financial system through enhancements to risk management, financial infrastructure development, as well as strengthened governance and comprehensive oversight at both the financial system and individual institution levels. At the same time, Bank Negara Malaysia has balanced the focus on financial stability with the need to provide an environment which is conducive for financial innovation and growth.

In recent years, the supervisory and regulatory approach has evolved to be more holistic with the adoption of a more principle-based regulatory approach, while preserving an appropriate balance between principle-based and rule-based regulations. The adoption of a more holistic supervisory and regulatory approach is in line with changing market circumstances and business practices, and safeguards proper risk-taking behaviour among the financial institutions. It also reduces the regulatory burden and creates an environment conducive for innovation and development.⁵⁴

On the regulatory front, continuous efforts have been channeled towards strengthening and streamlining the existing prudential and regulatory framework with international best practices, while at the same time providing flexibility to financial institutions that have demonstrated strong risk management capability.⁵⁵ The intensified competition in lending activities which raises banks' engagement in higher risk taking activities amidst the current environment of rapid product innovation pose a great challenge to the regulator. Nevertheless, Bank Negara Malaysia continues to strike a balance between promoting competition and efficiency in the banking system, and putting in place the necessary prudential safeguards to preserve stability and orderly market conditions.

54. A majority of prescriptive limits and regulatory requirements or restrictions have been replaced with broad principles that emphasise on corporate governance over the recent few years, beginning with substantive revisions to the prudential standards on corporate governance. Since 2001, more than 50 prudential standards have been developed or reviewed under this initiative.

55. For example, in April 2007, the limit on net open position was abolished to provide greater flexibility to licensed onshore banks to undertake foreign currency business. Since January 2007, banking institutions that meets the Bank Negara Malaysia supervisory standards are also no longer subject to the prevailing limit of 5% participation in equity-related activities.

Meanwhile, the supervisory framework is now premised on a rigorous risk-based assessment⁵⁶, focusing on banking institutions' risk profiles and the effectiveness of internal risk management systems. The framework assesses five main areas. This includes group structures, corporate governance, risk management, intra-group exposures and reporting requirements. The framework would enable a structured and pre-emptive approach in assessing financial institutions' stability. Initiatives are also being undertaken to prepare the banking institutions for Basel II which is expected to result in more efficient capital management through a more risk sensitive mechanism to compute capital adequacy.⁵⁷

Significant attention is also directed at ensuring the effective integration of the regulatory and supervisory processes to achieve a coherent framework that contributes to financial stability. Specifically, prudential policy priorities are assessed against key risks to financial stability which has been highlighted through supervisory observations and assessments, including micro stress testing adopted at the institutional level. Policies are developed jointly between the regulatory and supervisory functions in Bank Negara Malaysia, and staff involved in policy development is also included in the supervisory review panels and deliberations. In addition, greater emphasis has been placed on enhancing the effectiveness of macro prudential surveillance that provides a more holistic view of structural imbalances, linkages and vulnerability within the financial system.

56. For instance, in 2004, an enhanced risk-based supervisory framework (RBSF) was implemented for insurers and Takaful operators, followed progressively thereafter by the adoption of the framework for banking institutions and development finance institutions. The RBSF is a dynamic supervisory tool that identifies and assesses the emerging risks in financial institutions based on an in-depth understanding of the institution, the industry and environment in which it operates, and factors that could adversely alter the risk profile. In implementing the RBSF, regular discussions with the board and senior management as well as those principally responsible for internal audit, risk management, compliance and management information support within institutions are conducted to raise risk issues concerning the institution.

57. Starting 1 January 2008, a total of 27 banking institutions have adopted the Standardised Approach for credit risk and either the Basic Indicator, Standardised or Alternative Standardised Approaches for operational risk. The remaining seven banking institutions will move to the more advanced Internal Ratings-Based (IRB) approaches for credit risk under Basel II from 1 January 2010. With respect to Islamic banks, 10 out of 12 Islamic banks have adopted the revised framework for Islamic banks (Capital Adequacy Framework for Islamic Banks or CAFIB). The Risk-Based Capital (RBC) framework was issued to the insurance industry in 2007. The framework provides for regulatory capital requirements that are more sensitive to the underlying risk exposure of insurers and is expected to be implemented in January 2009.

The magnitude and speed of international capital mobility in international capital and the increasing risks of contagion arising from integration with the global financial markets have necessitated the identification and assessment of the link and sources of risks from the external sector. At the national level, contagion risk is monitored between various economic sectors with the financial sector. Both the assessment against the external developments and against various sectors in the economy captures the dynamic interaction of different risks and their impact on overall financial system stability, thereby facilitating immediate remedial response.

To complement the enhanced supervisory and regulatory measures, efforts were also undertaken to deepen and broaden domestic financial markets under the strategic master plans for the financial sector⁵⁸, improve financial safety nets through the establishment of institutions such as the Malaysian Deposits Insurance Corporation⁵⁹ and centers for financial education⁶⁰ and align risk management with the best international practices.

The cumulative effect of all these efforts has been the strengthening of the country's capacity to absorb the volatile movements of financial flows and to implement policies to manage and minimise the risks arising from capital flows. The restructuring and development of the banking and financial sector since the Asian Financial Crisis has placed the financial system in a better position to manage the return of large-scale and volatile financial flows to Malaysia in recent years.

The continuous enhancements to risk management, financial infrastructure development as well as strengthened governance and oversight at the institutional level have greatly improved the financial performance and fundamentals of banks since the recovery from the Asian Financial Crisis (see Table 2). The liquidity of the banking system has steadily increased since the crisis as banks received

58. The central bank and the Securities Commission launched the Financial Sector Master Plan (FSMP) and the Capital Market Master Plan (CMP), respectively, in 2001 to develop an efficient, dynamic and innovative financial system which ultimately forms the foundation for a robust and strong Malaysian economy.

59. The Malaysian Deposit Insurance Corporation was established in September 2005 and is an independent statutory body established under the Malaysia Deposit Insurance Corporation Act 2005 (PIDM Act).

60. The Credit Counselling and Debt Management Agency was established by Bank Negara Malaysia in April 2006 to provide financial counselling and debt management to individuals as well as financial education to help individuals take control of their financial situation and gain peace of mind that comes from the wise use of credit.

more cash deposits from both corporates and households. The capitalisation of the banking system remained high, at levels above 12.5%, providing a sizeable buffer against unexpected losses and shocks. Profitability in the banking sector has been improving steadily from 2003 onwards, underpinned by strong macroeconomic and financial conditions with very low levels of financial market volatility. While the interest income of most institutions remained broadly stable, banks enjoyed further improvements in fee, commission and trading income in 2006 and 2007. The rate of NPLs had fallen markedly from 7.5% at end-December 2004 to the historically very low level at 2.4% at end-June 2008.⁶¹ The strengthened fundamentals enhance the ability of the banking system to withstand shocks.

Table 2: Selected Financial Soundness Indicators of Malaysian Banks

	2004	2005	2006	2007
Risk Weighted Capital Ratio (RWCR)	14.4	13.7	13.5	13.2
Return on Assets (ROA)	1.4	1.4	1.3	1.5
Net NPL ratio	7.5	5.8	4.8	3.2

The deepening of the domestic financial market and the introduction of new instruments for monetary management have also improved Bank Negara Malaysia's ability to manage the build-up or withdrawal of liquidity from capital flows to ensure orderly functioning and stability of the domestic financial system. This has been illustrated by the episode of large capital inflows in anticipation of exchange rate revaluation in 2004 and 2005, the subsequent sharp withdrawal of capital in the last quarter of 2005, and the return of capital inflows in 2006 and 2007. Despite the sizeable and sharp movements of financial flows in these episodes, there were no disruptions to financial market functioning and the broader financial system.

61. The significant reduction in NPL was due to higher recoveries and the reclassification of NPLs to performing status as well as intensified efforts to strengthen balance sheets through write-offs and the disposal of loans via securitisation and outright sales.

The resilience of the banking sector and the financial system generally went through a testing phase in 2007 when the benign macroeconomic environment of the previous four years started to show considerable signs of strain⁶², emanating largely from the external sector. Nevertheless, the ensuing growing risk aversion and the continuous re-pricing of risks which led to tightening of global liquidity and credit conditions in the global markets had little impact on domestic financial system stability. The volatility was well-absorbed given the insignificant exposures of financial institutions to subprime related instruments and the increased depth of the domestic markets.

However, the risks remain going forward. While there had been no direct impact of external developments on the performance and stability of the banking sector and the broader financial system, the intensification of the global financial turmoil which emanated from the developed economies is likely to transmit through less direct channels. In particular, the general operating environment has changed. The weakening external environment has begun to affect the outlook for the Malaysian economy. This, in turn, is likely to increase the exposure of banks to credit and other risk as the potential downturn in general macroeconomic conditions affect the corporate and household sectors. It is too early to portend the impact on overall financial stability. Nonetheless, the significant improvements and capacity built-up since the Asian Financial Crisis will enable the domestic financial sector to better cope with challenges as they unfold.

7. Conclusion

This paper has looked at Malaysia's experience in coping with the volatile movements of capital over the period 1991 to 2007. While Malaysia's developmental progress has greatly benefited from investment flows, the historical experience suggests that the openness to financial flows exposed a small economy like Malaysia to the risks inherent with such flows. This includes their role in accentuating economic cycles, their destabilising impact on prices, as well as the challenges they pose in the conduct of monetary policy and the maintenance of financial stability. In terms of the determinants, an empirical investigation suggests that the portfolio investment inflows are affected by both pull and push factors, while FDI inflows are largely driven by pull factors.

62. The global financial and business environment deteriorated sharply due to the emergence of the US subprime crisis in mid-2007, the boom-bust cycle in commodities prices in 2007 and first half of 2008, and the impending slowdown in global economic growth.

The sizeable movement of financial flows has certainly complicated monetary policy, as well as monetary and exchange rate management. However, the development of surveillance capabilities, the deepening of domestic financial markets and the introduction of new instruments for monetary management has, thus far, enabled Bank Negara Malaysia to effectively manage the risks arising from large capital flows in the recent period and ensure the potency of monetary policy. Large capital flows also pose challenges for the maintenance of financial stability. Vulnerabilities are built up over time while the ability of the financial system to cope with significant stress and external shocks is dependent on its initial conditions. In this regard, Bank Negara Malaysia's policies have been pre-emptive and aimed at enhancing the strength and resilience of the financial system. The continuous enhancements to risk management, financial infrastructure development as well as strengthened governance and oversight at the institutional level have certainly placed the financial system in a better position to manage the return of large-scale and volatile financial flows to Malaysia in recent years.

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APPENDIX I

Capital Account Measures (1990 – 2007)

9 November 1990: Applications from non-residents and non-resident-controlled companies to obtain any domestic financing solely for property acquisition and development purposes would not be approved by the Controller of Foreign Exchange.

20 April 1992: Total borrowing by residents in foreign currency from domestic commercial and merchant banks to finance imports of goods and services was restricted to the equivalent of RM1 million (previously there were no limits).

9 July 1992: Borrowing under the Export Credit Refinance Facilities (both pre- and post-shipment financing) by non-resident controlled companies would be considered as domestic borrowing.

24 October 1992: Offshore guarantees obtained by residents to secure domestic borrowing, except offshore guarantees (whether denominated in ringgit or foreign currency) without recourse to Malaysian residents and obtained from the licensed offshore banks in Labuan to secure domestic borrowing were deemed as foreign borrowing. In cases where an offshore guarantee is denominated in ringgit, it were subject to the condition that, in the event the guarantee is called on, the licensed offshore banks in Labuan must make payments in foreign currency (with some exceptions), not in ringgit.

1 November 1992: The guidelines on foreign equity capital ownership were liberalised. Companies exporting at least 80% of their production were no longer subject to any equity requirement, whereas companies exporting between 50% and 79% of their production were permitted to hold 100% equity, provided that they have invested \$50 million or more in fixed assets or completed projects with at least 50% local value added and that the company's products do not compete with those produced by domestic firms. These guidelines would not apply to sectors in which limits on foreign equity participation have been established.

14 December 1992: Residents and the offshore companies in Labuan were prohibited from transacting with the residents of dealing in the currency of the FYR Yugoslavia (Serbia and Montenegro) without specific prior approval from the Controller of Foreign Exchange.

22 December 1993: Non-resident controlled companies involved in manufacturing and tourism-related activities were freely allowed to obtain domestic credit facilities to finance the acquisition and/or the development of immovable property required for their own business activities.

17 January 1994: A ceiling was placed on the net external liability position of domestic banks (excluding trade-related and direct investment inflows) (removed on January 20, 1995).

24 January 1994: Residents were prohibited to sell the following Malaysian securities to non-residents: banker's acceptances; negotiable instruments of deposit; Bank Negara bills; treasury bills; government securities (including Islamic securities) with a remaining maturity of one year or less.

7 February 1994: Residents were prohibited to sell to non-residents all forms of private debt securities (including commercial papers, but excluding securities convertible into ordinary shares) with a remaining maturity of one year or less.

7 February 1994: The restriction on the sale of Malaysian securities to non-residents was extended to both the initial issue of the relevant security and the subsequent secondary market trade.

23 February 1994: Prohibition of forward transactions (on bid side) and nontrade-related swaps by commercial banks with foreign customers to curtail the speculative activities of offshore agents seeking long positions in ringgit (lifted on August 16, 1994).

12 August 1994: Residents were permitted to sell to non-residents any Malaysian securities.

1 December 1994: Residents may borrow in foreign currency up to a total of the equivalent of RM5 billion from non-residents and from commercial and merchant banks in Malaysia.

1 December 1994: Non-resident-controlled companies were allowed to obtain credit facilities, including immovable property loans, up to RM10 million without specific approval, provided that at least 60% of their total credit facilities from banking institutions were obtained from Malaysian-owned financial institutions.

1 December 1994: Non-residents with valid work permits may obtain domestic borrowing to finance up to 60% of the purchase price of residential property for their own accommodation.

20 January 1995: Ceilings on the net external liability positions of banks, imposed since January 24, 1994, were removed.

27 June 1995: Corporate residents with a domestic credit facility were allowed to remit funds up to the equivalent of RM10 million for overseas investment purposes each calendar year.

1 February 1996: The threshold for the completion of the statistical forms for each remittance to or receipt of funds from, non-residents was raised from amounts exceeding RM50,000 to RM100,000, or its equivalent in foreign currency.

4 August 1997: Controls were imposed on banks to limit outstanding non-commercial-related ringgit offer-side swap transactions (i.e. forward order/spot purchases of ringgit by foreign customers) to \$2 million per foreign customer or its equivalent. Hedging requirements of foreigners for trade-related and genuine portfolio and foreign direct investment were excluded.

4 August 1997: Residents are allowed to enter into non-commercial-related swap transactions up to a limit (no limits previously).

30 October 1997: The quota on sales to foreigners of high-end condominiums was raised to 50% from 30%. Also, foreigners were allowed to acquire two units of condominiums (up from one previously).

22 April 1998: The limitation on the purchase of residential or shop or office space by non-residents was lifted.

1 September 1998: A requirement introduced to repatriate all ringgit held offshore (including ringgit deposits in overseas banks) by October 1, 1998 (BNM approval thereafter).

1 September 1998: Approval requirement was imposed to transfer funds between external accounts (freely allowed previously) and for the use of funds other than permitted purposes (i.e., purchase of RM assets).

1 September 1998: Licensed offshore banks were prohibited to trade in ringgit assets (allowed up to permitted limits previously).

1 September 1998: A limit was introduced on exports and imports of ringgit by residents and non-residents travellers, effective September 1, 1998 (no limits existed previously).

1 September 1998: Residents were prohibited from obtaining ringgit credit facilities from non-residents (subject to a limit previously).

1 September 1998: All imports and exports were required to be settled in foreign currency.

1 September 1998: All purchases and sales of ringgit facilities can only be transacted through authorised depository institutions.

1 September 1998: Approval requirement for non-residents to convert RM in external accounts into foreign currency, except for purchases of RM assets, conversion of profits, dividends, interest, and other permitted purposes (no such restrictions previously).

1 September 1998: No restriction on conversion of ringgit funds in external accounts of non-residents with work permits, embassies, high commissions, central banks, international organisations, and missions of foreign countries in Malaysia.

1 September 1998: A 12-month waiting period for non-residents to convert RM proceeds from the sale of Malaysian securities held in external accounts (excluding FDI, repatriation of interest, dividends, fees, commissions, and rental income from portfolio investment). No such restrictions previously.

1 September 1998: A prior approval requirement beyond a certain limit for all residents to invest abroad in any form (previously applied only to corporate residents with domestic borrowing).

1 September 1998: Trading in Malaysian shares on Singapore's CLOB OTC market became de facto prohibited as a result of strict enforcement of the existing law requiring Malaysian shares to be registered in KLSE prior to trade.

1 September 1998: A specific limit on exports of foreign currency by residents and up to the amount brought into Malaysia for non-residents (previously, no restriction on export of foreign currency on person or in baggage of a traveller; export by other means required approval, regardless of amount).

12 December 1998: Residents are allowed to grant loans to non-residents for purchases of immovable properties from December 12, 1998 to January 12, 1999.

13 January 1999: Capital flows for the purpose of trading derivatives on the commodity and monetary exchange of Malaysia and the Kuala Lumpur options and financial futures exchange were permitted for non-residents, without being subject to the rules governing external accounts, when transactions were conducted through “designated external accounts” that could be created with tier-1 commercial banks in Malaysia. (From September 1999, the classification of tier-1 and tier-2 banks became no longer applicable: All commercial banks were allowed to open designated accounts for non-residents)

15 February 1999: The 12-month waiting period replaced with a graduated system of exit levy on the repatriation of the principal of capital investments (in shares, bonds, and other financial instruments, except for property investments) made prior to February 15, 1999. The levy decreased over the duration of the investment, and thus penalised earlier repatriations; the levy was 30% if repatriated less than 7 months after entry, 20% if repatriated in 7-9 months; and 10% if 9-12 months. No levy on principal if repatriated after 12 months.

18 February 1999: Repatriation of funds relating to investments in immovable property is exempted from the exit levy regulations.

1 March 1999: The ceiling on the import and export of ringgit for border trade with Thailand was raised.

5 April 1999: Investors in MESDAQ were exempted from the exit levy introduced on February 15, 1999.

8 July 1999: Residents were allowed to grant overdraft facility in aggregate not exceeding RM200 million for intra-day and not exceeding RM5 million for overnight to a foreign stock broking company subject to certain conditions.

21 September 1999: Commercial banks were allowed to enter into short-term swap arrangement with non-resident stockbrokers to cover for payment for purchase of shares on the KLSE and in outright ringgit forward sale contract with non-residents who have firm commitment to purchase shares on the KLSE, for maturity period not exceeding five working days and with no rollover option.

4 October 1999: Residents are allowed to grant RM loans to non-residents for purchases of immovable properties from October 29, 1999 to December 7, 1999.

14 March 2000: Funds arising from sale of securities purchased by non-residents on the CLOB can be repatriated without payment of exit levy.

24 April 2000: Non-resident controlled companies raising domestic credit through private debt securities were exempted from the RM 19 million limit and the 50:50 requirement for issuance of private debt securities on tender basis through the fully automated system for tendering, to develop domestic bond market.

29 June 2000: Administrative procedures issued to facilitate classification of proceeds from the sale of CLOB securities as being free from levy.

27 July 2000: Residents and non-residents were no longer required to make a declaration in the traveller's declaration form as long as they carry currency notes and/or travellers' cheques within the permissible limits. For non-residents, the declaration was incorporated into the embarkation card issued by the Immigration Department.

30 September 2000: Licensed offshore banks in the Labuan international offshore financial centre were allowed to invest in RM assets and instruments in Malaysia for their own accounts only and not on behalf of clients. The investments could not be financed by ringgit borrowing.

1 December 2000: Foreign-owned banks in Malaysia were allowed to extend up to 50% (previously 40%) of the total domestic credit facilities to non-resident controlled companies, in case of credit facilities extended by resident banks. This is to fulfil Malaysia's commitment under the GATS.

20 December 2000: Licensed commercial banks were allowed to extend intraday overdraft facilities not exceeding RM 10 million (previously RM 5 million) to foreign stock broking companies and foreign global custodian banks.

1 February 2001: The exit levy on profits repatriated after one year from the month the profits are realised was abolished. Portfolio profits repatriated within one year remained subject to the 10% levy.

25 April 2001: Limitations and conditions imposed on purchases of residential, shop lot, commercial, and office space by foreigners were liberalised, provided that the purchase price is more than RM250,000.

1 May 2001: The 10% exit levy imposed on profits arising from portfolio investments repatriated within one year of realisation was abolished.

1 June 2001: All controls on the trading of futures and options by non-residents on the MDEX were eliminated. The Commodity and Monetary Exchange of Malaysia and the KLSE were merged to form the MDEX.

13 June 2001: Resident insurance companies were allowed to extend ringgit policy loans to non-resident policy holders with the terms and conditions of the policies. The amount of RM loans extended may not exceed the policy's attained cash surrender value and may be for the duration of the policies.

10 July 2001: Resident financial institutions were allowed to extend ringgit loans to non-residents to finance the purchase or construction of any immovable property in Malaysia (excluding financing for purchases of land only) up to a maximum of three property loans in aggregate.

21 November 2002: Banks are allowed to extend additional RM credit facilities to non-residents up to an aggregate of RM5 million per non-resident to finance projects undertaken in Malaysia. Prior to this, credit facilities in RM to non-residents for purposes other than purchases of three immovable properties or a vehicle were limited to RM200,000.

3 December 2002: In addition to obtaining property loans to finance new purchases or construction of any property in Malaysia, non-residents may also refinance their RM domestic property loans. The above is subject to a maximum of three property loans.

3 December 2002: The limit of RM 10,000 equivalent in foreign currency for investment abroad by residents under the Employee Share Option/Purchase Scheme has been removed. Effective this date, general permission is granted for overseas investment for this purpose.

3 December 2002: Payments between residents and non-residents as well as between non-residents for RM assets are liberalised to allow payments to be made either in RM or foreign currency (previously, only in RM).

7 March 2003: Banking institutions, as a group, were permitted to extend ringgit overdraft facilities not exceeding RM500,000 in aggregate to a non-resident, provided that the credit facilities are fully covered at all times by fixed deposits placed by the non-resident customer with the banking institutions extending the credit facilities.

21 May 2003: The threshold level for acquisition by foreign and Malaysian interests exempted from FIC approval was raised to RM10 million from RM5 million; acquisition proposals by licensed manufacturing companies were centralised at MITI, while corporate proposals were centralised at the SC, and these proposals no longer required FIC consideration.

31 May 2003: The guidelines on unit trust funds (issued by the SC in 1997) were revised to include investments in foreign securities traded in or under the rules of a foreign market with approval from the BNM, the SC, and other relevant authorities.

17 June 2003: Foreign equity holding in manufacturing projects was allowed up to 100% for all types of investments.

1 April 2004: COFE approval was required for the issuance of ringgit bonds in Malaysia by multinational development institutions and foreign multinational corporations.

1 April 2004: Resident banks and nonbanks were permitted to extend ringgit loans to finance or refinance the purchase or construction of any immovable property in Malaysia (excluding financing for purchases of land only) up to a maximum of three property loans in aggregate.

1 April 2004: The limit on banking institutions for loans to non-residents (excluding stock broking companies, custodian banks, and correspondent banks) was raised to RM10 million from RM200,000.

1 April 2004: Licensed insurers and Takaful (Islamic insurance) operators were allowed to invest abroad up to 5% of their margins of solvency and total assets, respectively, these entities were also allowed to invest up to 10% of net asset value in their own investment-linked funds.

1 April 2004: Unit trust management companies were allowed to invest abroad the full amount of net asset value attributed to non-resident. In addition, fund/asset managers were allowed to invest abroad up to the full amount of investments of non-resident clients.

1 April 2004: Unit trust management companies were allowed to invest abroad up to 10% of net asset value attributed to residents without prior COFE approval. In addition, fund/asset managers were allowed to invest abroad up to 10% of investments of their resident clients.

1 April 2005: Residents (individuals or companies on a corporate group basis) without domestic ringgit credit facilities were allowed to invest abroad amounts of own foreign currency held onshore or offshore, up to RM10 million from a foreign currency facility, and any amount of ringgit converted into foreign currency.

1 April 2005: Residents (individuals or companies on a corporate group basis) with domestic ringgit credit facilities were allowed to invest abroad amounts of own foreign currency held onshore or offshore, up to RM10 million from a foreign credit facility, or ringgit converted to foreign currency, subject to limits of RM10 million a calendar year on a corporate group basis for companies, and RM100,000 a calendar year for individuals.

1 April 2005: Resident individuals and companies were permitted to prepay foreign currency credits.

1 April 2005: The limits on foreign currency credits were raised to RM50 million for resident companies in aggregate on a corporate group basis, and RM10 million for individuals, from RM5 million for both. No limit applied to trade financing.

1 April 2005: Resident credit institutions other than ADs and approved merchant banks no longer required prior approval to open and maintain FCAs with onshore banks, offshore banks in Labuan, overseas banks, and approved merchant banks.

1 April 2005: Resident insurers and Takaful operators were allowed to invest abroad up to 5% of their margins of solvency or total assets, and up to 30% of the NAV of investment-linked funds marketed by them.

1 April 2005: Resident fund/asset management companies were allowed to invest abroad up to 100% of funds managed on behalf of non-residents and resident clients with no domestic ringgit credit facilities.

1 April 2005: Resident fund/asset management companies were allowed to invest abroad up to 30% of total funds managed on behalf of resident clients with domestic ringgit credit facilities.

1 April 2005: The limit on investments abroad for investment-linked funds offered by resident insurers was increased to 30% from 10% of total NAV of the funds.

1 April 2006: CIS funds of limited distribution to sophisticated investors (restricted investment schemes) were required to be managed and administered by a fund management company licensed by the SC.

7 April 2006: Restricted investment schemes were allowed to invest in foreign securities subject to prior approval by the BNM and the SC.

29 May 2006: Investments in securities listed on exchanges recognised by Bursa Malaysia Securities Berhad, SC require only prior notification of the BNM and other relevant authorities.

1 January 2007: The FIC Guidelines on Property on the acquisition of residential properties valued at not less than RM250,000 for personal use by foreign investors were relaxed.

1 January 2007: The restriction on Labuan offshore banks to transact in ringgit assets on behalf of non-resident clients was removed to enhance the role of and scope of business of Labuan offshore banks.

18 January 2007: The sub limit for investments in any one foreign jurisdiction of 2% of an insurer's solvency margin was removed.

1 April 2007: Resident corporations were allowed to utilise proceeds arising from the listing of shares through initial public offering on the main board of the Bursa Malaysia for offshore investment purposes.

1 April 2007: The limit for resident corporations with domestic ringgit borrowing to invest in foreign currency assets through conversion of ringgit into foreign currency was increased to RM50 million a calendar year from the previous limit of RM10 million.

1 April 2007: The limit for residents with domestic ringgit borrowing to invest in foreign currency assets through conversion of ringgit currency is increased to RM1 million a calendar year from the previous limit of RM100,000.

1 April 2007: Non-resident corporations were allowed to utilise abroad proceeds arising from the listing of shares through an initial public offering on the main board of the Bursa Malaysia.

1 April 2007: Residents were allowed to issue foreign currency bonds in Malaysia.

1 April 2007: Lending by non-bank residents to non-residents in foreign exchange is allowed. Residents without ringgit credit facilities may lend any amount.

1 April 2007: Lending by non-bank residents to non-residents in foreign exchange is allowed up to the following limits: resident corporations and individuals with ringgit credit facilities may lend up to RM5 million and RM1 million a year, respectively.

1 April 2007: Licensed onshore banks were allowed to extend to non-resident stock broking companies and custodian banks ringgit overdraft credit facilities without limit for the financing of funding gaps arising from unforeseen or inadvertent technical delays in relation to (1) settlement of trades on the Bursa Malaysia and (2) ringgit instruments settled through the Real Time Electronic Transfer of Funds and Securities System and Bursa Malaysia. The licensed onshore banks, in granting the overdraft facility, are required to observe the following conditions: (1) the facility is not for funding purposes and is granted strictly for settlement due to inadvertent or technical delays as well as time zone differences and (2) the facility must not exceed two working days with no rollover option.

1 April 2007: The limit in foreign currency borrowing that can be obtained by resident corporations from licensed onshore banks and non-residents as well as through issuance of onshore foreign currency bonds was increased to RM100 million equivalents in aggregate and on a corporate group basis from the previous RM50 million equivalents. The proceeds may be used for domestic purposes or offshore investment. Residents are allowed to obtain foreign currency credit from non-residents up to RM10 million.

1 April 2007: Residents are required to seek prior permission from the COFE to issue financial guarantees to or on behalf of a non-resident or to obtain financial guarantees from non-residents.

1 April 2007: The limit on the number of residential or commercial property loans obtained by non-residents was abolished. Under the previous policy, non-residents were allowed to obtain a maximum of three property loans from residents to finance the purchase or construction of residential or commercial properties in Malaysia.

1 April 2007: Investment banks in Malaysia were allowed to undertake foreign currency business, subject to a comprehensive supervisory review of their capacity and capability.

1 April 2007: The limit on borrowing abroad by financial institutions other than banks was increased to RM100 million from RM50 million.

1 April 2007: The limit imposed on licensed onshore banks, previously capped at 20% of the banks' capital base was abolished.

1 April 2007: The limits for resident institutional investors to invest in foreign currency assets were increased as follows: (1) unit trust companies may invest up to 50% of NAV attributable to residents (previously, 30% of NAV); (2) fund management companies may invest up to 50% of funds of resident clients with domestic credit facilities (previously, up to 30%) and (3) insurance companies and Takaful operators may invest up to 50% of NAV of investment-linked funds marketed (previously, 30% of NAV).

Source: IMF Annual Report on Exchange Arrangements and Restrictions (1990 – 2007) and Tamirisa (2004)

APPENDIX II

Definition for Data Used in the Final Estimation

Variable	Definition	Expected Sign
CAGDP	Ratio of Current Account Balance to GDP (Percent)	-
CONFDI	Contagion, FDI (millions USD)	+ / -
CONP	Contagion, Portfolio Inflows (millions USD)	+ / -
DLOG(KLCI)	KLCI Rate of Return (Log-Difference of Index Number)	+
DLOG(REERIFS)	IFS Real Effective Exchange Rate (Log-Difference of Index Number)	+ / -
DLOG(SP500)	S&P 500 Rate of Return (Log-Difference of Index Number)	-
D(NEERV)	Nominal Effective Exchange Rate Volatility (Percent Per Annum, Differenced)	+ / -
D(VIX)	Chicago Options Exchange Volatility Index (Percent Per Annum, Differenced)	-
EIU	EIU Country Risk Index (Index number)	-
FDIIN	FDI, Gross Inflows (millions USD)	Dependent
LIQ	KLCI Market Turnover relative to Capitalisation (Percent)	+
LOG(CCI)	Capital Controls Index (Log of Index number)	-
PINF	Portfolio Investment, Gross Inflows (millions USD)	Dependent
RGDP	Domestic Real GDP (millions MYR)	+
R_MY3M	Domestic Real 3-Month Money Market Rate (Percent Per Annum)	+
RSVSTED	Ratio of Reserves to Short-Term External Debt (Percent)	+
USRGDP	US Real GDP (billions USD)	+ / -

APPENDIX III

Estimation Results: Portfolio Inflows

Dependent Variable: Portfolio Inflows (USD, million)

Sample (adjusted): 1992Q2 2007Q4

Included observations: 63 after adjustments

Newey-West HAC Standard Errors & Covariance (lag truncation=3)

	Coefficient
C	99893.88 **
PINF(-1)	0.64 ***
RGDP(-1)	0.20 ***
USRGDP(-1)	-3.59 ***
DLOG(REERIFS)	26396.10 ***
LIQ	446.27 ***
LOG(CCI)	-54172.65 **
LOG(CCI(-1))	35523.87 *
CONP	0.33 *
CONP(-1)	-0.38 *
D(VIX(-1))	-151.69 **
D(NEERV)	46829.03 *
DLOG(KLCI)	4805.04 ***
DLOG(SP500)	-6354.89 **
DLOG(SP500(-1))	-10278.80 *
RSVSTED	14.99 ***
RSVSTED(-1)	-12.53 ***
<hr/>	
R-squared	0.9595
Adjusted R-squared	0.9454
S.E. of regression	1830.7804
Durbin-Watson stat	2.2738
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Serial Correlation: LM Test - Prob. Chi-Square(4)	0.2590
Heteroskedasticity: ARCH Test - Prob. Chi-Square(4)	0.7424
Normality: Jarque-Bera - Prob.	0.9148
<hr/>	

Notes:

* significance at 10% level

** significance at 5% level

*** significance at 1% level

APPENDIX IV

Estimation Results: Foreign Direct Investment Inflows

Dependent Variable: FDI Inflows (USD, million)

Sample (adjusted): 1992Q1 2007Q4

Included observations: 64 after adjustments

Newey-West HAC Standard Errors & Covariance (lag truncation=3)

	Coefficient
C	11609.56
FDIIN(-1)	0.11 *
CAGDP	74.51 ***
CAGDP(-1)	-53.30 **
R_MY3M(-1)	-80.87 ***
DLOG(REERIFS(-3))	-3494.76 ***
CONFDI(-4)	0.74 ***
LOG(CCI(-1))	5553.10 ***
LOG(CCI(-2))	-14387.18 ***
LOG(CCI(-4))	6650.24 ***
EIU(-4)	-30.05 **
LIQ(-2)	16.77 ***
LIQ(-4)	-14.71 *
<hr/>	
R-squared	0.9616
Adjusted R-squared	0.9474
S.E. of regression	322.6375
Durbin-Watson stat	2.2116
<hr/>	
Serial Correlation: LM Test - Prob. Chi-Square(4)	0.2274
Heteroskedasticity: ARCH Test - Prob. Chi-Square(4)	0.3521
Normality: Jarque-Bera - Prob.	0.0019

Notes:

* significance at 10% level

** significance at 5% level

*** significance at 1% level

Chapter 5

CAPITAL FLOWS AND THEIR IMPLICATIONS FOR CENTRAL BANK POLICIES IN MONGOLIA

by
Gan-Ochir Doojav¹

1. General Framework and Major Capital Flows Management Policies

1.1 General Framework

At the beginning of its transition to a market economy, Mongolia had a relatively closed capital account. Economic liberalisation, such as reduction of price controls, floating exchange rates, the privatisation of state-owned enterprises, and trade and capital liberalisation processes, was implemented in the 1990s. Most of the changes had occurred between 1990 and 1993. The Government of Mongolia accepted the obligations of Article VIII, Sections 2, 3, and 4 of the IMF Articles of Agreement, with effect from February 1, 1996². The implementation of current and capital account liberalisation has both negative and positive impact on the economy.

Mongolia was the first country in transition to join the World Trade Organisation (WTO) in January 1997. The opening up of Mongolian markets (foreign trade liberalisation) as well as their integration into the multilateral trading system under the WTO have created not only new opportunities and prospects for economic development of Mongolia, but also brought about limitations and restrictions for its domestic policies.

Like in other SEACEN countries, the liberalisation of the financial market and capital account has resulted in large capital inflows to Mongolia. On the other hand, the inflows were motivated by good macroeconomic performance

1. Author is Economist attached to the Monetary Policy and Research Department of the Bank of Mongolia. The opinions expressed in this paper are those of the author and do not necessarily reflect the views of the Bank of Mongolia.

2. IMF members accepting the obligations of Article VIII undertake to refrain from imposing restrictions on the making of payments and transfers for current international transactions or from engaging in discriminatory currency arrangements or multiple currency practices without IMF approval.

and by strong demand of foreign investors in the mining and financial sectors. The large capital inflows have financed a higher economic growth, although it created pressures that led to inflation, real appreciation of the exchange rate, and a reduction in the domestic interest rate in recent years. Furthermore, due to this negative impact, an analysis of the determinants of capital flows and their macroeconomic impact and their implications for the policy management of capital flows is required.

Capital inflows are expected to increase massively due to the fact that large mining projects (Oyu tolgoi and Tavan tolgoi) are in the pipeline to be implemented in the coming years and with financial investment in the commercial banking sector increasing. Thus, the importance of the topic, while not considered as significant previously, is engaging the close attention of policy makers today.

This paper examines the evidence on the recent developments in capital flows empirically, the determinants of capital flows, impact of capital flows on monetary and financial variables, and review of policy management of capital flows in Mongolia. There is no preceding work done in this area in Mongolia. Thus, it is not possible to make a review of literature in the Mongolian case and compare some results with other papers' results.

1.2 Policies Implemented to Manage Capital Flows

Capital inflows may lead to inflationary pressures, to real exchange rate appreciation, which can reduce international competitiveness, and to rapid growth of monetary aggregates and credit, and banking sector problems, if the inflows are not properly intermediated. So capital inflows worry policy makers. The impact depends on the volume of flows, the macroeconomic policy framework, the microstructure of the flows, and incentives in the financial sector. In the Mongolian case, current and capital account were almost fully liberalised in earlier 1990s. The present capital flow management framework is as follows:

- Non-residents can purchase local bond and other debt securities;
- Commercial credits to and from non-residents are allowed;
- Investment by private corporations in export promotion, use of advanced technology, and the exploration of natural resources are encouraged;
- Sales or issue of capital market securities, money market securities, derivatives and other instruments by non-residents are prohibited; and
- Gold mining companies are not required to register their exports at the Bank of Mongolia (BOM) or a commercial bank.

Nowadays the Mongolian authorities do not use any direct controls to react to capital flows. However, they implement policies to reduce the negative effects of capital flows.

1.2.1 Exchange Rate Policy

A country with high inflows is to let the nominal exchange rate appreciate in response to the capital inflows. Calvo, Leiderman and Reinhart (1998) noted that a disadvantage of a pure float is that massive capital flows may induce rapid nominal and real appreciation which may damage strategic sectors of the economy, like non-traditional exports, and it could rise to have adverse effects on the trade balance.

The BOM shifted to a floating-exchange rate regime in May 1993 and then moved to a managed floating regime in 2001. For the BOM, its interventions are officially limited to smoothening severe volatility in the foreign exchange market, using the US dollar as the principal intervention currency. In reality, the BOM has been a net seller of foreign exchange in the interbank market.

The IMF staffs' report (January 2007) documented that the impact of the BOM's intervention on the market rate is limited. The BOM's interventions are atypical of central banks' interventions, whereby the central banks buy or sell foreign exchange in order to affect the exchange rate level. Nevertheless, the impact could still be significant, given that these interventions are relatively large. Also the report concludes that the interventions may have reduced the magnitude of the appreciation/depreciation (in other words, the volatility), but have not fundamentally changed the trend of exchange rate movements.

1.2.2 Monetary Policy

Sterilisation is a popular policy used in several countries. This policy aims to mitigate inflationary pressures, real exchange rate appreciation and avoid the loss of control over the domestic money stock.

Before 2007, without sterilisation, capital inflows led to reserve money and money supply injection into the economy, which could have contributed to inflation. Furthermore, in recent years the real exchange rate appreciation is effected through higher inflation in Mongolia. In fact, the increase in the reserve money in Mongolia has been largely driven by an increase in the net international reserves (NIR) before 2007. IMF staff (January 2007) calculated the sterilisation coefficient as the ratio of the change in Central bank bills (CBBs)³ to the change

in NIR. The short-term elasticity is estimated around 60-70% and even the long-run elasticity is less than 80%. Also they conclude that sterilisation through CBBs issuance was not sufficient and the effectiveness of monetary policy may be dampened.

Since July 2007, the excess liquidity in the inter-bank market, reserve money and growth of monetary aggregates have decreased and the sterilisation coefficient has risen due to the revision of the regulation on CBBs auction. In the economy, decreases in the growth of monetary aggregates reduce inflationary pressure with lags of 3-5 quarters. Section 4.3 considers the issue of sterilisation policy from the BOM in more detail.

1.2.3 Fiscal Policy

The government of Mongolia has revised the profit tax and income tax rates to encourage the FDI by private corporations in January 2007. The government has not imposed any taxes and restrictions on capital flows. Calvo, Leiderman and Reinhart (1996) noted that a policy reaction to the surge in capital inflows is to tighten fiscal policy (cut in public expenditures) and this policy may be effective in limiting the appreciation of the real exchange rate. In the case of Mongolia, fiscal policy expansion has continuously increased due to government transfer for social purpose, increased pensions and wages of state employees since 2005. For example, the fiscal expenditure increased from 27.5% of GDP in 2005 to 38.4% in 2007. The funds for public expenditure are derived from windfall tax income of gold and copper. This expansion has led to high monetary growth, accelerating inflation and appreciation of REER.

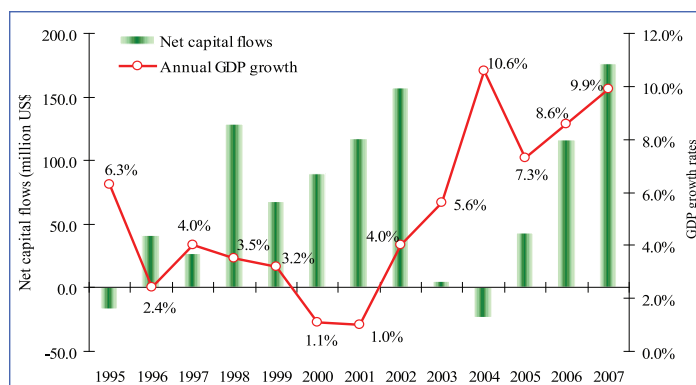
2. Trends of Capital Flows in Mongolia

2.1 Key Macroeconomic Indicators

Economic growth in Mongolia has been strong in recent years. Capital inflows, of which foreign direct investment – especially in mining and construction activities and Mongolian workers' remittances have increased significantly in recent years pushing up GDP growth. Annual real GDP growth has averaged to 8.4% since 2003 due to the high world prices of gold and copper. As illustrated in Figure 1, there is a strong empirical positive correlation between GDP growth and net capital flows, especially during the last three years.

3. BOM issue CBBs to **observe** (absorb?) excess liquidity from the banking sector.

Figure 1
Capital Flows and GDP Growth Rates

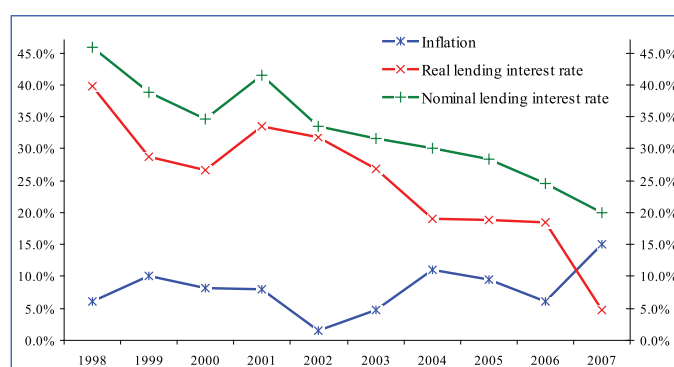


Source: The Bank of Mongolia and National Statistical Committee

The Mongolian economy grew nearly 5% per year between 1995 and 2007, while receiving net capital flows of nearly 5.8% of GDP.

As the economy began to be exposed to external shocks, inflation acquired significance, though it was at a low level (1.6-11.0%) between 1998 and 2006. Strong supply shocks, such as increases in petroleum and food prices have mainly been responsible for inflation volatility. The inflation rate jumped from 6% in 2006 to 15.1% in 2007, due to supply side shocks (rapid increase of oil and food price in the world market), fiscal expansion, rapid monetary growth and structural bottleneck (Figure 2).

Figure 2
Inflation and Interest Rates⁴

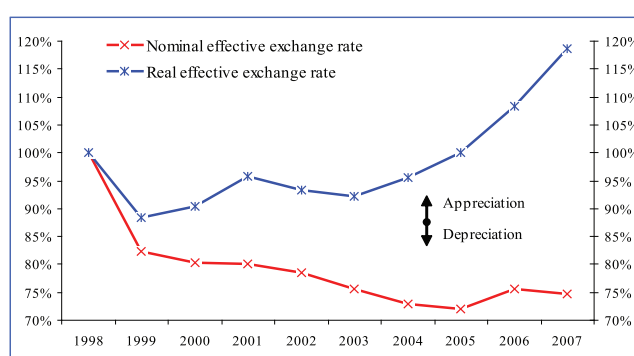


Source: The Bank of Mongolia

4. Real interest rate is calculated using Fisher's identity.

Figure 2 shows that high lending interest rates have also been decreasing in recent years. Especially during the last five years, the lending interest rate dropped twice to 20%. This decrease reflected in the reduction in the interest rate spread due to extension of banking operation, decrease of NPL ratio, and financial intermediation deepness of banking system, high economic growth and relatively low inflation. At the same time deposit rates have not decreased and it seems to be mainly the result of strong competition among banks.

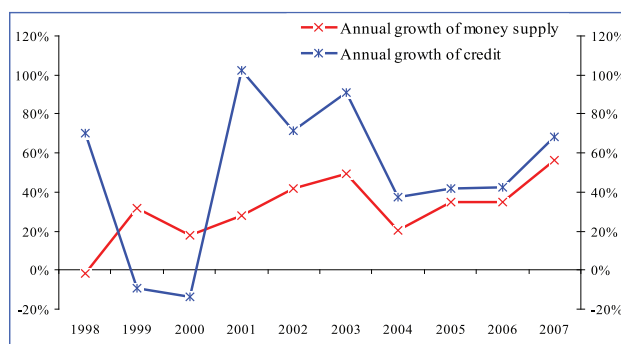
Figure 3
Developments of NEER and REER



Source: The Bank of Mongolia

The NEER has slightly appreciated in 2006 due to strong trade balance surplus, and the REER has been moderately appreciating since 2004 (Figure 3). Recent years' exchange rate movements have related to capital inflows, improvement in term of trade and rapid increases in domestic price level.

Figure 4
Growth of Money Supply and Credit



Source: The Bank of Mongolia

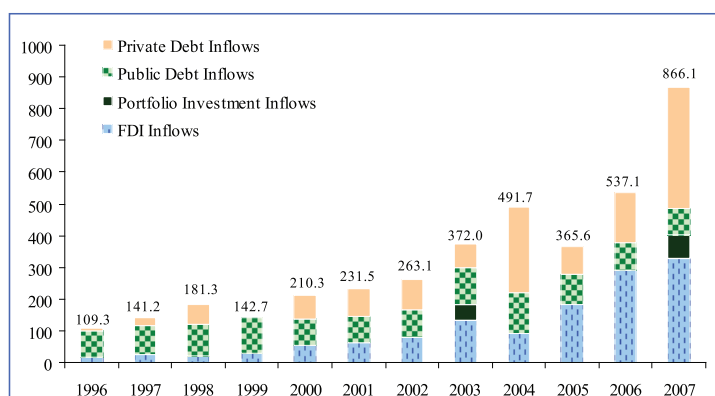
The money supply and credit growth have been high, that is between 20% and 90% per year in the last six years (Figure 4). The growth in money supply was reflected in the strong foreign exchange inflows. Especially in 2007, the high growth of money supply and credit has mainly been driven by increases of financial inflows and fiscal expansion. The improvement in fiscal position has been attributed to strong economic growth, increase in mining sector revenues (related with rapid growth of copper prices).

The average annual credit growth was over 40% in 2001-2007, and it is a relatively high indicator comparing to other transition economies. The growth in credit has been supported by decreases of lending interest rate, expansion of economic scale and rapid growth of banks' deposits.

2.2 Trends in Capital Flows

Figure 5 reveals that capital inflows are trending upwards since 1996. During this period, the composition of capital inflows changed, with public debt inflows replaced by foreign direct investment (FDI) and private debt inflows. FDI and private debt inflows in last four years took up on average 40% and 38% of capital inflows, respectively. While public debt inflows declined from 77% of capital inflows in 1996 to about 10% in 2007. FDI inflows peaked at US\$327.8 million in 2007.

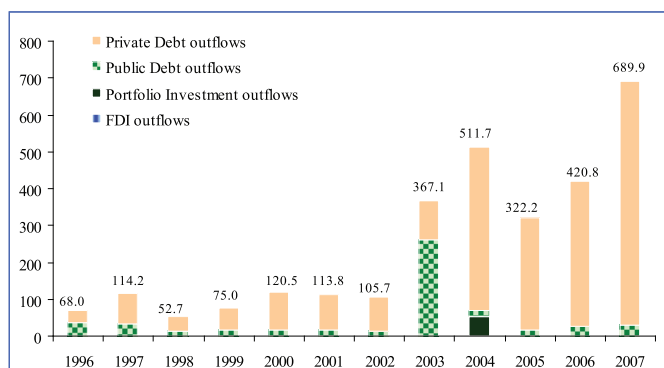
Figure 5
Composition of Capital Inflows (US\$ million)



Source: The Bank of Mongolia, Balance of Payment Statistics

Increases in the world copper and gold price and domestic real estate prices, the high growth of the private sector and the high differential interest rate have attracted a large amount of FDI and private debt inflows in recent years.

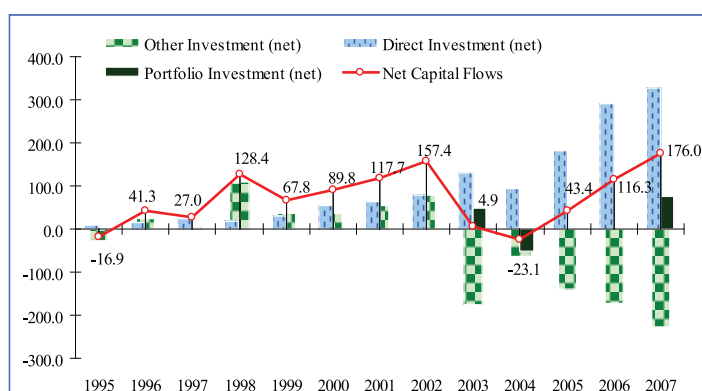
Figure 6
Composition of Capital Outflows (US\$ million)



Source: The Bank of Mongolia, Balance of Payment Statistics

Figure 6 shows that capital outflows have been rapidly increasing from 2003. Capital outflows have largely been accounted by private debt outflows since 2003. Private debt outflows rose from 48.2% of total capital outflows in 1996 to 95.7% in 2007. The macroeconomic determinants of capital flows are closely examined in Section 3 of this paper.

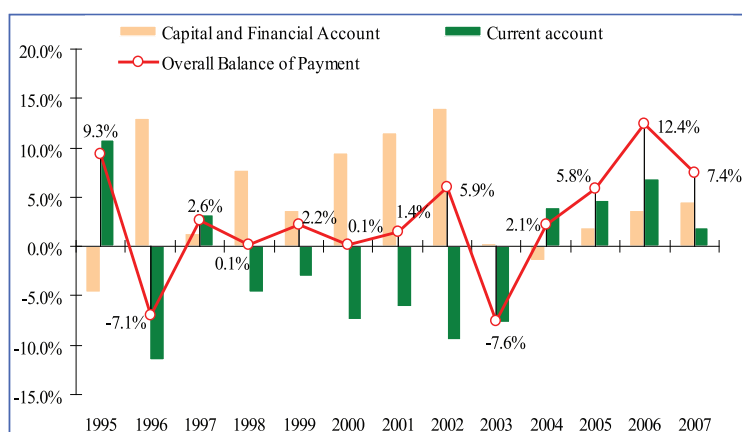
Figure 7
Composition of Net Capital Flows (US\$ million)



Source: The Bank of Mongolia, Balance of Payment Statistics

Figure 7 plots the trend of net capital flows (capital inflows minus capital outflows) and its composition in Mongolia. The plot shows that net capital flows were positive and continuously increasing between 2004 and 2007. The composition of net capital flows has not changed during this time. The net capital flows in the recent years are mainly accounted by net direct investment, because of strong demand from foreign investors for Mongolian mining and exploration sector. FDI into the mining and exploration sector has been growing rapidly since 2001 and is the fastest growing component of total FDI. The FDI inflows increased 38.1% as compared to the previous year. In 2007, net capital flows increased by 51.3% and showed a surplus of US\$176.0 million.

Figure 8
Composition of Balance of Payment (% of GDP)



Source: The Bank of Mongolia, Balance of Payment Statistics

Since 2004, the current account of the balance of payments is in surplus, since gold and copper prices in the world market have continuously increased and stayed at relatively high levels. In other words, the improved terms of trade have shifted the current account into surplus. The capital and financial account (net capital flows) recorded a surplus since 2003, given the net capital flows of about 4.1% of GDP in the last two years. The surplus of current and capital accounts led to an overall balance of payments surplus – with the ratio of overall balance of payments surplus to GDP increasing from 2.1% to 7.4% in last four years, reaching its peak at 12.4% of GDP in 2006 (Figure 8).

3. Determinants of Capital Flows

3.1 Methodology

Lipschitz, Lane, and Mourmouras (2002) noted that there are two ways to think about the motivation for capital flows to transition economies. One way is in portfolio terms, about interest rate differentials and arbitrage condition. The other way is in terms of fundamentally, different supply conditions, mainly, capital-labor ratios and rates of return on capital.

Some researchers divided the factors by their influence on capital flows into external and internal factors. Calvo, Leideman and Reinhart (1993), Fernandez-Arias (1996), Frankel and Okongwu (1996) noted that for small open economies, external factors (world interest rates and world growth) are major drivers of capital flows. Other external factors include terms of trade, the international business cycle and its impact on profit opportunities, and some regulatory changes that affect the international diversification of investment portfolios at the main financial centers. Whereas Chuchan, Claessens and Mamingi (1995), Henandez and Rudolph (1995), Kang and others (2002) noted that internal factors are also as important as external factors. The internal factors are related to domestic monetary, exchange rate and fiscal policies⁵ and market-oriented reforms, such as trade and capital market liberalisation. In most of the empirical studies, the internal and external factors are chosen as follows:

Internal (Pull) Factors:

- Real GDP growth rate
- Real interest rate
- Current account balance
- Stock price index
- Exchange rate volatility
- Credit rating
- Financial/Trade openness
- Investment Environment
- Expectation of exchange rate

External (Push) Factors:

- World or industrial countries' real GDP growth rate
- World real interest rate

5. Capital can also flow to a country as a result of lack of credibility in current policies, or renewed confidence about a country's economic prospects. For example, inflation stabilisation programmes can reduce macroeconomic risk.

Like other studies, the determinants of capital flows in Mongolia are examined using a simple regression model. Based on the above theoretical and empirical concepts, the empirical model for the determinants of capital flows is chosen as follows:

$$[1] \quad CF = \alpha + \beta X + \gamma Z + \lambda D + e$$

Where CF is real capital inflows or real capital outflows (in logarithms), X is a group internal variables (pull factors) including real GDP growth rate, domestic real interest rate (proxied by real 12-month time deposit rate), current account to GDP ratio, Z is a group of external variables (push factors), including world real GDP growth rate (proxied by US GDP growth rate), world real interest rate (proxied by US real interest rate), D is dummy for structural break and e is residual of the regression.

3.2 Data Description, Unit Root Tests and Cointegration Tests

The empirical results are based on quarterly data for the period 1998Q1-2008Q2 (42 observations) to exclude impact of structural changes of the economy and banking crisis. Also the official quarterly data of real GDP and capital flows are available from the first quarter of 1998 for Mongolia. Table 1 summarises the variables used in the estimation and their sources.

Table 1
Variables in the Estimation⁶

Name of variables	Notation	Information	Source
<i>Dependent variables</i>			
Capital inflows	CIN_R_L	Real capital inflows, (in log) ⁷	Balance of Payment Statistics, BOM
Capital outflows	COUT_R_L	Real capital outflows, in real terms (in log)	Balance of Payment Statistics, BOM
<i>Independent variables</i>			
<i>Internal factors</i>			
Real GDP growth	GDP_G	Real GDP growth	Bulletin of Statistic, National Statistical Committee (NSC)
Domestic real Interest Rate	R	12-month time deposit real rate	Bulletin of Statistic, BOM
Current account to GDP ratio	CA_GDP	Current account to GDP ratio	Bulletin of Statistic, NSC and Bulletin of Statistic, BOM
<i>External factors</i>			
World real GDP growth	W_GDP_G	US real GDP growth	www.economagic.com
World real interest rate	R_W	US real interest rate (1 year constant maturity treasury yield-inflation)	www.economagic.com

The order of integration of the series is tested by employing the ADF and Perron (1997) (IO2 model)⁸ test. The result of AFD test is reported in Appendix 1.

The ADF test represents that the variables *CA_GDP*, *W_GDP_G*, *R* and *R_W* appear to be integrated to order I(1) and their underlying processes are without deterministic trend. The variables *CIN_R_L*, *COUNT_R_L* and *GDP_G*, on the other hand, appear to be stationary, i.e., integrated to order I(0)⁹. As

6. All the variables are in percent except capital inflows and capital outflows. The series of capital inflows, capital outflows, GDP and current account are seasonally adjusted by using the X-12-ARIMA method.

7. Real capital flows= nominal capital flows (in US\$)/CPI of USA.

8. The IO2 model allows for gradual changes in the intercept and the slope of the trend function such that:

$$x_t = \mu + \theta DU_t + \beta t + \gamma DT_t + \delta D(T_b)_t + \alpha x_{t-1} + \sum_{i=1}^K c_i \Delta x_{t-i} + e_t$$

Where T_b denotes the time break ($1 << T$) which is unknown, if $t = T_b$ and zero otherwise, if $t < T_b$ and zero elsewhere, if $t = T_b$ and zero otherwise, is any general ARMA process and e_t white noise. The null hypothesis of a unit root is rejected if the absolute value of the t statistic for testing $\alpha=1$ is greater than the corresponding critical value tabulated by Perron (1997).

9. In the paper, order of integration was chosen at the 5% level.

these variables appear to be mixed (stationary and non-stationary), the appropriate estimation method (ARDL approach) for mixed time series is applied.

But a problem with the AFD test is, it does not allow for testing the possibility of a structural break. Perron (1997) proposed unit root test with existence of structural break. In this paper, the IO2 model of Perron (1997) is also used for testing unit roots of the series. The time of break (T_b) of the series is chosen based on the historical experience and the principle, which is to minimise the t-statistic of $\alpha = 1$. The timing of any T_b for each series is shown in Table 2. Also the optimal lag (k^*) is selected such that the last coefficient in an autoregression of order greater than k is insignificant, up to a maximum order k . Figure 10 provides unit root tests using IO2 model. The results obtained indicate that all variables are non-stationary under structural change at 5% significance level.

Table 2
Unit Root Tests: Innovational model (IO2)

Variable	Break point (T_b)	Lag (\hat{k})	Test Stat (t_α)
CIN_R_L	2002Q3	0	-4.47
COU_T_R_L	2003Q4	0	-4.17
GDP_G	2002Q1	3	-4.35
R	2006Q2 ¹⁰	3	-2.75
CA_GDP	2006Q3 ¹¹	3	0.81
W_GDP_G	2001Q4	0	-2.27
R_W	2006Q3 ¹²	0	-0.97

Note: Critical values for the IO2 models at 1%, 5% and 10% are -6.32, -5.59 and -5.29, respectively. (Source: Perron (1997), page # 36, Table 2.A).

As all variables appear to be non-stationary under structural change (IO2 model, Perron 1997), the appropriate estimation methods for non-stationary time series are applied. The co-integration analysis is carried out using the main two methods so as to ensure that the acquired estimates have some robustness. These methods are: the auto-regressive distributed lag (ARDL) approach due to Pesaran and Shin (1995, 1999), and the full-information maximum likelihood (FIML) method due to Johansen (1995).

10. Real interest rate has decreased from the first quarter of 2006, due to rapidly decreasing nominal interest rate between the first quarter of 2006 and second quarter of 2007. This trend has continued because of the rapid increase in the inflation rate since July of 2007.

11. Due to increase in gold and copper prices in the World market, the current account had a surplus between third and fourth quarters of 2006.

12. Nominal interest rate of USA started to decrease from the third quarter of 2006. Then, the Federal Reserve Bank has decreased FED target rate since September of 2007, due to the sub-prime crisis.

Due to the small sample available, a maximum of three lags in the lag-length selection process is considered. It appears that both the LR test statistic and AIC (Akaike information criterion) suggest that this maximum of three lags is employed. Both criteria are weakly consistent in the case where the lag-length determination is carried out for non-stationary variables. Thus, VAR(3) for the Johansen procedure¹³ and a maximum of three lags for the ARDL method are used. The Trace and Maximum-Eigen statistics for the VAR(3) system of the variables considered are reported in Table 3.

The Maximum-Eigenvalue statistic indicates the presence of two co-integration vectors at the 5% significance level within the system of part 2 and the presence of only one co-integration vectors within the system of part 1. Also, the Trace statistic indicates the presence of only one co-integrating vector within the system of part 1 and the presence of two co-integrating vector within the system of part 2. It continues with more conservative choice of one co-integrating vector, which is easily identified in our case by normalising the real capital inflows or real capital outflows (in log).

Table 3
Cointegration Rank Test

Hypothesised No. of CE(s)	Eigenvalue	Trace Statistic	5% Critical Value	Max-Eigen Statistic	5% Critical Value
Part 1. Vectors: CIN_R_L, GDP_G_R, CA_GDP, W_GDP_G_R_W					
$r=0$	0.91	178.1*	117.7	91.9*	44.5
$r \leq 1$	0.56	86.2	88.8	31.8	38.3
$r \leq 2$	0.42	54.4	63.9	21.4	32.1
$r \leq 3$	0.39	32.9	42.9	19.4	25.8
$r \leq 4$	0.18	13.6	25.9	7.6	19.4
$r \leq 5$	0.14	5.9	12.5	5.9	12.52
Part 2. Vectors: COUT_R_L, GDP_G_R, CA_GDP, W_GDP_G_R_W					
$r=0$	0.76	165.9*	117.7	56.4*	44.5
$r \leq 1$	0.72	109.4*	88.8	49.3*	38.3
$r \leq 2$	0.53	60.1	63.9	28.9	32.1
$r \leq 3$	0.39	31.2	42.9	19.4	25.8
$r \leq 4$	0.156	11.8	25.9	6.6	19.4
$r \leq 5$	0.125	5.2	12.5	5.2	12.5

Note: * denotes rejection of the hypothesis at the 5% level.

13. The Johansen co-integration technique is used to determine the number of co-integrating vectors in a vector autoregression (VAR) framework.

An advantage of the ARDL model is that while other cointegration techniques require all of the regressors to be integrated of the same order, the ARDL model can be applied irrespective of their order of integration. It thus avoids the pre-testing problems associated with the standard cointegration tests (Pesaran et al., 2000).

In the ARDL approach, the null hypothesis (*all long-run coefficients of the underlying ARDL are equal to zero*, implying no cointegration) is tested by computing the general F-statistic to determine that a long-run relationship does exist between the dependent and independent variables. At this stage the F-statistic is compared with the critical value tabulated by Pesaran et al. (2001). We choose 3 as the maximum lag length in the ARDL model and the calculated F-statistics of real capital inflows and real capital outflows equation is equal to 14.7 and 21.4, respectively. These estimated F-statistics is greater than upper bound critical value¹⁴, respectively. Thus, the null hypothesis of no cointegration is rejected, implying long-run relationship exists between the real capital inflows/capital outflows and its independent variables. However, based on the theory, real capital inflows/capital outflows are used as the dependent variables in the paper.

3.3 Estimation Results: Determinants of Capital Flows

The estimates of long-run coefficients of the model in equation [1] using two (ARDL and Johansen methods) estimations are reported in Figure 12. The general to specific approach is applied to arrive at the parsimonious versions of the estimates provided in Table 4.

14. Source: Pesaran et al. (2001), Critical Value Bounds for the F-Statistic, Table C1.iii: Case III with unrestricted intercept and no trend for $k=4$, $k=5$. For $k=4$, Lower bound $I(0)=3.74$ and Upper bound $I(1)=5.06$ at the 1% significance level. For $k=5$, Lower bound $I(0)=3.41$ and Upper bound $I(1)=4.68$ at the 1% significance level.

Table 4
Estimated Long-run Coefficients of the Real Capital Inflows/Capital Outflows Model

Variable/Method	CIN_R_L (Real Capital Inflows)		COUT_R_L (Real Capital Outflows)	
	ADRL ¹⁵ (1,2,2,3,0,1)	Johansen VECM (2)	ADRL ⁷ (1,2,2,2,2)	Johansen VECM (2)
Internal factors				
GDP_G	0.03 (1.86)*	0.05 (3.55)***	0.12 (5.4)***	0.16 (8.34)***
R	0.015 (1.83)*	0.013 (1.89)*	-0.04 (2.96)***	-0.03 (2.23)**
CA_GDP	0.05 (7.78)***	0.04 (7.55)***	0.016 (1.86)*	0.015 (2.21)**
External factors				
W_GDP_G	0.17 (4.67)***	0.09 (2.68)**	0.18 (2.93)***	0.10 (1.90)*
R_W	-0.35 (8.43)***	-0.29 (6.85)***	---	---
Intercept and Dummy for Structural Break				
Intercept	5.05 (24.9)***	4.88 ¹⁶	3.38 (10.2)***	3.32
DUM_2002Q3	0.82 (3.37)***	0.91 (2.21)**	---	---
DUM_2003Q4	---	---	2.62 (5.02)***	2.64 (5.25)***
Error Correction Mechanism (ECM)				
ECT_{t-1}	-0.90 (6.74)***	-0.95 (4.71)***	-0.69 (8.85)***	-0.86 (4.85)***
Summary Statistics and Diagnostic Tests				
R^2, \bar{R}^2	0.77, 0.66	0.74, 0.58	0.75, 0.67	0.83, 0.73
Prob (F-stat)	0.00	0.00	0.00	0.00
SER	0.25	0.28	0.40	0.34
Serial Correlation (AR(4))	[0.39]	[0.60]	[0.23]	[0.33]
Normality (Jarque-Bera)	[0.49]	[0.17]	[0.84]	[0.15]
Heteroscedasticity	[0.26]	[0.21]	[0.62]	[0.61]

Note: *, **, *** denotes 10%, 5% and 1% significance level, respectively. t-statistics are in parentheses. The probability level of the diagnostic tests is in square brackets. The long-run coefficient standard errors of ARDL model are obtained using familiar delta method.

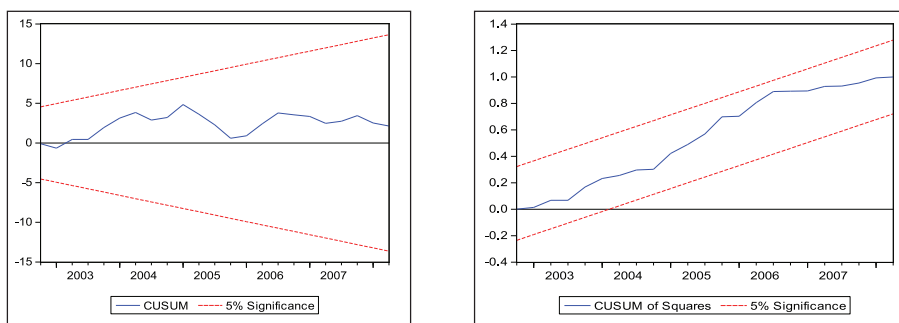
15. The order of the optimal ARDL model (distributed lag function) is selected based on the AIC.

16. Standard error of the coefficient is not defined from the Eviews 6.0 software.

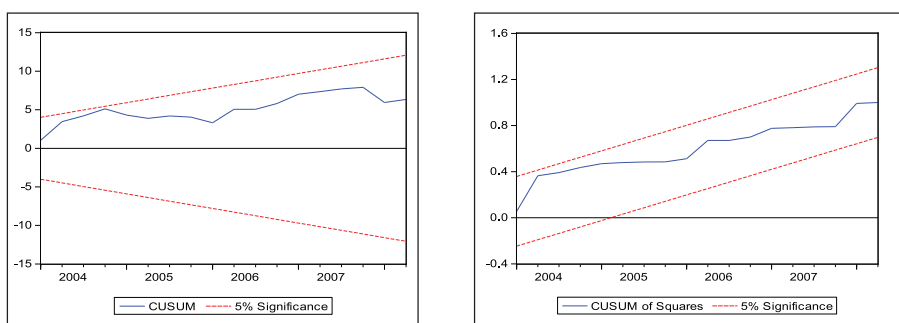
The two model estimates satisfy the summary statistics and common diagnostic tests, based on the results reported in the last three rows of Figure 12. The residual tests show that there is no significant serial correlation and heteroscedasticity in the residuals. Also from the accompanying summary statistics of the R^2 , \bar{R}^2 and the F-statistics, the selected models have a good fit. These are especially appropriate in a case like ours, where the sample size is very small. Recursive estimation of the ARDL models also suggests that the regression coefficients are generally stable over the sample period. The cumulative sum (CUSUM test) and cumulative sum of squares (CUSUM of Squares test) plots based on the recursive residuals are given in Figure 9 and do not show evidence of statistically significant breaks. This implies that the estimated models are stable.

Figure 9
CUSUM Test and CUSUM of Squares Test

A) ADRL (1,2,2,3,0,1) Model of Real Capital Inflows



B) ADRL (1,2,2,2,2) Model of Real Capital Outflows



According to the estimates from the two methods employed an increase in domestic real GDP growth results in a rise of the real capital inflows and real capital outflows. Namely, the ARDL and Johansen estimates suggest that the 1 percentage point increase of domestic GDP growth causes the real capital inflows to increase by 3-5%. This result confirms that real capital inflows are partly explained by high domestic real GDP growth in recent years.

An increase in domestic real interest rate causes a growth of real capital inflows, in accordance with the underlying theory. Namely, the estimates indicate that a 1 percentage point increase of domestic real interest rate causes the real capital inflows to increase by 1.3-1.5%. However, the effect of domestic real interest rate on real capital outflows is significantly negative, as predicted. In the other words, a 1 percentage point increase in domestic real interest rate leads to 3-4% decrease in real capital outflows.

There is a positive relationship between the current account as a proportion of GDP and real capital inflows and real capital outflows. That is, a 1 percentage point increase in the ratio causes the real capital inflows to raise 4-5%. The effects of World real GDP on the real capital inflows and capital outflows are significant and consistent across two methods, with slight variability in the estimates' magnitude. Similarly, increasing World real GDP growth appears to induce a rise of real capital inflows and capital outflows. As predicted in the earlier parts of this paper, the effect of the World real interest rate on the real capital inflows is negative and significant. In the other words, decreasing World real interest rate results in a rise of the real capital inflows. But the World real interest rate does not help to explain real capital outflows.

The results of the estimations indicate that the recent year's high real capital inflows are determined by push and pull factors, including high domestic economic growth, high domestic real interest rate, positive current account performance, strong World real GDP growth and low world real interest rate. Whereas the real capital outflows are determined by internal factors, including domestic economic growth, domestic real interest rate and current account to GDP ratio. Furthermore, the high real capital inflows are associated with FDI promotion policies after 2001, increasing interest of foreign investors for investment in mining sector, decline in the corporate income tax rate since January 2007, growing international confidence in the economy, macroeconomic stability and rapid growth of banking sector credit by bank borrowing from abroad. These do mean that the capital flows are affected by the domestic policy environment and external shocks will necessarily require macroeconomic policy response.

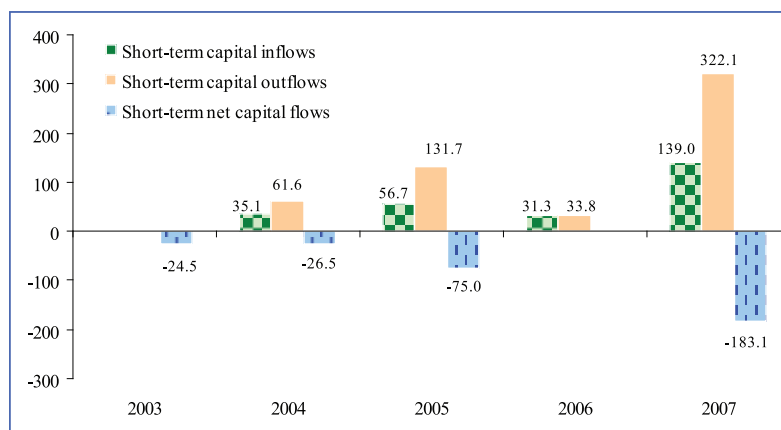
The coefficients of the error correction term (ECT_{t-1}) have the right sign (negative) and are statistically significant at 1% level. The estimated values of ECT_{t-1} of real capital inflows and real capital outflows indicate that 90-95% and 69-86% of the disequilibria of the previous quarter's shock adjust back to the long-run equilibrium in the current quarter, respectively.

4. Capital Flows and Monetary Policy

4.1 Short-term Capital Flows

Figure 10 shows that short-term net capital recorded a deficit from 2003, due to a rapid increase in capital outflows from 2003. In the Mongolian case, the short-term capital flows are dominated by short-term private debt. Before 2003, the volume of short-term capital flows was small and the deficit of short-term net capital flows increased by 7.5 times between 2003 and 2007. Also, the short-term capital flows have been highly volatile: short-term capital outflows decreased by 3.9 times between 2005 and 2006, and the short-term capital inflows increased 4.4 times between 2006 and 2007.

Figure 10
Short-term Capital Flows (US\$ million)



Source: Bank of Mongolia, Balance of Payment Statistics

With regard to capital controls on short-term capital flows, Mongolia has a very liberal capital account regime with free flows into and out of the economy. Short-term capital inflows to the economy are expected to increase massively. Thus, the policy makers need to study carefully the effect of short-term capital flows on the economy in light of the experience of other countries in managing short-term capital flows.

4.2 Impact of Capital Flows on Monetary and Financial Variables

This section will examine the effects of capital flows on the important macroeconomic variables, namely, the GDP growth rate, real effective exchange rate, foreign exchange reserves and monetary expansion. Capital flows have different effects on an economy depending on its economic structure, exchange rate regime, etc., and this Section draws on the works of Kohli (2001), Edward (1999) and others in analysing Mongolia's experience. Large capital inflows can create a higher rate of economic growth, rapid monetary and credit expansions, and can generally lead to pressures of inflation, real exchange rate appreciation, lower domestic saving, and a reduction in the domestic interest rate or the cost of capital.

4.2.1 Impact of Capital Flows on Economic Growth

Theoretically, FDI has a direct positive impact on economic growth through an economy's productive capacity. It also has an indirect impact on development via competition, improvement in technology and machinery, better education and knowledge, higher employment (higher household income), improved infrastructure and environment, and enhanced tax collection, etc. On the other hand, foreign investors will be increasingly interested in investing when the host country is experiencing economic growth, as they are confident that industry promises high stable return and financial market.

The simple correlation coefficient between FDI and GDP level is 0.76 and the long-run elasticity of GDP in relation to FDI is 0.27 between 2000 Q1 and 2008 Q1 in the Mongolian economy. Production elasticity of the agricultural sector in relation to the FDI to the sector is 0.25. For the sectors of mining and manufacturing, the calculated elasticity is 0.29; and, for hotels, restaurants and wholesale & retail trade, the value is also 0.29. These results imply that any expansion in foreign investment in those sectors cause their production level to rise. The response of GDP to FDI is obtained from vector error correction

(VEC) with 4 quarters lags estimation between the two series¹⁷. The response function shows that a 10% increase shock to FDI in the first period causes the GDP to rise by 0.4% in the second quarter. This is then accompanied by a cumulative growth of 1.0% after 12 quarters, i.e., three years.

4.2.2 Impact of Capital Flows on Exchange Rate

Capital inflows are linked with the real appreciations of exchange rate. On the one side, capital inflows may be motivated by the anticipation of real appreciations and, on the other side, inflows support the real appreciation¹⁸. The simple correlation coefficient between net capital flows and the real effective exchange rate is 0.54. This result indicates that the relationship between these variables is positive and capital inflows may lead to appreciations of REER.

The Granger causality test¹⁹ with one lag shows that the hypothesis that net capital flows do not cause an appreciation in the REER can be rejected at the significance level of 10%. The test result indicates a permanent effect of capital account shock upon the REER.

4.2.3 Impact of Capital Flows on Foreign Exchange Reserves and Money Supply

Depending on the exchange rate regime, capital inflows can be either international reserves' accumulation or a current account deficit²⁰. The current account balance had surplus from third quarter of 2004 to second quarter of 2007. The sharp increase in foreign exchange reserves is parallel with the current account surplus, suggesting absorption of foreign currency inflows by the BOM. In addition, the increase in gold prices in the world market strongly affected the foreign exchange reserves. The stock of net international reserves was US\$1.04 billion in March 2007, represents an increase 154% over January 2006. But the trade balance deficit has started increasing since April 2007, reaching a deficit

17. Both GDP and FDI to be I(1) process and both series are also co-integrated at significance level of 5%.

18. Lipschitz. L, Lane. T, Mourmouras. A (2002).

19. The test is used in the Kohli, R. (2001), "Capital Flows and Their Macroeconomic Effects in India", IMF.

20. If the exchange rate regime is fixed and the central bank intervenes to counter appreciation pressures, then capital inflows would be visible in increase in foreign exchange reserves. If there is no intervention by central bank, then the net increase in capital assets via capital inflows would be associated with a similar increase in imports and therefore a widening current account deficit.

of US\$706.1 million in July 2008. Due to the increase of this deficit, foreign exchange reserves have declined.

Net capital flows affect domestic money supply through accumulation of net foreign currency assets (NFA)²¹. The correlation coefficient (0.45) shows that a positive relationship between money supply and net capital flows exists in the economy.

The Granger causality test with three lags shows that the hypothesis that net capital flows do not cause money supply can be rejected at the significance level of 10%. This result may be consistent with reality. The high growth of money supply in the last three years is fueled by the growth of net foreign currency assets. During this time, the average annual growth of NFA increased by 69.7% and it pushed the average annual growth of money supply to 41.9%. These results confirm that money and credit growth are rapidly growing, owing to the substantial capital inflows in the recent years. In other words, increases in capital inflows intermediated through the banking system have been supporting a strong growth of banking sector credit, leading to economic overheating, jeopardising stability and creating inflationary pressures.

4.2.4 Response of Monetary and Financial Variables to Capital Inflows

Figure 11 presents the impulse response functions (IRFs) for monetary and financial variables to one standard deviation innovation in the capital inflows. These IRFs are calculated from the SVAR model²² used in analysis of determinants of capital inflows.

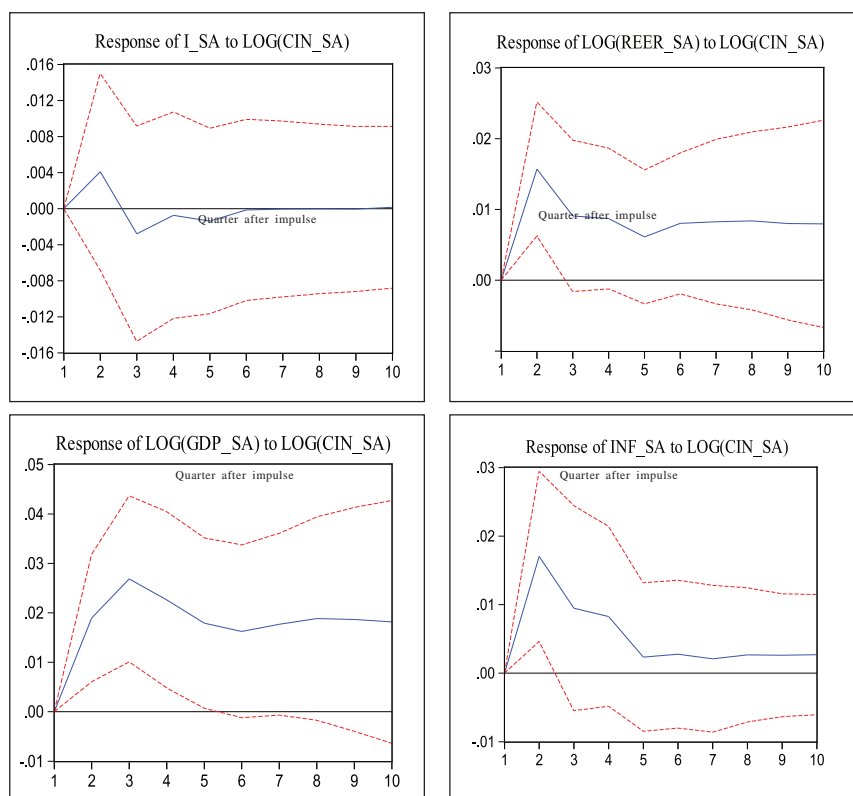
The positive reaction of GDP to one standard deviation impulse of capital inflows start from same period, reaches its peak after three quarters. The response of GDP to capital inflows is significantly different from zero at the significance level of 5% for first five quarters. With respect to inflation, it takes a major positive effect for first three quarters and reaches its peak level after two quarters.

21. If the central bank intervenes to maintain a fixed exchange rate, then an accumulation of international reserves represent an increase in the net foreign exchange assets of the central bank and directly affects the monetary base.

22. The SVAR model was identified by orthogonalising the variance-covariance matrix of the residuals of the equations using the Cholesky decomposition. In performing the decomposition, the causal ordering $\pi_1, \pi_2, \pi_3, \pi_4, \pi_5$ was used. Where π_1 is a logarithm of terms of trade, π_2 is nominal international interest rate (LINOR3M rate), π_3 is nominal domestic interest rate (monetary policy rate), π_4 is logarithm of real effective exchange rate, π_5 is logarithm of real GDP, π_6 is annual inflation rate, π_7 is logarithm of capital inflows.

The positive reaction of GDP to one standard deviation impulse of capital inflows start from same period, reaches its peak after three quarters. The response of GDP to capital inflows is significantly different from zero at the significance level of 5% for first five quarters. With respect to inflation, it takes a major positive effect for first three quarters and reaches its peak level after two quarters. The impact of capital inflows leads to appreciation in the REER. This effect start after one quarter, reaches its peak after two quarters. The response is different from zero at the significance level of 5% for first three quarters. These impulse responses confirm that the key macroeconomic indicators have strongly affected by large capital inflows in the recent years.

Figure 11
Impact of Shocks to Capital Inflows on Monetary and
Financial Variables²³



23. The point estimates of responses are shown as solid lines; dashed lines display a two standard deviation confidence interval.

4.3 Monetary Policy Reactions to Deal with Capital Flows

It has been observed that large capital inflows often give rise to increases in money supply and domestic liquidity, appreciation of both nominal and real exchange rates, and acceleration in asset prices. Hence, a country experiencing excessive capital inflows usually has to face the challenges of inflationary pressures, loss of a competitive exchange rate and misallocation of capital into unproductive projects²⁴.

In the Mongolian economy, it is clear from Figure 4, the monetary aggregates have been growing since 1999. Indeed, over the last eight years, the year-on-year (y-o-y) monetary growth rates have exceeded the y-o-y nominal GDP growth, which has averaged 21.5% only over the same period. Turning to the exchange rates, we see that the Mongolian REER exhibited an upward trend since 2003 (Figure 3). However, depreciation in the NEER is discernible in the recent period, reflecting a return of the Mongolian Tögrög (domestic currency) to a depreciation path against its major trading partners. By comparison, the REER continued its appreciation path, reflecting relatively high inflation until the most recent period. Correspondingly, Figure 2 shows that the consumer price inflation stayed at a relatively high level.

In recent years, the sharp increases in monetary aggregates associated with the current account surplus, fiscal expansion and rise in capital inflows. The BOM is concerned to see the credits and monetary aggregates rising rapidly. The issue of concern is that the rise in money supply will fuel inflation²⁵. This fear led the BOM to engage in sterilisation policies through the open market sale of central bank bill and increases in monetary policy rate. Increases in the reserve requirements were also used to reduce liquidity during the monetary aggregates surge²⁶. This sterilisation effort was particularly intensive since 2007.

In 2007, the BOM updated its regulations on CBB auction and statutory reserve requirement and announced one-week CBB rate as its policy rate. The policy rate shall apply to one-week CBB rate. The BOM has been conducting the one-week CBB auctions as fixed rate tender with preannounced full allotments, and for longer maturity CBB auctions as variable rate tender with

24. Calvo, G.A., Leiderman, L., Reinhart, M.C., (1996).

25. Fear of inflation often leads central banks to try to *sterilise* the increase in money supply through open market operations.

26. Theoretical model of sterilisation of capital inflows through the banking sectors (increase in reserve requirement) is postulated in Mark M. Spiegel (1995).

preannounced allotment volume. By making all those changes, the BOM is able to realise all the advantages in announcing the real and true interest rate to market and use its monetary policy instruments efficiently.

Due to the high growth of credits and monetary aggregates and the tendency of inflation to increase continuously, the BOM increased its monetary policy rate to 10.25% in September 2008, bringing the cumulative increase since July 2007 to 3.85 percentage points. Furthermore, the BOM raised its reserve requirements by 0.5 percentage points to 5.5% from January 2008. As a result, by August of 2008, the amounts of reserve requirements of commercial banks increased by 7.8–8.6 billion Tögrög. Excess reserve of interbank market stood at 81.1 billion Tögrög in June 2006. As a result of raising the monetary policy rate and the increases in reserve requirement, the excess reserve of the interbank market has decreased and reached its lowest level of 9.3 billion tugrug in August 2008. Also owing to these policy changes, the weighted average of central bank bill rate and interbank market rate has continuously increased to 14.41% in August 2008²⁷. As a result, the domestic currency loan rate increased to 21.8% and the foreign currency loan rate to 15.2% in August 2008.

As a result of the sterilisation policy, the growth of credits and money aggregates has started to decelerate since first quarter of 2008. The BOM expects this deceleration of credits and monetary aggregates to drive down inflation in the mid-term. But there were no signs of fiscal tightening as a reaction to the high credit growth (related with large capital inflows) and high inflation in past two years. Thus, the BOM aims to improve the conduct of monetary and fiscal policy (credible and consistent macroeconomic policy mix).

5. Capital Flows and Financial Stability

5.1 Capital Flows in Banking Sector

Capital flows in the economy and banking sector are shown in the Table 5. The total capital inflows, excluding currency and deposits in the banking sector, rose 6.65 times from US\$30 million in 2006 to US\$199.6 million in 2007. The increase was provided by the joint growth of short-term (less than one year) and long-term capital inflows. Namely, the short-term capital inflows in banking sector was increased three fold, as the Trade Development Bank (a large commercial bank in Mongolia) issued US\$ 75 million senior unsecured bond in

27. In most cases, the domestic short-term interest rates rose when sterilisation began, suggesting that this policy had an impact, at least in the short run.

the international capital market. Furthermore, the long-term capital inflows in the banking sector rose by US\$109.3 million, owing to the high differential interest rate and high demand for long-term foreign funds of commercial bank. Figure 16 also provides some information about the changing maturity of capital flows. The maturity profile of capital inflows in the banking sector has changed where 45.2% of the capital inflows are now short-term.

The rise of the capital outflows is similar with the increase in capital inflows in the banking sector. But the increase in the capital outflows in the banking sector has been fully accounted by the short-term capital outflows. In other words, the short-term capital outflows in the banking sector generally exceeded the long-term capital outflows where over 96% of the total capital outflows in December 2007 were in one year.

Table 5
Capital Flows in the Economy and Banking Sector by Maturity
(US\$ million)

	Capital inflows					
	Short-term		Long-term		Total	
	Total	To banks*	Total	To banks*	Total	To banks*
2004	35.1	1.0	456.6	16.9	491.7	17.9
2005	56.7	12.0	308.9	1.0	365.6	13.0
2006	31.3	30.0	505.8	0.0	537.1	30.0
2007	139.0	90.3	727.1	109.3	866.1	199.6
	Capital outflows					
	Short-term		Long-term		Total	
	Total	To banks*	Total	To banks*	Total	To banks*
2004	61.6	0.9	450.1	5.8	511.7	6.7
2005	131.7	9.1	190.5	0.0	322.2	9.1
2006	33.8	14.6	387.0	0.0	420.8	14.6
2007	322.1	77.4	367.8	2.9	689.9	80.3

Source: The Bank of Mongolia Balance of Payment. * denotes capital flows excluding currency and deposits in the banking sector²⁸.

28. In the Mongolian case, items of currency and deposit in balance of payment statistics are not classified.

Figure 16 also indicates that the capital flows of the economy are concentrated in the monetary authority and general government rather than the banking sector and non-bank private sector. But capital inflows to the banking sector constituted 23% of the total capital inflows in 2007.

The capital inflows in the banking sector are expected to rise in the immediate future, since commercial banks are starting to issue their own bond in the international capital market and financial investment is increasing enormously in the commercial banks.

5.2 Impact of Capital Flows on Financial Stability

Although large increases in financial flows can be handled by the financial system, flows of significant magnitude may risk the safety of the banking system. In addition, the real exchange rate appreciation that often accompany these capital inflows can lead to undesirable resource reallocation, particularly if the reallocation of resources motivated by the capital inflow surge is likely to be temporary. Financial development is important for financial intermediation and the efficient allocation of capital. It is clearly a crucial element to the overall economic development of emerging capital markets.

The Mongolian financial system is developing and performing well, in line with the economy as a whole, but faces a number of challenges. There are signs that the economy is overheating and the country's dependence on a relatively narrow range of commodity exports and the rapid credit growth are sources of risk. The y-o-y credit growth has been high, annual average growth is 58.6% in the last six years (Figure 4). The rapid credit growth fueled by the capital inflows²⁹ has also given rise to potential risks to financial sector stability. Some deterioration in the lending standards has been observed as banks compete for market shares³⁰. The Granger causality test indicates that the faster credit growth leads to higher non-performing loans³¹ after six to nine months. Furthermore, the negative real interest rates due to relatively high inflation, which, in turn, contribute to the real estate boom and rapid growth, have caused the risks to financial stability.

29. Also the rapid credit growth thus seems to reflect to a large extent financial sector deepening.

30. Large inflows can lead to unsound credit allocation.

31. An increase in loan growth is likely to lead to higher loan losses only if the source of the faster credit growth is a shift in the supply of bank credit.

The price of securities has risen rapidly since the first quarter of 2007 in tandem with the increase in market capitalisation of the local securities market. The price of securities and the market capitalisation increased by 3.7 times and 4.4 times, respectively, between the first quarter of 2007 and second quarter of 2008. A similar surge in housing prices saw a 2.8-fold increase between the fourth quarter of 2005 and second quarter of 2008, due to the growth of mortgage loan and prices of raw construction material. In other words, the increases in securities and housing prices have been fueled by capital inflows and rapid credit creation.

The stress tests undertaken by the FSAP team of the IMF and the World Bank (September 2008) indicate that the surge in capital inflows³² would decrease the aggregate capital adequacy ratio (CAR) by 2.7 percentage points from the baseline CAR (15.2%). Also, the hypothesised substantial increase in the NPL ratio by 10 percentage points would take the aggregate capital adequacy ratio to 9.8%. This indicator is lower than the baseline CAR by 5.4 percentage points.

Table 6
Selected Financial Soundness Indicators
(in percent)

	2003	2004	2005	2006	2007
Capital Adequacy Ratio (CAR)	20.4	20.0	18.2	18.1	14.0
Return on Assets	3.1	2.5	2.2	2.7	2.5
Non-Performing Loan Ratio	4.8	6.4	5.8	4.9	3.3

Source: The Bank of Mongolia

As shown in Table 6, the Mongolian banking sector remained resilient in the recent years, with positive developments recorded in all key financial soundness indicators. Due to increased investments and activity in the banking sector and instruments, the non-performing loans are continuing to trend downwards and profitability is improving.

32. Under this scenario, it was assumed that substantial trade and capital inflows result in an appreciation of the Tögrög by 20%, and intensified inflationary pressures, leading to a moderate slowdown in the performance of all tradable and non-tradable sectors. Interest rates were assumed to remain at the current levels.

5.3 Central Bank Policy Reactions Related to Capital Flows and Financial Stability

The financial sector in Mongolia consists mainly of banks, which hold about 95% of assets in the financial sector. The BOM supervises banks to ensure the stability of the financial sector, which is one of its main goals stated in the Central Banking Law, within the framework of the related laws and regulations³³. As the role of the banking sector in the economy increases, it is vital to make the supervisory framework more prudent and banks need to manage their risks efficiently to improve corporate governance, and to adequately define their strategic aims.

In recent years, the BOM subscribes to such strategic aims as improving the quality and scope of financial intermediation, ensuring the stability of the financial sector, preventing financial crises, enhancing the confidence of investors and depositors in the banking sector, creating a favorable environment for banks, protecting the interests of depositors and restraining illegal activities through banks or other financial institutions. All these aims are stated in the “Short-term Strategy of Reform and Development of the Banking Sector”. As a result of this policy implemented by the BOM to enhance stability and support the growth of financial sector, the confidence of customers and depositors in the banking sector has improved. The result of which led to an expansion of the scope of banks’ operations and improvement in the profitability of banks.

The BOM has been refining its supervision policy and methods, such as conducting assessments of the financial sector, improving corporate governance and enhancing prudential regulation, as well as defining future direction and preventing financial crises.

The current system of supervision of banks is carried out in accordance with the common and accepted structure of international banking and financial organisations, and the BOM has made adjustments in the sophistication of the system. As the activities of the banking and financial organisations widen to embrace the latest methods and technologies, as has happened in recent years, banks face more risks. Therefore, to conduct supervision efficiently, the direction of supervision based on regulations and rules was shifted to a risk-based analysis. Thus, the supervision operations are focused on evaluating and measuring risk, and encouraging customers’ oversight of banks. As of now, the BOM has been harmonising its rules and regulations with international standards, especially those

33. Improvements in prudential supervision and regulation have helped enhance the capacity to absorb the inflows.

of the Basel Committee. Amendments to the “Prudential Ratios Regulation of Banks” was approved on October 2007, because of the Basel Committee’s new capital framework and mortgage market, which has been adopted in Mongolia. Changes to the regulation include making market risk requirements more compliant with international standards, making calculation of capital adequacy more adequate, and lowering risk-weights of mortgage-backed securities issued by the Mongolian Mortgage Corporation to support the development of a secondary mortgage market.

At the request of the BOM, the IMF and the World Bank performed a “Financial Sector Assessment Programme” in Mongolia. This programme evaluates the current situation of the financial sector and the regulation framework, and delivers recommendations for future work based on the “Core Principles for Effective Banking Supervision” issued by the Basel Committee. According to the report of the “Financial Sector Assessment Programme,” the performance of the Mongolian financial sector is relatively good compared to those countries which have the closest rate of social and economic development to Mongolia.

A “Financial Stability Council” was established consisting of the Governor of the BOM, the Minister of Finance, and the Chairman of the Financial Regulatory Commission. The council shall monitor the soundness and stability of the financial system, informing the public of a potential financial crisis and, in pertinent cases, work with the management of the financial institutions, provide financial aid and oversee effective cooperation between them. In addition, the “Financial Stability Report” had been constantly published since the third quarter of 2008.

6. Conclusion

Capital inflows and outflows have increased significantly over the past five years, starting from 2003. Much of the capital inflows have taken the form of FDI – especially in mining and construction activities, which has created GDP growth in the recent years. A common feature of changes in the composition of the capital inflows has been an increased share of FDI and private debt, and a decrease in the public debt.

The results of empirical analysis indicate that push and pull factors, including improved macroeconomic performance with high economic growth, high interest rate differentials, current account surplus, World real GDP growth, have led to increases of capital inflows in the recent years. Whereas the high capital outflows in the recent years have mostly been determined by internal factors, which are

high domestic economic growth, domestic real interest rate and current account to GDP ratio.

The large capital inflows in the recent years have contributed in promoting economic growth and improving productivity and export performance, but the inflows are starting to create some adverse consequences, including rapid monetary expansion, accelerating inflation, appreciation of REER and a loss of competitiveness and faster growth in securities and housing prices. The results are shown by the some technical analysis. The rapid inflows also posed risks to financial stability in terms of rapid growth of credit (credit risk), negative real interest rates related with high inflation (market and liquidity risks), and appreciation of domestic currency (currency risk). The results show that if the large capital inflows continue, they may create potential risk of economic overheating and financial instability. In the near future, capital inflows are expected to increase massively due in light of the large mining projects and the government's intention to issue sovereign bond in the international financial market. Thus, the policy makers are concerned how to sterilise the expected impact of the surge in capital inflows. Unfortunately, the management of capital flows is not an easy exercise and the policy maker's efforts should focus on reducing the risks and adverse consequences associated with the inflows, as opposed to affecting the flows and their composition.

The following policies are recommended to avoid the adverse impact of surge in capital inflows:

- Fiscal austerity, tightened monetary policy, enhanced bank supervision and institutional improvements are the best responses to a capital-inflow episode.
- The BOM should continue tightening monetary policy (sterilisation policy) because tightened monetary policy reduces economic overheating, excess money and inflationary pressure. Also to avoid excess money and inflationary pressure related to large capital inflows, the BOM need to engage in sterilisation policies through the open market sale of CBB, monetary policy rate, reserve requirement and capital requirement, and foreign exchange intervention. But the policy makers should consider that while sterilisation may provide some relief, it may also be quite costly to the central bank.
- The BOM may need to determine and formulate its foreign exchange rate intervention strategies. Although increases in capital inflows will require a careful mix of interest rate and intervention policies to avoid disorderly exchange rate adjustments, while preserving the credible monetary policy.

Furthermore, the exchange rates of Tögrög need to be protected from a speculative attack depleting foreign exchange reserves.

- The Ministry of Finance should implement a tighter fiscal policy. Tightening the fiscal stance helps to reduce the risk of economic overheating and inflation pressure. Fiscal policy and elimination of excessive fiscal incentives may be the options for aggregate demand management.
- Deepening the financial markets and strengthening the financial system supervision and regulation, where needed, would be the most effective ways to deal with the risks associated with capital inflows. The rapid credit growth³⁴ and the rollover of loans could make it difficult for the BOM to spot emerging problems in the banking sector. Thus, the authorities should continue to upgrade the supervisory framework by improving the supervision of liquidity and operational risks of banks, and continue to implement structural policies for a sound financial sector, including prudential regulation and supervision and improved risk management.
- Institutional improvements have helped strengthen the policy responses to capital inflows. Other countries' experiences show that instead of capital controls, countries have been able to combine macroeconomic policy tools, with efforts to develop the financial markets, closer monitoring of capital flows, and adoption of various debt management measures and some indirect intervention schemes. Thus, the authorities should aim to improve the conduct of macroeconomic policies and policy tools.
- Promoting the development of the stock market, improving the financial structure to cater for safe accommodation of capital flows and managing risk related to them. A well developed and deeper stock market could promote financial stability and help reduce the economy's susceptibility to volatile capital flows.
- The policy makers should consider capital controls on short-term capital inflows, if the capital inflows are mostly of the "hot money" type. While capital controls may work, at least in the very short run, it needs to be considered that the introduction of restrictions to capital mobility may have undesirable long-run effects.

34. Beware of rapid credit growth during the inflow phase of the cycle. When capital flows out, these loans may have to be repaid at short notice, leading to bankruptcies in the private non-financial sector and, possibly, bank failures.

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APPENDIX

Unit Root Tests: ADF test

Variable	Order of variable	Optimal lag length	ADF test
CIN_R_L	<i>Levels</i>	0	-4.98 [c,t]***
	<i>1st diff</i>	0	-6.95 ***
COUT_R_L	<i>Levels</i>	0	-4.64[c,t]***
	<i>1st diff</i>	0	-8.85***
GDP_G	<i>Levels</i>	1	-5.89[c,t]***
	<i>1st diff</i>	3	-7.42***
R	<i>Levels</i>	3	-1.74*
	<i>1st diff</i>	2	-1.99**
CA_GDP	<i>Levels</i>	4	-2.22
	<i>1st diff</i>	3	-1.97**
W_GDP_G	<i>Levels</i>	0	-1.41
	<i>1st diff</i>	0	-5.74***
R_W	<i>Levels</i>	0	-1.85*
	<i>1st diff</i>	0	-5.76***

Note: c or t the test. *, **, *** denote rejection of null hypothesis at the 10%, 5%, and 1 % level, respectively.

Chapter 6

CAPITAL FLOWS AND THEIR IMPLICATIONS FOR CENTRAL BANK POLICIES IN MYANMAR

by
Thida Myo Aung¹

1. Introduction

Capital flows have become increasingly important to the developing nations for their economic growth. Governments of the developing nations are striving to promote capital flows, especially foreign direct investment (FDI) from the rest of the world. This is because not only does FDI involve transfers of tangible and intangible assets, but it also confers many spill-over benefits to the host countries, such as employment, development of human resources, transfer of superior technology, and so forth. FDI, therefore, is invaluable for its contribution to economic development and enhancement of the standard of living of the host country.

Recognising capital flows as an importance source of external financing for a long-term economic growth, the governments of many developing nations have been taking measures to put in place an institutional framework as well as provide a stable economic and financial environment that is conducive for investment to attract FDI inflows. The measures include were privatisation schemes, trade openness, attractive investment incentives, and so forth. Myanmar has been strategising to promote FDI by structuring incentives to attract foreign investors and entrepreneurs.

2. General Framework and Major Capital Flows Management Policies

2.1 Current Account and Capital Account Liberalisation

It is recognised that liberalisation of the various sectors, such as trade, investment, and so forth, can facilitate the implementation of a country's development objectives. Following the adoption of a market-oriented economic system in late 1988, Myanmar has been carrying out various institutional and policy reforms, including financial liberalisation. The Myanmar government

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permitted the liberalisation of both current and capital accounts to ease the inflow of financial resources.

The export and import of goods and services, investments, debt-service payments, and private or public net remittances and transfers are classified under the current account. Whereas private foreign direct investment (mostly by multinational corporations), foreign loans by private international banks, and loans and grants from foreign governments (as in the form of foreign aid) and multilateral agencies, such as the IMF and the World Bank, are classified under the capital account (Todaro & Smith, 2009, p.668, 669).

2.2 Policies Implemented to Manage Capital Flow

In late 1988, Myanmar converted its economic system from a centrally planned economy to a market-oriented economy. The government subsequently promulgated the Union of Myanmar Foreign Investment Law (FIL) on 30th November, 1988. The policy objectives of this law are as follows:

- (1) Promotion and expansion of exports;
- (2) Exploitation of natural resources requiring heavy investment;
- (3) Acquisition of high technology;
- (4) Supporting and assisting capital-intensive production and services;
- (5) Creation of employment opportunities;
- (6) Development of energy conserving activities; and
- (7) Promotion of regional development.

To achieve the above objectives, the FIL provides for the following incentives:

- (1) Exemption from income tax for up to three years;
- (2) A reduction of up to 50% on income tax due on the investor's produce exported from Myanmar;
- (3) Exemption from customs duty on capital goods imported as part of the investment operations;
- (4) Guarantee against nationalisation;
- (5) Right to repatriate profits and investment capital; and
- (6) Exemption from customs duty on capital goods imported as part of the investment operations.

A foreign investor is allowed to invest in Myanmar with 100% foreign capital or a joint with any Myanmar partner from private sector or cooperative sector or state sector. He has the right to enjoy appropriate economic benefits as well as tax incentives. A foreign investor is, however, required to contribute a minimum foreign equity of 35% of the total. The minimum amount of foreign capital is US\$ 500,000 for investment in manufacturing and US\$ 300,000 in the services sector. Land lease is also granted to the investors up to 30 years, and the lease can be renewable after 30 years. Through the reduction of red-tape and simplification of procedures in the registration of companies, production, trade, finance, etc., the business environment has been significantly improved. The Foreign Direct Investment Law offers a slew of incentives to the foreign investor and it has managed to attract much foreign investment to Myanmar.

On the tax front, reforms have been implemented. Some of the major tax reform measures include broadening of the tax base, adjustment or relaxation of tax rates, granting of reasonable tax exemptions and relief, and simplification of tax procedures. A flat corporate tax of 30% per annum is imposed on the income of companies set up in Myanmar. Myanmar has signed bilateral tax treaties with ASEAN countries and the U.K. Such tax reforms give important support to the current account liberalisation drive. Myanmar's commitment to the AFTA also helps promote liberalisation of the current account. Tariff barriers and non-tariff barriers have been eliminated as scheduled in accordance with the ASEAN agenda of Capital Account Liberalisation.

3. Trends in Macroeconomic Indicators and Capital Flows

The growth rate of the gross domestic product (GDP) shrank from -1.1% in 1986/87 to -11.4% in 1988/89. The deterioration of the economy affected political stability, which led to a change of government and a change of economic system. Myanmar switched from a socialist, centrally planned economic system to a market-oriented one in late 1988. The SLORC (State Law and Order Restoration Council) initiated economic reforms, the main objectives of which are to:

- Adopt a market-oriented system for the allocation of resources and the distribution of goods and services;
- Encourage private investment and entrepreneurial activity at home; and
- Open up the economy to foreign direct investment and to promote export.

The four economic objectives of the SLORC/SPDC, which were boldly proclaimed on the front page of *The New Light of Myanmar* in 1996, are as follows:

- Development of agriculture as the base as well as all-round development of other sectors of the economy;
- Proper evolution of the market-oriented economic systems;
- Development of the economy inviting participation in terms of technical know-how and investments from sources inside the country and abroad; and
- Initiative to shape the national economy must be kept under the control of the state and the national peoples.

The major economic reforms directly affecting the macroeconomy and the external sector may be summarised as follows:

- Introduction of Foreign Investment Law: to enhance technical know-how and investments in all sectors, except those reserved for the state;
- Fiscal reforms: taxation reforms to restructure the tax and tariff systems and to streamline tax collection and customs procedures to be in line with the market-oriented system and to tackle the problem of deficits; and stringent scrutiny of government expenditures;
- Financial sector reforms: building of legal framework; restructuring the financial sector; and allowing private sector participation in banking and insurance;
- Legal system reforms: The combination of Common Law and Civil Law Legal Systems, which Myanmar already had and kept intact during the past twenty-five years before 1988, were reactivated with some new legal injection and revocation of the Law of Establishment of Socialist Economic System;
- Tourism sector reforms: allowing private sector participation in hotels and tourism business;
- Trade sector reforms: liberalisation of domestic and foreign trade, allowing private sector participation in the business previously under the monopoly of SEEs; resumption of Myanmar's Chamber of Commerce and Industry, regularisation of border trade; and
- Reforms of frontier areas administration: pacification and promotion of development of minority races in frontier areas. (Myat Thein, 2004, pp.124 and 125.)

Basically, the purchase of the stocks (equity), bonds, certificates of deposits, and commercial paper are related to portfolio investment. Capital flow as portfolio

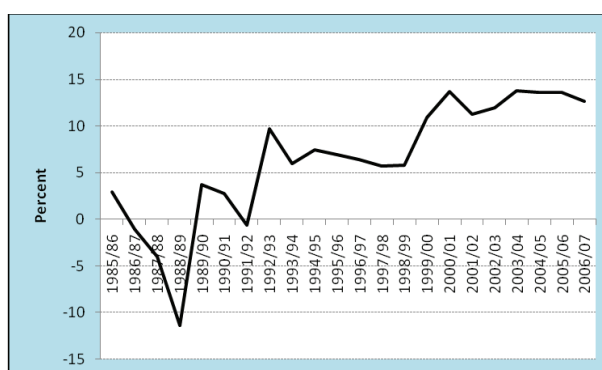
investment relies on the rate of return on those investments. (Todaro & Smith, 2009, p.725.) When domestic bonds or foreign bonds are invested, they depend on the difference between the domestic interest rate and the foreign interest rate. (Blanchard, 2003, p.389.)

Scholars have conducted a number of empirical studies regarding the variables which determine the influx of capital into recipient countries from abroad. The GDP growth rate, inflation, saving and lending interest rates, exchange rates, stock price index, current account balance, foreign reserves and overall BOP are considered the key macroeconomic indicators in determining the capital flows into nations.

3.1 Gross Domestic Product

As a result of the above-mentioned reform measures, Myanmar's GDP improved between 1989 and 2007, except negative growth in 1991/92. The government emphasised on stabilisation and national consolidation and implemented stabilisation programmes to revitalise the economy during the three-year period from 1989/90 to 1991/92. The economy began to turn around and accounted for a growth rate of 5.9% during the three-year period.

Figure 1
Growth Rate of Gross Domestic Product



Source: Statistical Yearbook, Central Statistical Organisation, Ministry of National Planning and Economic Development

With stability restored, the Short Term Four-Year Plan (1992/93 to 1995/96) was launched with a target growth rate of 5.1% annually. The government successfully carried out the Short Term Four-Year Plan achieving an average annual GDP growth rate of 7.5%. Per capita income also increased to K 13,515 from K 4,496.

The above Plan was followed by the Second Short Term Five-Year Plan (1996/97 to 2000/2001). It was launched with a target GDP growth rate of 6% annually and achieved GDP growth on average of 8.5% annually. In addition, per capita income rose sharply from K 13,515 in 1995/96 to K 50,927 in 2000/01. It can be said that the economy could expand 1.5 times. During that period, the average annual growth rate of agriculture sector, industry sector and service sector was 7.3%, 11.4% and 8.5%, respectively.

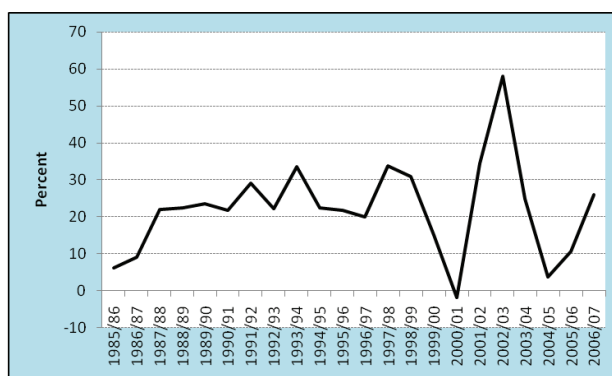
After accomplishing the Second Short Term Five-Year Plan, the Third Short Term Five-Year Plan (2001/02 to 2005/06) was implemented with the target average annual growth rate of 11.3%. Because of the favourable performance of the economy during the plan period, the average annual growth rate of GDP was 12.8%. The economy increased 1.83 times, and per capita income also reached to K 221,217 in 2005/06. Similarly, agriculture sector increased to 9.8% while industry sector rose to 23.5%.

Overall, the economic performance of Myanmar can be said to have improved to some extent during the period of 1989 and 2006/07.

3.2 Inflation

According to the official statistics, the inflation rate continuously fluctuated during the period from 1985/86 to 2006/07, generally hovering between 20% to 30% per annum during this period. In 2002/03, the inflation rate exceeded 50%. It gradually fell after 2002/03, and declined to 3.76% in 2004/05. Inflation reared up again, and increased to 26.07% in 2006/07.

Figure 2
Inflation Rate



Source: Statistical Yearbook, Central Statistical Organisation, Ministry of National Planning and Economic Development

Myanmar faced budgetary deficits and increases in money supply. In addition, the over-bidding of agricultural export product, over-building of certain infrastructural facilities, and depreciation of the kyat in the parallel foreign exchange market were also contributory factors to the inflationary process.

The depreciation of the kyat caused the prices of imported intermediate goods used as inputs in the production process to increase. On the one hand, the large budget deficits financed by money creation contributed to “demand-pull” inflation, which in turn fuelled rising prices. On the other hand, the “cost-push” factors, such as the price hike of electricity, the rising cost of transportation and the decline in the production of some essential commodities, have raised the cost of doing business, and this was reflected in price increases.

Innumerable forms of local taxes, municipal taxes, wheel taxes, toll charges, and so forth, escalated transportation cost all over the country. The rising cost of transportation and the electricity price increase from 2.50 kyat/kwh to 25 kyat/ kwh in March 1999 caused the prices of essential goods to rise.

Apart from this, the prices of some food items increased due to excess demand as their production lag far behind the population growth in recent years. For instance, the production of beef between 1995/96 and 1998/99 was lower the level needed to sustain the population growth rate, which is 2%.

Inflation reduces the purchasing power of fixed-income earners, which in turn, lead to cost-push inflation. This is because the wage earners who are affected, generally, are striving to earn income from other sources in order to spend more.

3.3 Exchange Rate

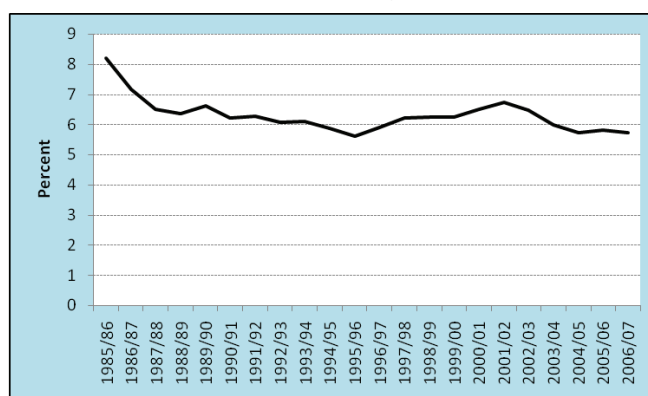
Myanmar is a country using a fixed exchange rate system. Under this foreign exchange regime, Myanmar’s currency unit the “kyat” is pegged to special drawing rights (SDRs) at 8.5087 kyat = SDR 1. After changing a market-oriented policy, Myanmar has experienced many transformations. In actuality, it can be described that Myanmar has a two-tiered or even a multi-layered exchange rate system.

In February 1993, the government of Myanmar introduced foreign exchange certificates (FECs) to facilitate the convenience of foreigners visiting Myanmar. Under this scheme, both local and foreign entrepreneurs were conducting their

businesses based on the parallel exchange rates, which reflect the true market value of the kyat. Thirty foreign-exchange dealers and ten semi-government and private banks were permitted to engage in foreign exchange transactions, thus making the FECs popular.

Myat Thein (2004, pp.141and142) states that the government intends to gradually re-align the kyat value in line with the free market equilibrium rates as businesses conduct their transactions with FECs more and more. However, due to the depreciation of the kyat, the government revoked the licenses of seven foreign exchange dealers and nine banks. On the other hand, the lack of confidence in the local currency also affected people’s willingness to save or deposit money in the banks. The large difference in the two-tier exchange rate, i.e., the official versus unofficial rates, is a major obstacle to national saving.

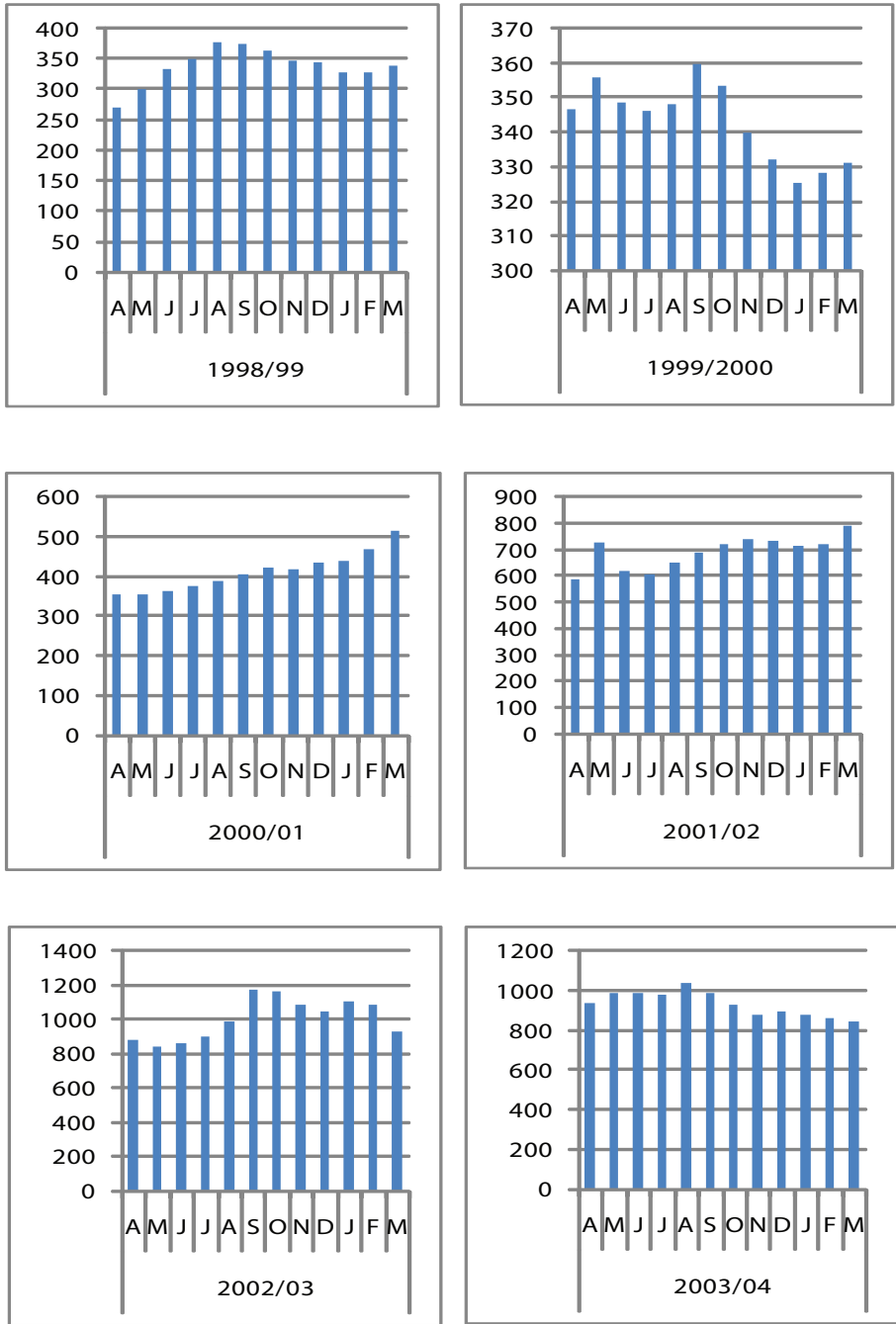
Figure 3
Official Exchange Rate

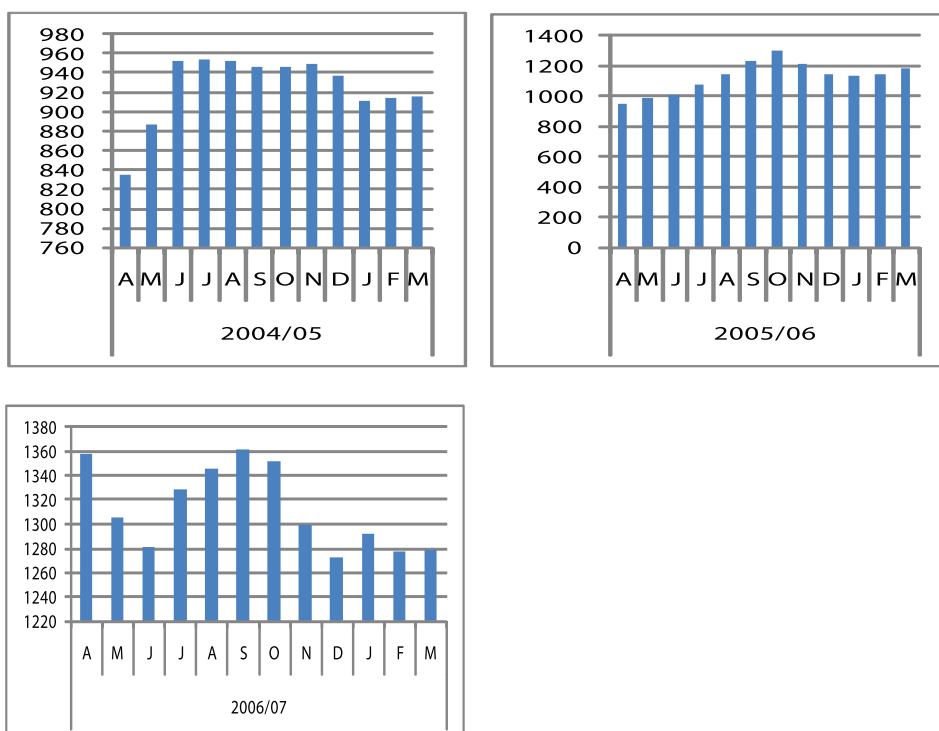


Source: Statistical Yearbook, Central Statistical Organisation, Ministry of National Planning and Economic Development

According to the available statistics, the exchange rate between the foreign exchange certificate and the Myanmar currency unit “kyat” during the period of 1998/99 and 2006/07 is shown in Figure 4. Looking at the exchange rate between the FEC and the kyat, the equivalent of 1 FEC was around 500 kyat during the period of 1998/99 and 2000/01. In the following years, the exchange rate was between 800 kyat/FEC and nearly 1400 kyat/FEC. It can be seen that the gap between the official rate and even the FEC rate was very large based on these data.

Figure 4
Changes in the Rate of Foreign Exchange Certificate (FEC)





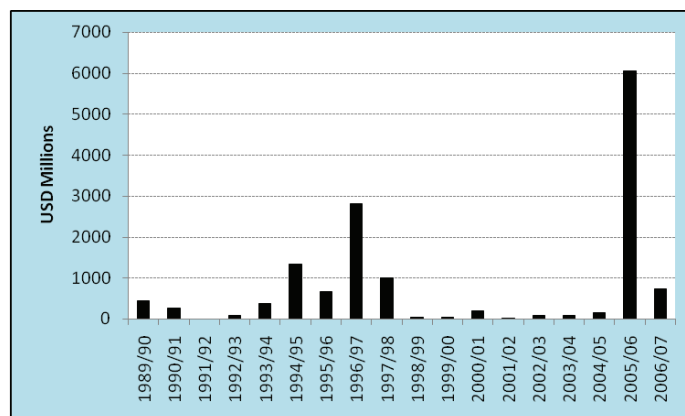
Source: Central Bank of Myanmar

3.4 Foreign Direct Investment

Figure 5 shows the pattern FDI inflows into the Myanmar for the period from its conversion to a market-oriented economy to 2006/07.

There was significant fluctuation in the inflows of direct foreign investment into Myanmar, as can be seen in Figure 5. The volume of FDI inflow into the country had dropped almost continuously after 1997 up to 2004/05. However, the volume of direct foreign investment inflows, increased sharply in 2005/06, totalling \$ 6065.675 million, because of an increase in investment in the power generation sector. In 2006/07, the inflow of foreign direct investment into country fell again, and accounted for \$752.7 million.

Figure 5
Pattern of the Inflow of FDI



Source: Statistical Yearbook, Central Statistical Organisation, Ministry of National Planning and Economic Development

Table 1
Inflow of Foreign Direct Investment by Sector (US \$ million)

Year	Agri	Fishery	Mining	O & G	Manu	Trans	H & T	RE D	IE	Const	Power	Others	Total
1989/90			54.1	298.045	15.842		81.5						449.487
1990/91		77.31	55.102	19.05	42.713		86.4						280.573
1991/92					5.893								5.893
1992/93	2.69	5.848	33.38	44.55	13.342	1	3.025						103.785
1993/94		7.604	20.87	19.5	17.752		311.458						377.184
1994/95		148.2	0.5	1039.53	76.7	1.3	86.062						1352.3
1995/96		13.07	155.779	14.8	21.292	118.922	79.19	251.45	12			1.666	668.166
1996/97	5.991	17.5	178.299	695.603	923.561	47.865	114.924	623.5	181.113	17.267		8.62	2814.25
1997/98	5.67	5.819	3.331	172.1	319.215	106.3	274.892	122.19				3.4	1012.92
1998/99		4.755	4.885		43.296		1.46						54.396
1999/00		3.261	16	5.25	18.139		15.5						58.15
2000/01	20		1.112	47.55	77.391	7.885	5.25	28		20.5		10	217.688
2001/02				3.25	15.752								19.002
2002/03		26.84	3.382	44	13.18								86.948
2003/04		2.6	1.45	54.3	2.82	30							91.17
2004/05			6	142.55	3.52		3.5	2.713					158.283
2005/06			0.7	34.975							6030		6065.68
2006/07				471.48							281.2		752.7

Source: Statistical Yearbook, Central Statistical Organisation, Ministry of National Planning and Economic Development

Note: Agri – Agriculture, O & G – Oil and Gas, Manu – Manufacturing, Trans – Transport, H & T – Hotel and Tourism, RE D – Real Estate Development, IE – Industrial Estate, Const – Construction

The distribution of FDI inflows by sector during the period of 1989/90 and 2006/07 is presented in Table 1. The power sector received the biggest share of FDI, and the oil and gas sector was the second largest recipient of FDI. The manufacturing sector was the third largest recipient of FDI. The hotel and tourism sector became important as it received the fourth largest amount of direct investment from abroad. The influx of foreign direct investment into the agricultural sector was very low compared to the other sectors. It can be seen from the statistics that the FDI did not flow into the sectors regularly and consistently. For instance, although the power sector is the largest recipient of FDI till now, the inflow of foreign direct investment into that sector started only in 2005/06.

As have been stated, the government has taken the necessary measures to attract foreign and local investors to do business in Myanmar. Nevertheless, some risks and issues remain in regard to the investment environment, notably, the economic sanctions imposed by some advanced countries; government budget deficit due to implementation of infrastructure development and reforms financed mainly from our resources; absence of international assistance for more than two decades; inflation and low investor confidence; the overvalued exchange rate; lack of access to credit and foreign exchange; restrictions affecting business in specific sectors; and incomplete infrastructure.

With regard to the macroeconomic environment, although Myanmar has achieved GDP growth, there is still room for improvement. The widening rate gap between the official and unofficial exchange rates and the existing exchange controls are impediments in creation of a sound and adequate payment system in attracting massive foreign capital flows. The situation calls for the unification of exchange rates and further liberalisation of the foreign exchange market. Delay in exchange rate reform is an obstacle in inducing FDI inflows. The development of a well-functioning financial and capital market is a key to liberalisation and growth of the economy.

4. Capital Flows, Monetary Policy and Financial Stability

Portfolio flows are potentially beneficial in raising capital for the local firms. In attracting portfolio flows into the host countries, the local stock and bond markets need to be developed. Additionally, the recipient countries need to step up the liberalisation of the domestic financial markets and open up these markets to foreign investors.

Following the conversion of Myanmar to a market-oriented economy in the late 1988, the government of Myanmar promulgated the following laws to liberalise the financial system:

- (1) The Foreign Investment Law, 1988;
- (2) The Central Bank of Myanmar Law, 1990;
- (3) The Financial Institutions of Myanmar Law, 1990;
- (4) The Myanmar Agricultural and Rural Development Bank Law, 1990;
- (5) The New Savings Bank Law, 1993; and
- (6) The Myanmar Insurance Law, 1993.

The financial sector consists of the banking sector and non-bank sector. The banking sector includes the following:

- The Central Bank of Myanmar
- State-owned Banks, namely:
 - (a) Myanma Foreign Trade Bank
 - (b) Myanma Agricultural and Development Bank
 - (c) Myanma Investment and Commercial Bank
 - (d) Myanma Economic Bank (with 350 branches)
- 20 Domestic private banks (with 219 branches)
- 28 Representative offices of foreign banks
- Myanmar Securities Exchange Centre Co., Ltd.

The non-bank sector includes:

- Myanma Insurance Corporation
- Myanma Small Loans Enterprise
- Japanese Insurance Representative Offices
- Myanmar Oriental Leasing

Under the Central Bank of Myanmar Law, 1990, the Central Bank of Myanmar is empowered to carry out these functions:

- Advising the government on economic development policies and plans and the State Budget;
- Formulating and implementing monetary policy;
- Regulating the financial system;
- Implementing exchange rate policy and controlling foreign exchange transactions; and
- Managing the international reserves.

While Myanmar receives FDI from abroad, it does not receive any portfolio investment inflow. This is because the capital market is underdeveloped in Myanmar, but its development is in progress. Portfolio flows, theoretically, depends on the development of local stock and bond markets.

The function of a capital market is for transacting of purchase and sale of long-term loanable funds in the form of bonds, stock, long-term securities, mortgages, treasury notes, obligations of state and local governments, corporate bonds and corporate stock. The development of the capital market, therefore, is essential for portfolio inflows.

After adopting a market oriented economic system in late 1988, the government of Myanmar undertook various fiscal and monetary reform measures. In addition, the Central Bank of Myanmar and the Sung Hung Kai Fund Management Ltd., Hong Kong, jointly conducted a symposium in Yangon in 1990 on the development of a capital market, and mooted these justifications for the establishment of a stock market:

- (1) The increasing numbers of limited companies, the establishment of joint-ventures between the government and the private sector, and the growing amount of tradable shares favored the creation of an efficient stock market.
- (2) Myanmar has a potential source of investment funds for the functioning of a stock market because it was estimated that a large part of savings was in the hands of individuals.
- (3) The Myanmar Company Act, which was enacted on 1st April 1914, provides an adequate legal framework for the establishment and operation of business entities in a free enterprise economy. The Act includes the definition of the meaning and nature of shares, provision for shares which are negotiable and tradable, and recognition of the rights of shareholders.

Under the Myanmar Companies Act, the establishment of two types of companies is provided for, namely, public and private companies.

Based on these justifications, the symposium recommended the formation of a high-level steering committee to draft the Securities and Exchange Law, and rules and regulations for the establishment of a stock market.

To facilitate the development of a capital market, the Daiwa Institute of Research Ltd., Japan, and the Myanmar Economic Bank, a state-owned bank with the largest national banking network, established the Myanmar Securities Exchange Centre Co., Ltd. (MSEC) in June, 1996. The MSEC was set up as a joint-venture on 50-50 basis, with an authorised capital of US\$ 17 million, and a paid-up capital of US\$ 3.4 million.

In Myanmar, the MSEC is the first and only securities company, which is authorised by the government, to create a securities market and establish a stock exchange in Yangon. The aim of the MSEC is to help promote the national economy by mobilising long-term funds for the expansion and modernisation of businesses, launching of new business start-ups, support of the privatisation of state-owned enterprises, and provision of new methods of savings to the general public in developing the economy.

The following are the functions of the MSEC:

- (1) Assisting companies going public;
- (2) Brokering, dealing, and underwriting securities;
- (3) Making research on the national economy and companies;
- (4) Publishing investment information;
- (5) Providing investment consultancy services;
- (6) Managing venture capital funds and acting as an agent for joint ventures;
and
- (7) Selling to investors Myanmar Treasury Bonds as an agent of the Central Bank of Myanmar, and shares of Myanmar companies as an agent of those companies. (Yin Yin Mya, 2000, p.62.)

A sound regulatory framework with the appropriate laws, rules and regulations should be set up in order to create the securities market in Myanmar and protect market participants in the securities market. The MSEC was mainly responsible for drafting the proposed laws regulating the securities and exchange market because it was the first and only securities company in Myanmar. In early 1995, the Daiwa Institute of Research, Ltd. (DIR) presented a draft of the laws to the Ministry of National Planning and Economic Development, and extensive discussions were held between with the senior officers of the Ministry of National Planning and Economic Development, the Ministry of Finance and Revenue and the DIR. After three and half years of discussions with senior officers of the Central Bank, the MEB, the MESC and the Attorney General's office, the final completed draft was submitted to the Cabinet.

Myanmar encountered many major problems in the establishment of a capital market. Yin Yin Mya (2000, p.65) highlighted some of them:

- Lack of public knowledge concerning the securities and stock market.
- Reluctance of business owners to widen their ownership.
- Inadequate infrastructure, including electricity supply, telecommunications system, electronic data processing system, and so forth.
- Insufficient regulatory and incentive aspects of the stock exchange.
- Lack of skilful intermediaries, such as brokers and fund managers.
- Shortage of technical and professional skills, such as qualified accounting professionals, auditing firms and financial analysts.
- Insufficient supply of stocks and low market capitalisation.
- Inflation.
- Interest rates which do not provide adequately for the risk in lending
- Exchange control and unrealistic official exchange rate.
- Imposition high tax and levy of stamp duty on shares trading.

The financial sector is in need of more reforms. To tackle the said issues, the government should take measures to combat inflation and maintain macroeconomic stability. Appropriate policies to promote productivity and production should be implemented to reduce inflation. The measures that can be adopted include the employment of better technology in industries, promotion of investment in the economy, reduction of tax rates, provision of easier access to markets, transparent business procedures, and availability of market information to the economic players without discrimination. Moreover, a contractionary monetary policy will help in slowing down inflation.

As overvalued exchange rate makes domestic products less competitive and reduces exports, it would cause balance of payment problems, and this will not help the economy. The exchange rate policy, therefore, should be flexible according to the domestic and international conditions.

5. Conclusion

This paper focuses on the capital flows and the implications for Central Bank policies. According to this study, it is found that Myanmar receives inflows of foreign direct investment from abroad following its transformation into a market-oriented economy in late 1988. However, it does not receive any inflows of portfolio investment.

Regarding the policy implications, the foreign exchange control measures of the Central Bank of Myanmar have been used as the major instrument for capital inflow management policies. Import controls were also used, especially in the real estate sector. There is not much to say about the policies regarding the management of capital outflows, since Myanmar does not have an organised capital market in the country. However, those who keep foreign currency accounts with Myanmar banks must get prior approval from the Central Bank of Myanmar when the deposit money is to be taken out.

Myanmar has not yet developed its financial system that is strong enough to withstand the instability that would result from the liberalisation of the capital account. It is necessary for the country to gradually build up and strengthen its financial system with sound macroeconomic policies in order for Myanmar to withstand external shocks. We have so far not experienced any large capital outflows or inflows because of our strict exchange controls. If we should dismantle our exchange controls, short-term capital flows are bound to create instability in the economy. We will need to deploy the appropriate monetary, fiscal and exchange-rate policies to achieve macroeconomic stability, if Myanmar is to benefit from the liberalisation of its capital account.

The fact remains, Myanmar welcomes foreign investment for its economic development and has been continuing its sincere cooperation with the regional and international community in pursuit of this end.

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Chapter 7

CAPITAL FLOWS AND THEIR IMPLICATIONS FOR CENTRAL BANK POLICIES IN NEPAL

by
Bibhu Prasad Aryal¹

1. Background

Nepal started its development process only after the new political regime of 1950. The country initiated measures to develop its economy with the introduction of its first five-year plan in 1956. This was followed by a number of planned development efforts. The country today is in its eleventh plan (The Three-Year Interim Development Plan of 2007/08-2009/10).

Nepal has been experiencing a relatively low GDP growth of about 3% per annum during the period of 1960-2000. While the GDP growth averaged about 2.5% per annum during 1960s and 1970s, it increased to about 5 % per annum during the 1980s and 1990s. From the macroeconomic perspective, one can presume that Nepalese economy has neither experienced a recession nor a boom during the last four decades. The GDP growth in the year 2000 and onwards has exhibited an upward slopping trend.

The Nepalese economic growth was expected to rebound in the fiscal year 2007/08. A growth of 5.6% at basic price is estimated for this fiscal year. This has mainly come from the agricultural sector that accounts for 32% of the GDP.

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Table 1
Annual Percentage Change in GDP

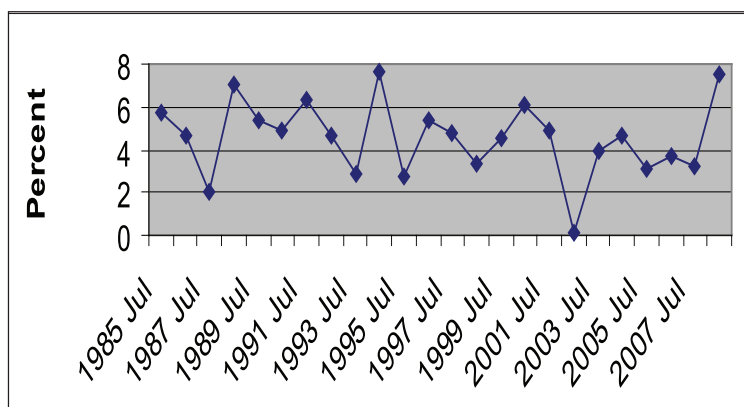
	1980s	1990s	1999/2000	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08
Agriculture and Forestry	2.4	3.6	4.9	5.5	3.01	3.32	4.72	3.45	1.67	0.94	5.65
Non-agriculture	4.9	6.3	6.8	4.5	-0.99	3.52	5.38	2.69	5.95	4.10	5.57
GDP at Basic Prices (Before FISIM) ¹	4.1	4.7	6.0	4.8	0.2	3.8	4.4	2.9	4.1	2.6	5.6

Source: Central Bureau of Statistics, Nepal.

1.1 Macroeconomic Situation

The highest GDP growth of 7.6 % was experienced in 1994 whereas the rate stood at 0.2 % in FY 2001/02. In FY 2007/08, the GDP growth rate was at 4.7 % in producer price and 5.6% in basic price. A highest level of growth of the agricultural sector contributed to this level of economic growth.

Figure 1
GDP Growth Rate in Producer Price

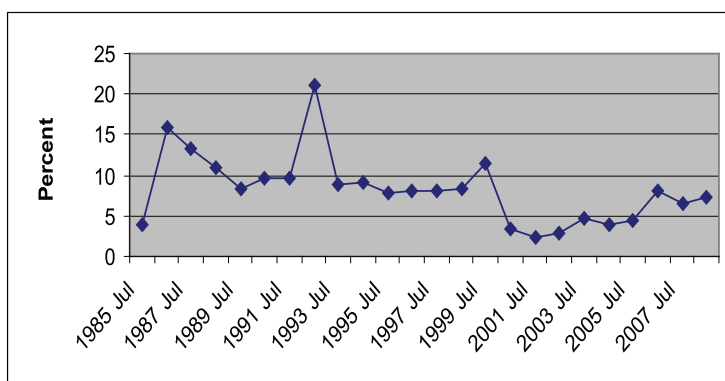


Nepal experienced a galloping rate of inflation at 21.1% in FY 1991/92. The lowest inflation of 2.4% was experienced in FY 2000/01. In the FY 2007/08, the annual average Consumer Price Index (CPI) was 7.5% whereas the annual

2. FISIM stands for Financial Intermediaries Service Indirectly Measured.

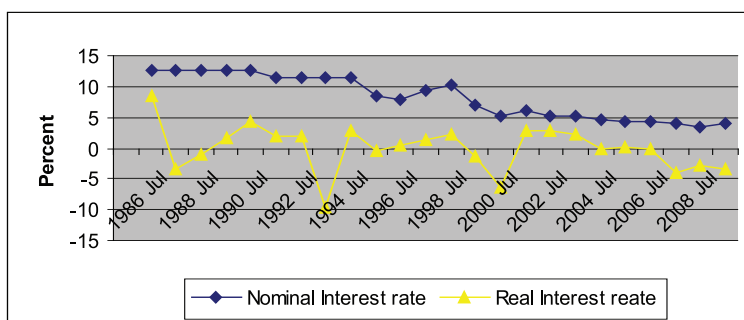
growth rate of the CPI was recorded at 12.1%. The price increase in crude oil and other raw materials in the international market contributed to such higher growth rate of the CPI.

Figure 2
Annual Average Inflation



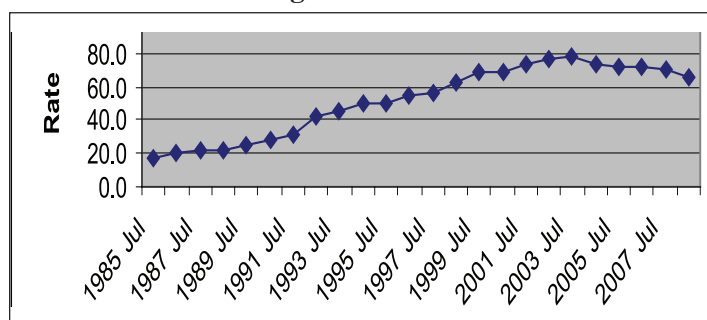
Because of the higher inflation rate, the gap between the nominal and real interest rate widened especially in year FY 1986/87, and in FY 1992/93. Because of the lower nominal interest rate and higher inflation rate, the real interest rate remained negative in various years.

Figure 3
Nominal and Real Interest Rate



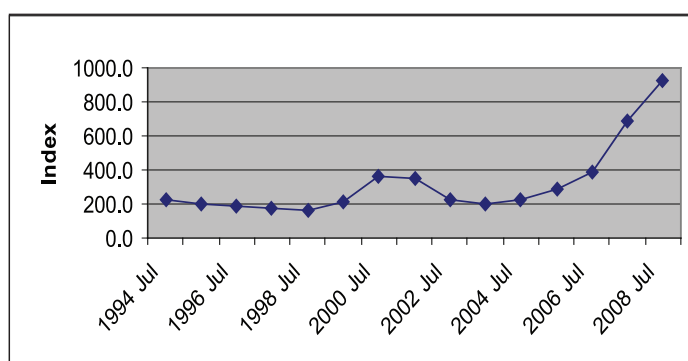
In the following figure, the exchange rate of US\$ to Nepalese Rupee is presented. The highest rate of 77.8 (1 US\$ = Rs. 77.8, annual average) was experienced in FY 2002/03. After FY 2002/03 the rate is moderately low by the end of FY 2007/08. Such fluctuations of exchange rate of Nepalese currency with the US dollar could have occurred because of the revaluation or devaluation of Indian currency because the Nepalese currency is pegged to Indian Rupee.

Figure 4
Exchange Rate with USD



Nepal lacked a secondary market for capital-market instruments in the past. In February 1994, the Nepal Stock Exchange was established to facilitate the secondary market for long-term financial market instruments. In the following figure, the trend of the stock price index is presented from 1994 onward. The Nepalese Stock Price Index (NEPSE) reached to 930.7 in July 2008 from 683.9 in July 2007.

Figure 5
Stock Price Index



1.2 Foreign Exchange Policy

As the central bank of Nepal, the Nepal Rastra Bank (NRB) is responsible for the formulation of the foreign exchange policy of the country. Since its establishment in 1956, the bank has been adopting a significantly different methodology in case of exchange rates of convertible currencies. The NRB started to buy and sell the convertible currencies from 1960, four years after its establishment (Adhikary). The bank subsequently decided to adopt the policy of current account convertibility.

There were two different phases in the process of current account convertibility in the country. The First Phase was the partial convertibility of current account and the Second Phase was the full convertibility of such account. In order to facilitate trade and promote export, “partial convertibility” policy of current account was adopted in 1992 allowing the exchange rate of convertible currencies to be determined by the market forces. In this system, the market rate was applicable to 65% of export earnings in the beginning and subsequently it was increased to 75%.

Nepalese Rupee was made fully convertible for the current account transactions in 1993. Under this policy, all the foreign currency proceeds were permitted to be converted at market rates. Exporters were permitted to retain 100% of their earnings in their foreign currency accounts and foreign exchange facility for a large number of items was easily made available.

Even though the current account is made fully convertible, the country has not yet adopted the capital account convertible policy. It is obvious that the nature of such convertible policies affect the capital inflow of the country. The official record of FDI flow to Nepal is from 1951. Foreign investors are protected by law in repatriating their profits to their home foreign countries in foreign currencies according to their need. These activities can be marked as a partial convertibility of capital account. Moreover, the government is currently planning to issue a new policy for Nepali citizens which will facilitate the people in making investment in the foreign capital market. If such a step is taken, it will be a significant achievement towards the full capital account convertibility.

2. Major Capital Flow Management Policy

Policies and institutional frameworks are necessary for making the economy more competitive. Basically, the laws and policies that govern capital flows in Nepal are as follows:

2.1 Foreign Direct Investment Policy, 1992

Even though Nepal was receiving FDI since 1951, there was an absence of FDI-related laws and policies in the past. In 1992, the *Foreign Direct Investment Policy* was promulgated with the sole objective of providing a sound environment for FDIs. This policy also aimed at streamlining the investment procedures and encouraging foreign investment.

2.2 Foreign Investment and Technology Transfer Act, 1992

The country's investment mechanism is laid out in the Foreign Investment and Technology Transfer Act, 1992. This legislation was enacted to attract technology transfer and foreign investment. According to the Act, foreign investment implies the investment made by a foreign investor in any industry as investment in share (equity), reinvestment of the earnings derived from the investment in share (equity) and investment made in the form of loan facilities. The Act stipulates that the industries set up with foreign investment are also entitled to enjoy all facilities and incentives. Permission is given to the foreign investors to repatriate the following income outside the country:

- a) amount procured from the sale of share of foreign investment as a whole or any part thereof;
- b) amount procured as profit or dividend in place of such investment;
- c) amount procured as payment of principal and interest on any foreign loan; and
- d) amount procured under the agreement for the transfer of technology in such currency as agreed upon in the contract accepted by the DOI.

The Act, amended in 1996, has made 100% foreign equity participation possible by foreign investors in all industrial enterprises, except for cottage and some specific types of industries especially reserved for domestic investment. Moreover, the transfer of technology is possible even in the case of cottage industries. The Government requires that a business enterprise set up with foreign investment or technology should require the prior approval of the DOI.

In July 2000, the Government constituted a seven-member Fast Track Committee (FTC), under the chairmanship of the Prime Minister, with a view to take a quick decision on projects linked to foreign investment. As a result, a foreign investor could directly send a proposal to the FTC, and a decision is made within two weeks.

2.3 One Window Committee and Industrial Promotion Board

In Nepal, there is a provision to establish the One Window Service (OWS) under the Industrial Enterprises Act, 1992. The aim of the OWS is to provide all the necessary services needed by foreign investors under one roof. The OWS purposes to provide hassle free services to the concerned persons or companies. The OWS provides all the required services from a single workstation, so that investors do not need to deal with the various government offices in order to start up an industry in the country.

2.4 Board of Investment

Nepal formed a Board of Investment under the chairmanship of the Prime Minister in December 2001. The Board was set up in order to promote investment and to make the investment process more transparent and reliable. The other objectives of the Board include formulation of new policies by reviewing the existing investment policy, maintaining coordination between the various government and non-government organisations for the promotion of investment, pinpointing the areas of priority sector for investment promotion, monitoring the activities associated with investment promotion and providing directives to the concerned department to boost investment.

3. Trends in Capital Flows

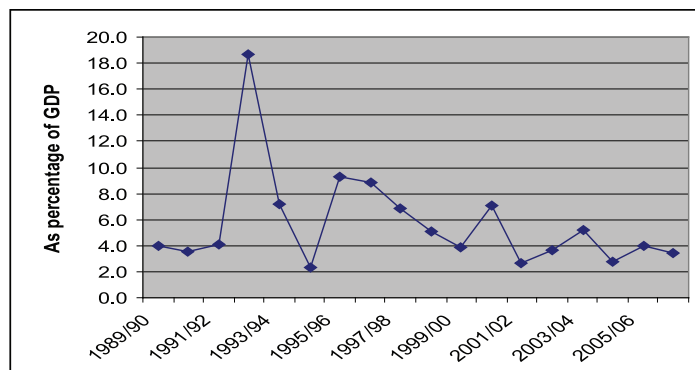
The amount of capital flows can have a significant impact in an economy. A country should analyse the trend of capital flows alongside other major macroeconomic indicators of the economy, like GDP, price level, level of consumption, saving, and investment, etc., before formulating the relevant policy.

With regard to Foreign Direct Investment (FDI), the first official record of FDI flow to Nepal was in FY 1951/52 when the Nepal Commercial Corporation was set up as a joint venture with 67% equity participation from Indian investors. There was a provision of foreign investment in medium-scale industries with the investment of Rs. 50,000 to Rs. 500,000 and large-scale industries with the investment of more than Rs. 500,000.

In reality it is very difficult to capture the actual FDI data in Nepal. The Department of Industry (DOI) compiles the data on FDI commitment but the mechanism to monitor the realisation of such commitment is still not properly in place. The BOP statistics also does not fully capture the movement of the FDI in Nepal.

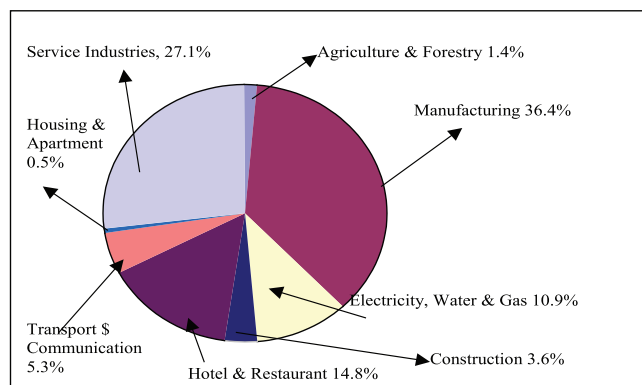
After the political regime change of 1990, the move towards liberalisation was further accelerated. As a result, the commitment to promote FDI in early nineties was sustained at a higher level.

Figure 6
FDI Commitments



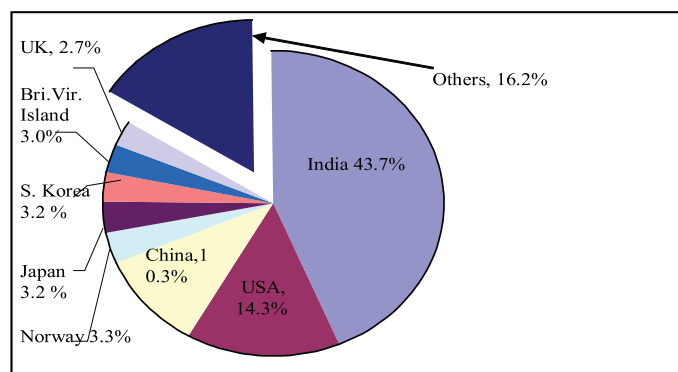
Analysing FDI on a sectoral basis, manufacturing sector takes up the largest share. It is followed by the manufacturing sector, services, hotel/restaurant and electricity which take up 36.4%, 27.1%, 14.8%, and 10.9%, respectively.

Figure 7
Sectoral FDI on FY 2007/08



With respect to country-wise portfolio analysis of FDI, India has the largest share of 43.7%. Next to India, USA and China have the share of 14.3% and 10.3%, respectively.

Figure 8
FDI Country-Wise



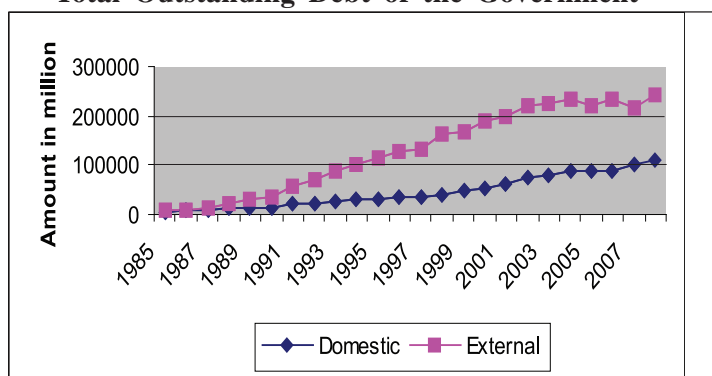
Portfolio investment is one of the components of capital flows. Therefore, this type of investment can have a significant influence in any economy depending upon its volume and flow. However, in the Nepalese context, no portfolio investment is recorded till today. Thus, there is no portfolio investment data is presented in this paper.

As the ‘other investment’ is another component of capital flows, it is also meaningful to discuss about this type of investment. In the Nepalese context, the data of ‘other investment’ can be obtained from BOP statistics from FY 2000/2001 onward. After the implementation of the fifth BOP manual, other investment data is being recorded in BOP statistics. In this paper, other investment data is not presented mainly because of two different reasons. Firstly, such data can be obtained only from FY 2000/2001 and, secondly, the amount of other investment is negligible.

Another factor which could have an important role in capital flows is the government debt. So it is meaningful to discuss a little bit about public debt. The public debt comprises external as well as domestic debt. In the Nepalese context, the outstanding domestic debt is increasing steadily every year. Similarly the outstanding external debt is also increasing since the beginning, except in FY 2004/05. Nepal was suffering from internal political instability over the last few

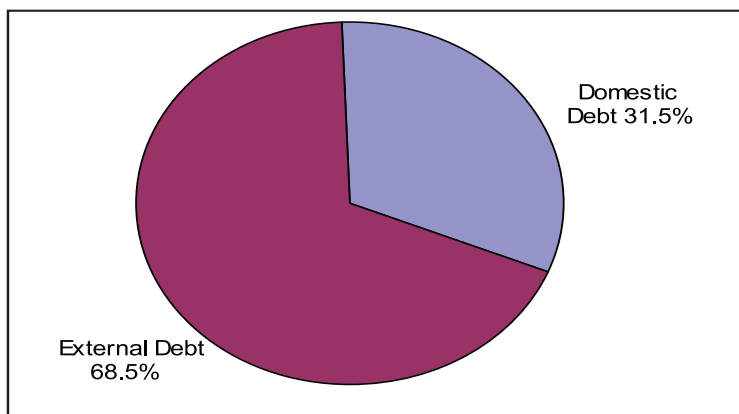
years which causes external loan to decrease in FY 2004/05. In July 2008, the total outstanding domestic debt and total outstanding external debt were recorded as Rs.111,239.1 million and Rs.242,060.6 million, respectively.

Figure 9
Total Outstanding Debt of the Government



Composition of total outstanding debt in 2008 is presented in following pie chart. Out of total debt outstanding of Rs.353299.7 million, the ratio of domestic debt and external debt stood at 31.5% and 68.5%, respectively.

Figure 10
Composition of Public Debt Outstanding



As mentioned earlier, the capital account is not fully convertible in Nepal. Except for the repatriation of income, no capital outflows data is recorded in the Nepalese BOP. Presently the government is taking steps to provide facility to the Nepali people in making investment in the foreign capital market. If the government pursues such policy, it will be a major milestone towards the capital outflow.

3.1 Challenges

The following factors can be considered as the challenges facing capital flows in the context of Nepal.

3.1.1 Political Situation

The political situation is one of the major determinants of capital flow in Nepal. Nepal has been facing political instability since 1996. The period of political turbulence and conflict among the major political parties was brought to an end last year. Peace is restored in the land. It is believed, this will have a positive impact on capital flows. Political stability is a 'must' to increase capital flows in any country.

3.1.2 Government Policy

Capital flows increase with the sound and safe government policy. On one hand, the Nepal government has promulgated the necessary policies to protect foreign investors in Nepal (like Foreign Investment and Technology Transfer Act, 1992), which provide a conducive environment for facilitation of capital flows to the country. On the other hand, the government has not been able to adopt the capital account convertibility policy in its full extent, which has prevented capital outflows from the country. However, the Nepalese capital account policy can be called a partial capital account convertibility policy. It is, therefore, necessary for any government to adopt the appropriate policy to attract the capital inflows in the country.

3.1.3 Macroeconomic Performance

Closely related to sustained and high growth rates of capital flows, Nepal needs to pay attention to the maintenance of a stable macroeconomic environment. Macroeconomic stability should be maintained as a prerequisite

for sustained and high level of FDI and other investments. Until and unless the macroeconomic indicators are stable in any country, it will be difficult for that particular country to attract FDI and other foreign investments.

3.1.4 Foreign Exchange Reserves

The higher the country's foreign reserves, the more likely are foreign investors to invest in the country. Nepal has maintained a level of foreign currency reserve equivalent to Rs. 212,624 million as of July 2008, which is sufficient to cover its imports for eleven months.

3.1.5 Human Capital

Even though human capital is an important determinant of capital flows, Nepal lacks skilled manpower. With both low levels of education and health in terms of literacy ratio, school enrollment ratio, poverty, and underfed population, a large portion of the labor force is unskilled in Nepal. Therefore, it is necessary for the country to produce skilled manpower in order to acquire a significant level of capital inflows.

4. Capital Flows and Monetary Policy

As 'other investment' is one of the components of capital flows, the Nepalese BOP data captures such investment only after 2001. If we take net other investment data from the year 2001 up to the current period, the amount will only show a negligible figure. That's why net other investment data is not presented in this paper. Since Nepal does not have portfolio investment and financial derivatives data in its record and, as mentioned above, the data figure of net other investment is negligible, it is FDI that has been a dominant factor in the capital flows.

To analyse the impact of capital flows on monetary policy, an example of FDI can be given. For example, whenever capital inflow increases in the country, it will increase Net Foreign Assets (NFA). As NFA is a part of the monetary base, such increased NFA affects the monetary base pressuring the money supply to increase. The central bank, the monetary authority, of the country has to sterilise such money supply pressure using its monetary tools. In the Nepalese context, the FDI commitment has gone up by 300% in July 2008 compared to that in the preceding year. In July 2007, the FDI commitment was recorded at Rs. 2,453.1 million whereas in July 2008 the commitment figure stood at Rs. 9,810 million. Such increment of FDI has helped Nepal to maintain the foreign exchange reserves of US\$ 3,104 million in July 2008.

On one hand, capital inflow has helped the country to maintain the foreign exchange reserve holding at a significant level. On the other hand, this capital flow has helped, directly or indirectly, to enhance the overall business activities of the nation. Even after such a growth of capital inflow and foreign exchange reserve, Nepal has been able to maintain its money supply at a desired level.

5. Capital Flows and Financial Stability

Needless to say, capital flows play a major role in the financial stability of any country. Sound and safe financial systems are a 'must' for financial stability. In the Nepalese context, capital flows have not played a major role in the financial sector, especially in banking sector. In the last five years no capital inflow is experienced in the establishment of banking sector. However, Nepal has become a member of World Trade Organisation (WTO) and is a signatory in the WTO agreement permitting foreign banks to open their branches in the country beginning from 2010. Once foreign bank branches start operating in the country, it is very possible that capital inflow will increase heavily.

To control the sudden increment of capital inflow which is going to happen after 2010, the country should formulate the necessary policies at the early stage. If sound and effective rules and regulations are implemented in order to manage the impact of such capital flows on the financial market, the sudden and heavy flow of capital will not adversely affect financial stability.

Proper inspection and supervision of the financial institutions are also required to maintain the soundness and efficiency of the financial system. To maintain the health of the banking sector, Nepal has just implemented Basel II. In order to comply with the directives published by the NRB, all the financial institutions are required to observe all the rules and regulations. The financial institutions should pay attention to various factors like capital adequacy, liquidity, maturity mismatch, investment decision, managerial decision-making, etc. If the regulatory authority is capable enough to supervise the banking sector of the country, financial stability can be maintained.

6. Conclusion

To attract and facilitate capital flows to the country, Nepal has adopted various policies and acts. In 1992, the *Foreign Direct Investment Policy* was initiated with the sole objective of providing a sound environment for FDI. In the same year, the *Foreign Investment and Technology Transfer Act, 1992* was enacted to attract technology transfer and foreign investment. The Act has

defined the meaning of FDI and also provided the permission of repatriation to the foreign investor. Similarly, the OWS was set up under the Industrial Enterprises Act, 1992 to provide all the facility to foreign investors under a single roof. Finally, to promote investment, a Board of Investment was established under the chairmanship of the Prime Minister in December 2001. Capital flow comprises FDI, portfolio investment and other investments. In this study, only FDI is taken as the indicator of capital inflow. The first official FDI to Nepal was recorded in FY 1951/52 when Nepal Commercial Corporation was set up as a joint venture with 67% equity participation from the Indian investors. The FDI commitment increased in Nepal after the new political regime of 1990. On a sectoral basis, the highest share the FDI is taken up by the manufacturing, followed by service, hotel and restaurant, and the electricity of sectors.

Capital flow in any country increases if the pull and push factors play a significant positive role. Factors like the real GDP, interest rate, capital account GDP ratio, Indian real GDP and Indian interest rate are considered as the determinants of capital flow in this study. The first three factors are considered as the determinants of capital flow because GDP growth has a direct and positive effect on capital flows. Besides, capital flow increases or decreases depending upon the performance of GDP, interest rate and capital account GDP ratio. The last two factors are considered as the determinants of capital flow because India is a big international trade partner of Nepal. Also the share of India in FDI is highest compared to that of the other countries.

As mentioned above, capital inflow in the form of FDI was started in 1951. Since then, Nepal has taken many steps to promote capital inflows in line with the situation and context. Some achievements have been attained and, as the data show, Nepal received FDIs from various countries on various dates. However, due to the political situation and economic performance of the country, the amount of capital inflows did not increase according to the expectation of the country. Therefore, it can be said that the policies adopted up until today are not sufficient to boost capital inflows to Nepal.

Capital inflow confers another benefit to the countries, like Nepal, where capital account is not fully convertible. Such inflow helps maintain foreign exchange reserves to a desired level. But at the same time the inflow increases, the Net Foreign Assets (NFA) affecting the monetary base, pressure the money supply to increase. In such a situation, the monetary authority of the country has to sterilise the money supply pressure using its monetary tools.

In the Nepalese context, FDI commitment has gone up by 236% in July 2008 compared to that recorded in the preceding year. In 2007 July, the FDI commitment was recorded as Rs. 2,920 million, whereas in July 2008 the commitment figure stood at Rs. 9,807 million. Such increment of FDI has helped Nepal to maintain the foreign exchange reserves of US\$ 3,104 million in July 2008. Even after such a growth of capital inflow and foreign exchange reserve, Nepal has been able to maintain its money supply at a desired level.

In the Nepalese context, capital flows have not played a major role in the financial sector, especially in banking sector. However, Nepal has become the member of World Trade Organization (WTO) and is a signatory in the WTO agreement allowing foreign banks to open their branches in the country beginning from 2010. It is obvious that proper inspection and supervision of the financial institutions are required to maintain the soundness and efficiency of the financial system. To maintain the health of the banking sector, Nepal has implemented Basel II. Similarly, the NRB has published the necessary directives for compliance by the financial institutions and implemented the appropriate monetary policy in order to maintain the desired level of liquidity.

Nepal has been trying to attract capital inflow right from the very beginning. Some policies and acts have existed to achieve the objective. But at the same time the country is beset with problems hindering the country from reaching the desired objective of achieving a higher level of capital inflow. Unstable political situation, lower growth rate of macroeconomic indicators, and a serious shortage of unskilled manpower are the major challenges confronting the country today.

On one hand, the Granger causality result suggests that IIR is causing FDI. On the other hand, the country is facing different kinds of challenges in receiving capital inflows. As the government of the country concentrates mainly in economic development projects and in fiscal policy, the central bank of the country has to pay attention in managing monetary and financial policy. To attract capital flow to the country, the government should address the above-mentioned challenges and frame the appropriate policies for the future.

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ANNEX 1

Industries Approved for Foreign Investment

FY	No. of industries	Total project cost	Total fixed cost	Foreign Investment	(Rs. in million)
					Total no of employees
Up to 1988/89	59	5425.92	4581.82	466.84	10586
1989/90	30	2438.19	2139.6	398.51	9515
1990/91	23	863.56	690.74	406.28	2974
1991/92	38	3508.17	2902.1	597.84	5615
1992/93	64	17886.22	16210.81	3083.67	13873
1993/94	38	3733.23	3175.66	1378.76	4734
1994/95	19	1627.28	1247.85	477.59	2386
1995/96	47	10047.47	9398.54	2219.86	8032
1996/97	77	8559.25	6692.15	2395.54	9347
1997/98	77	5569.38	5142.32	2000.28	4336
1998/99	50	5324.42	4380.17	1666.42	2146
1999/00	71	2669.09	1910.24	1417.61	4703
2000/01	96	7917.62	6122.49	3102.56	6880
2001/02	77	3318.53	1559.59	1209.65	3731
2002/03	74	4921.82	3608.25	1793.77	3572
2003/04	78	4323.74	3775.86	2764.8	2144
2004/05	64	1801.1	1150.89	1639.52	5576
2005/06	116	4121.08	3296.95	2606.31	7358
2006/07	184	2996.88	2349.56	2919.79	7150
2007/08	211	20398.86	16894.86	9807.25	10660
Total	1493	117451.81	97230.45	42352.85	125318

Source: Government of Nepal, Department of Industry.

ANNEX 2

Sectoral Composition of FDI (upto FY 2007/08)

Sector	No. of industries	Total project cost	Total fixed cost	Foreign investment	(Rs. In million)
					Total number of employees
Agriculture	27	572.35	489.19	214.11	1420
Construction	36	3305.64	2494.57	2494.72	2687
Energy Based	27	27160.42	25437.36	6300.05	5866
Manufacturing	582	42610.06	30546.35	15287.33	70297
Mineral	11	4793.14	3926.17	2285.98	1979
Services	416	21810.68	18106.72	10035.28	23114
Tourism	394	17199.52	16230.09	5735.38	19955
Total	1493	117451.81	97230.45	42352.85	125318

Source: Government of Nepal, Department of Industry. Industrial Statistics.

ANNEX 3**FDI by Country of Origin (upto FY 2007/08)**

(Rs. In million)

Country	No. of industries	Total project cost	Total fixed cost	Foreign investment	Total number of employees
India	396	44733.53	34262.37	18579.12	48855
USA	127	13580.14	12313.32	4680.98	10873
China	190	10360.89	8425.16	3748.65	12182
Norway	9	8090.59	6745	1115.83	619
Japan	130	3028.6	2595.78	1052.33	6037
S. Korea	94	7939.12	7525.98	3954.17	4753
Bri. Vir. Island	3	2739.79	2636.19	961.43	1018
UK	73	4347.08	3876.5	1278.6	7035
Others	471	22632.08	18850.14	6981.75	33946
Total	1493	117451.82	97230.44	42352.86	125318

Source: Government of Nepal, Department of Industry. Industrial Statistics.

Chapter 8

CAPITAL FLOWS AND THEIR IMPLICATIONS FOR CENTRAL BANK POLICIES IN PAPUA NEW GUINEA

by
Tanu Irau¹

1. Introduction

This paper examines the nature of capital flows into and out of the Papua New Guinea (PNG) economy and discusses how these flows may influence monetary policy. The management of capital flows varies from country to country. PNG's major policy tool relating to capital flow management has been the Exchange Controls and Gold Regulation² which has been enforced by the Bank of PNG (BPNG) since 1976. The exchange controls are aimed primarily at controlling the amounts of foreign exchange transactions between PNG and the rest of the world to preserve the level of foreign exchange reserves and to protect the domestic banking and financial sector. There have been several episodes of reform to the exchange control system. The first of these was in 1987. These reforms represent an ongoing need to adapt to changes in economic policy and environment as well as international and domestic institutional and structural changes. Reducing controls on foreign exchange transactions over the years has been part of the overall process of liberalisation in line with the government's market-orientated approach to economic development. Other government agencies, such as the Investment Promotion Authority (IPA), Internal Revenue Commission (IRC) and the Department of Trade and Industry, also have policies relating to different aspects of capital flows. An integral component of the government's development strategy is the promotion of investment in PNG. The IPA was established by an Act of Parliament in 1992. Its focus is

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1. The author is a Senior Research Analyst, Research Department, Bank of Papua New Guinea (BPNG). The author expresses his gratitude to the project leaders Min B. Shrestha and Vincent Lim of The SEACEN Centre for their leadership and guidance on the project and to Gae Kauzi, Boniface Aipi, James Lloyd, Elim Kiang, George Awap, Gaona Gwaibo and Williamina Nindim of the Bank of PNG for their editing and comments. The views expressed herein are those of the author and do not necessarily reflect those of the BPNG.
 2. Exchange control refers to the enforcement of limits on amounts in foreign exchange transactions carried out by individuals or entities into and out of Papua New Guinea with the rest of the world. The main objective of exchange control is to conserve the country's foreign exchange reserves. The controls are administered by the BPNG and commercial banks who may grant approvals within the limits of their delegated authority.

centred on attracting new investors to the country as well as encouraging existing investors, both foreign and domestic, to expand their investment.

The paper is structured as follows. In Section 2, the major policies relating to capital flows are discussed. This is followed, in Section 3, by a review of the trends in the major macroeconomic indicators and capital flows since 1985. Section 4 provides the empirical analysis of the determinants of capital inflows into PNG. Capital inflows and their relation to the BPNG's monetary policy are covered in Section 5, while Section 6 discusses capital flows and financial stability. Section 7 concludes the paper by identifying policy issues, prospects and recommendations.

2. General Framework and Major Capital Flow Management Policies in Papua New Guinea

2.1 Policies Implemented by the Bank of Papua New Guinea

A uniform set of exchange controls under the Exchange Controls and Gold Regulation came into effect with monetary independence in 1976. The fixed exchange rate regime adopted in 1975 obviated the need for extensive exchange controls and, with the exception of restrictions on some capital transactions, a reasonably liberal exchange control regime was put in place. Approval was readily given for imports and most types of current account payments.

The main focus of exchange controls was on investment from overseas for which approval was dependent on the compatibility of the investment with the government's objectives. Limits were also imposed on annual remittances overseas for portfolio investments made by PNG residents and all export proceeds were to be repatriated to PNG.

In November 1982, the BPNG made amendments to the controls relating to borrowing. Offshore borrowing by private sector companies in PNG required the specific approval of the BPNG if the borrowing resulted in a debt to equity ratio exceeding 3:1. A three-year moratorium on principal interest payments was also imposed.

Several liberalisation measures were taken in 1987. These included a 50% increase in the amounts that authorised dealers could approve under delegated authority; a 50% increase in the allowable levels of overseas portfolio investments for individuals and a reduction to one year of the moratorium on principal repayments. In 1992, foreign exchange controls were liberalised further by

increasing the delegated authority of the authorised dealers and relaxing controls on capital transactions. For overseas debt, the authorised dealers could approve borrowing in foreign currency up to K5 million at a debt to equity ratio of 5:1. By 1992, the exchange controls related primarily to the outflows and not the inflow of capital. Inflows were welcome, providing that they were consistent with government policy. Repatriation and loan repayments were still monitored to ensure that the terms were fair and reasonable.

In October 1994, the kina was floated. This prompted minor changes to the exchange controls. The remaining capital controls were designed to limit short-term speculative capital flows, assist tax surveillance and prevent transfer pricing³ (BPNG, 2007: 170).

The creation of the Port Moresby Stock Exchange (POMSoX) in 1999, financial sector reforms, the need to remove impediments to investment and good economic fundamentals provided the motive for major foreign exchange control liberalisation in 2005. Liberalisation from this stage forward was implemented through exemptions, so that exchange controls could be re-implemented if a balance of payments crisis required them to be invoked.

In 2005, all current account contracts and flows, all capital account contracts and flows to the government and all private capital account flows whose contracts had been approved by the BPNG were liberalised. The need for foreign exchange approval was retained for all private capital account contracts to acquire or deal with an asset within or outside Papua New Guinea; the opening of foreign currency accounts outside PNG; licensing of gold exporters; and licensing of foreign exchange dealers. The conditions imposed included (a) approval required to take K20, 000 (about US\$7,600) out of the country; and (b) only authorisation for dealers to conduct foreign exchange transactions.

In September 2007, private capital account contracts between residents and non-residents; securities and guarantees in favour of non-residents; listed and un-listed securities and other investments with underlying written contracts; and

3. Refers to the pricing of contributions (assets, tangible and intangible, services, and funds) transferred within an organisation. For example, goods from the production division may be sold to the marketing division, or goods from a parent company may be sold to a foreign subsidiary. Since the prices are set within an organisation (i.e., controlled), the typical market mechanisms that establish prices for such transactions between third parties may not apply. The choice of the transfer price will affect the allocation of the total profit among the parts of the company. This is a major concern for fiscal authorities who worry that multi-national entities may set transfer prices on cross-border transactions to reduce taxable profits in their jurisdiction. This has led to the rise of transfer pricing regulations and enforcement, making transfer pricing a major tax compliance issue for multi-national companies.

foreign currency accounts of individuals opened prior to 1st June 2005 were liberalised.

The Bank retained controls on the opening of offshore foreign currency accounts, including kina accounts outside PNG; licensing of gold exporters; licensing of foreign exchange dealers; and the removal of physical cash in excess of K20, 000 or equivalent in foreign currency.

2.2 PNG Policies to Manage Foreign Direct Investment (FDI) Inflows

The National Investment Development Authority (NIDA) was established by the government in 1989 to channel foreign investment into areas of business that would make the best use of resources consistent with national development and investment policies. It was also aimed at encouraging citizen participation in business activities or projects facilitated by foreign investment. Government regulated monopolies were restricted from receiving any foreign investment. No new foreign firms were allowed into the retail sector and established foreign firms in the retail sector had to sell 50% of their equity to local enterprises. In 1990, NIDA, which was considered as being overly regulatory and an impediment to investment growth, was replaced with the Investment Promotion Authority (IPA) which was given clear goals to encourage foreign investment in the economy.

The Government, through the IPA and the Department of Trade and Industry, launched the five-year National Investment Policy in 1998 to achieve the following objectives (National Investment Policy, Vol. I, 1998:4):

- The creation of a social and economic environment conducive to private investment;
- The development and maintenance of infrastructure;
- The development of human resources;
- Greater clarity and transparency in investment incentives;
- The elimination of regulatory and procedural obstacles to investment;
- The promotion of small and medium enterprises;
- The encouragement of backward and forward linkages and support for domestic value added;
- The provision of greater consistency in policy measures; and
- The creation of the necessary institutional framework, in order to ensure strong implementation of its investment policy.

Furthermore, other government development aspirations and plans, such as the Medium Term Development (MTDS) 2005-2007, call for export promotion; employment growth; aiding the development of new industries; influencing the spatial distribution of economic activity in favour of less developed areas; increasing training; aiding investment; promoting fuel efficiency; environmental conservation; and aiding primary production. Some of the initiatives covered under these areas can be initially exempted from company income tax to encourage investment flows.

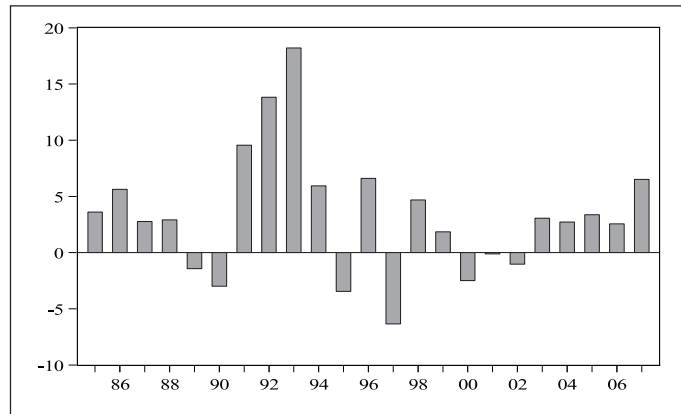
3. Trends in Macroeconomic Indicators and Capital Flows in Papua New Guinea

3.1 Gross Domestic Product

Economic growth in PNG averaged 3.0% for the period, 1985-2007. In the sub-period, 1985-1990, real GDP growth averaged 1.7%. The prices of PNG's export commodities were generally low during this period. The commencement of production at Ok Tedi mine in 1984 contributed positively to GDP growth during the period. However, the closure of the Bougainville mine and a significant decline in mineral prices resulted in the decline in real GDP in 1989 and 1990. The decline would have been higher had it not been for the increase in the number of other mineral projects.

The period 1991 – 1995 saw real GDP growth rates averaging around 8.8% per annum with a high of 18.2% in 1993. The high growth during the period was mainly due to the boom in the mineral sector which had positive spin-offs to the other sectors of the economy. It was during this period that production commenced at Hides gas and Kutubu oil projects, whilst Wapolu gold/silver project was under construction.

Figure 1
GDP Growth Rate (%)



From 1996 – 2002 economic activity was influenced by unfavourable internal and external developments. These lead to an average growth rate of 0.4% for the period. Internally, these included the El Nino drought, the Sandline⁴ crisis and unproductive overspending by the government. Meanwhile, the prices of PNG’s export commodities were low. These factors had the effect of reducing economic activity for most of the years during this period. However, in 1998 and 1999 real GDP grew by 4.7% and 1.9%, respectively, largely due to the commencement of production at the Lihir gold mine.

GDP growth for the period 2003 - 2007 averaged around 3.6% per annum and was broad-based, with all sectors contributing strongly to the growth. The growth was largely driven by high international commodity prices due to higher global demand which was supported by prudent fiscal and monetary policy.

3.2 Inflation

Changes in the domestic prices of goods and services are closely associated with movements in the kina exchange rate. Under the fixed exchange rate regime the kina’s foreign currency value was high and stable, and therefore headline inflation during the period 1985-1994 was relatively stable and low. Most of the inflationary pressure came from foreign inflation and domestic factors. Other factors that contributed to these inflation outcomes were: disciplined government spending, a favourable balance of payments position, low international oil prices

4. A period when foreign mercenaries were brought into the country by the government to help halt the Bouganville crisis. Some factions of the Defence Force were not happy with this arrangement and therefore had to remove the mercenaries by force.

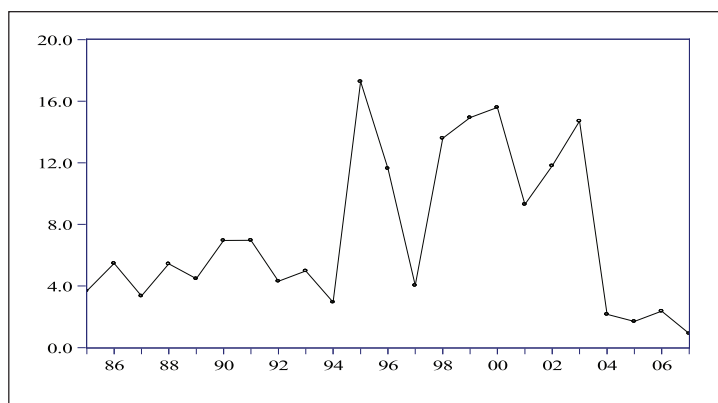
and low inflation in PNG's major trading-partner economies. Annual inflation averaged around 5.0% during the period, with a low of 2.9% in 1994 and a high of 7.0% in 1991.

Under the floating exchange rate regime, which was adopted in 1994, the kina exchange rate trended downwards and inflation was volatile and high. Internal research by the Bank shows that pass-through to inflation was 50-60% of a one percent depreciation in the effective exchange rate.⁵ This depreciation in the exchange rate fed through to the Consumer Price Index over 4-6 quarters during the period 1989-2004 (Sampson, Yabom, Nindim & Marambini, 2006: 25). Annual inflation between 1995 and 2002 averaged around 12.0%. When the kina depreciated by 11.6% against the Australian dollar and 13.1% against the US dollar in 1995, inflation peaked at 17.3%. The high inflation rate in 1998 and 1999 were due to irresponsible government spending, the effects of El Nino and the Asian financial crisis. The impact of the Asian financial crisis had manifested itself in balance of payments pressure and rapid depreciation of the currency. Prices of PNG's export commodities, particularly oil, copper and logs, fell dramatically. Log volumes declined due to a contraction in the demand in the main export markets of Korea and Japan. Between 2000 and 2003, the kina depreciated by 30.9% and 22.3% against the Australian and the US dollars, respectively, resulting in an inflation outcome of 14.7% in 2003.

The exchange rate stabilised between 2004 and 2007 as a result of high commodity prices and favourable international conditions. This led to annual inflation falling within a range of 0.9 – 2.4%, with an average of 1.8%. Prudent fiscal and monetary management also contributed to the stable rate of inflation.

5. The exchange rate is the weighted average of the exchange rates of the kina with the US, Australian, New Zealand and Singapore dollars and the Japanese yen. Two alternative weightings are used to calculate the effective exchange rate. One based on the average share of PNG's imports purchased from each country during 1989–2004 and the other based on the average share of imports purchased in each currency during 1996–2004. The effective exchange rates calculated using these weightings is labeled the country-based exchange rate and the currency-based exchange rate, respectively.

Figure 2
Annual Headline Inflation (1985-2007)

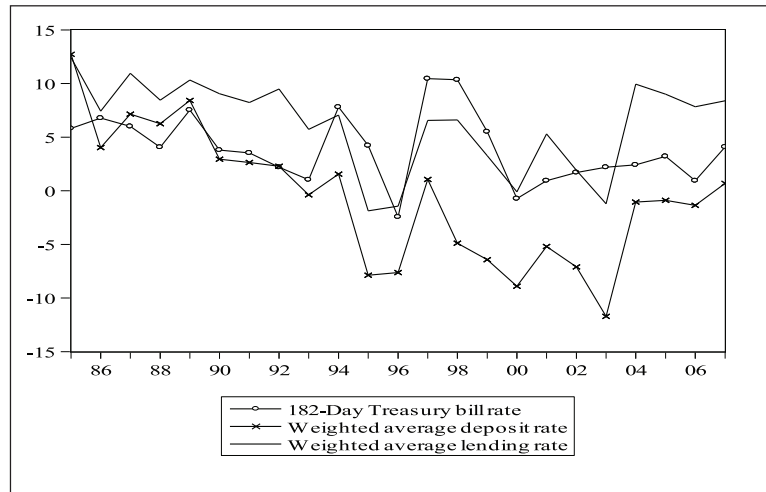


3.3 Interest Rates

During the fixed exchange rate period from independence to 1994, real interest rates in PNG were generally stable and positive reflecting low inflation over most of the years. The margin between the lending and deposit rate was around 4.0% on average during the period. Following the float of the kina, real interest rates fluctuated widely as inflation was volatile, and, for some years, negative real interest rates were realised, particularly for term deposits. In an attempt to realign interest rates and signal its monetary policy stance, the BPNG introduced a price-based signalling mechanism, the Kina Facility Rate (KFR), with the aim of enhancing the transmission of monetary policy. Any change in the KFR signals the monetary policy stance of the Bank of PNG and sets the rate at which the BPNG deals with the commercial banks for over-night and term⁶ repurchase agreements. Following the introduction of the KFR, the commercial bank's lending rate and the 6-12 month deposit rate moved in line with the KFR. However, the margin between the lending and deposit rate remains wide.

6. Apart from the overnight repos, 7- and 14-day term repos are also offered by the BPNG to commercial banks.

Figure 3
Interest Rates (%)

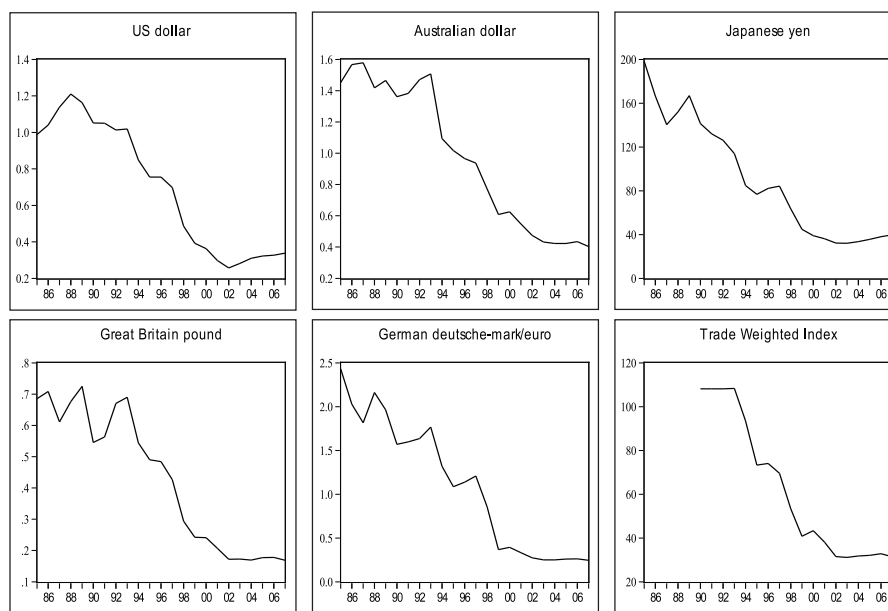


From 2003 to 2007, inflation stabilised and averaged around 4.0%. This was driven by high international commodity prices and stable kina exchange rates. The BPNG, in response, reduced its KFR progressively down to 6.0% and maintained it up until June 2008 when it raised the KFR to 6.25% due to a high inflation outcome in the March quarter of 2008 and expectations of continued inflationary pressures for the rest of the year.

3.4 Exchange Rate

The exchange rate regime adopted by the Bank of PNG provides the basic framework within which rates are determined and it influences the way in which the Bank conducts its monetary, exchange rate and foreign currency management. The transition to a floating regime therefore introduced some fundamental changes to the nature of monetary management. Under the fixed exchange rate regime, foreign exchange reserves acted as a shock absorber, allowing injections of liquidity to be diffused without an adverse effect on inflation. Under the floating regime, imbalances between demand and supply are brought into equilibrium through changes in exchange rates (BPNG, 2007: 110).

Figure 4
PNG Exchange Rate against Major Currencies and the Trade Weighted Index (TWI)

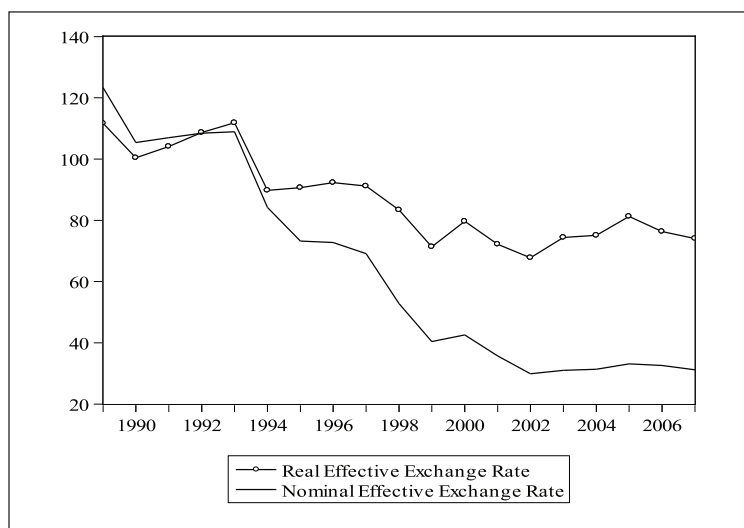


During the fixed exchange rate period⁷, the kina value in terms of foreign currencies of the major trading partners was relatively high and stable. Following the adoption of the floating exchange rate system in 1994, the kina fluctuated considerably, mostly depreciating against the key currencies. By 2002, the kina stabilised and has since remained fairly stable. The stability in the kina in recent years has been due to the favourable external and domestic economic conditions that the country has been experiencing.

Figure 5 shows that, until 1994, PNG's real effective exchange rate (REER) tracked the nominal effective exchange rate (NEER) during the fixed exchange rate period. Following the float of the kina in 1994, the NEER has been volatile, particularly on the downward side, and the REER no longer tracks the NEER. The REER has generally depreciated and is at a level lower than it was when the kina was floated. In combination with the abolition of index-linked minimum wage determination, this implies an increase in the international competitiveness of the PNG economy (BPNG, 2007: 80).

7. PNG had a fixed exchange rate regime known as the "hard kina policy" from 1975-1994. One of the primary purposes of the 'hard kina' policy that Papua New Guinea pursued from the time of independence until the kina was floated in 1994 was to avoid imported inflation by maintaining the value of the kina (Garnaut and Baxter 1983).

Figure 5
Real and Nominal Effective Exchange Rates (1989 – 2007)



3.5 Current Account, Foreign Exchange Reserves and Overall Balance of Payments (US\$ million)

The overall balance of payments position of the country has moved in line with the developments in the current account. Historically, changes in the trade account balance are dependent on international export commodity prices. Generally, when commodity prices are high there is a high trade surplus and when commodity prices are low the trade account tends to be low or in deficit. However, given the high import dependency of the economy, the service account has usually been in deficit which more than offset the trade surpluses resulting in a current account deficit between 1985 and 1992. Correspondingly, there was a balance of payment deficit during this period. The current account balance prior to the float was always in deficit until 1993 when it recorded a surplus of US\$474 million. This was underpinned by increased production in minerals which was due to the commencement of production at the Porgera gold mine. Together with an improvement in the export performance of the agriculture/forestry/fisheries sector, the current account continued to be in surplus from 1994 to 1996. When the current account returned to surplus between 1985 and 1992, the balance of payment also improved.

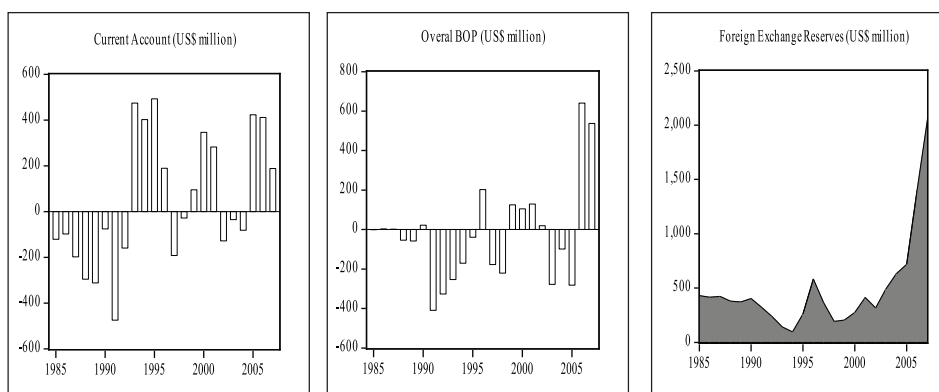
PNG's level of foreign exchange reserves has been around US\$500 million from 1985 up until the early 1990s. Despite the healthy position of the current account in the mid 1990s, the reserve level began to slide downwards from

US\$323 million in 1991 and reached a low of US\$85 million in 1994, because a large part of increased government spending was on imported goods and services, which translated into a high usage of foreign exchange reserves under the fixed exchange rate regime. Eventually, when the reserves were not sufficient to support the fixed exchange rate regime, the kina was floated in October 1994. After the floating, the foreign reserve level increased under the government's effort to restore macroeconomic stability. In the late 1990s excessive government spending became a feature of the economy. Combined with the adverse effects of the El Nino drought on agricultural exports and copper exports from Ok Tedi mine, the current account went into deficit once again. These had the effect of reducing foreign exchange reserves and causing the overall balance of payments to be in deficit.

After 2000, international commodity prices rose which assisted in improving the trade and current accounts, the balance of payments and the nation's foreign exchange reserves position. The surpluses in the balance of payments in 2000 and 2001 were due to higher international prices for mineral exports and some of the agricultural commodities, increased activity in the agriculture/forestry/fisheries sectors and the depreciation of the kina. The level of international reserves increased to a level where they were sufficient for 4 months of total import cover and 5.4 months of non-mineral import cover.

Economic activity declined in 2002, resulting in lower exports and increased service payments, this deteriorated the balance of payments and lowered international reserves. In 2003, improved export activity, a lower value of exports and prudent fiscal management by the government led to an increase in the level of foreign exchange reserves and an improvement in the overall balance of payments. From 2004 onwards, there has been macroeconomic stability in the economy. High export commodity prices have led to an increase in international reserves and a favourable balance of payments position.

Figure 6
Current Account & Overall BOP Balances and Foreign Reserves
(US\$ million)



3.6 Capital Flows

Total capital flow consists of FDI, portfolio and other investments. The value of each component at the end of a year is a net figure and therefore the total is a net value. These can be either positive or negative. For example, in a particular year, some capital may be coming into the country from abroad as FDI⁸ while at the same time, part of the capital that came as FDI in the previous years may be returned as earnings to foreign investors. So, the FDI figure (Dir. Invest. in Rep. Econ⁹) in a given year is derived by subtracting the returned amount in that year from the new FDI amount received that year. If the amount of incoming new FDI is greater than the returned amount, then the FDI value in that year will be positive. But if returned investment amount is greater than the incoming new FDI amount, then the value would be negative.

3.6.1 Capital Inflows - Foreign Direct Investment

Most of the FDI inflows to PNG are associated with large scale mining and petroleum projects. In 2004, of the total volume of FDI stock received by PNG, 76.3% was destined for the mineral sector, while the manufacturing and

8. Foreign direct investment occurs when a non-resident acquires a stake of at least 10% in a domestic enterprise (or if he increases that stake).

9. Short for Direct Investment in Reporting Economy.

agriculture sectors received smaller but still significant volumes of FDI inflows (Table 1).

Table 1¹⁰
Sectoral Distribution of FDI in Papua New Guinea, 2004

SECTOR	% Composition
Mineral	76.3
Manufacturing	4.4
Agriculture	5.5
Forestry	4.1
Banking, Insurance & Finance	3.2
Other	3.0
Fishery	0.9
Power	0.6
Retail	1.3
Hotel/Restaurant	0.3
Drilling	0.1
Transport	0.2
Source: CSDRMS ¹¹ – Bank of Papua New Guinea	

Foreign direct investment in PNG averaged around US\$113 million during the period 1985-2007. FDI has been the dominant component of total capital inflows into PNG. On an annual basis, FDI inflows have been below US\$200 million. However, this hides the volatility in capital inflows into PNG which have been due to the volatile nature of FDI inflows into the mineral sector (Figure 7.0). As PNG receives, on average, only small volumes of FDI inflows per year, large inflows that are used to fund large scale capital-intensive mining projects have a large impact on the country's capital account. The highest FDI inflow was recorded in 1995, totalling over US\$450 million, which was primarily due to the Tolukuma and Lihir Gold mine projects. The significant FDI inflows received in 1989 and 1990, as shown in Figure 7.0, were due to the construction of the Porgera gold mine, while the increase in FDI inflows received in 1997

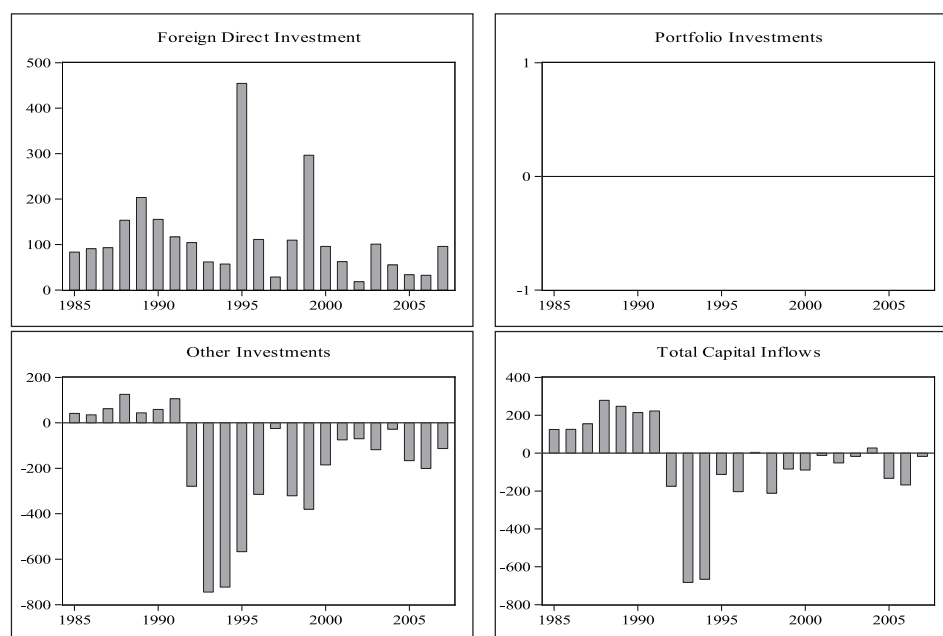
10. Taken from the working paper (FDI and Economic growth in Papua New Guinea) by B. Aipi and J. Lloyd, Research Department, Bank of Papua New Guinea.

11. Commonwealth Secretariat Debt Recording and Management System.

were mainly destined for the construction of the Lihir gold project and the RD Tuna canning plant in Madang. The continued inflow in FDI between 1997 and 2002 reflected the development of the Moran oil project, on-going work at Lihir and the borrowings under the 2000 structural adjustment programme (SAP).

In the years since 2000, PNG has seen an increase in FDI inflows into both the manufacturing and the other sectors, which includes the telecommunications sector. In addition there were new mineral projects, such as the Ramu Nickel/Cobalt, Hidden Valley, Wafi, Kainantu and Simberi gold projects, which attracted a significant volume of FDI inflows.

Figure 7
Capital Inflows (US\$ million)



3.6.2 Portfolio¹² and Other Investment¹³ Inflows

There has been little portfolio investments into PNG between 1985 and 2007. This reflects the small size and immaturity of the domestic security market.

12. Portfolio investment includes purchases of securities and equity shareholdings. It also includes tradable financial derivatives.

13. Other capital flows include non-tradable instruments, such as loans and deposits, trade credit and payment of arrears on outstanding debt.

Lack of proper management of records by the relevant agencies could have also contributed to the state of data on this category of investment.

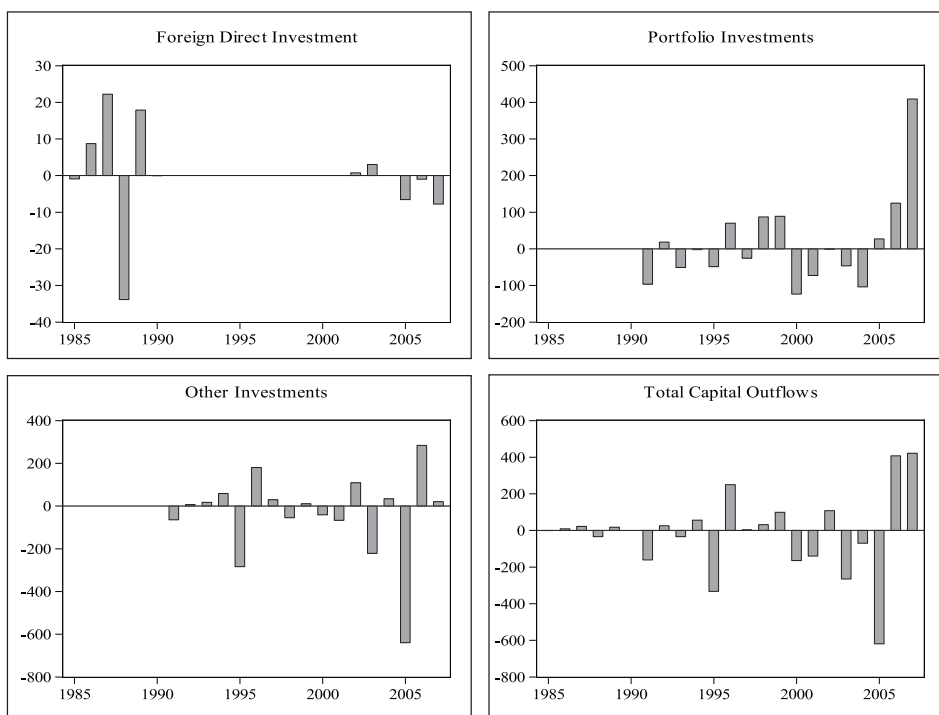
During the period 1985 to 2007, Papua New Guinea had other investments from abroad which averaged around US\$160 million per annum. Since 1992, while there was net FDI inflow, there has been net outflow of other investments. This means that there has been a greater outflow of earnings on previous investments than inflows into the country for new other investments. The negative other investment inflows also reflect the payment of arrears on outstanding debt.

3.6.3 FDI, Portfolio and Other Investment Outflows

Capital outflows are investments made abroad by PNG residents. These have been low compared to the inflows since 1985. Prior to 1990, there were some FDI outflows while portfolio and other investments were very little or non-existent. From 1991 onwards there have been some portfolio and other investment outflows while FDI outflows have been insignificant. During the period 1985-2007, total capital outflows averaged negative US\$15 million per annum, reflecting a reduction in investments abroad through the sale of previously held foreign assets by residents.

Foreign direct investment remained very low and this is attributed to a number of factors. These include a lack of capital and PNG companies not having the competitive advantage over foreign companies.

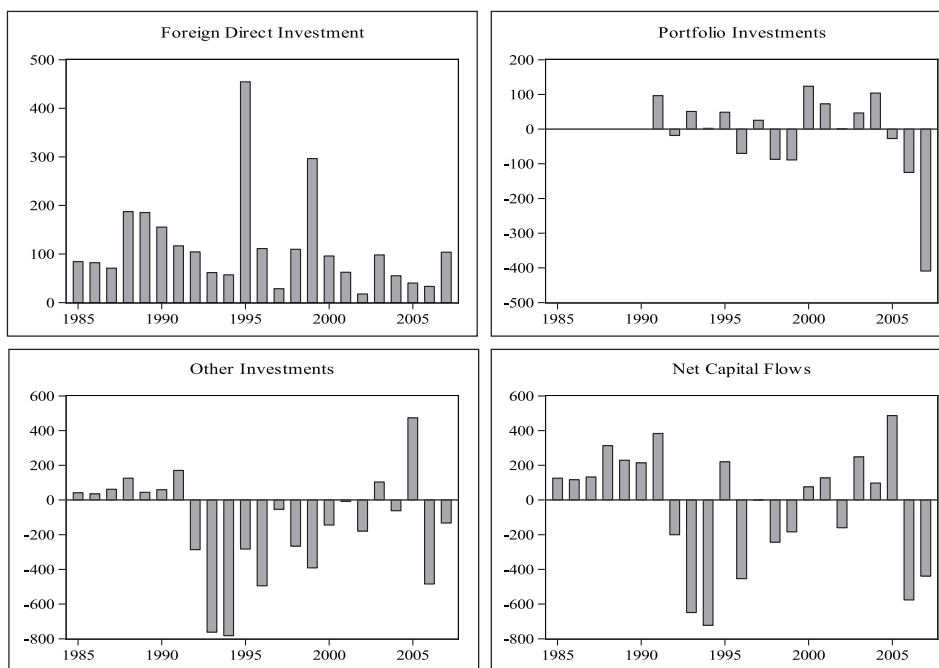
Figure 8
Capital Outflows (US\$ million)



3.6.4 Net Capital Flows

Papua New Guinea's net capital flow position has been volatile since 1985. Between 1985 and 1991, PNG had successive net inflows reflecting the developments in the mineral (including petroleum and gas) sector. From 1992 onwards, net outflows of other investments, particularly payment of arrears on outstanding debt to international financial institutions, have resulted in total net capital outflows. Figure 9 presents net capital flows by components and it is clear that net FDI inflows into Papua New Guinea have been dominant whilst portfolio and other investment flows have mostly shown net outflows.

Figure 9
Net Capital Flows by Components (US\$ million)



4. Capital Flows and Monetary Policy

The discussion of capital flows and monetary policy almost without doubt starts with the well known concept of the “Impossible Trinity”, that is, the observation that a country cannot simultaneously have open capital markets (or free capital mobility across borders); a fixed exchange rate regime; and an independent monetary policy (Obstfeld, Shambaugh and Taylor, 2004).

Economists have long argued that trade in assets (or capital flows) provides economic benefits by enabling residents of different countries to capitalise on their differences. According to Eichen-green, et al. (1999), capital flows allow countries to trade consumption today for consumption in the future. Capital flows allow countries to get out of large falls in national consumption from economic downturn or natural disaster by selling assets to and/or borrowing from overseas. Capital flows also allow countries as a whole to borrow in order to improve their ability to produce goods and services in the future. In more recent times, economists have emphasised other benefits of capital flows in terms of technology transfer that normally accompanies foreign investment, or greater competition in the domestic markets that results from allowing firms to invest locally. However,

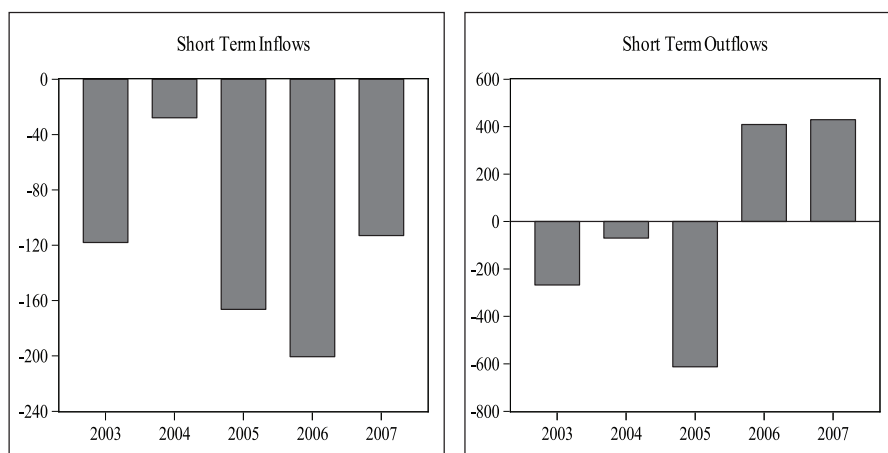
on the other hand, the benefits from capital flows do not always come without a price. Capital flows can complicate economic policy or even be a source of instability themselves and therefore relevant authorities have used some form of capital controls to mitigate the adverse impact of capital flows.

The core objective of monetary policy is to achieve and maintain price stability. This entails low inflation and stable interest and exchange rates. The implementation of monetary policy to achieve this objective is done through open market operations and from time to time intervention in the foreign exchange market.

Papua New Guinea, being a small capital-importing country with a floating exchange rate regime, the nominal exchange is expected to appreciate in response to capital inflows, and the opposite is expected to happen when there is capital outflow. When the flows are such that the movements in the exchange rate threaten price stability, the Bank of PNG intervenes in the foreign exchange market to smooth out volatility in the exchange rate.

Figures 11 and 12 show developments in short-term capital flows, foreign exchange reserves and US\$/kina exchange in recent years.

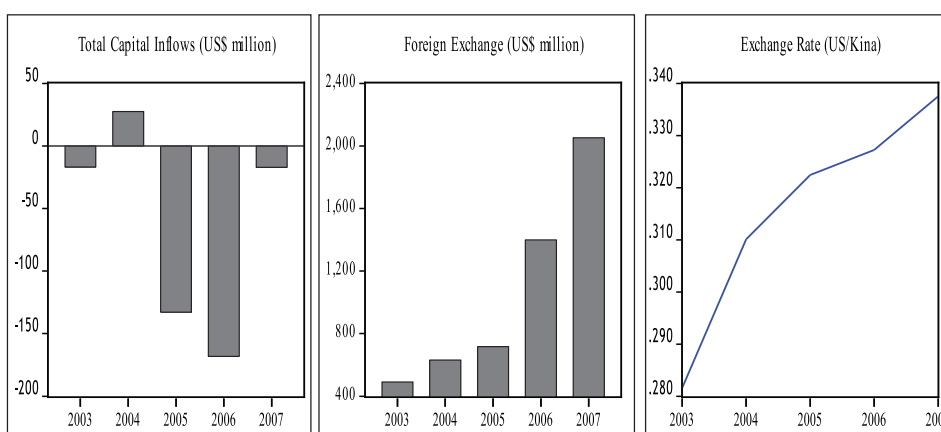
Figure 10
Short-term Capital Flows: 2003-2007 (US\$ million)



As presented in Figure 7, whilst there have been negative other investment inflows in the last five years, portfolio investments from abroad have been non-existent. This is primarily attributed to the securities market being undeveloped and therefore foreign investors are not able to come into the securities market. The negative other investment inflows reflects trade credits and dividend payments by mineral companies to foreigner shareholders.

Figure 11 shows the short-term capital flows in recent years, 2003-2007. Whilst there have been negative short-term capital inflows due to the reasons mentioned above, short-term capital outflows were negative between 2003 and 2005, reflecting residents bringing back their earnings from previous investments. Short-term outflows were recorded in 2006 and 2007, where residents invested in short-term money market instruments.

Figure 11
Capital Inflows, Foreign Exchange Reserves and US\$/kina
Exchange Rate



Total capital inflows (as shown in Figure 12) in recent years have been mostly negative, whilst the exchange rate and foreign exchange reserves have been on an upward trend. The accumulation of foreign exchange reserves and the appreciation of the exchange rate may not necessarily be influenced by capital inflows but by mineral tax receipts (paid through BPNG) and export earnings.

Monetary policy focuses on the implication of mineral tax receipts. When the Bank gets the foreign exchange from this source it pays local currency to the government via the banking system. This is injection of liquidity. It would therefore respond to an increase in liquidity through its open market operations for price stability considerations. The most popular policy response to foreign exchange inflows into the banking system in recent years has been sterilisation. Through sterilisation, inflationary pressures, high volatility in exchange rate movements and changes in the money stock are mitigated. However, if there is a perceived increase in the demand for money which the BPNG wishes to accommodate then non-sterilised intervention may be desirable.

5. Capital Flows and Financial Stability

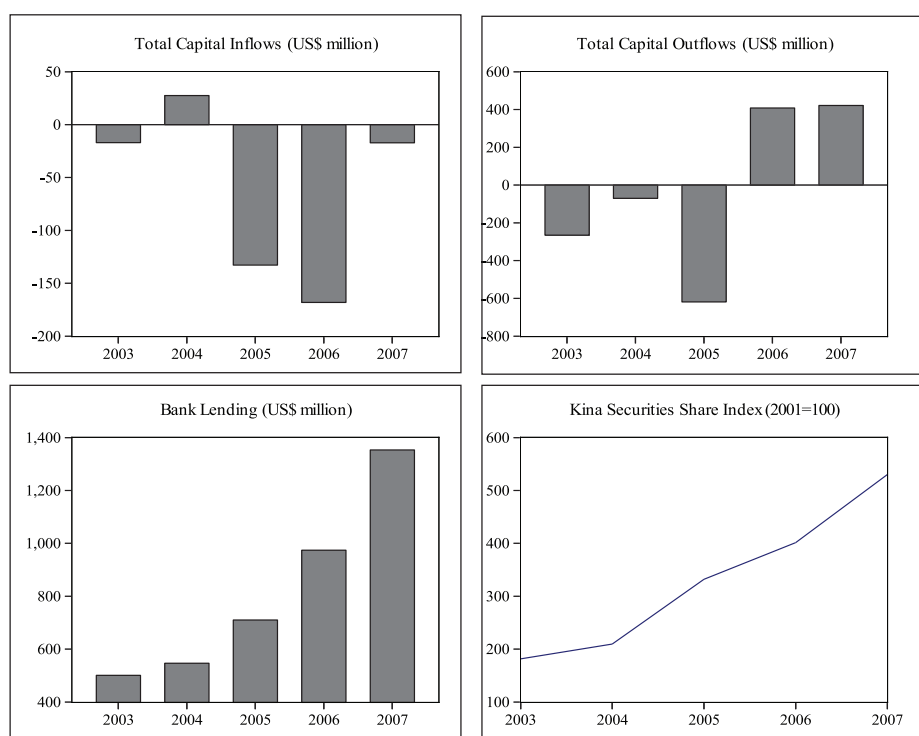
As stipulated in the Central Banking Act (CBA) 2000, one of the core objectives of the Bank of Papua New Guinea is its responsibility for financial stability. The BPNG focuses on the prevention of financial disturbances which potentially can have adverse consequences on the economy, particularly the financial system. The Bank applies prudential standards and guidelines through its off-site surveillance and on-site reviews and examination to ensure soundness and stability of financial institutions. On an on-going basis, the Bank assesses a range of aggregate financial and economic data which help gauge the soundness of the financial system and potential vulnerabilities.

Broadly, financial stability can be thought of in terms of the financial system's ability to: facilitate both an efficient allocation of economic resources and the effectiveness of other economic processes (such as economic growth); assess, price, allocate, and manage financial risks; and maintain its ability to perform these key functions - even when affected by external shocks. A definition consistent with this broad view defines a financial system as stable whenever it is capable of facilitating (rather than impeding) the performance of an economy, and of dissipating financial imbalances that arise as a result of significant adverse and unanticipated events.

The impact of capital inflows on commercial bank lending is not clear as lending has been increasing during the last five years while total capital inflows have mostly been negative. Theoretically, we would expect lending to increase if there are short-term capital inflows because the increase in liquidity or loanable funds caused by the inflows would result in lower lending rates, thus encouraging borrowing. This is not the case, as shown in Figure 7, PNG has received negative other investment inflows and no portfolio investments. Though FDI inflows have been positive during the last five years, this has been offset by the outflows.

The increase in lending may not be associated with capital inflows but rather caused by domestic factors, such as increased levels of deposits. The level of deposits increased from US\$370 million in 2003 to around US\$1455 million in 2007, an increase of over 293%.

Figure 12
Capital Flows, Bank Lending and Kina Securities Share Index



The Kina Securities Share Index (KSi), launched on 29th October 2003, tracks the price performance of stocks listed on the Port Moresby Stock Exchange (POMSoX). The aggregate market capitalisation of the stock exchange is now K37.61 billion - a growth of more than 300% in less than five years. Though still in its infancy in comparison to the other stock exchanges, the performance of POMSoX is a testimony to the confidence and growth in the locally listed stocks. Since 2003, there has been significant development in the PNG economy. The upward trend of the KSi, as shown in Figure 13 (bottom right chart), reflects

PNG's development and recent strong performance in the mining, agriculture and service sectors, which have led to increased investor confidence. Other investment inflows may have found their way onto the stock market since 2003 and, with the good performances by the listed companies, dividend payments are being repatriated abroad as shown in Figure 7.

Given the natural instability of international capital flows, any country closely integrated into the world financial system is prone to financial crises and currency disorder. The extent of the impact of any financial crisis depends on PNG's investments offshore and hence its exposure. The PNG economy appears to be shielded from the direct effects of the current (2008) global financial market turmoil because the banks and financial institutions are funded primarily by domestic deposits and their liquidity are not affected by the tight conditions in international capital markets. Also, these institutions do not have large exposures to offshore financial and investment companies. PNG's external indebtedness can be affected when there are huge movements in capital given its reliance on foreign capital.

6. Conclusion

The paper looked at the types of capital flows (particularly inflows) into the PNG economy during the period 1985-2007. Papua New Guinea's major policy tool relating to capital flow management has been the Exchange Controls and Gold Regulation enforced by Bank of PNG since monetary independence in 1976. The exchange controls aimed at controlling the amounts in foreign exchange transactions between PNG and the rest of the world to preserve the level of foreign exchange reserves and to protect the domestic banking and financial sector. Reforms to the exchange control regime reflected an on-going need to adapt to changes in economic policy environment as well as institutional and structural changes. The easing of controls on foreign exchange transactions over the years has been part of the overall process of liberalisation in line with the Government's market-orientated approach to removing impediments to investment and economic growth.

On the whole, monetary policy does not directly influence capital flows but is concerned about its implications on liquidity, interest rate and exchange rate. Through its open market operations and intervention in the foreign exchange market, the BPNG influences the movements in these variables for price stability. With price stability and general macroeconomic stability, the BPNG can indirectly provide an economic climate that can be conducive for capital inflows.

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APPENDIX

Table 2
OLS Results (Sample Period: 1985Q1 – 2007Q4)

Independent Variables	MODEL A	MODEL B	MODEL C
	Dependent Variable		
	TCI_t	FDI_t	$OINV_t$
β_0	-29.481 (0.1282) [-1.537]	4.287 (0.7529) [0.316]	-12.289 (0.5768) [-0.560]
$\beta_1 \Delta LGDP_{t-3}$	-1496.435*** (0.0014) [-3.318]	-415.793 (0.1963) [-1.303]	752.746 (0.1483) [1.459]
$\beta_2 \Delta RTD3_6_t$	0.562 (0.8206) [0.228]	4.401** (0.0138) [2.516]	2.727 (0.3375) [0.965]
$\beta_3 CAGDP_t$	-811.975*** (0.0000) [-5.167]	45.861 (0.6811) [-0.4125]	-225.451 (0.2132) [-1.255]
$\beta_4 \Delta XR_t$	3.130** (0.0385) [2.103]	-0.182 (0.8635) [-0.172]	-1.140 (0.5048) [-0.670]
$\beta_5 \Delta LIBOYR_{t-1}$	-27.708* (0.0770) [-1.791]	-13.420 (0.2238) [-1.226]	-0.164 (0.9926) [-0.009]
$\beta_6 \Delta LOECD_{t-1}$	4481.606* (0.0807) [1.769]	4040.116** (0.0269) [2.254]	-375.029 (0.8973) [-0.129]
R-squared	0.4537	0.1519	0.031
Adjusted R-squared	0.4138	0.0898	-0.038
S.E. of Regression	66.375	46.963	101.843
Durbin-Watson	1.882	2.004	2.732
Diagnostic Test ¹			
a. Serial Correlation			
Breusch-Godfrey LM Test	Critical: 0.257 (0.9046) Est.: 1.157 (0.8851)		
b. Heteroskedasticity			
Breusch-Pagan LM Test (6, 82)	Critical: 0.572 (0.7517) Est.: 3.574 (0.7341)		
White (27, 61)	Critical: 0.532 (0.9631) Est.: 16.976 (0.9317)		
ARCH(4,80)	Critical: 0.608 (0.6583) Est.: 2.506 (0.6435)		
c. Functional Form			
Ramsey RESET (1, 81)	Critical: 3.425 (0.0679) Est.: 3.685 (0.0549)		
d. Stability Tests			
Chow test (7, 75): 1994Q4 Change in Exchange Rate Regime	Critical: 0.402 Est. 0.552		
Chow test (7, 75): 2005Q2 Exchange Control Liberalisation	Critical: 0.884 Est.: 1.214		
<i>Note: t-statistics [], probability ()</i>			
*** 1%, ** 5% and * 10% significance levels			

1. Diagnostic tests for Models B and C have been omitted because most of the estimates are statistically insignificant.

Chapter 9

CAPITAL FLOWS AND THEIR IMPLICATIONS FOR CENTRAL BANK POLICIES IN THE PHILIPPINES

by

Sittie Hannisha M. Butocan¹

1. General Framework and Major Capital Flow Management Policies

1.1 Current Account and Capital Account Liberalisation

The Philippines went through a long regime of import and foreign exchange controls in the post-World War II period. From 1949 to early 1970, foreign exchange policy was used to promote the development and growth of home-grown industries, limit imports, and deployed in an attempt to change the orientation of the Philippine economy from agricultural to agro-industrial. The objective was to protect local industries from foreign competition and promote import-substituting development strategy. A floating rate system was adopted in 1970, but it was not until late 1984 that the central bank stopped announcing a guiding rate and imposing a trading band.

While the controls served their purpose for a time – the import restrictions stimulated the growth of the manufacturing sector in the early years of exchange controls – experience showed that a perpetuation of these controls gradually took its toll on the economy resulting in the lack of competitiveness and stunted growth.

Thus, bold reforms to deregulate the foreign exchange system began to be implemented in 1992. The issuance of the Bangko Sentral ng Pilipinas (BSP) Circular No. 1389 on the “Consolidated Foreign Exchange Rules and Regulations” on 13 April 1993, marked an important achievement in the country’s efforts to liberalise foreign exchange transactions following four decades of exchange controls.²

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2. Specific provisions of the BSP Circular No. 1389 as well as other circulars discussed in this paper are available in the BSP website www.bsp.gov.ph.

The liberalisation process covered essentially the lifting of restrictions on current account transactions and the relaxation of some capital account controls. The major changes in the current account include the removal of the mandatory surrender requirements on all foreign exchange receipts as well as the mandatory inward remittance of all foreign exchange receipts from exporters and the lifting of restrictions on the purchase and sale of foreign exchange outside the banking system. Current account transactions were fully liberalised in 1995, the same year that the Philippines became an Article VIII country of the International Monetary Fund (IMF).

Presently, the Philippines' current account transactions, particularly on imports and import payments and exports and export proceeds, are relatively deregulated, except for standard documentation requirements and certain restrictions on commodity imports and regulated exports.

The rules on foreign borrowings and foreign investments were likewise modified to be consistent with the liberalised rules on the current account. Selected controls in the capital account were, however, retained to limit the country's external vulnerability. The major provisions liberalising the capital account, under the BSP Circular 1389, include the following:

- a. Allowing the full and immediate repatriation of foreign investments, including profit remittances, except investments under debt-to-equity;
- b. Allowing outward investments without prior BSP approval, if the foreign exchange are not to be sourced from the banking system (for outward investments to be sourced from the banking system a limit of US\$1 million per investor per year was set); and
- c. Relaxing registration requirements on foreign loans and investments such that only those whose foreign exchange needs (for future debt servicing and repatriation of capital and remittances of dividends and profits) are to be sourced from the banking system need to register with the BSP.

In the succeeding years, the BSP relaxed further regulations on capital flows taking into account the country's absorptive capacity amid increasing integration with global markets. Initiatives in this area included: the lifting of the restriction on the repatriation of investments (including the remittance of dividends and profits) under the debt-to-equity conversion programme; allowing indirect exporters to borrow short-term foreign currency deposit unit (FCDU) loans without prior

BSP approval to fund both foreign exchange and peso export-related costs; and raising the limit on outward investments to be sourced from the banking system, without prior BSP approval, to US\$3 million and further to US\$6 million, US\$12 million, and recently to US\$30 million.

1.2 Policies Implemented to Manage Capital Flows

Capital account liberalisation can have large potential economic and welfare gains. However, the opening of the capital account also increases exposure to external risks, which, in turn, create challenges in the conduct of domestic macroeconomic policies, including monetary management. It is, therefore, highly crucial for monetary authorities to identify the policy options for managing capital flows.

In general, the policy options available to the BSP in managing capital flows and limiting the adverse impact of either a surge in foreign inflows, or its reversal, include: greater foreign exchange flexibility, participation in the foreign exchange market, reserve accumulation, sterilisation policy, and financial sector reforms. In the past two decades, the BSP employed a combination of these measures, depending on the nature, causes and impact of these flows on the economy.

1.2.1 Period from 1992 to 1996

During the surge of capital inflows in the early to mid-1990s, there were concerns that the appreciation of the peso might adversely affect the country's competitiveness. Some participation in the foreign exchange market, through dollar purchases, was then required to increase the demand for foreign exchange. This is to stem the rapid appreciation of the peso and avoid substantial loss in competitiveness. At the same time, measures were undertaken reduce the supply of foreign exchange in the country. This was done through accelerating the BSP's prepayment of some of its external debt. Between 1994 and 1997, the BSP prepaid a total of US\$1.4 billion of foreign loans. The BSP also relaxed rules on capital outflows by increasing the allowable outward investments that can be sourced from the banking system from the initial US\$1 million to US\$6 million per investor per year. The restriction on the repatriation of foreign investments made under the debt-to-equity conversion programme was also lifted.

The increased inflow of foreign capital also led to concerns on its impact on domestic liquidity that could create inflationary pressures. However, the monetary authorities noted that the economy was undergoing a period of financial

deepening and that the demand for money was expanding. It was also noted that the acceleration in the expansion of domestic liquidity, particularly in 1993-1995, was not accompanied by a significant uptick in inflation. Thus, some additional expansion in domestic liquidity might not be necessarily inflationary as this was used to support the expansion of activities in the economy. Accordingly, monetary policy partly accommodated the capital inflows and tolerated some uptick in the growth of the money supply. The BSP built up its net foreign assets with the impact on domestic liquidity only partially sterilised. This approach allowed the provision of adequate liquidity to support economic growth while ensuring that inflation objectives are achieved.

1.2.2 Period from 1997 to 2004

Confronted by large reversal of capital flows and exaggerated fluctuations in the foreign exchange rate at the onset of the Asian financial crisis in 1997, tight monetary policy was pursued to adjust to the diminished demand for domestic assets, limit the extent of exchange rate depreciation, and contain inflationary pressures. The BSP undertook a delicate balancing act of limiting the depreciation of the currency and the rise in interest rates. The goal was to allow some depreciation and accept a temporary rise in interest rates to restore stability in the foreign exchange market, while at the same time limiting the adverse effects of this policy choice on the balance sheets of banks and corporates.

(a) Promotion of Financial Sector Stability to Support Stable Capital Flows

In response to the distress experienced in the banking and corporate sectors, the BSP embarked on an aggressive and wide-ranging reform process of the domestic financial system. The reform process involved greater commitment to enhancing risk management techniques, strengthening of the regulatory and supervision frameworks, promotion of transparency and good corporate governance, and improving financial infrastructure. One of the objectives was to increase the resilience of the domestic financial sector to volatilities in capital flows and enable it to allocate foreign capital more efficiently.

Providing the umbrella for this reform process was the enactment of the General Banking Law in May 2000. This law modernised the legal framework governing the regulation and supervision of the banking system. At the same time, it institutionalised a critical mass of banking reforms in the areas of risk management, corporate governance, competition as well as microfinance. This ushered in the implementation of new banking rules, such as those relating to

the adoption of a risk-based capital adequacy framework, the observance of fit and proper rule on bank management, the acquisition of a domestic bank by foreign banks/nationals and the granting by financial institutions of microfinance loans.

In terms of upgrading the regulatory framework, the BSP adopted a consolidated and risk-based approach to banking supervision to proactively respond to the rapidly changing and highly complex financial services industry. The risk-based capital adequacy framework was consistent with international standard and best practice.³ Meanwhile, the consolidated approach to the supervision of banks and their affiliates or subsidiaries began in 1998 with the rise of financial conglomerates, which raised concerns on the effectiveness of the traditional approach to managing risks. With this approach, the BSP strengthened its regulatory oversight by having a more comprehensive assessment of the risks involved in the activities of financial groups.⁴

To facilitate the efforts by banks to improve the quality of their loan portfolio, the BSP supported the passage of the Special Purpose Vehicle Act (SPVA) of 2001. The SPVA provided a legal framework for the creation of SPVs, including the incentives for the disposal of banks' non-performing assets (NPAs). This approach remained a private sector-led mechanism and did not involve the use of public funds. The SPVA, which expired in 2005, was extended for another year to encourage banks to dispose more of their NPAs.

Support infrastructure was upgraded to make the financial system more efficient. Along this line, the BSP initiated the upgrading of the existing payment system into a real time gross settlement (RTGS). The Philippine RTGS, also known as the Philippine Payment System or PhilPASS, was formally launched in December 2002. It is expected to minimise systemic risk as real-time high value payments between banks are made using their deposit accounts with the BSP.

3. The legal basis for risk-based capital requirement is embodied in Section 34 of the General Banking Law of 2000. 2 Circular No. 280, dated 29 March 2001. The said Section specified the guidelines on the risk-based capital adequacy framework which initially covered only capital requirements for credit risks. Circular No. 360 dated 3 December 2002 specified the guidelines to incorporate market risk in the risk capital adequacy framework for universal and commercial banks.

4. In line with the consolidated supervision, the BSP reorganised its departments under the Supervision and Examination Sector (SES) and a regrouping of the banks assigned to the various bank examination departments whereby parent banks are grouped with their subsidiaries and affiliates.

(b) Improvements in Transparency and Monitoring of Capital Flows

Measures to improve and upgrade the monitoring and transparency mechanisms with respect to capital flows were also introduced. The provision of timely and relevant information on capital flows can help economic authorities anticipate possible exchange rate movements or evaluate access conditions in international capital markets. The Philippines started subscribing to the IMF's Special Data Dissemination Standards (SDDS) in 1996. By January 2001, the Philippines was in full compliance with the SDDS in the dissemination of relevant data through the Internet in accordance with the prescribed timeliness and frequency.

To facilitate the adoption of international norms, the Philippines has also been participating in the formulation of Reports on the Observance of Standards and Codes (ROSCs). These reports assess the extent to which the Philippines conforms to the various key international standards and codes that are relevant to the effective functioning of its economic and financial systems. Resulting gains in transparency are expected to enable market participants to formulate better analysis, forecasts and investment decisions, thus reducing uncertainty and helping investors price risk on a sounder basis.

To complement the activities under the ROSCs, the Philippines has also been participating in the IMF-WB Financial Sector Assessment Programme (FSAP) aimed at providing a comprehensive assessment of the strengths, risks and vulnerabilities of the financial system.

(c) Development of Early Warning Systems

The magnitude and volatility of capital flows during the 1997 crisis underscores the need for developing early warning indicators to anticipate foreign exchange and banking crises to complement traditional macroeconomic models. In this regard, the BSP developed Early Warning Systems (EWS) on Currency Crises and Bank Failure. The EWS on currency crisis uses a signal approach that compares the actual data of key indicators with the thresholds to help monitor foreign exchange pressures and predict the occurrence of a currency crisis in the future. Meanwhile, the Bank Failure EWS produces a one-year advance forecast of a bank's solvency. The adoption of this Bank Failure EWS allows the BSP to prioritise its supervisory focus to the most vulnerable banks based on the results, and to initiate prompt corrective measures to prevent bigger problems down the road.

1.2.3 Period from 2005-2007

In recent years, the Philippines experienced large inflows of foreign capital due in part to improving market sentiment on the economy. This was driven largely by renewed investor confidence due to a positive economic outlook following the recent fiscal reforms and overall solid macroeconomic performance. However, the rise in capital inflows as well as the sustained foreign exchange inflows from overseas Filipino remittances and export receipts exerted appreciation pressures on the peso.

(a) Reforms in the Foreign Exchange Regulatory Framework

To reduce upward pressures on the peso in the short term and allow freer and more efficient capital flows in the long run, the BSP crafted two sets of reforms in its foreign exchange regulatory framework. These moves are envisaged to make the regulatory environment more responsive to the needs of an expanding, more dynamic economy that is increasingly becoming integrated with the global markets.

The first phase of the reforms involved changes pertaining to current and capital account transactions as well as to prudential regulations. Specific measures under this initiative include: (a) increasing the limit on allowable foreign exchange purchases by residents from banks for non-trade purposes from US\$5,000 to US\$10,000; (b) increased limit on allowable outward investment from US\$6 million per investor per year to US\$12 million; and (c) imposition of symmetrical limit of 20% of unimpaired capital with an absolute limit of US\$50 million for both overbought and oversold positions of the banks. This first package was contained under Circular Nos. 561 and 565, dated 8 March and 3 May 2007, respectively.

The BSP Circular No. 561 raised the limits on foreign exchange (FX) purchases by residents for non-trade transaction purposes and outward investments. The relaxation of the limits was intended to facilitate: (a) the rising demand by residents for foreign exchange to service non-trade transactions, such as education of dependents abroad, medical care and payment of service fees; and (b) greater integration with the international capital markets and diversification of asset portfolios and risk exposures of institutional investors and other corporate entities.

The adjustments were seen to support the further liberalisation of capital flows, and in the process, help dampen the effects of strong foreign exchange inflows on the exchange rate. They were also aimed at removing the incentive

for residents to circumvent existing regulatory measures by encouraging transactions within the formal banking system rather than the unsupervised market.

The second set of reforms was approved on 20 December 2007. The second phase focuses largely on two objectives: first, to promote greater integration with the international capital markets and risk diversification supportive of an expanding economy with global linkages; and second, to streamline the documentation and reporting requirements on the sale of foreign exchange by banks. The policy reforms under the second phase involve the following: (a) increasing the allowed foreign exchange purchases from banks by residents for non-trade current account transactions (without the need for supporting documentation) to US\$30,000 from US\$10,000 and outward investments (also without the need for BSP approval) to US\$30 million per investor per year from the previous US\$12 million per investor per year; (b) expanding the authority of foreign currency deposit units of thrift banks and rural/cooperative banks to deposit and borrow; (c) expanding the use of foreign exchange swaps involving the Philippine peso; and (d) enhancing other rules concerning both the current and capital accounts to improve the efficiency of the foreign exchange market.

(b) Liquidity Management Measures

As large foreign exchange inflows has the potential to drive liquidity expansion, the BSP implemented measures, effective 10 May 2007, to help prevent inflationary pressures that could build up over the medium term, mainly as a result of rapid money supply growth. These liquidity measures include: (a) encouraging pension fund agencies and other government-owned and controlled corporations to deposit funds with the BSP; (b) allowing trust entities under BSP supervision to deposit funds with the BSP; and (c) allowing special deposit account placements of banks to be considered as alternative compliance with the liquidity floor requirements for government deposits.

(c) Increasing the Reserve Buffer

The importance of building up foreign exchange reserves has been particularly highlighted during the 1997 financial crisis. The provision of adequate level of reserves enables policymakers to counter sudden capital flow reversal, particularly when they threaten to bring unwelcome changes in the value of the domestic currency. It can also enhance creditworthiness as it builds the credibility of an economy to service its foreign obligations. The increased inflow of foreign direct and portfolio investments, together with the steady inflow of overseas

Filipino remittances and strong export growth, provided the BSP an opportunity to build a more comfortable international reserve cushion.

(d) Prepayment of loans

The BSP again accelerated the servicing of its external debt obligations amidst large inflows of foreign exchange. In December 2006, the BSP prepaid its outstanding obligations to the IMF in the amount of US\$220 million, marking its exit from the post-programme monitoring (PPM) arrangement with the Fund. Meanwhile, in April 2007, the prepayment of the Philippine Brady Bonds freed up collateral amounting to US\$103 million including interest earned, of which, US\$85 million was credited to the BSP and the balance to the National Government.

2. Trends in Philippine Capital Flows: 1985-2008

2.1 Key Developments in the Macroeconomy

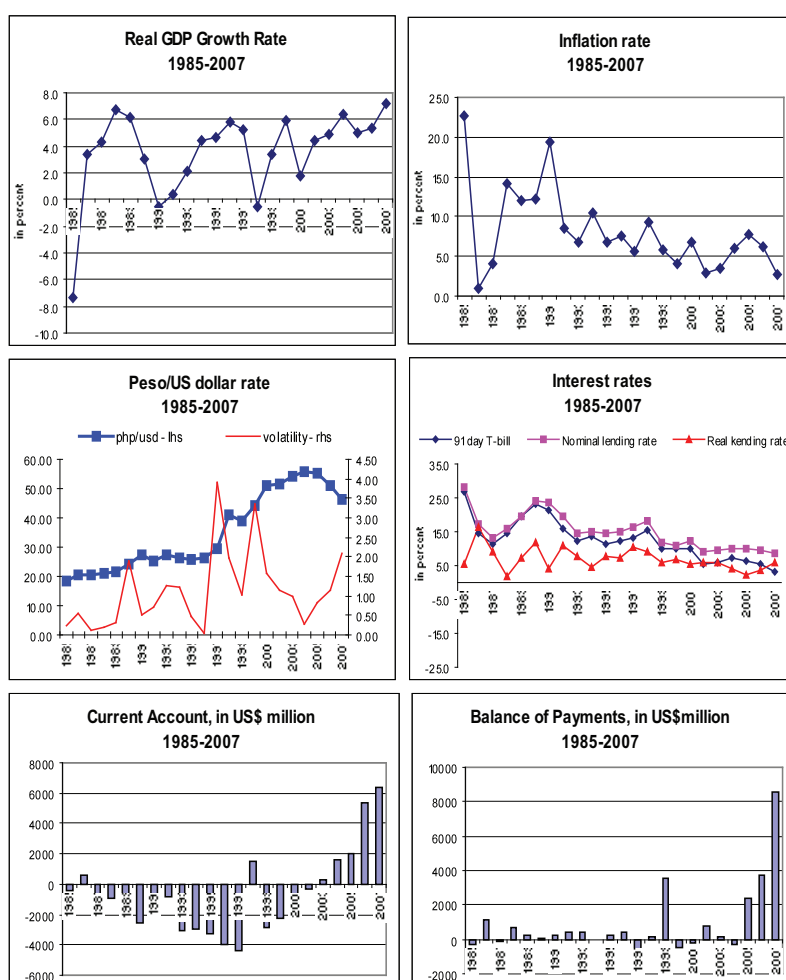
To provide a background against which to assess trends in the Philippine capital flows, a brief discussion of the major developments in the macroeconomy is provided in this subsection.

The Philippines' economic growth story over the past three decades has been marked by cycles of economic upswings and downswings. Significant interruptions in economic growth occurred in 1984-1985, 1991 and 1998, which were followed by periods of relative growth (Figure 1). In recent years, however, with the aid of key structural and policy reforms undertaken in the last two decades, the Philippines achieved its most stable macroeconomic position.

The early 1980s had been difficult as the economy was adversely affected by deteriorating external conditions. This was reflected mainly in poor commodity prices, deteriorating terms of trade, and the consequently reduced trade flows. The US dollar strengthened against virtually all world currencies. International interest rates were at their highest levels, thus increasing the cost of servicing the country's external obligations, eventually leading to the country's announcement of a moratorium on its foreign debt. These largely uncontrollable developments slowed down production, investments and revenues and led to deep recession in 1984 to 1985. Real GDP fell by 7 % in both these years. Inflation rate shot up to 50% in 1984 and 23% in 1985. Domestic interest rates also rose dramatically during this period.

The economic growth was revived in 1986 under a new administration, with real GDP reaching 6.7% in 1988. Driving in part the economic expansion during this period was the vast privatisation programme launched by the government in 1987. This initiative was aimed at supporting economic development through the attraction of fresh infusions of capital to major industrial sectors needing rejuvenation. But, beginning in 1990, the country encountered economic difficulties once again. The growing trade and fiscal deficits were of particular concern. This situation was exacerbated by the start of the Gulf War and, on the domestic front, by the power crisis as well as the onslaught of severe natural disasters (e.g., earthquake in 1991).

Figure 1
Philippine Economic Indicators



The Philippine economy gradually recovered starting in 1993 through the introduction of broad range of economic liberalisation measures designed to spur business expansion and foreign investment. Moreover, the initiatives to contain the budget deficit, mainly through the introduction of build-operate-transfer schemes and privatisation, efforts paid off. The narrowing of the budget deficit yielded palpable results, namely, lower interest rates and moderation of inflation.

In 1998, the Philippine economy slowed down as a result of spill-over from the Asian financial crisis. Real GDP fell to about -0.6% in 1998 from 5.2% in 1997. The Philippines quickly recovered from the crisis, posting positive growth rates starting in 1999 on the back of a recovery in the agricultural sector and strong government spending. There was some slowdown following the downturn in global information technology cycle in 2001, but the economy eventually picked up momentum from 2002 onwards.

The recovery was helped in part by supportive global economic conditions. More importantly, the authorities continued to pursue relevant reforms in critical areas of the economy. Since 2004, real GDP has grown steadily at over 5% annually. This was capped by the 7.3% GDP growth in 2007, the highest in over three decades. Growth was supported mainly by strong private consumption, spurred in part by large inflows of overseas Filipino remittances, increased government and private construction expenditures, and robust exports growth.

The Philippines experienced the most stable economic environment in 2005-2007. Inflation reached a historic low of 2.8% in 2007, leading to an ideal convergence of strong growth and low inflation during the year. The Philippines also saw marked improvements in the financial and external sectors of the economy. The banking sector exhibited marked improvements, as evidenced by near pre-crisis non-performing loan ratios, double-digit growth in assets and profitability, and capital adequacies way above the international standards. Meanwhile, the Philippine stock market closed 2007 as one of the top performers in East Asia. The Philippine peso appreciated about 16% to the U.S. dollar between end-2006 and end-2007. The country's balance of payments was in substantial surplus of around US\$8.5 billion, more than double the level in the preceding year, due mainly from the continued strength of the current account. Finally, the GIR, at an all-time high of US\$33.7 billion, remains adequate and within internationally accepted benchmarks.

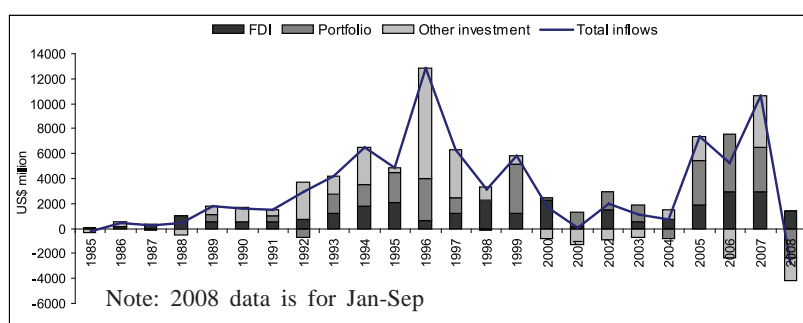
Since the second half of 2007, however, strains in the global economy began to surface – the disruption in financial markets and the unprecedented surge in food and fuel prices. Although faced with tougher economic prospects in 2008,

compensating strengths in the economy remain. To begin with, the country enters a slower period from a position of strong domestic demand and with more vibrant macroeconomic fundamentals today compared to previous episodes of global economic downturns. Other mitigating factors include the continued strong inflow of overseas remittances and the favorable prospects of key service sectors, particularly the business process outsourcing and tourism.

2.2 Trends in Capital Inflows (Non-resident Investment to the Philippines)

Influenced in part by these developments in the macroeconomy, the Philippine capital inflows showed three distinct trends in the last three decades (Figure 2).⁵ First, was the steady rise in capital inflows in the early 1990s that reached its peak in 1996. A slight decline was however recorded in 1995 following the financial strains that resulted from the Tequila crisis. The surge in capital inflows during this period very likely reflected the reforms undertaken to liberalise the foreign exchange system in 1993. This was complemented by the efforts of the National Government to attract and promote foreign investments. Major efforts include the rationalisation of investment incentives under the Omnibus Investments Code introduced in 1987 and the passage of the Foreign Investment Act in 1991 (relevant legislations pertaining to foreign investment in the Philippines are listed in Annex A). These initiatives helped facilitate further the inflow of international capital to the Philippine shores. From the implementation of foreign exchange liberalisation initiatives in 1993 until 1996, gross investment inflow by non-residents grew at an annual pace of about 60%.

Figure 2
Real Effective Exchange Rate Indices of the Peso



5. Total/gross capital inflows as discussed in this paper consist of non-residents' (1) foreign direct investment; (2) portfolio investment; and (3) other investment. Financial derivatives were not included.

The second major development in capital flows occurred in the years 1997-2004. The upward trend in capital inflows was cut short by the Asian financial crisis in 1997 that led to massive reversal of capital flows. During this year, gross non-residents investments to the country dropped by 50%.

There was a slight recovery in capital inflows in 1999 due largely to a Swiss manufacturing company's buy-out of a local dairy firm.

The recovery in 1999 was, however, interrupted by the dotcom bubble in early 2000s, which again affected access to international financial markets. In 2000-2001, gross capital inflows declined by 71% and 99%, respectively. Following improvements in both the domestic and global economic environments in 2005-2007, non-residents' investments to the Philippines grew rapidly, almost reaching its historic highs in the mid-1990s.

Heightened uncertainties in the global economy in 2008 led to weaker capital inflows to the country. In particular, capital flows were adversely affected by: (a) the continued weakening of the economies of the country's major trading partners; (b) heightened risk aversion of foreign investors due to a general lack of confidence in the global financial system; and (c) the extensive de-leveraging and financial restructuring process undertaken in the major advanced economies, which entailed the withdrawal by these economies of their funds invested abroad, particularly in emerging market economies. While non-residents' direct investment continued to post a surplus in the first three quarters of 2008, this was lower by 45% compared to the same period in 2007. Meanwhile, non-residents' portfolio and other investment reversed to a deficit in the January-September 2008 period.

In terms of composition, foreign direct investments (FDI) and loan availments comprised a significant share of foreign inflows as they accounted for an average of about 30% and 51%, respectively, during the period 1990-1996. The share of FDI declined significantly in 1996 to 5%, but recovered in 1998. FDI by country of origin is dominated by the US and Japan and is channeled mainly to the manufacturing sector. Starting in 1999, portfolio investments, particularly investments in bonds, and direct investments have generally been the most important sources of capital inflows.

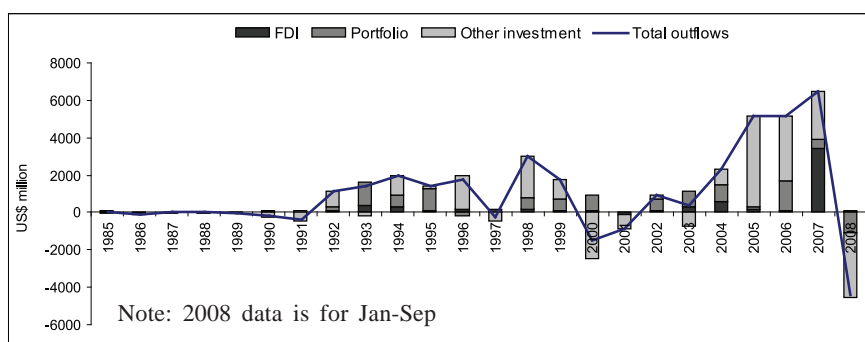
2.3 Trends in Capital Outflows (Resident Investment Abroad)

Since the 1990s, the total capital outflows basically moved in tandem with the capital inflows (Figure 3). This trend is consistent with the IMF's observation that "to a certain extent, an increase in outflows is a consequence of rising

inflows, with some outward portfolio flows representing the onward distribution of investment flows into the region, and other outflows representing hedging associated with portfolio or FDI inflows.”⁶

Outward investment flows also registered increases in the early to mid-1990s, most likely a result of the relaxation of rules on capital outflows as part of the foreign exchange liberalisation measures in 1992. The Asian financial crisis, however, dampened residents’ investments abroad. There was a short recovery in 1998, but gross capital outflows fell further in 2000. Beginning in 2005, however, the total capital outflows reached historic highs following favorable developments in the global economy.

Figure 3
Total Capital Outflows: Residents’ Net Investments



In the first three quarters of 2008, residents’ investment abroad weakened due to the persistence of negative investor sentiment in response to the global financial crisis. Residents’ FDI investment abroad remained in surplus but was lower by 96% compared to the same period in 2007. Meanwhile, outward portfolio investment posted a higher deficit in the first nine months of 2008.

The other investment account comprises the major component of gross outflows. It recorded large increases in 2005 to 2007, due primarily to prepayments and repayments made by the National Government and the BSP of their outstanding loan obligations amidst periods of large and growing stocks of foreign reserves. Portfolio investment is also a major contributor to capital outflows, with its share to total outflows averaging 20% in 1990-1999 and 38% in 2000-

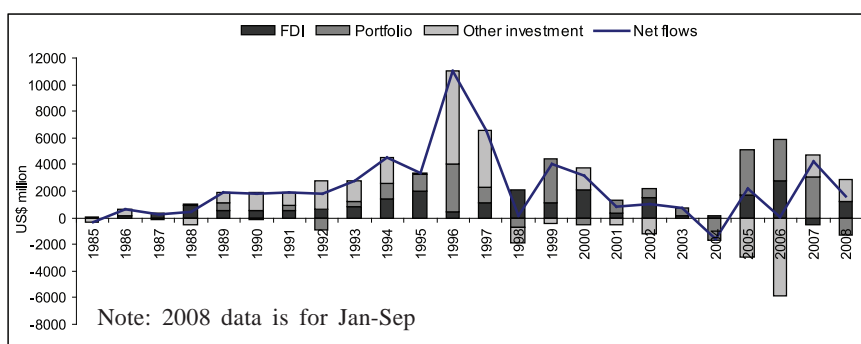
6. Chapter 2: The Evolving Nature of Capital Flows in Emerging Asia, Regional Economic Outlook: Asia and Pacific, April 2007, International Monetary Fund

2007. While the Philippines' direct investments abroad have remained negligible in the past years, a substantial equity capital placement abroad following the acquisition of shares of a foreign power company was recorded in 2007.

2.4 Net Capital Flows

Gross capital inflows largely offset the country's gross outflows throughout the review period, making the Philippines a net capital importer. Net capital flows very much mirrored the trend in gross capital inflows, also reaching its peak in 1996 and began declining in 1997 (Figure 4). Nonetheless, as a result of the rapid increase in gross capital outflows, particularly the significant prepayments made in 2005 to 2007, net capital flows have been lower during this period.

Figure 4
Net Capital Flows: Inflows Less Outflows



3. Key Determinants of Capital Flows

The large scale capital flows to emerging market countries in the early 1990s and in mid-2000 as well as the extent of their reversal during the 1997 crisis have stimulated an extensive literature on the determinants of such flows. While the theoretical literature has considered a wide range of possible factors, much of the empirical work has adopted a framework distinguishing between the external ("push") and internal ("pull") determinants of capital flows (Calvo et al (1993), Chunan et al (1998), Fernandez-Arias (1996), Montiel and Reinhart (1999)).

Internal or “pull” factors refer to the domestic determinants of capital inflows, such as domestic interest rates, stock market prices, macroeconomic stability, exchange rate regime, inflation, domestic credit level, creditworthiness and industrial production. Meanwhile, external or “push” factors include movements in world interest rates, terms-of-trade developments, the international business cycle and its impact on profit opportunities, and any regulatory changes that affect the international diversification of investment portfolios at the main financial centers.

Analysis of the relative roles of push and pull factors in driving capital flows has an important policy implication, particularly in capital recipient countries. If capital flows are determined by push factors, domestic policymakers will not have much control on capital flows. On the other hand, to the extent that capital flows are determined by pull factors, domestic policymakers will have more power on capital flows by introducing sound macroeconomic policies.

In order to analyse the magnitude and relative impact of internal and external factors on capital flows, the vector autoregression model can be utilised as in other empirical studies of capital flow determinants. The use of the VAR model is useful in generating impulse response functions (IRFs), which provide an indication of the response of capital inflows to shocks in the exogenous variables.

In line with the “push-pull” factors approach, the estimation equation can be specified as follows:

$$CF = a + b_i X_i + d_i Z_i + u$$

where, CF = total capital inflows

X_i = represents the internal variables (pull factors); and

Z_i = represents the external variables (push factors)

In this paper, the pull factors identified are the real GDP growth rate, real domestic interest rate, current account balance to GDP and exchange rate volatility, while the push factors include world real GDP growth rate and world interest rates.

3.1 Data Description

The data employed for the estimation are quarterly data spanning the period 1990Q1-2008Q2. The variables used in the estimation are described in Table 1.

Table 1
Estimation Variables

Variable	Notation	Description
<i>Dependent variable</i>		
Capital inflows	LOG(CF)	Capital inflows = FDI inflows + portfolio investment inflow + other investment inflow; in log form
<i>Explanatory variables</i>		
<i>Internal variables</i>		
Real GDP growth rate	RGDP	Philippine real GDP growth rate; in percent
Real interest rate	REAL_91TB	Average Philippine real 91-day T-bill rate; in percent
Current account to GDP ratio	CAB_GDP	Philippine current account balance as a percent of real GDP; in percent
Real effective exchange rate	REERMTP	Volatility (as measured by standard deviation) of the real effective exchange rate index of the peso relative to the currency basket of major trading partners (MTPs) including: USA, Japan, European Monetary Union and the UK
<i>External variables</i>		
World Real GDP growth rate	US_RGDP	Proxied by US real GDP growth rate; in percent; source: US Bureau of Economic Analysis, www.bea.gov)
World real interest rate	LIBOR	Proxied by the average 3-month LIBOR; in percent

3.2 Estimation Methodology

Before proceeding with the VAR estimation, the time-series properties of the variables were first determined as estimations of non-stationary series are known to be spurious. The Augmented Dickey-Fuller (ADF) test is used to check for the presence of unit roots or non-stationarity. The results of the ADF test indicate that all the variables are non-stationary in levels, except for capital inflows and US GDP growth (Annex B).

First-differencing was applied to remove the non-stationarity of the series. After the variables were expressed in first difference form, the ADF test result shows that all series are stationary at the 5% significance level. There is a caveat though in performing this step – first differencing results in the loss of long-run information on the data.

With the variables transformed into stationary series, the model specified earlier is estimated using the VAR to generate the IRFs. In estimating the VAR, all variables were first differenced for consistency.

An important preliminary step in impulse response analysis is the selection of the VAR lag order. In this exercise, the lag of order three was chosen for the VAR estimation based on the Akaike and Schwarz information criteria. The residual test shows that there is no significant serial correlation in the residuals.

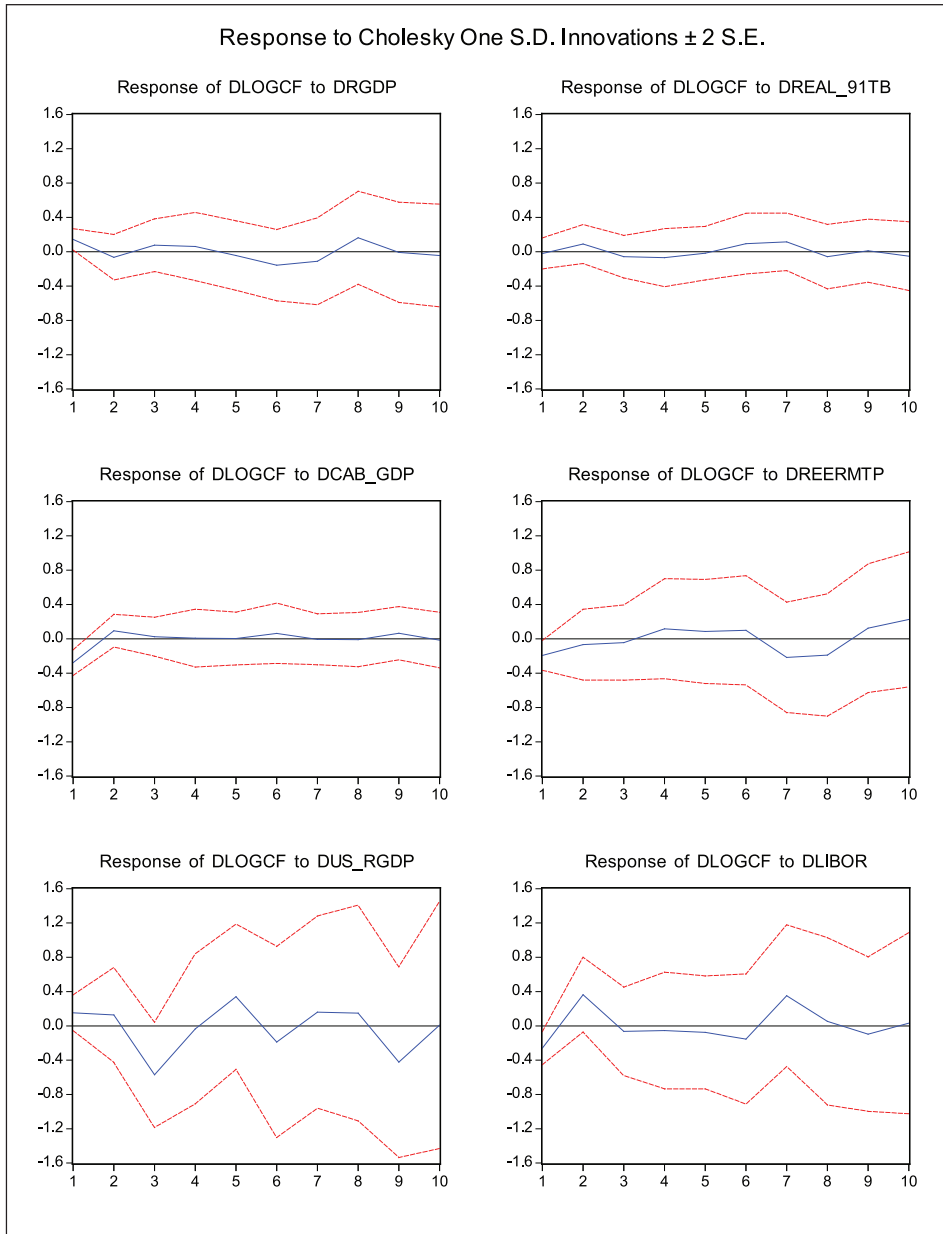
It may be noted that IRF results using Cholesky decomposition could be sensitive to the ordering of the variables in the VAR. Therefore, it is important to decide on a proper ordering of the variables. There is, however, no unique solution to the ordering. The Cholesky decomposition requires the variables to be ordered in a way such that variables placed higher in the ordering have a contemporaneous impact on all variables lower in the ordering, but the variables lower in the ordering do not have a contemporaneous impact on the variables higher in the ordering. In this paper the Cholesky ordering is based on theoretical expectations and Granger causality test (Annex C). The external factor variables were placed before the domestic variables, consistent with a small country assumption. CF is placed last in the ordering to allow all other system variables to have a contemporaneous impact on it. Based on these considerations, the Cholesky ordering was determined as follows: DUS_RGDP, DLIBOR, DREAL_91TB, DREERMTP, DCAB_GDP, DRGDP, DLOGCF.

3.3 Estimation Results

The IRF result (Figure 5) suggests that a positive Philippine GDP growth can lead to an increase in capital inflows, with the impact reaching its highest magnitude in the first quarter after the shock indicating a relatively rapid effect on capital inflows. Meanwhile, the current account balance exhibits a negative relationship with capital inflows, which could imply significant reliance on foreign capital in financing large and persistent current account deficits. Also, as expected, a less volatile exchange rate environment tends to attract capital inflows. The result also confirms the predicted inverse relationship between international interest rates and capital inflows. That is, sustained declines in world interest rates, particularly of the lending economies, can lead foreign investors to seek out other markets that would generate higher returns, thus increasing capital inflows to these markets. IRFs generated in relation to the domestic interest rate and US GDP growth rate yielded insignificant results.

Overall, the results of the IRF analysis suggest that capital inflows to the Philippines is influenced by both internal and external factors, specifically by the growth of the domestic economy, the level of current account deficit, a stable exchange rate environment and decline in world interest rates.

Figure 5
Impact of Internal and External Variables to Capital Inflows



4. Capital flows and Monetary Policy

Capital flows can be a powerful force towards further economic growth, but if not managed carefully, these can disrupt the development process of a country. Large capital flows have exposed emerging market economies to risks in capital markets and financial sectors and increased their vulnerability to external shocks. These risks include macroeconomic imbalances such as the rapid appreciation of the real exchange rate, inflationary risks associated the expansion in domestic liquidity, asset price bubbles, and destabilising effects from sudden stops or reversal of these flows, similar to what happened during the Asian financial crisis. These potential adverse effects of capital flows could complicate the task of monetary as well as exchange rate management.

In the Philippines, large inflow of foreign capital, particularly of a short-term nature in the years 2005-2007, and its subsequent weakening in light of the global financial crisis in 2008, have affected the movements of the key economic variables, particularly the exchange rate, international reserves, domestic liquidity, and asset prices.

4.1 Impact of Capital Flows on Monetary and Financial Variables

4.1.1 Exchange Rate

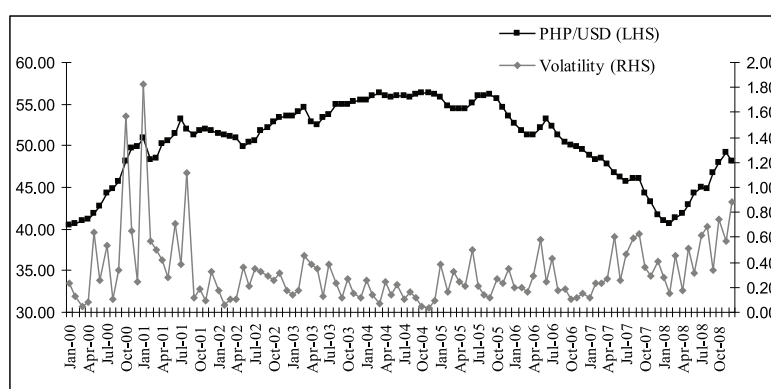
Significant movements in capital flows exert pressure on nominal and real exchange rates. Under a floating exchange rate regime, capital flows directly impact on the demand for domestic currency assets, leading to an appreciation or depreciation in the nominal exchange rate. In an environment of sticky prices, the real exchange rate is likewise affected.

In the Philippines, the rise in capital inflows starting in 2005 as well as the strong foreign exchange inflows from overseas Filipino remittances and export receipts exerted upward pressures on the peso. Based on end-of-period rates, the peso appreciated by 6.0% in 2005, 8.0% in 2006 and by 19.7% in 2007.⁷ During this period, the peso exhibited relative stability with the average standard deviation of the daily exchange rates for 2005-2007 at P0.28 (Figure 6). This was in stark contrast to the sharp depreciation experienced in the early 2000 when peso volatility reached a peak of P1.82.

7. Based on average monthly rates, the peso appreciated by 1.7%, 7.4% and 11.2% for 2005, 2006, and 2007, respectively.

In 2008, however, the weaker capital flows owing to the rising risk aversion on concerns about a slowing global economy have put a dampening effect on the peso. While the peso appreciated by 3.8% on average for 2008, the end-of-period rate showed the peso depreciated by 12.8%. The depreciation of the peso was, however, partly tempered by the continued strong dollar inflow of overseas remittances and export earnings. Heightened market uncertainties drove the average volatility of the peso to rise by ₱0.47 in 2008.

Figure 6
Pesos per US Dollar Rates and Volatility



The strength of the peso amid strong foreign exchange inflows in the years 2005-2007 also led to the appreciation of the real effective exchange rate (REER) index of the peso against the currency baskets of its major trading partners (MTPs) as well as competitor countries. During this three-year period, the REER of the peso gained by an average of 9.9% against the currency basket of MTPs, and by 6.0% and 4.4% for the broad and narrow baskets of competing currencies, respectively (Table 2).

In 2008, the peso continued to exhibit strength on a real trade-weighted basis as the REER for the broad and narrow baskets of competing currencies appreciated by 10.2% and 8.4%, respectively. This could be due to the greater nominal depreciation of competitor currencies against the US dollar.

Table 2
Real Effective Exchange Rate Indices of the Peso

Year	LEVEL			PERCENTAGE CHANGE		
	Major Trading Partners ^{1/}	Competing Countries		Major Trading Partners ^{1/}	Competing Countries	
		Broad ^{2/}	Narrow ^{3/}		Broad ^{2/}	Narrow ^{3/}
2000	71.92	109.02	169.40	-6.20	-7.40	-8.58
2001	67.37	114.40	180.97	-6.33	4.94	6.83
2002	66.50	106.14	160.53	-1.29	-7.22	-11.29
2003	59.94	99.84	142.67	-9.87	-5.94	-11.12
2004	57.46	100.78	146.14	-4.15	0.94	2.43
2005	61.98	101.43	149.52	7.88	0.65	2.31
2006	69.99	109.01	153.85	12.92	7.47	2.89
2007	76.21	119.69	166.27	8.85	9.81	8.13
2008 ^{4/}	80.00	131.89	180.29	4.97	10.19	8.43

1/ U.S., Japan, European Monetary Union (EMU), United Kingdom
2/ Singapore, South Korea, Taiwan, Malaysia, Thailand, Indonesia, Hong Kong
3/ Indonesia, Malaysia, Thailand
4/ Estimate

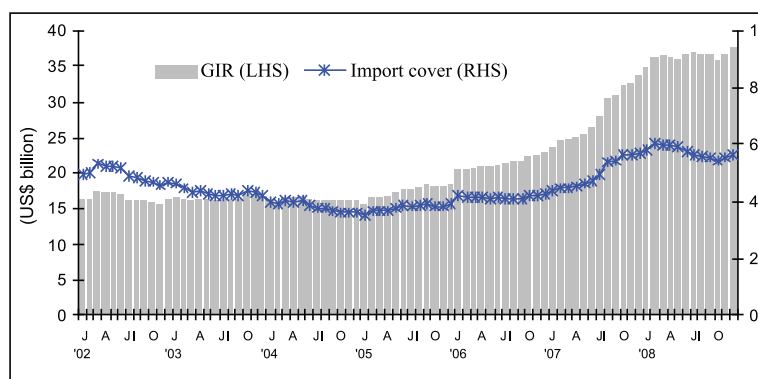
In the paper by Yap (2008), it was pointed out that foreign exchange inflows may have a less prominent role in the strengthening of Asian currencies, in general, and the peso, in particular. Apart from maintaining a current account surplus since 2003, the paper highlights other factors that contributed to the appreciation of the peso, including: (a) base effect – the peso exhibited one of the sharpest depreciations during the Asian crisis period, it was thus expected to have a faster appreciation during the recovery phase; (b) the success of the Philippine government’s stringent fiscal reforms implemented in 2005 helped boost investor confidence, which contributed to the peso’s strong appreciation in 2006-2007; and (c) the BSP, relative to other central banks in the region, did not intervene much in the foreign exchange market resulting in a faster appreciation of the peso compared to other Asian currencies.

4.1.2 Foreign Exchange Reserves

In so far as capital flows result in severe fluctuations in the exchange rate and bring unwelcome changes in its value, monetary authorities intervene in the foreign exchange market by buying foreign currency, thus increasing the foreign reserve buffer. Given its commitment to a flexible exchange rate regime, the BSP limits its intervention in the foreign exchange market in smoothening exaggerated movements in the exchange rate, which can threaten the achievement of the inflation target.

Since 2005, the country's gross international reserves (GIR) grew at record highs (Figure 7). In end-December 2007, the GIR reached an all-time high of US\$33.75 billion. Reserve accumulation remained strong even with the significant debt prepayments made by the government in recent years. GIR also remained high in 2008 despite concerns over rising risk aversion from the global financial strains.

Figure 7
Gross International Reserves



While large foreign exchange reserves enhance an economy's resilience against external vulnerabilities, its rapid accumulation can lead to strong liquidity and credit growth. However, in the Philippines, there is still extra room to expand bank credit to the private sector, as will be discussed in later section.

4.1.3 Domestic Liquidity

From 2002-2007, domestic liquidity registered steady increases, with its most notable expansion posted in 2006 as it rose by 22.7% relative to the 2005 level (Table 3). The growth in the money supply was supported mainly by the rapid expansion in NFA. The NFA position expanded by an average of 35% in 2005-2007 owing to higher foreign exchange inflows from foreign investments, exports and remittances of overseas Filipinos. While both the BSP and the other depository corporations (ODCs) exhibited significant expansions in NFA, the increase has been particularly notable for the ODCs as it reverted to positive levels beginning in 2005 and even posted three-digit growth rates in 2005-2006. The increased intermediation of capital inflows by banks resulted in the expansion of the

industry's resources. Meanwhile, net domestic assets (NDA) posted modest growth in recent years as the growth in net credits extended to the public and private sectors were offset by declines in net other items account.

In 2008, the demand for money remained high due to the strong growth in both NFA and NDA. NFA grew by 12.9% in November 2008 relative to December 2007 due mainly to the expansion in the BSP's foreign assets. Banks' NFA, however, has been declining as investments in foreign securities dropped while foreign liabilities increased.

Table 3
Domestic Liquidity

Year	Level (in million pesos)			Percent change		
	NFA	NDA	M3	NFA	NDA	M3
2002	493,102	2,067,695	1,846,142	39.8	3.3	9.5
2003	597,668	2,120,078	1,923,637	21.2	2.5	4.2
2004	677,664	2,306,673	2,121,392	13.4	8.8	10.3
2005	911,651	2,299,648	2,339,012	34.5	-0.3	10.3
2006	1,366,258	2,444,787	2,869,568	49.9	6.3	22.7
2007	1,659,261	2,421,539	3,174,365	21.4	-1.0	10.6
2008 ^{1/}	1,873,121	2,561,558	3,440,067	12.9	5.8	8.4

1/ as of end-November 2008

4.1.4 Asset Prices

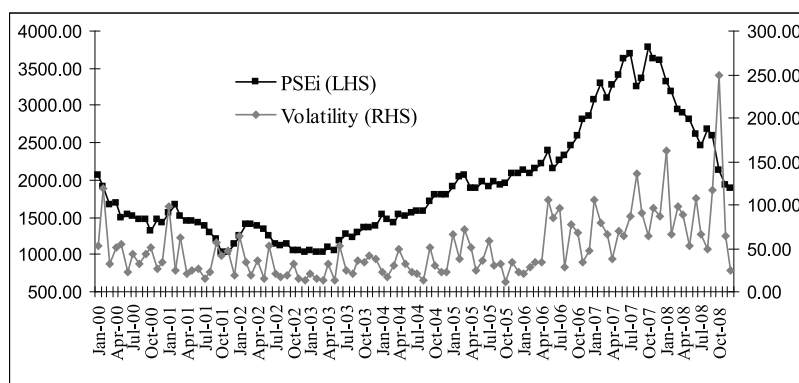
There are three ways in which capital flows affect asset prices (Kim and Doo, 2008). First is a direct effect through foreign investment in the stock market. Second, capital flows indirectly result in asset price increases when there is significant intervention in the foreign exchange market that consequently increases liquidity flows into asset markets. Third, empirical studies suggest that capital inflows tend to generate economic booms and, thus, lead to an increase in asset prices.

In the Philippines, the stock market composite index (PSEi) has shown steady increases in the years 2004-2007 (Figure 8). This was driven, in part, by a string of positive economic developments, which included a more accommodating external environment that led to the rise in regional equity indices, improvement in the country's fiscal position following the passage of government revenue-enhancing measures, and the deceleration in inflation. These developments, in

turn, contributed to the favorable market sentiment on the economy and attracted foreign capital flows. A more stable political environment, solid growth in corporate profits, and implementation of landmark financial reforms, also boosted share prices in these years. In 2007, the end-of-period composite index surged to 3,621.6 index points, despite the challenges that began to surface in the global financial markets in the second half of the year.

Come 2008, however, stock prices trended downwards amid heightened fears over the US sub-prime crisis and worries over a prolonged global slowdown. The PSEi ended 2008 at 1,872.9 index points, registering a year-to-date decline of 48% from end-2007.

Figure 8
Philippine Stock Market Composite Index (PSEi)



The influx of foreign capital had an important contribution to the positive developments in the local bourse in recent years (i.e., 2005-2007). Foreign investor participation has, in fact, outpaced local placements as it broadly accounted for over 50% of total market transactions since 2002 (Figure 9). The increased interest of foreign investors was also evident in net foreign transactions, which represent the inflow (net buying) and outflow (net selling) of foreign funds in the local stock market. Net foreign buying has grown steadily during 2003-2006. However, the rising investor risk aversion due to the global financial crisis led to a decline in net buying activity in 2007, relative to 2006, and subsequently a reversal to net foreign selling in 2008 (Figure 10).

Figure 9
Share of Foreign Transactions to Total Value Traded in the PSE

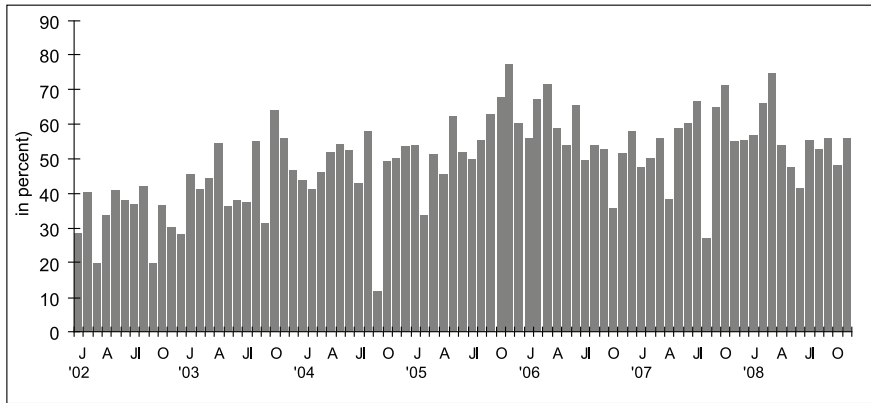
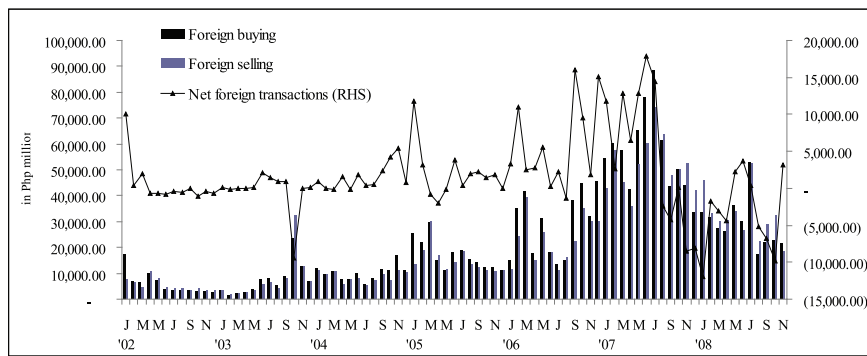


Figure 10
Value of Foreign Transactions in the PSE



Meanwhile in the real estate market, prices started to recover in 2004 following sharp declines in the earlier years as a result of the Asian financial crisis.⁸ Since 2004, prices rose steadily in line with the improving economic environment and increasing inflows of capital in these years. Based on estimates from Colliers International Research, land values in the fourth quarter of 2007 rose by 30% and 21% year-on-year, respectively, for the CBDs in Makati City and Ortigas Center. The hike in demand for office space in recent years came mainly from the growing business process outsourcing sector in the country.

⁸ Land values in the country's central business districts (CBDs) in Metro Manila declined by an average of 13% in 1998-2003.

4.2 Monetary Policy Reactions to Deal with Capital Flows in Recent Years

Capital flows can have important implications for monetary policy formulation by way of their effect on the inflation rate. In the Philippines, there are three channels by which capital flows can affect inflation, namely, via the exchange rate, interest rate and domestic liquidity. First, massive and sudden flow of foreign capital would result in volatile exchange rates affecting import prices and, subsequently, inflation. Second, in the case of net outflows of capital or a drop in access to foreign financing would imply a corresponding increase in demand for domestic financing, both from banks and non-banks. If the domestic liquidity situation is tight, the loss of access to foreign capital may lead to an increase in interest rates that have the tendency to have inflationary repercussions due to higher cost of borrowing. Third, capital flows can affect the conduct of monetary policy through their direct impact on money supply, which, in turn, can affect future inflation outcomes.

In view of these factors, the BSP, during the surge of foreign exchange inflows (which include foreign investment inflows, export receipts and overseas remittances) in the years 2005-2007, employed various measures that would mitigate the effects of such flows on inflation and inflation expectations.

A package of measures was adopted in the areas of foreign exchange regulatory framework and liquidity management in 2007, as discussed in Section 1.2. The primary objective in implementing these reforms is to ensure that the additional resources provided by foreign capital inflows are used to promote growth and development, at the same time that the BSP pursues its mandate of maintaining price stability and safeguarding the stability of the banking system. Specific measures in these areas include the following:

4.2.1 Reform in the Foreign Exchange Regulatory Framework

- a. Increase in the maximum allowable foreign exchange purchases by residents to cover payments to foreign beneficiaries;
- b. Elimination of the “no-splitting” rule within a 20-day period on foreign exchange purchases for non-trade purposes;
- c. Increase in the allowable outward investments by residents without prior BSP approval and registration; and
- d. Imposition of a symmetrical limit of 20% of unimpaired capital with an absolute limit of US\$50 million on both the overbought (OB) and oversold (OS) positions of banks.

4.2.2 Liquidity Management Measures

- a. Encouraging government-owned and controlled corporations to deposit funds with the BSP;
- b. Allowing trust entities under BSP supervision to deposit funds with the BSP; and
- c. Allowing placements in special deposit account windows of banks to be considered alternative compliance with the liquidity floor requirements for government deposits.

Meanwhile, the weaker capital flows in 2008 resulting from the global financial crisis have put a dampening effect on the peso and resulted in sharp declines in equity prices. Nonetheless, the sustained flow of remittances of overseas Filipinos as well as higher export services receipts continue to provide a balancing effect on the domestic currency. The macroeconomic effects of weaker capital flows have also been muted due to the continued resilience of domestic demand, sustained health of the corporate sector, and the dominant domestic financing of investments.

5. Capital Flows and Financial Stability

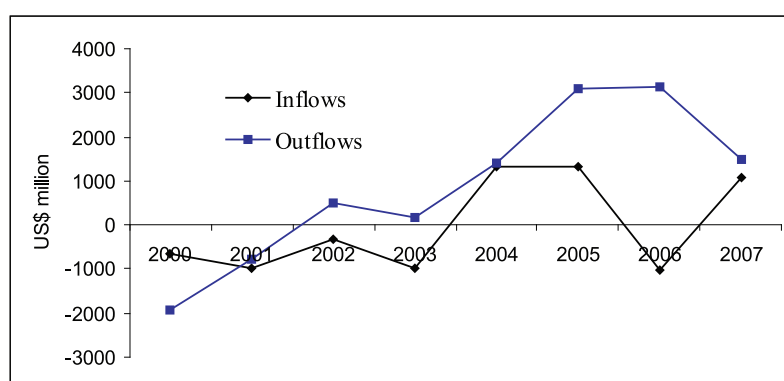
The steady inflow of foreign capital in recent years has helped facilitate the development of the financial sector by allowing higher levels of investment, promoting technology transfer, and expanding market access. However, it also exposed financial markets to risks through increased vulnerability to external shocks, such as what the current global financial crisis has harshly demonstrated. Thus, to help maximise the benefits and, at the same time, effectively manage the risks from foreign exchange flows, maintenance of the stability and promotion of the development of the financial markets has become a priority for many emerging market countries, including the Philippines.

5.1 Capital Flows in the Banking Sector in the Last Five Years

Figures on short-term capital inflows to the banking system in recent years have been generally negative, specifically for the years 2000-2003 and in 2006 (Figure 11). For 2000-2002, both portfolio and other investment inflows treaded on the negative. For portfolio investment this implies that the amount of non-residents' portfolio investments to the Philippine banking sector is more than offset by the sale of non-residents of their previously held domestic portfolios. Meanwhile, for other investment account, this means that the amount coming from overseas as other investments to domestic banks has been smaller compared

to that remitted abroad as payment for other investment received previously. This development is likely explained by the widespread uncertainty in both the global and domestic economies during this period. Portfolio investment inflows turned positive in the succeeding years. These net inflows were, however, offset by the large net outflow of non-residents' other investments to the country, particularly for the years 2003 and 2006.

Figure 11
Short-term Capital Flows to the Banking System



Short-term capital outflows to the banking system, has generally increased between the years 2000-2007. The amount invested abroad by resident banks as both portfolio and other investments generally offset the amount they received from the capital they have previously invested overseas. This is particularly evident in 2005-2006 during which resident banks, together with the National Government and the BSP repaid and prepaid a significant amount of their external loan obligations, taking advantage of the large stock of foreign reserves available.

5.2 Impact of Capital Flows on Credit Growth

The surge in capital inflows in recent past did not translate directly to increased lending activities by banks. Bank lending growth has remained modest despite ample liquidity and a generally sound financial system. Total outstanding loans in the banking system grew at an average of 2.8% in the years 2001-2007 (Table 4).

A combination of demand and supply factors explains the relatively moderate growth in bank lending. On the demand side, borrowers have not borrowed heavily from banks due partly to excess capacity and highly liquid positions of

companies. The relatively weak demand for loans may also be traced to the changing nature of businesses. The country's emerging growth industries, which are mainly service-oriented, such as trading, tourism and business process outsourcing are less capital and credit-intensive. Non-bank sources of financing are also becoming more available to the corporate sector as the domestic financial market broadens, therefore reducing the reliance on bank lending. On the supply side, credit growth may have been constrained by the cautious stance of banks following major economic and political uncertainties, and information asymmetries brought about by the lack of extensive database and credit bureau system to aid and facilitate loan evaluation.

Table 4
Bank Lending (Other Depository Corporations)

Year	Level (in billion pesos)	Percent change
2001	1,581.5	--
2002	1,627.7	2.9
2003	1,697.1	4.3
2004	1,754.7	3.4
2005	1,797.9	2.5
2006	2,000.0	11.2
2007	1,856.0	-7.2
Sept 2007	1,654.4	--
Sept 2008	2,052.9	24.1
Other Depository Corporations (ODCs) consist of universal and commercial banks, thrift banks and rural banks.		

5.3 Central Bank Policy Reactions Related to Capital Flows and Financial Stability in Recent Years

In recent episodes of capital flows surges, the key priority has been to promote a well-developed financial market so as to increase the country's capacity to absorb such flows, that is, the ability to channel these resources to a broader range of investment opportunities.

In an effort to broaden and deepen the Philippine financial market, the BSP has pushed financial sector reforms in recent years aimed at (a) improving the BSP's supervision technology and capacity; (b) aligning prudential regulation of the banking system with international standards and best practices; (c) strengthening corporate governance standards and market discipline mechanisms; and (d) stimulating the development of the domestic capital market. Relevant measures toward this end include the following:

- Improved financial transparency by enforcing more stringent mark-to-market regulations; and aligning local accounting standards with International Accounting Standards;
- Supported the passage of the Special Purpose Vehicle (SPV) Act and Securitisation law to help banks resolve their bad asset problem;
- Launched the Philippine Payments System or PhilPASS, a real-time payments infrastructure system;
- Provided for the recognition/de-recognition of domestic credit rating agencies for bank supervisory purposes;
- Issued a directive paving the way for the creation of unit investment trust funds (UITFs) by authorised trust entities to align the operation of pooled funds under management by trust entities with international best practices and enhance their credibility with retail investors;
- Formed the Financial Sector Forum (FSF) with the SEC, the IC, and the PDIC, to provide an institutionalised framework for coordinating the supervision and regulation of the financial system;
- Supported the private sector-led initiative to establish a Fixed Income Exchange (FIE) to provide an electronic platform for the secondary trading, clearing and settlement, depository, registry and custody of fixed income securities and its derivatives;
- Approved Securities Borrowing and Lending (SBL)⁹ as part of the PSE's long-term programme to create more stock market sophistication and liquidity;
- Pushed for the completion of the Philippine Dealing and Exchange Corporation (PDEX) interconnection for the efficient trading of government

9. SBL involves the lending of securities from a lender's portfolio on a given date to support borrowers trading activities with the commitment by the borrower to return or deliver the same or equivalent securities to the lender at a future date.

securities through a “straight through processing”¹⁰ of government securities traded at the FIE; and

- Provided guidelines for custodianship agreement between the owner/purchaser of the security and the BSP accredited third party custodian of his choice to promote investor protection and enhance the confidence of investors in the government securities market.

Meanwhile, in light of the current global financial strains, the BSP has been instituting measures to limit risks to the domestic financial system. The BSP’s approach under the current turbulent financial conditions is to ensure that there is no credit gridlock or a freezing-up of credit markets and at the same time provide sufficient liquidity to fund the growth requirements of the economy. In particular the BSP has pursued the following measures in 2008:

- Enhanced existing peso repurchase agreement (repo) facilities through relaxed valuation and a broader list of acceptable collateral;
- Established the US dollar repo facility;
- Reduced the reserve requirement by two percentage points;
- Increased the rediscounting budget from P20 billion to P40 billion; and
- Provided directed relief to banks by allowing reclassification of financial assets from categories measured at fair value to those measured at amortised cost.

6. Conclusion: Policy Issues and Lessons Learned

From the time the Philippines liberalised its capital account in the early 1990s, it has experienced episodes of extreme capital flow volatility, i.e., surges and reversals of capital flows. This highlights the fact that, while the free movement of capital across borders has provided significant benefits to recipient economies (e.g., it provides a means to utilise investment opportunities, allows savers the opportunity to earn higher returns and minimise risks through international portfolio diversification, and allows expenditure smoothening,

10. In a straight through process, the buyer and seller exchange cash and securities ownership simultaneously, which eliminates the need to encode separately instructions to the RoSS and trade transactions.

especially in the advent of adverse external shocks), it can also bring about challenges in the conduct of macroeconomic policies, if not managed properly.

In general, capital flow management requires a set of consistent policies that will help maximise the benefits and limit the risks from capital flow volatility. Implementing the appropriate policy response depends on a clear understanding of the causes of such volatilities, i.e., recognising the relative importance of “push” and “pull” factors. The issue is not whether capital flows are good or bad, the issue is determining which set of policies will ensure that the additional resources provided by surges in foreign capital flows are maximised (i.e., used to promote growth and development), while the risks of sudden stops and reversals are mitigated.

For the Philippines, both internal and external factors, explain volatilities in capital inflows. This implies that, while capital inflows are, to a certain extent, influenced by domestic economic decisions, they will also be affected by factors beyond the control of policymakers. Such situation requires the instituting of safeguards against capital flow volatilities that could arise from external shocks and, at the same time, pursuing policies aimed at effectively allocating additional resources to more productive uses.

The policy tools available in managing capital flows can be applied to greater effectiveness if they are supported by macroeconomic and structural reforms, including:

6.1 Making Further Headway in Macroeconomic and Structural Reform

A key factor in facilitating the efficient use of foreign capital flows is the maintenance of macroeconomic and financial stability. Stable interest rates, inflation, and exchange rates project a positive outlook for long-term investment. Investor confidence could be reinforced by reforms in the financial system that foster greater competition and enhance integrity. More importantly, instituting sound macroeconomic policy provides the best insurance against sudden reversals.

6.2 Greater Financial Deepening

To help maximise the benefits of foreign capital flows, it is imperative to increase the country’s absorptive capacity, such as through greater financial deepening. A well-developed financial market plays an important role in increasing a country’s capacity to channel these resources to a broader range of investment opportunities, such as in infrastructure, support industries, or in financial

instruments. It is important to note that an economy's capacity to absorb foreign exchange inflows also depends on other factors, including the quality of the labor force, the availability and quality of the infrastructure and the overall institutional and policy environment.

6.3 Continue Improvements in the Regulatory Framework and Market Infrastructure

More vigorous reforms in the regulatory and legal environment intended to provide adequate investor protection and sound business practices would help remove distortions and increase efficiency in the financial system. Moreover, improvements in market infrastructure (e.g., the development of internationally competitive clearing and settlement system) would promote the broadening of the investor base and the liquidity of the bond markets.

6.4 Promoting the Development of the Domestic Capital Market

A deeper and broader domestic capital market could reduce the over-reliance by the public on banks and equity financing. This will help mobilise the country's savings for investment and economic development and, at the same time, help reduce the economy's vulnerability from volatile capital flows and promote financial market stability.

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ANNEX A

Major Legislations on Foreign Investment in the Philippines

- a. **Executive Order No. 226 (The Omnibus Investment Code of 1997)** – provides incentives to registered enterprises in preferred areas of investment as identified in the Investment Priorities Plan.
- b. **Republic Act No. 7042, as amended by Republic Act No. 8179 (The Foreign Investment Act of 1991)** – stipulates the processes and conditions under which foreign nationals may do business in the Philippines.
- c. **Republic Act No. 7652 (The Investor’s Lease Act of 1993)** – allows qualifying foreign investors to lease private lands for an initial period of up to 50 years renewable up to an additional 25 years.
- d. **Republic Act No. 7721 (The Foreign Banks Act of 1994)** – liberalised the entry and scope of operations of foreign banks in the Philippines.
- e. **Republic Act No. 7718 (The Build-Operate-Transfer Act of 1994)** – allows variations of schemes, eases restrictions on government financing and setting of tolls and charges, and increases the opportunity for wholly foreign-owned corporations to undertake a project.
- f. **Republic Act No. 7916 (The Special Economic Zone Act of 1995)** – provides for incentives to enterprises located within the Special Economic Zone.

ANNEX B

ADF test result (Series in levels)				
Variable	t-stat	Critical values at 5% level	No. of lags*	Presence of unit root
LOG(CF)	-4.023	-2.922	0	No
RGDP	-2.668	-2.902	0	Yes
REAL_91TB	-1.946	-2.902	0	Yes
CAB_GDP	-1.659	-2.904	3	Yes
REERMTP	-2.165	-2.904	2	Yes
US_RGDP	-6.459	-2.902	0	No
LIBOR	-2.799	-2.902	1	Yes
*Automatic based on Schwarz Information Criterion				

ADF test result (Series in first difference)				
Variable	t-stat	Critical values at 5% level	No. of lags*	Presence of unit root
DLOG(CF)	-6.936	-2.968	1	No
DRGDP	-9.818	-2.904	1	No
DREAL_91TB	-7.999	-2.905	3	No
DCAB_GDP	-13.064	-2.904	2	No
DREERMTP	-8.923	-2.906	3	No
DUS_RGDP	-6.675	-2.906	5	No
DLIBOR	-12.039	-2.903	0	No
*Automatic based on Schwarz Information Criterion				

ANNEX C

Pairwise Granger Causality Tests

Sample: 1990Q1 2008Q2; Lags: 3

Null Hypothesis:	Obs	F-Statistic	Probability
DRGDP does not Granger Cause DLOGCF	29	0.86137	0.47578
DLOGCF does not Granger Cause DRGDP		0.64479	0.59447
DREAL_91TB does not Granger Cause DLOGCF	29	0.03907	0.98940
DLOGCF does not Granger Cause DREAL_91TB		0.65995	0.58543
DCAB_GDP does not Granger Cause DLOGCF	29	0.49896	0.68683
DLOGCF does not Granger Cause DCAB_GDP		0.12135	0.94654
DREERMTP does not Granger Cause DLOGCF	29	0.16429	0.91927
DLOGCF does not Granger Cause DREERMTP		4.46222	0.01359
DUS_RGDP does not Granger Cause DLOGCF	29	1.82807	0.17153
DLOGCF does not Granger Cause DUS_RGDP		1.27287	0.30819
DLIBOR does not Granger Cause DLOGCF	29	0.26129	0.85249
DLOGCF does not Granger Cause DLIBOR		0.47425	0.70337
DREAL_91TB does not Granger Cause DRGDP	70	4.55926	0.00592
DRGDP does not Granger Cause DREAL_91TB		4.39521	0.00716
DCAB_GDP does not Granger Cause DRGDP	70	0.56705	0.63876
DRGDP does not Granger Cause DCAB_GDP		1.58135	0.20271
DREERMTP does not Granger Cause DRGDP	68	5.50640	0.00206
DRGDP does not Granger Cause DREERMTP		0.31965	0.81111
DUS_RGDP does not Granger Cause DRGDP	70	1.68990	0.17819
DRGDP does not Granger Cause DUS_RGDP		1.06167	0.37179
DLIBOR does not Granger Cause DRGDP	70	0.41143	0.74534
DRGDP does not Granger Cause DLIBOR		3.98995	0.01149
DCAB_GDP does not Granger Cause DREAL_91TB	70	0.27262	0.84492
DREAL_91TB does not Granger Cause DCAB_GDP		0.20962	0.88938
DREERMTP does not Granger Cause DREAL_91TB	68	1.23892	0.30341
DREAL_91TB does not Granger Cause DREERMTP		0.17940	0.90997
DUS_RGDP does not Granger Cause DREAL_91TB	70	4.77676	0.00461
DREAL_91TB does not Granger Cause DUS_RGDP		0.96780	0.41359
DLIBOR does not Granger Cause DREAL_91TB	70	4.93457	0.00385
DREAL_91TB does not Granger Cause DLIBOR		0.89035	0.45112
DREERMTP does not Granger Cause DCAB_GDP	68	7.51470	0.00023
DCAB_GDP does not Granger Cause DREERMTP		0.23185	0.87385
DUS_RGDP does not Granger Cause DCAB_GDP	70	0.99159	0.40262
DCAB_GDP does not Granger Cause DUS_RGDP		0.90932	0.44167
DLIBOR does not Granger Cause DCAB_GDP	70	0.11737	0.94959
DCAB_GDP does not Granger Cause DLIBOR		0.15962	0.92309
DUS_RGDP does not Granger Cause DREERMTP	68	0.67511	0.57062
DREERMTP does not Granger Cause DUS_RGDP		0.60807	0.61231
DLIBOR does not Granger Cause DREERMTP	68	0.85203	0.47091
DREERMTP does not Granger Cause DLIBOR		0.57634	0.63276
DLIBOR does not Granger Cause DUS_RGDP	70	5.18832	0.00288
DUS_RGDP does not Granger Cause DLIBOR		2.07844	0.11199

Chapter 10

CAPITAL FLOWS AND THEIR IMPLICATIONS FOR CENTRAL BANK POLICIES IN SRI LANKA

by
P. Pushparajah¹

1. Introduction

Capital flows to Sri Lanka have been modest as compared to several SEACEN member countries. Though the foreign direct investment and portfolio investment have been increasing over the years, supported by the deepening of financial sector reforms, capital account liberalisation, privatisation and increased corporate profitability, the debt flows to the private sector have been low due to the prevailing exchange control regulation on private sector borrowings. However, the government has been receiving substantial amount of foreign debt, especially from multilateral financial institutions and bilateral donors since 1977 to finance major infrastructure projects and major institutional reforms. In the very recent past, the government resorted to more foreign commercial borrowings to finance major infrastructure projects as the access to concessional financing has been declining gradually with Sri Lanka moving to middle-income country status. During the early 1990s, inflows to the capital market increased sharply with the relaxation of restrictions on foreign investment in the stock market, privatisation of State-owned Enterprises (SOEs) and foreign loan inflows to SOEs for restructuring purposes. During 2007 and 2008, Sri Lanka experienced a surge in capital flows mainly due to the issuance of international sovereign bonds by the government, approval for foreign investment in Treasury bonds and Treasury bills, substantial increase in foreign investment in the stock market and record high foreign direct investment. The surge in short-term capital flows in the 1990s and during 2007 and 2008 have posed some challenges to the monetary authorities in Sri Lanka, which were successfully managed through the adoption of appropriate and timely policy actions.

1. Deputy Director, Economic Research Department, Central Bank of Sri Lanka. The author wishes to thank Dr. D S Wijesinghe, Assistant Governor, Central Bank of Sri Lanka and Dr. P N Weerasinghe, Chief Economist and Director of Economic Research, Central Bank of Sri Lanka for their valuable comments and suggestions, and also Min B. Shrestha for his comments, guidance and especially for his assistance in the empirical part of this paper. The author also wishes to thank the fellow country researchers, Dr. John Junggun Oh and Mr. Vincent Lim for their helpful comments at the Research workshops.

This paper examines the policy measures implemented by the government, trends in capital flows since 1985, determinants of capital flows to Sri Lanka and capital management policies promulgated by the Sri Lankan authorities. Section 1 of this paper presents a brief introduction on the topic. Section 2 outlines the general framework and major capital flow management policies in Sri Lanka, while Section 3 presents the trends in capital flows since 1985. Determinants of capital flows are analysed in Section 4. Issues relating to capital flows and monetary policy are discussed in Section 5, while the issues relating to capital flows and financial stability are discussed in Section 6. Finally, the conclusion of this study and the policy recommendations are presented in Section 7.

2. General Framework and Major Capital-Flow Management Policies

At the time of regaining independence in 1948, Sri Lanka's balance of payments had registered a sizable current account surplus and the external reserves were sufficient to finance about one year's imports. However, by the end of the 1950s, the balance of payments came under severe pressure and the external reserves had fallen to a level sufficient to finance only four months of imports. The depletion of external reserves prompted the abandonment of the relatively liberal import and foreign exchange policies and the introduction of import restriction in 1961. Attempts in the relaxation of the restrictions during the mid-60s came to an end in 1970. The period 1971-77 witnessed the re-emergence of a comprehensive system of quantitative restrictions, high tariffs and foreign exchange controls. The government that came to power in 1977 introduced wide ranging economic reforms, which included removal of the import controls, unification of the rupee's two-tier rates, and incentives to foreign investment to promote export-oriented industrialisation based on the successful experience of the East Asian countries.

2.1 Current Account and Capital Account Liberalisation

The liberalisation policies introduced in November 1977 removed most of the quantitative restrictions through the introduction of higher tariffs. During the period from 1977-1980, import controls and quota were removed for most of the items leaving only a few items under import control. Export licensing was limited to only 17 items, and the Exchange controls were relaxed on several items, such as remittances of profits and dividends to non-resident shareholders, and foreign exchange for education overseas, etc. During the 1987-90, deregulation continued and imports controls were removed on several items, deregulation of shipping and air freight, and selected Exchange controls were relaxed. With the acceptance

of the obligations under Article VIII of the IMF Articles of the Agreement by Sri Lanka on 15th March 1994, restrictions on all current account transactions were removed. Accordingly, Authorised Dealers (commercial banks) were permitted to release foreign exchange without restrictions for all current (non-capital) account transactions.

With regard to capital account liberalisation, successive governments have generally been following a relatively liberal regime to attract foreign investment and provided a framework of incentives for such purpose. As far back as 1955 the government of the day issued a White paper on foreign investment, which defined government policy on all the important issues governing foreign investment. This included freedom for remittance of profits and repatriation of capital, foreign participation up to 100 percent, full compensation in the event of nationalisation, tax concessions, and employment of foreign personnel. The change of government that followed shortly after the issue of this White Paper resulted in policies of nationalisation and state enterprise. There were two other White Papers issued in 1966 and 1972 to redefine government policies and encourage foreign investment. Although the package of specific incentives offered was generous, the foreign investors had to operate within a macroeconomic framework of state controls and regulation. The economic liberalisation introduced in 1977 largely changed the foreign investment climate in Sri Lanka. The unutilised Sri Lanka's export quota under the MFA in the garment industry attracted sizeable flow of foreign direct investment, especially from Singapore and Hong Kong. Aid from donor countries came in the form of grants and concessional loans to support the government's structural reform measures and development activities. In 1990, the government issued a new investment policy. It proceeded to simplify further the rules and regulations governing foreign direct investment. This was followed by a set of guidelines which further liberalised the procedures in regard to remittances and capital repatriation and granted automatic approval for most foreign investment. More recently, the government's securities market was opened up for foreign investment with certain upper limits on such investment. Annexure 1 presents the chronology of capital account liberalisation.

2.2 Policies Implemented to Manage Capital Inflows

Sri Lanka's capital market is only partially liberalised and the existing exchange control regulations on selected foreign investment in Sri Lanka prevent any surge in capital inflows to the country. However, with the approval for foreign nationals to purchase 100% of the issued share capital in the listed companies, subject to certain exclusions and limitations in 1992 and the privatisation of State-owned Enterprises (SOEs), Sri Lanka experienced a surge

in portfolio investment during 1993-1994, as foreign nationals showed renewed interest in stock trading and in acquiring ownership. However, this trend did not continue as the foreign participation in the stock market declined and accounted, on average, for around 27-30% during the last decade. Hence, such foreign inflows did not pose any significant challenge to the management of capital inflows. Again the country witnessed a surge in capital flows during 2007 and 2008 with the opening up of the government securities market for foreign investment, issuance of sovereign bonds in the international markets, higher FDI inflows and increased foreign investment in the Colombo stock market.

Until 2006, foreign investment in government securities was not permitted and currently foreign investors could invest only up to ten percent of the outstanding stock of Treasury bonds and Treasury bills. Private sector borrowings other than the borrowing by financial institutions are permitted on a case-by-case basis and foreign inflows on account of such private borrowings remain insignificant. Foreign borrowings by financial institutions are restricted to 15% of their capital and hence their external borrowing is very limited. The monetary expansion resulting from the surge in capital flows during 1993-94 and 2007-2008 were managed through monetary policy measures without introducing any new policies as the existing Exchange Control regulations were effective in dealing with such flows.²

2. During 1993, the statutory reserve ratios (SRR) on rupee deposit as well as foreign currency liabilities of commercial banks were raised on several occasions. Accordingly, the SRR on Rupee deposits was raised to 14 % from 13.5% set on January 29, 1993. In respect of foreign currency deposits, the SRR on time and savings deposits was raised from 6 % to 8 %, while on demand deposits was kept at 10 %. In view of the continued credit expansion, the SRR on Rupee deposits was raised to 15% in May, while that on foreign currency time and savings deposits was fixed at 11 %. In June, the SRR on foreign currency deposits were unified at 12 %. In August 1993, SRR on all deposits were unified at 15 %, thus strengthening the effectiveness of the SRR as a policy instrument. However, with a view to encouraging commercial banks to build up their foreign currency assets, thus pressure on reserve money growth, the SRR on foreign currency deposits placed abroad was lowered to 5 % with effect from February 18, 1994. The SRR on foreign currency deposits was abolished in August 2000 and currently, there is no SRR on foreign currency deposits. In addition, major thrust in managing reserve was placed on open market operations (OMO). In the context of depleted stock of Treasury bills, the Central Bank commenced the issue of its own securities from October 1993 with a view to containing reserve money growth in the maturities of 3 months and 6 months. During 1994 also the CBSL issued its own securities with 3-6 month maturity to mop up excess liquidity. OMO was the main instrument used during 2007 and 2008 to mop up the excess rupee liquidity created through the inflow of foreign funds.

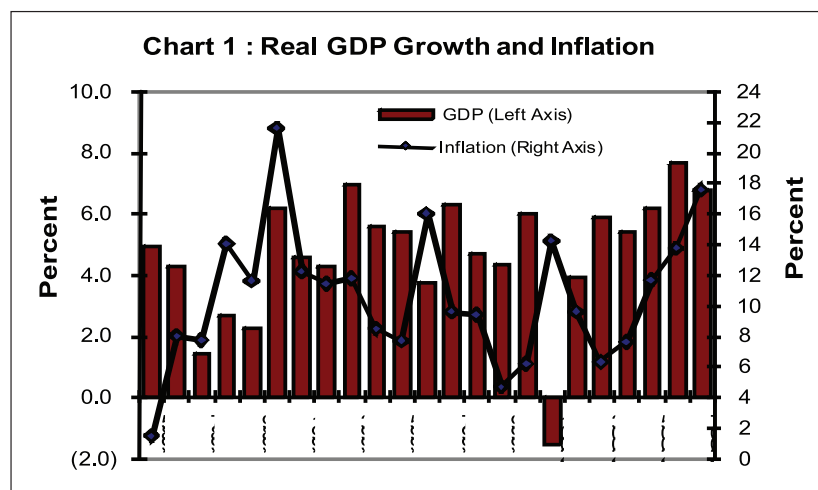
2.3 Policies Implemented to Manage Capital Outflows

Under the existing exchange control regulations, Sri Lankan residents are permitted only to undertake direct investment abroad on a case-by-case basis, depending on the feasibility of each venture, and are not permitted to invest abroad either in government securities or in equities/ corporate debt securities. In view of these restrictions, no new policies were introduced to manage the capital outflows.

3. Trends in Capital Inflows since 1985

3.1 Key Macroeconomic Indicators

The real GDP has been growing at around 5% on average in the post-liberalisation period, except in 2001 with all the key sectors of the economy contributing to the overall growth. In 2001, the economy recorded a negative growth rate of 1.5% for the first time since independence largely due to both external and internal shocks. On the external front, the terrorist attacks on Sri Lanka's only international airport at Katunayake in July and the subsequent imposition of insurance surcharges on sea and air travel and political uncertainties contributed to a negative growth. Meanwhile, the economy recorded a higher growth rate of 7.7% in 2006 and has been growing over 6% during the last three years. The inflation has been rising in recent years and during the last five years it increased on average by around 11.3%.



The interest rates on 12 months fixed deposits, which have been declining since 1985 rose steadily from 1989 before declining again in 1993. The interest rates remained at low levels during 2003-2005 (Table 1). However, on an average basis, the average deposit rate, which remained around 15.65% during 1985-94 declined to 11.80% during 1995-04 and to further 11.67% during 2004-2007. The same trend has been observed in the prime lending rate, which declined from 17.80% during 1985-1994 to 14.63% during the 2004-2007 period.

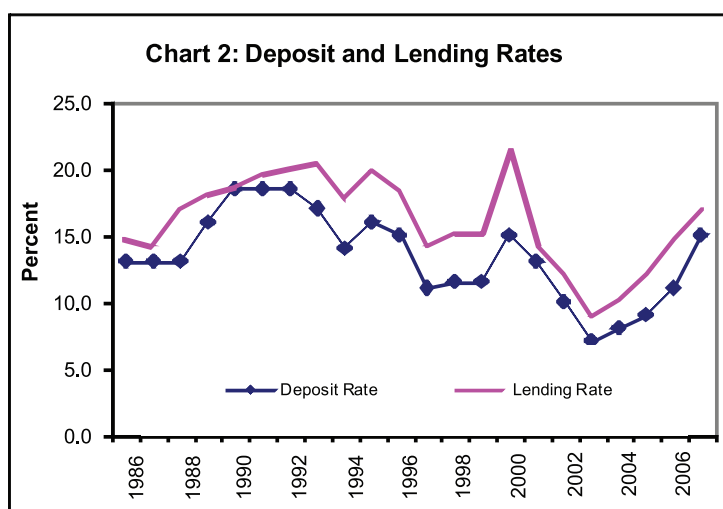


Table 1
Key Macroeconomic Indicators (1985-2007)

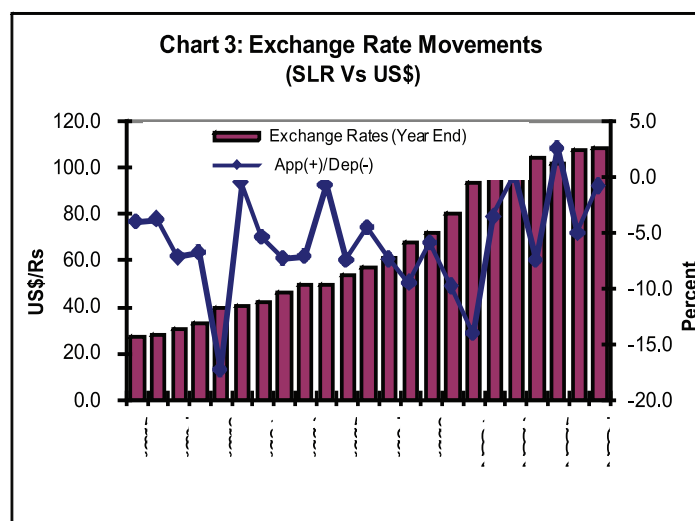
	Real GDP Growth Rate (%)	Inflation CCPI (1952=100)	Deposit Rate (%)	Prime Lending Rate (%)	Year-end Exchange Rates (Rs/US\$)	Rs/US\$ End Period App(+)/De p(-)	All Share Price Index(a)	Sensitive Price Index/ MPI (b)	Current Account balance (% of GDP)	Official Forex Reserves (US\$m)	Overall BOP (US\$ mn)
1985	5.0	1.5	15.00	n/a	27.4	-4.12	122.0	158.9	-7.0	461.2	-49.3
1986	4.3	8.0	13.00	14.80	28.5	-3.89	141.2	218.2	-6.7	362.9	-70.3
1987	1.5	7.7	13.00	14.20	30.8	-7.28	119.1	382.3	-5.1	299.5	-67.3
1988	2.7	14.0	13.00	16.90	33.0	-6.87	164.5	306.8	-5.6	277.5	-90.7
1989	2.3	11.6	16.00	18.00	40.0	-17.43	179.8	342.0	-4.6	291.4	-88.0
1990	6.2	21.5	18.50	18.60	40.2	-0.60	384.4	680.3	-4.7	435.0	118.7
1991	4.6	12.2	18.50	19.60	42.6	-5.50	837.8	1198.6	-6.9	718.4	290.2
1992	4.3	11.4	18.50	19.90	46.0	-7.43	605.3	826.6	-5.7	936.4	189.6
1993	6.9	11.7	17.00	20.40	49.6	-7.18	979.0	1442.4	-4.8	1,674.7	660.9
1994	5.6	8.4	14.00	17.80	50.0	-0.84	986.7	1438.8	-7.3	2,022.0	239.7
1995	5.5	7.7	16.00	19.88	54.0	-7.53	663.7	990.5	-6.0	2,063.0	51.5
1996	3.8	15.9	15.00	18.35	56.7	-4.69	603.0	897.7	-4.9	1,937.0	-67.8
1997	6.3	9.6	11.00	14.18	61.3	-7.47	702.2	1068.0	-2.6	2,029.0	162.9
1998	4.7	9.4	11.50	15.12	67.8	-9.58	597.3	923.0	-1.4	1,984.0	36.8
1999	4.3	4.7	11.50	15.16	72.1	-6.02	572.5	937.5	-3.6	1,639.0	-263.2
2000	6.0	6.2	15.00	21.34	80.1	-9.92	447.6	698.5	-6.4	1,049.0	-521.9
2001	-1.5	14.2	13.00	14.25	93.2	-14.06	621.0	1031.0	-1.4	1,338.0	219.8
2002	4.0	9.6	10.00	12.17	96.7	-3.69	815.1	1374.6	-1.4	1,700.0	338.0
2003	5.9	6.3	7.00	8.95	96.7	-0.01	1062.1	1897.8	-0.4	2,329.0	502.0
2004	5.4	7.6	8.00	10.17	104.6	-7.52	1506.9	2073.7	-3.1	2,195.8	-205.0
2005	6.2	11.6	9.00	12.14	102.1	2.44	1922.2	2451.1	-2.7	2,735.0	501.0
2006	7.7	13.7	11.00	14.74	107.7	-5.19	2722.4	3711.8	-5.3	2,836.8	203.7
2007	6.8	17.5	15.00	17.00	108.7	-0.93	2541.0	3291.9	-4.2	3,508.2	530.5

(a) All Share Price Index 1985=100

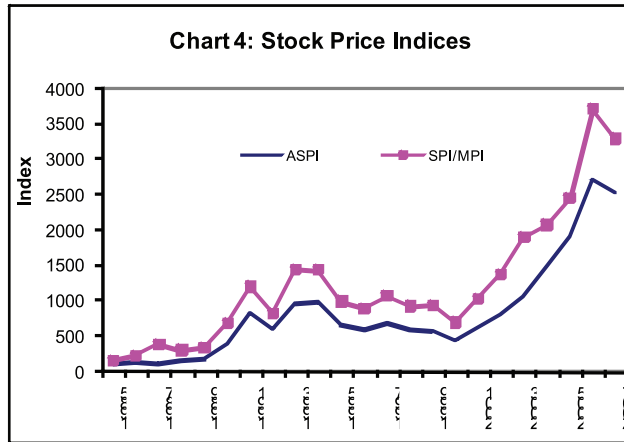
(b) Sensitive Price Index 1985= 100/ Milanka Price Index 1998 Dec=1000

Sources: Central Bank of Sri Lanka Colombo Stock Exchange

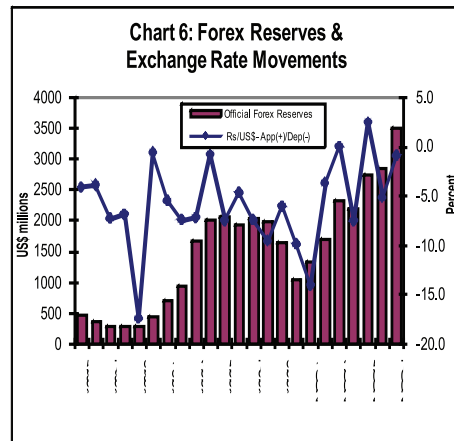
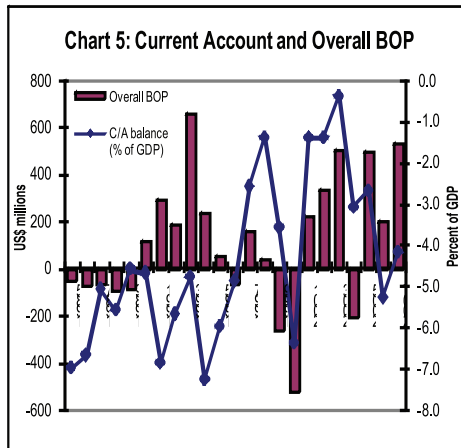
Sri Lanka rupee has been depreciating, on average by around 5%, per annum against the US dollar since moving to the managed float regime in 1977 and it registered a highest depreciation of 17.43% in 1989. Before moving to an independently floating exchange regime in 2001 from the managed float, the rupee depreciated by 14.06 % in 2001. The independently floating exchange regime has served well for Sri Lanka and during most of 2008 the exchange rate remained stabilised despite the higher domestic inflation supported by higher foreign inflows to both the government and the private sector. However, during the latter part of 2008, especially with the escalation of global financial market turbulence since September, the exchange rate came under heavy pressure to depreciate.



The All Share Price Index and Sensitive Price Index/Milanka Price index continued to perform strongly since 1990, except during 1995-1999 where the indicators recorded declining movements. Higher corporate sector profitability, increased activities of domestic retail investors and the strategic buying by the foreign investors in certain sectors attracted foreign inflows.



The current account deficit as a percentage of GDP, which remained at a lower rate during 2001-2005, worsened in 2006 due to higher import expenditure on oil and investment goods, but improved in 2007 largely offset by higher worker remittances. The overall balance of payments (BOP) has been recording surpluses since 2001 except in 2004, largely supported by higher foreign capital flows to the government. Reflecting the BOP surpluses, the official foreign reserves of the country also improved, strengthening the external sector resilience.

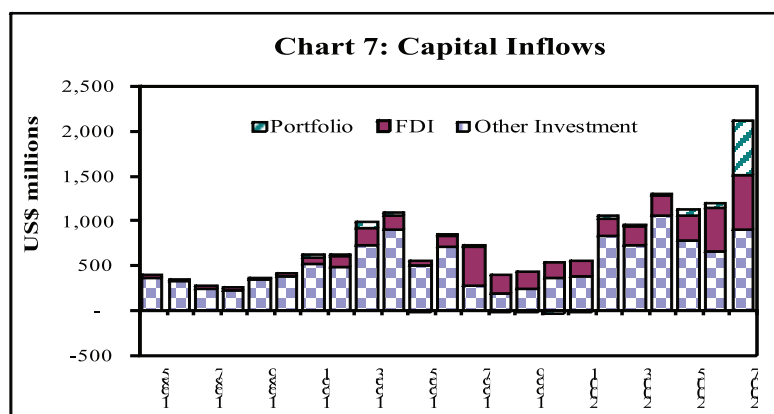


3.2 Capital Inflows

3.2.1 Foreign Direct Investment

Foreign direct investment, the principal source of private capital inflows, which was virtually non-existent prior to 1977, had reached around US\$ 64 million in 1982 after the initial liberalisation of the economy in 1977. However, this initial momentum could not be maintained and, on average, the FDI flows during 1985-90 amounted to just around US\$ 33 million. This was largely due to the eruption of ethnic riots in 1983 and the political instability created by the insurrection of Janatha Vimukthi Peramuna (JVP) during 1983-89 periods³. With the suppression of the JVP insurrection, the implementation of the second wave of liberalisation and structural adjustment in 1989, the relative improvement of the macroeconomic environment and other reforms measures introduced by the government, including the privatisation of the SOEs, FDI increased gradually and remained, on average, around US\$ 118 million per annum during 1990-94. This increasing trend continued thereafter and FDI reached a record level of US\$ 603 million in 2007. Increased investment by companies in the telecommunications sector through new investments and reinvestment of retained earnings for expansion of their capacity and networks, and investment in other services sector, contributed to higher investment in 2006 and 2007.

3.2.2 Portfolio Investment



3. Janatha Vimukthi Peramuna (“People’s Liberation Front”) is a nationalist Marxist political party in Sri Lanka. The party was involved in two armed uprisings against the ruling governments in 1971 and 1987-89, and entered into the democratic politics by participating in the 1994 Parliamentary general election.

The portfolio investment was virtually non-existent prior to 1990, and with approval granted for foreign investment in shares of companies incorporated in Sri Lanka, the capital flows through portfolio investment expanded to US\$ 31 million (0.3% of GDP) in 1991. Since 1991, private capital portfolio investments tended to increase rapidly and, by 1994, they reached US\$ 293 million (2.5% of GDP). The recession and low interest rates in the industrialised countries were the main external push factors while high domestic interest rates, further capital account liberalisation, accelerated divestiture of state-owned enterprises, and contemporary boom conditions in the Colombo Stock Exchange were some of the important pull factors. The portfolio investment remained low during 1998-2002 due to various reasons, including the low profitability of corporate sector, political instability, loss of investor confidence and the heightened security situation. However, with the signing of ceasefire agreement with the Liberation Tigers of Tamil Eelam (LTTE)⁴ in 2002, investor confidence improved and portfolio flows surged from US\$ 78 million in 2002 to US\$ 145 million in 2003. With the government mobilising funds from the international capital markets for the first time through the issuance of dollar-denominated bonds, the portfolio investment flows reached a peak of US\$ 600 million in 2007.

3.2.3 Other Investment

Other investment inflows, consisting of private and public sectors' foreign borrowings and suppliers' credits to private sector importers, have been continuously increasing in the post-liberalisation era. The credit extended by the foreign suppliers has been growing with the higher import expenditure. The demand for foreign borrowing by the private sector, including public corporations, increased during the 1990s, as there was increased access to foreign funds at relatively low rates of interest than the domestic interest rates.

3.3 Capital Outflows

Currently, Sri Lankan residents are permitted to undertake foreign investments abroad on a case-by-case basis and hence outflows on account of such investment are not significant. Residents are not permitted to purchase shares or debt securities abroad and therefore no outflows on account of portfolio investment. Meanwhile, Sri Lankan exporters are permitted to extend credit to importers

4. Liberation Tigers of Tamil Eelam, commonly known as the Tamil Tigers, is a militant Tamil nationalist organisation that has been waging a secessionist campaign against the Sri Lankan government since the 1970s in order to create a separate Tamil state in the north and east of Sri Lanka.

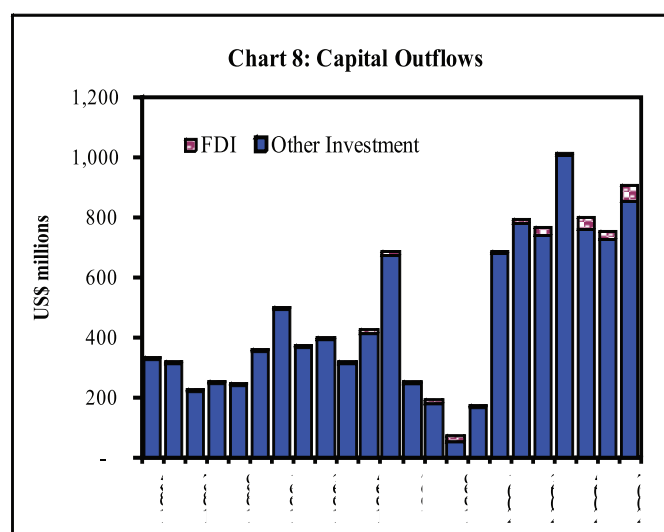
abroad and capital outflows on account of suppliers' credit have also been increasing with higher export growth in recent years.

3.3.1 Foreign Direct Investment

FDI outflows, which averaged around US\$ 1.6 million during 1985-89, more than doubled to US\$ 4.4 million during 1990-94. During 2003-07, FDI outflows averaged to around US\$ 30 million, with more investors expanding their businesses overseas, especially in apparel and tourism sectors.

3.3.2 Other Investment

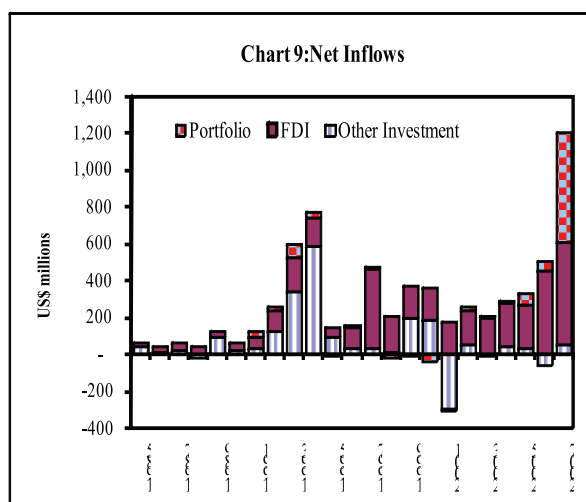
Other investment outflows mainly consist of trade credit extended by the Sri Lankan exporters to foreign buyers. The other investment outflows, which were around US\$ 300 million in the 1980s and 1990s have exceeded US\$ 600 million in 2001. Since then capital outflows have been increasing with higher growth in exports.



3.4 Net Capital Flows

Net capital flows to Sri Lanka have always been in the favour of inflows although the net portfolio flows and net other investment flows have registered capital outflows during certain years. Due to restrictions on residents' foreign direct investment, the net FDI flows have always been inflows to Sri Lanka. The portfolio net inflows, which consisted of only share-related inflows until

2006, increased substantially in 2007 due to Sri Lanka issuing debut sovereign debt in the international markets and permitting foreign investors to invest up to 10% of the outstanding stock of rupee- denominated Treasury bonds in 2007. With the record high FDI net inflows and higher portfolio investment, the net capital inflows reached an unprecedented level of US\$ 1.2 billion in 2007.



4. Determinants of Capital Flows

4.1 Analysis of Macroeconomic Variables of Capital Importing and Exporting Countries

There are several factors that influence the capital flows to any country. These include economic, social and political developments in both capital exporting and importing countries, and could be broadly grouped into two major categories: the push factors and pull factors. The push factors are related to the economic cycle and other developments in the capital exporting countries and the pull factors are related to the reforms and future economic growth prospects and other developments, especially in the macroeconomic front, in the capital importing countries. The push factors include changes in world interest rates, especially US interest rates, changes in financial systems of the capital exporting countries, world growth and corporate profitability, and demographic structure of the industrialised countries, etc. The pull factors include increase in productivity and growth prospects in the capital importing countries, domestic financial market reforms, trade and capital market liberalisation and government policies on taxation

and foreign investment, performance of the corporate sector and profitability, flexibility of the labour market and wage structures, domestic interest rates, especially yields on Government securities and corporate bonds, in the capital importing countries.

4.2 Identifying Key Determinants of Capital Flows to Sri Lanka

4.2.1 The Empirical Model

In order to empirically test the determinants of capital flows, we model capital inflows to Sri Lanka as a linear function of both the pull factors, such as real GDP growth, real interest rate, and current account balance of Sri Lanka, and push factors, such as real world GDP and real world interest rate. For the empirical test, we use the annual data for all the variables from 1977-2007. The rationale for selecting the data from 1977 being Sri Lanka launched its economic liberalisation in 1977 with a prominent role for the private sector in the economy, especially for foreign investments.

As explained in Section 4.1, both the pull factors and push factors determine the capital flows to any country. In equation (1), CAPIN stands for total inflows to the country, which is a function of pull factors (internal variables) represented by X_i and push factors (external variables) represented by Z_i . Finally, α , β and δ are parameters and u is the error term.

$$CAPIN = \alpha + \beta_i X_i + \delta_i Z_i + u \quad (1)$$

Equation (2) is the expansion of equation (1) with four internal variables and two external variables selected for this study.

$$CAPIN = \alpha + \beta_1 RGDP + \beta_2 RINT + \beta_3 CAGDP + \beta_4 XRATE + \delta_1 RGDPW + \delta_2 RINTW + e \quad (2)$$

where, dependent variable CAPIN represents the total capital inflows (FDI flows, portfolio investment and other investment, such as trade credits received from foreign suppliers) to Sri Lanka from 1977 to 2007 as a percentage of GDP. Internal independent variables such as RGDP, RINT, CAGDP, XRATE represent, respectively, real GDP growth rate of Sri Lanka, real interest rate (proxied by real 12 month fixed deposit rate of National Savings Bank) in Sri Lanka, external current account as a percentage of GDP and Sri Lanka's exchange rate expressed in terms of number of units of US\$ per unit of Sri Lankan rupee. Meanwhile, the external variables, such as RGDPW and RINTW represent, respectively,

World Real GDP Growth Rate (proxied by real GDP growth of USA) and World Real Interest Rate (proxied by 1-Year US \$ LIBOR rate). In the equation (2), α , β s and δ s are parameters to be estimated, while e represents the error term.

The real GDP growth of Sri Lanka is expected to have a positive correlation with the capital inflows to the country, especially FDI and portfolio investment as higher growth in the domestic economy will create more investment opportunities with higher return and encourage foreign investment in the real economy and equities. The higher domestic real interest rate will have a positive correlation with capital flows, especially in respect of investment in the government and corporate securities. However, in the Sri Lankan case, the foreign investment in corporate securities are not permitted, while the government securities market was opened for foreign investment only very recently with certain limitation on maximum permissible foreign investment (up to 10% of outstanding Treasury bills and bonds). Current account to GDP ratio is expected to have a positive correlation with capital flows as current account deficit attract foreign savings to finance the deficit. The exchange rate is expected to have a negative correlation with capital flows as the appreciation of the USD against the rupee will reduce the volume of foreign capital required for the purchase of domestic assets denominated in rupee. The correlation between growth in world GDP and capital flows to the host country is ambiguous. The higher growth in the developed countries may create new investment opportunities with higher return in those countries, thereby encouraging domestic investors to make more investment domestically and less investment outside the countries. On the other hand, if high growing countries are operating at full capacity, they may encourage domestic investors to invest outside the countries rather than investing locally. The world real interest rate will have a negative correlation with capital flows to the host country as higher world interest rate may reduce capital flows to the host country, while attracting more capital flows from other countries.

4.2.2 The Empirical Results

The annual data from 1977-2007 are used to empirically test the determinants of capital flows to Sri Lanka. To ascertain the order of integration, augmented Dickey Fuller (ADF) unit root test is applied and the results are given in Table 2. Accordingly, it was found that the variables, such as CAPIN and RINT, appear to be integrated of order one and other variables integrated of order zero. That is among the seven variables, CAPIN and RINTW are non stationary at level and other five variables are stationary.

Table 2
Unit Root Test

Variables	ADF Test Statistics (Level)
CAPIN	-2.3465
RGDP	-4.2099*
RINT	-5.3535*
CAGDP	-3.7620*
RGDPW	-4.2059*
RINTW	-2.3552
XRATE	-3.0140**

* Significant at 1% , ** Significant at 5%

As all the variables are not stationary, OLS cannot be performed. Similarly, since all the variables are not non stationary, Johansen cointegration test cannot be performed. Therefore, the OLS- based autoregressive distributed lag (ARDL) model is adopted for cointegration analysis in this study.

The ARDL_p model for equation (2) is given by

$$\begin{aligned}
 \Delta CAPIN_t = & \alpha_0 + \sum_{i=1}^p \beta_i \Delta CAPIN_{t-i} + \sum_{i=1}^p \gamma_i \Delta RGDP_{t-i} + \sum_{i=1}^p \delta_i \Delta RINT_{t-i} + \sum_{i=1}^p \varepsilon_i \Delta CAGDP_{t-i} \\
 & + \sum_{i=1}^p \varepsilon_i \Delta XRATE_{t-i} + \sum_{i=1}^p \theta_i \Delta RGDPW_{t-i} + \sum_{i=1}^p \vartheta_i \Delta RINTW_{t-i} + \mu_1 \Delta CAPIN_{t-1} \\
 & + \mu_2 \Delta RGDP_{t-1} + \mu_3 \Delta RINT_{t-1} + \mu_4 \Delta CAGDP_{t-1} + \mu_5 \Delta XRATE_{t-1} + \mu_6 \Delta RGDPW_{t-1} \\
 & + \mu_7 \Delta rintw_{t-1} + \mu_t
 \end{aligned} \tag{3}$$

The test statistics of the above model selected based on Akaike Information Criterion (AIC) are given in Table 3.

Table 3
ARDL (1, 1, 2, 2, 2, 1, 0) Model Long Run Results
Dependent Variable: CAPIN

<i>Regressor</i>	<i>Coefficient</i>	<i>Standard Error</i>	<i>T-Ratio</i>
CONSTANT	1.5486	2.0738	0.7467
CAGDP	-0.2075	0.4570	-0.4542
RGDP	1.2267	0.4073	3.0122 ***
RINT	0.4584	0.2093	2.1902 **
RGDPW	-1.5537	0.4938	-3.1467 ***
RINTW	-0.5855	0.3770	-1.5529
XRATE	-54.6627	54.7136	-0.9991

*** Significant at 1percent level ** Significant at 5 percent level

The long-run results show that real GDP (RGDP) and real interest rates (RINT) of Sri Lanka are positively associated with capital inflows (CAPIN) to Sri Lanka, and statistically significant at 1% and 5% level, respectively. Accordingly, the results suggest that an increase in real GDP of Sri Lanka by 1% will increase capital inflow-GDP ratio by 1.23%, and an increase in domestic real interest rates by 1% will increase the capital inflow-GDP ratio by around 0.46 %. While world real GDP is negatively associated with CAPIN and statistically significant at 1 % level. This suggests that an increase in World GDP by 1% will lead to a reduction in capital inflows to Sri Lanka by 1.55% of GDP. This may be possibly due to the rising investment opportunities in those high growing countries with higher returns on such investments, when their economies grow at higher rates, thereby causing reduction in capital flows to small developing countries like Sri Lanka. Though, RINT has a positive sign and is significant, in the Sri Lankan case, interest-sensitive investment instruments were not opened for foreign investment until recently. Government securities market was opened for foreign investment in 2006 with strict limitation on permissible investment, while the corporate securities market still remain closed for foreign investment. Therefore, real interest was not a pull factor that determined the capital flows until recently and, as even now, it could influence only the capital flows in respect of Treasury bonds and Treasury bills, which is just limited to 10% of the outstanding stock of Treasury bills and Treasury bonds.

The current account to GDP ratio, which reflects the country's savings investment gap, has a negative sign and is insignificant. In fact, the government's

project-related imports, which include materials, machinery and equipments, and other investment goods, largely contribute to the widening current account deficits, and are largely financed through the foreign inflows to the government. However, foreign inflows to the government were excluded in this study as it aims to assess the determinants of capital flows to the private sector. In reality, the government has been the major recipient of capital flows to Sri Lanka since the liberalisation of the economy in 1977, as almost all the major infrastructure projects have been financed by the government through borrowing and grants from both bilateral and multilateral donors. Therefore, it appears that the exclusion of inflows to the government in this study may have made the variable CAGDP negative and insignificant.

Moreover, as stated elsewhere in this paper, the capital account has only been partially liberalised over the years and still there are several restrictions on foreign investment in certain sectors.⁵ In addition, inflows of capital were largely influenced by other factors such as civil disturbances, which erupted in 1983 and escalated over the last two decades, especially in the North and East of Sri Lanka, and the JVP insurrection in Southern parts of Sri Lanka during 1990s. Under the prevailing regulatory regime, it is clear that, in the case of Sri Lanka, domestic pull factors, especially the domestic real GDP growth has been largely determining the capital flows to the country, especially FDI, trade credits and portfolio investment. At the same time, increasing FDI flows have been contributing to higher GDP growth in the economy in the post-liberalisation period.

In recent years, Sri Lanka attracted substantial FDI from India and other developing countries, such as Malaysia. Indian investors have set up their businesses in Sri Lanka encouraged by the Free Trade Agreement with India, where most exports from Sri Lanka to India enjoy duty free market access. Moreover, the Board of Investment of Sri Lanka provides attractive incentives to foreign investors such as long tax holidays, tax exemption, and duty free imports of investment goods, such as plants, machinery and equipments and building materials. All these factors and the developments in the political and security fronts are not captured by this model. Hence, further research is needed in this area to identify the determinants of capital flows to Sri Lanka to strengthen those factors to attract the much needed capital flows to the critical sectors of the economy.

5. Foreign investment in government securities, such as Treasury bonds and Treasury bills, were permitted, respectively, in 2006 and 2008, and such investment is permitted only up to 10% of outstanding stock of Treasury bonds and bills. Foreign investment in corporate bonds is currently not permitted.

The short-run dynamics of the model is given in Table 4. As in the long run, RGDP of Sri Lanka is positively associated with CAPIN in the short term as well and statistically significant at 10% level. Although the World real interest rate (RINTW) and exchange rate (XRATE) were not statistically significant in the long run, Δ RINTW, Δ XRATE and Δ XRATE1 are statistically significant, at 10%, 1% and 1%, respectively. That is change in capital flows to Sri Lanka is associated with changes in World real interest rates and rupee exchange rates in the short run.

Table 4
ARDL (1, 1, 2, 2, 2, 1, 0) Model ECM Results
Dependent Variable: Δ CAPIN

<i>Regressor</i>	<i>Coefficient</i>	<i>Standard Error</i>	<i>T-Ratio</i>
Δ CONSTANT	1.1382	1.4813	0.7684
Δ CAGDP	-0.2117	0.2261	-0.9363
Δ CAGDP 1	0.2102	0.1405	1.4957
Δ RGDP	0.4265	0.2326	1.8333*
Δ RINT	0.0773	0.0706	1.0946
Δ RINT 1	-0.1450	0.0871	-1.6646
Δ RGDPW	-0.5313	0.2417	-2.1981**
Δ RINTW	-0.4303	0.2285	-1.8830*
Δ XRATE	-765.0317	264.6184	-2.8911***
Δ XRATE 1	-909.5894	286.7325	-3.1723***
ECM(-1)	-0.7350	0.1764	-4.1669***

*** Significant at 1% level ** Significant at 5% level *Significant at 10% level

However, the changes in CAGDP ratio, RINT and in the lags of CAGDP and RINT are statistically not significant. The coefficient of ECM (-1) is -0.7350 and is statistically significant at 1% level. This suggests a rapid adjustment process, where about 74% of shock or deviation is corrected in one year.

Table 5
Pair-wise Granger Causality Tests

Sample: 1977-2007, Lags: 1			
Null Hypothesis	Obs	F-Statistics	Prob.
RIR does not Granger Cause CAPIN CAPIN does not Granger Cause RIR	30	1.03544 5.95251	0.3179 0.0215*
RGDP does not Granger Cause CAPIN CAPIN does not Granger Cause RGDP	30	0.15372 0.00780	0.6981 0.9303
RGDPW does not Granger Cause CAPIN CAPIN does not Granger Cause RGDPW	30	9.05529 0.47760	0.0056* 0.4954

The Granger causality test statistics is shown in Table 5. Accordingly, the global real GDP growth will have an impact on capital flows to Sri Lanka with one-year lag and is significant at 1% level. Similarly, capital inflows to Sri Lanka will have an impact on domestic real interest rates with a lag of one year and is significant at 5% level. However, the Granger causality test does not reveal a relationship between Sri Lanka's real GDP and capital flows. In fact, it has been practically observed that increasing GDP has contributed to higher foreign capital inflows to the country in recent years, especially FDI in industry and services sectors and portfolio investment and such capital inflows, in turn, have led to higher economic growth through expansion of production capacity. These causalities are not revealed by this model. Perhaps, it may be due to limited annual observations, and the availability of quarterly data would have been very useful to test such causality.

5. Capital Flows and Monetary Policy

5.1 Short-term Capital Inflows and Outflows in the Last Five Years and Possible Reason Behind the Recent Capital Flows

Short-term capital inflows, consisting of portfolio investment and private sector debt, increased during 2003-2007, largely due to the substantial increase in trade credits and further opening of capital account. Short-term capital inflows, which averaged to around US\$ 380 million per annum during 1998-2002, increased sharply to US\$ 1,044 million during 2003-2007. Private short-term debt, which primarily comprised of trade credit extended by foreign exporters to Sri Lankan

importers, accounted for over 96% of short-term flows until 2006, and then declined to around 47% in 2007. This was mainly due to the further opening up of the capital account by way of permission for foreign investors to invest up to a permitted limit in rupee-denominated Treasury bonds and the issuance of dollar-denominated sovereign bonds for the first time in the international markets by the government to mobilise foreign funds to finance infrastructure projects.

Table 6
Short-term Capital Inflows and Outflows (US\$ mn)

	Inflows	Outflows	Net-flows
2003	759.6	739.0	20.6
2004	1041.9	1003.0	38.9
2005	833.4	756.0	77.4
2006	742.6	721.0	21.6
2007	1468.8	848.0	620.8

Source: Central Bank of Sri Lanka

Private short-term inflows have been rising largely in line with movements in imports. The average private short-term inflows more than doubled to US\$ 824 million during 2003-2007 from US\$ 395 million during 1998-2002. The main reason for such a huge increase was the rise in the amount of suppliers' credit obtained by the Ceylon Petroleum Corporation, the state oil company, from major oil suppliers' in the wake of the sharp increase in international oil prices since 2003. As a percentage of GDP, the private short-term inflows remained around 3.5% during 2003-2007.

Until recently, portfolio investment consisted purely of foreign investment in equities and that composition changed in 2007 with the issuance of dollar-denominated sovereign bonds by the government in international markets in October and foreign investment in rupee-denominated Treasury bonds in 2007. As a result, the portfolio inflows, comprising equities and debt securities, recorded a sharp increase in 2007. Portfolio investment, which has been registering outflows since 1998, turned around in 2002 and has been registering positive inflows since then. With the signing of the ceasefire agreement with the Liberation Tigers of Tamil Eelam (LTTE) by the UNF government in 2002, the activities in the share market increased substantially with the improved investor confidence,

as reflected in the share market indices and equity purchases by foreign investors. During 2003-2007 the All Share Price Index (ASPI) rose by 139% and Milanka Price Index (MPI) by 73%.

Table 7
Net Portfolio Inflows and Private Short-term Inflows (US\$ million)

	Net Portfolio Inflows	Foreign Purchase	Foreign Sales	Private Short-term
2003	1.6	144.1	142.0	758.0
2004	10.9	107.8	97.2	1031.0
2005	61.4	271.4	211.2	772.0
2006	50.6	345.1	295.1	692.0
2007	972.8	430.4	326.9	868.0

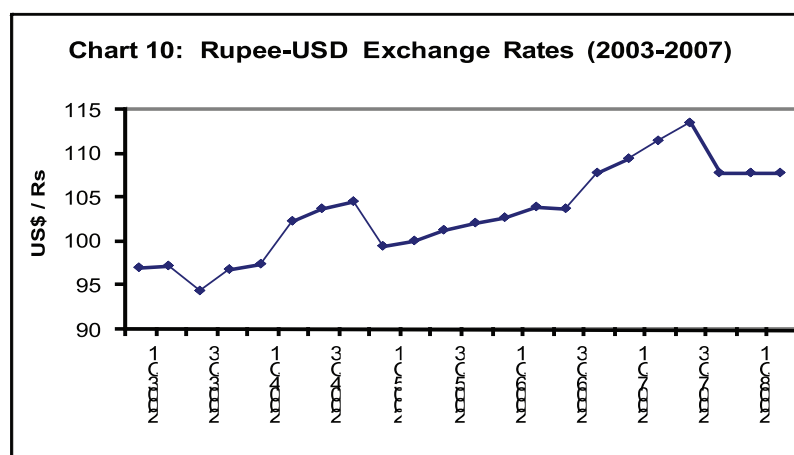
Source: Central Bank of Sri Lanka

The average net portfolio flows increased substantially to US\$ 219 million during 2003-2007 from an average net outflow of US\$ 13 million registered during 1998-2002. However, if the inflows on account of international sovereign bonds and foreign investment in Treasury bonds were excluded, the average net portfolio inflows from equity flow amounts to around US\$ 45 million. The net foreign equity investment increased from mere US\$ 2 million in 2003 to US\$ 101 million in 2007. The foreign purchases of equities in the Colombo Stock Exchange (CSE) increased from US\$ 144 million in 2003 to US\$ 430 million in 2007. A strong performance in the corporate sector, especially in firms engaged in banking, telecommunications and insurance, attracted substantial foreign interests in equities listed in the CSE in recent years, with some strategic foreign buying in those companies. In 2007, the net portfolio investment increased substantially with the issuance of US\$ 500 million worth of sovereign bonds in the international financial markets by the government and foreign investment in rupee-denominated Treasury bonds amounting to US\$ 372 million.

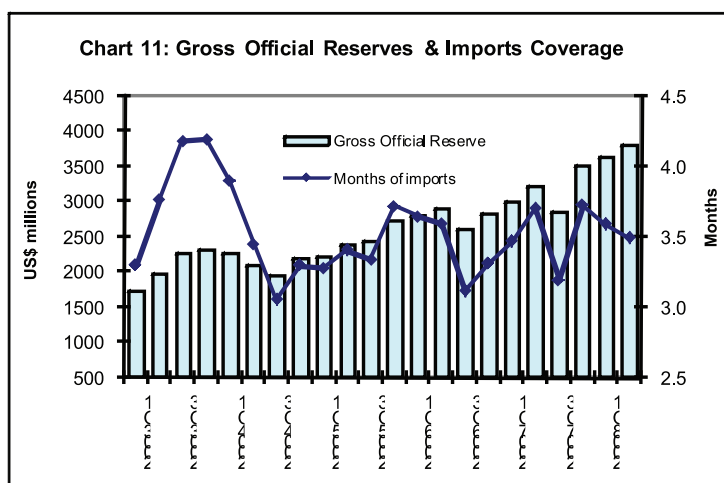
The short-term capital outflows comprising purely the trade credit extended by Sri Lankan exporters to foreign buyers also continued to increase in line with growth in exports. The average short-term capital outflows during 2003-2008 increased to US\$ 813 million from US\$ 370 million during 1998-2002. This increase was attributable mainly to growth in exports, which increased to US\$ 7,740 million in 2007 from US\$ 5,133 million in 2003.

5.2 Impact of Capital Inflows and Outflows on Monetary and Financial Variables

The net short-term inflows were not substantial till 2005. Net inflows rose from just around US\$ 21 million in 2003 to US\$ 77 million in 2005, but decreased to US\$22 million in 2006 before reaching a peak of US\$ 621 million in 2007. Hence, they did not impact on the domestic deposit and lending rates during these periods. At the same time, they were not significant to have impact on the exchange rate as well. However, these inflows coupled with trade flows and private remittances seemed to have impacted on the exchange rates in certain years. The rupee-US dollar exchange rate appreciated by around 2.4% in 2005, irrespective of high domestic inflation as compared to that of major trading partners and competitors largely due to relatively higher short-term foreign inflows and sharp rise in private remittances and aid flows received in the aftermath of tsunami that devastated major coastal areas of Sri Lanka in December 2004. Again in 2007, the exchange rate, which was depreciating at around 5.6% to Rs.113.47 per US\$ by the end September amidst injection of foreign currency to the forex market by the central bank, reversed its depreciating trends in October with the receipt of proceeds of international sovereign bonds amounting to US\$ 500 million in October. The rupee-dollar exchange rates fell to Rs.111.89 in October from Rs.113.47 in September and by end 2007 it reached Rs.108.64 per US\$ thereby registering a marginal depreciation of 0.93%, irrespective of higher domestic inflation of 17.5%.



The official external reserves of the country were not materially impacted by the capital flows, as the net short-term flows were not substantial until 2007. However, these short-term flows, by lowering the market expectation of sharper depreciation of rupee, have indirectly contributed in building up the official reserves helping to avoid the drain of reserves, which otherwise would have warranted the sale of foreign currency to the market by the central bank to avoid excessive volatility in the foreign exchange market. The reserves declined to US\$ 2,196 million in 2004 from US\$ 2,329 million at end December 2003 largely due to the sale of foreign exchange amounting to US\$ 515 million in 2004 to meet the excess demand resulting from the higher trade deficit. However, the reserves increased by US\$ 539 million to US\$ 2,735 million in 2005 with the relatively low volume of sales in that year resulting from the higher purchases of foreign exchange by the central bank amounting to US\$ 290 million as against a purchase of US\$ 27 million in the previous year. With the purchase of the proceeds of sovereign bonds and a part of the proceeds of foreign investment in Treasury bonds from the market, the official reserves increased by US\$ 671 million to US\$ 3,508 million in 2007, while the total external reserves of the country increased by US\$ 951 million to US\$ 4,956 million, with the commercial banks absorbing a part of the proceeds of foreign investment in Treasury bonds and higher foreign equity investment in shares listed in the Colombo Stock Exchange.



Both the ASPI and MPI indices have been rising during the last five years reflecting increased activities in the Colombo Stock market and higher profitability of corporate sector. The activities of domestic retail investors in the share market have been growing since mid-1990s, which reached as high as 87% in 2000 mainly due to the low deposit rates and higher earning potentials from the equity trading. However, encouraged by the higher corporate earnings and increased retail activities, the foreign participation continued to increase and reached around 45% in 2007. Both the ASPI and MPI, decreased by 6.7% and 11.3%, respectively, in 2007, irrespective of both foreign purchases and sales recording highest flows of US\$423 million and US\$ 322 million, respectively, resulting in an unprecedented record-high in net equity inflows of US\$ 101 million in 2007. Hence, there is no evidence to suggest the impact of foreign inflows on the share market indices, which are largely influenced by the domestic retail activities.

5.3 Monetary Policy Reactions to Deal with Capital Inflows and Outflows in Recent Years

As discussed above, the net short-term flows were not significant in recent years to pose any challenges to monetary management in Sri Lanka due to the existing regulations and the short-term financial outflows are not permitted under the existing exchange control regulations.⁶ However, the opening up of Treasury bond market for foreign investment with limited investment and receipts of debut international sovereign bond proceeds in 2007 posed some challenges for the monetary management in the latter part of 2007 as market liquidity increased with central bank purchases of such foreign proceeds. This situation was further aggravated in 2008 following the permission for foreign investment in Treasury bills and with foreign exchange earners also bringing in their foreign exchange earnings from overseas bank accounts and converting their foreign exchange earnings lying in the foreign currency deposit accounts with domestic banks, on the expectation of further appreciation of rupee with continuous foreign inflows.

In this context, the Central Bank of Sri Lanka actively used sterilised intervention policies without adjusting statutory reserve requirement (SRR) on rupee deposits (no SRR on foreign currency deposits) or adjusting the policy rates as those short-term term flows were not permanent in nature and not substantially high. Accordingly, the central bank continued to absorb excess

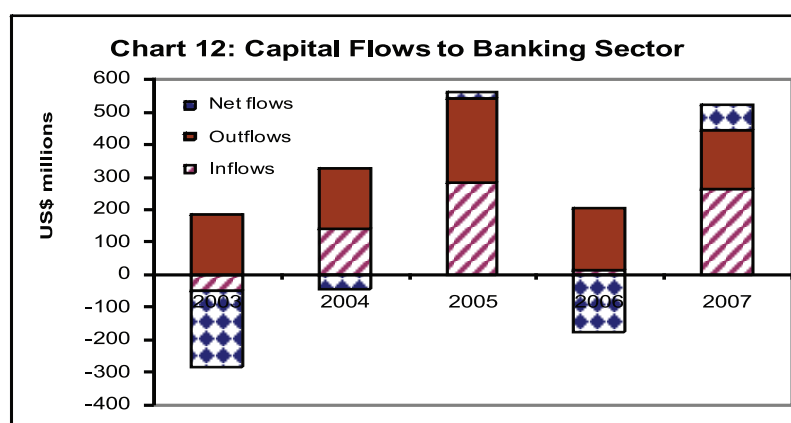
6. Under the existing Exchange Control Regulations, Sri Lankan residents are given case-by-case approval to undertake only foreign direct investment abroad and are not permitted to undertake foreign investment in government securities, stocks and corporate securities overseas.

liquidity in the foreign exchange market by purchasing foreign exchange in the inter-bank market, while at the same time mopping up the excess liquidity in the banking system through the aggressive Open Market Operations (OMO), on overnight/long-term basis. For the OMO, the central bank mainly used the Treasury bill holdings held by it and, in the absence of Treasury bills in the holdings of the central bank, the bank issued its own securities called Central Bank Securities to absorb excess liquidity from the banking system. However, the authorities experienced some difficulties in absorbing the excess liquidity through the issuance of Central Bank Securities due to the lesser attractiveness of such securities, as they cannot be used by commercial banks as collateral to obtain liquidity facility from the Central Bank's reverse repo window.

6. Capital Flows and Financial Stability

6.1 Capital Flows in Banking Sector in the Last Five Years and Possible Reason Behind the Recent Capital Inflows in This Sector

Commercial banks in Sri Lanka are currently permitted to borrow only up to 15% of their capital and reserves and hence capital flows to banking sector are limited by banking regulations. Net inflows to the Domestic Banking Units (DBUs) of commercial banks amounted to just US\$ 13 million in 2003 and US\$ 24 million in 2004, but declined to US\$ 6 million in 2005 before rising to US\$ 31 million in 2006. During 2007, capital flows to the DBUs turned to net outflows due to the settlement of overseas loans. However, the Off-shore Banking Units (OBUs), which are established under the Central Bank Circular No. 380 of 2 May 1979, are permitted to borrow from and to lend to non-residents without any restrictions. Their lending in domestic market is limited to commercial banks, companies approved under Section 17 of the Board of Investment of Sri Lanka (BOI) Act and other residents approved by the Central Bank of Sri Lanka.



The net capital flows to OBUs have been increasing during the last few years due to the higher demand for foreign currency loans from the BOI companies mainly due to the relatively higher domestic interest rates, as compared to the interest rates on foreign currency loans and local banks raising syndicated loans from overseas banks to on-lend to the government. The net inflows to OBUs in 2005 and 2007 increased substantially to US\$ 273 million and US\$ 342 million, respectively, as compared to an inflow of US\$ 115 million in 2004 mainly due to the mobilisation of syndicated loans for the government by local banks, as compared to an outflow of US\$ 20 million in 2006.

6.2 Impact of Capital Inflows and Outflows on Financial Stability

As explained above, the capital flows to banking sector were not so large and volatile to have any destabilising impact on the financial system stability. The banking sector regulations impose limits on foreign borrowings, maximum accommodation and single borrowers' limit, and the existing exchange control regulations impose limits on lending to resident entities in foreign currencies. Such regulations act as safeguards in ensuring the financial sector stability.

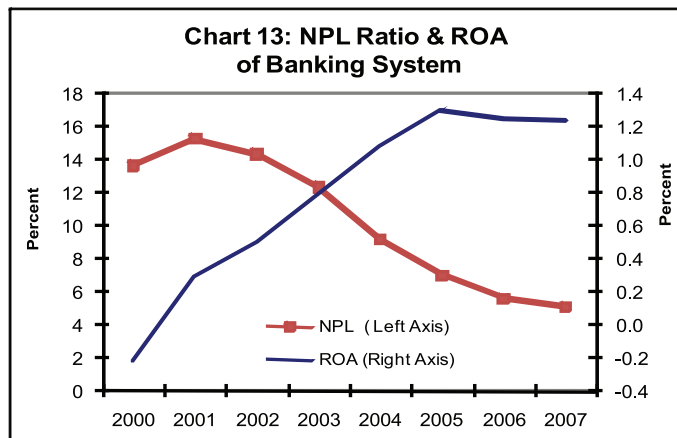
The commercial banks' lending to various sectors is given in Table 8. Accordingly, the bank lending has been increasing during the last five years. A major part of the lending has been for the financing of trading activities, followed by the consumption and housing. On average, during the last five years the trading sector absorbed around 27% of the total lending, while the private consumption and housing sectors absorbed around 25% and 17%, respectively. The lending has been growing with the relaxed monetary policy since 2002 and increased economic activities, the result of a peaceful political environment ensuing from the signing of a ceasefire agreement with the rebel group in 2002. However, the growth in bank lending has been declining since 2005 with the tightening of monetary policy and recommencement of hostilities. The lending, which grew by over 82% in 2004 has slowed to around 5% in 2007. However, the growth in lending was largely met by deposit mobilisation, which has been growing, on average by around 19% during the last five years rather than through the foreign borrowings.

Table 8
Bank Lending (Rs.million)

	2003	2004	2005	2006	2007
Trading	15,515	28,815	27,325	26,610	67,226
Financial	5,496	7,122	9,019	16,734	14,364
Agriculture	1,435	702	8,324	4,029	8,388
Industrial	3,035	5,589	11,082	9,303	9,851
Tourism	746	1,207	2,857	2,496	-447
Housing	7,180	14,426	20,035	39,196	32,959
Consumption	13,379	24,571	28,446	46,957	46,852
Services	983	1,671	5,186	154	8,805
Other Loans	3,596	9,574	22,268	25,014	-8,702
Total	51,365	93,677	134,543	170,493	179,295

Source: Central Bank of Sri Lanka

The growth in bank lending has not affected the asset quality of the banks as the banks were more diligent in the provision of loans to their customers. Moreover, the banks have been following better risk management techniques and sound loan recovery procedures supported by more stringent prudential measures. As a result, the non-performing loan ratio (NPL) for the banking system has been improving from around 12.3% in 2003 to around 5.2% in 2007 (Chart13). The profitability of banks, as indicated by the return on assets (ROA) ratio, also showed an improvement from 0.8% in 2003 to around 1.2% in 2007 with the higher profitability of banking system.



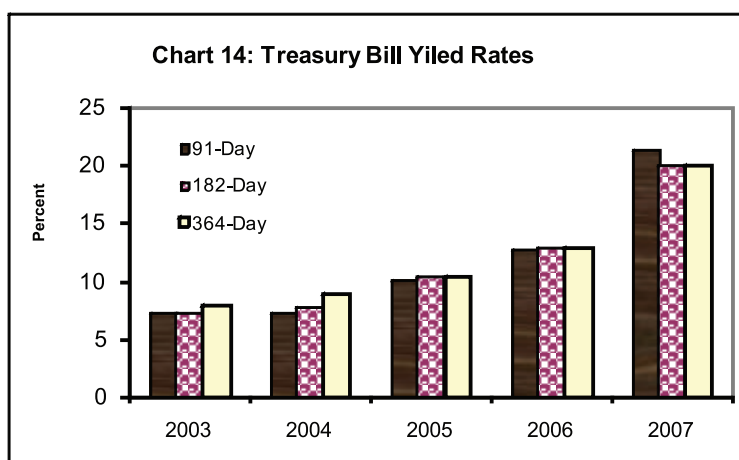
The equity prices, as indicated by movements in both the ASPI and MPI, increased substantially during the last five years, except in 2007, due to the increased participation of domestic retail investors on the wake of low deposit rates and low yields on Government securities. Moreover, the increasing foreign interest in the Colombo stock market contributed to the higher equity prices, as the Colombo stock market has been recognised as one of the best performing market in the region. However, in 2007 the equity prices decreased even with the record-high foreign inflows during the year. The ASPI and MPI recorded a decline of 6.7% and 11.3%, respectively. The equity prices reached record levels during the first two months, but moved down thereafter due to numerous factors, such as heightened security concerns, higher yields on gild-edge Government securities, such as Treasury bills and bonds, higher interest rates on bank deposits and the implementation of rules on margin trading.

Table 9
Movements in Equity Prices

	Equity flows	ASPI	% change	MPI	% change
2003	1.6	1062.1	30.3	1897.8	38.1
2004	10.9	1506.9	41.9	2073.7	9.3
2005	61.4	1922.2	27.6	2451.1	18.2
2006	50.6	2722.4	41.6	3711.8	51.4
2007	101.0	2541.0	-6.7	3291.9	-11.3

Source: Central Bank of Sri Lanka

Though, the government securities market was opened for foreign investment in 2006, the inflow came only in 2007 as the rule on minimum holding period for foreign investment was withdrawn in January 2007. The yield on Treasury bills, which was in the region of 13% at the beginning of the year, rose sharply during the year with the tightening of monetary policy. However, with receipt of the proceeds of international sovereign bonds (US\$500 million) in October and inflows foreign investment in Treasury bonds amounting to US\$ 372 million, the yield rates declined during October-December to around 20% at the end of 2007. Though the inflow of foreign investment did not sharply reduce the yield rates, it prevented the yield rates from shooting up further in 2007.



During 2008, the inflows on account of foreign investment in Treasury bills and bonds increased further largely due to the higher yields on these securities, as compared to the foreign interest rates and stable rupee-US dollar exchange rates that prevailed in 2008. However, it is still too early to assess whether Sri Lanka will continue to receive foreign investment on these government securities if the yield rates decline and the exchange rate depreciates in the future.

Table 10
Treasury Bill Yield rates (%) - Primary Market

	91-Day	182-Day	364-Day
2003	7.35	7.24	8.00
2004	7.25	7.65	8.90
2005	10.10	10.32	10.37
2006	12.76	12.78	12.96
2007	21.30	19.99	19.96

Source: Central Bank of Sri Lanka

6.3 Central Bank Policy Reactions Related to Capital Flows and Financial Stability in Recent Years

As explained elsewhere in the paper, the existing exchange control regulations and banking sector regulations prevent higher foreign speculative capital inflows or outflows. However, the recent opening up of government securities for foreign investment and allowing foreigners to open savings accounts, either in foreign currencies or in local currency, may expose the financial system to foreign exchange risks if there is any sudden reversals of such foreign inflows. Nevertheless, since there are restrictions on such inflows in the form of 10% cap on foreign investment in both Treasury bills and bonds and limits on acceptance of foreign savings by a domestic bank up to 20% of total deposit liabilities of the domestic banking unit, their impact on financial system stability will be limited. Moreover, the policies implemented to improve the financial sector stability and soundness will ensure the resilience of this sector to any shocks that may be created by foreign capital flows.

The minimum equity capital requirement for commercial banks was raised to Rs.2,500 million in 2005 from Rs.500 million to promote consolidation in the banking sector. In 2006, a general provision for loans was introduced. Accordingly, all banks were required to maintain a general provision of 1% of total performing loans and advances and non-performing loans in the overdue category (loans and advances in arrears for 3-6 months). Banks were directed to adopt Basel II effective from January 2008, and this new framework is intended to improve the safety and soundness of the banking system by aligning capital adequacy assessment more closely with the underlying main risks in the banks.

7. Conclusion

As the capital inflows to Sri Lanka remain relatively small, they have not posed any major difficulties for the conduct of monetary policy and monetary management in Sri Lanka, except during 1993-1994 and 2007-2008 when there were surges in capital flows during these periods. Even though inward FDI, equity investment of up to 100% by the foreigners in shares listed in the Colombo stock exchange, and foreign investment in government securities up to 10% of outstanding Treasury bills and bonds are freely permitted, the capital inflows to Sri Lanka still remain relatively small, partly due to the existence of restrictions on certain capital inflows, such as private sector external borrowing, external borrowing by commercial banks, and foreign investment in corporate and government securities.

To deal with the surges in capital flows during 1993-94 and 2007- 2008, the central bank primarily relied on monetary management. In order to absorb the excess liquidity in the banking system, the central bank raised the SRR on several occasions during 1993-1994, while absorbing excess liquidity through its open market operations through the sale of Treasury bills and central bank's own securities. During the latter part of 2007 and the early part of 2008, the country experienced sudden capital inflows with the opening of Treasury bills for foreign investment and enhancement of permissible foreign investment limit on Treasury bonds, and the central bank used sterilised intervention to absorb the excess forex liquidity and resultant excess rupee liquidity. Again the central bank had to issue its own securities as it did not possess sufficient stock of Treasury bills for the conduct of OMOs. However, foreign investment in government securities fled with the intensification of the global financial crisis since mid-September 2008, exerting higher pressure on the exchange rates to depreciate. In this regard, to meet the excess demand created by such sudden capital outflows, the central bank sold foreign exchange, which created liquidity shortage in the banking system requiring the provision of rupee liquidity by the central bank through open market operations. This situation highlighted the risks of encouraging short-term speculative capital flows. Therefore, Sri Lanka should focus more on attracting long-term capital flows and discourage interest sensitive short-term speculative flows to avoid any adverse impact on the exchange rates and the monetary management.

Even with this high degree of capital account opening, the capital inflows seem to be at low level though both FDI and portfolio investment increased in recent years. This highlights the existence of some structural issues, which needs to be addressed effectively to attain the desirable level of investment to finance the widening savings-investment gap through long-term investment flows rather than short-term debt flows.

7.1 Major Issues

As an emerging economy with a relatively higher savings-investment gap, Sri Lanka needs to attract foreign capital to finance the necessary social and economic infrastructure to promote a sustainable higher economic growth in order to enhance the income of the people and alleviate poverty. Though Sri Lanka was the pioneer in the South Asian region to adopt a market-oriented economic policy and open the economy for foreign direct investment and trade, it still lags behind other countries, who embraced the open economic policy much latter than Sri Lanka. The main contributory factors for such lackluster

performance were lack of better infrastructure facilities, heightened civil conflicts since 1983 and the resultant waste of human and financial resources, and lack of willingness to implement the necessary reforms in some key areas, including labour laws. The bold reforms implemented by the Sri Lankan authorities over the years in respect of several key areas, including external trade, foreign investment, Customs, taxation and tax administration and financial sector have yielded tangible benefits to the country. However, it is necessary to implement reforms in areas such as labour laws, land laws, and energy sector, etc., on a priority basis, while strengthening the reforms already instituted in other areas. Therefore, timely policy initiatives are essential to relax the existing restrictions and regulations that discourage capital flows to create a conducive investment climate in the country so that foreign investment could be attracted to facilitate the continuation of the current economic growth momentum.

Currently, the government receives higher capital flows with least flows to the private sector as there are restrictions on the private sector borrowings and the infrastructure projects are largely financed by the government. The concessional financing to government from multilateral financial institutions are gradually drying up with the country moving into a middle income status, warranting the government to borrow from the financial markets and bilateral sources at commercial interest rates to finance new infrastructure projects. This raises the government debt servicing burden and, hence, the higher fiscal deficit, which will be largely financed through bank financing if the government revenue grows at a slower pace, leading to higher inflation and imbalance in the economy. In several countries major infrastructure projects are implemented under private-public partnership (PPP) arrangements with risk sharing, financing and expertise from the private sector. Hence, both the local and foreign private sector could be engaged in the infrastructure developments with greater access to foreign financing for the local private sector.

The higher yield rates on government securities resulting from the higher budgetary financing requirement may encourage speculative capital flows in the short-term, which may reverse faster if the domestic currency depreciates rapidly and macro imbalance emerges in the country. Such a sudden reversal of capital flows would exert pressure on the exchange rates to depreciate further thereby triggering outflow of other short-term capital as well. Consequently, depreciating currency would adversely impact on government's debt servicing, balance sheets of the financial institutions and private sector borrowers, who have exposure to foreign currency debt. Therefore, it would be prudent to impose an acceptable minimum holding period on government securities and impose a tax on withdrawal

of such short-term flows before the minimum holding period to avoid speculative capital flows.

7.2 Policy Recommendations

The government should encourage trade-related FDI, which will not only partly finance the savings-investment gap, but it will also bring in foreign exchange in the future through exports revenue, thereby strengthening the debt servicing capacity of the country. In addition, more private companies should be encouraged to list their shares in the stock exchange to increase foreign interest in the stock market and to receive cheap capital for the expansion of business ventures. Private sector enterprises, which are commercially viable and have a good track record should be permitted to borrow freely from overseas on a medium to long-term basis, while at the same time permitting foreigners to subscribe to corporate bonds issued locally by the private sector. In this respect, the existing exchange control regulations need to be gradually relaxed with sufficient safeguards for ensuring the stability of the financial system.

However, short-term capital flows to both the private and public sectors should be discouraged as they are likely to cause higher volatility in the foreign exchange market and be the first to fly out of the country when macro imbalances emerge or when the speculation builds up against the domestic currency. Consequently, macro imbalances may intensify causing exchange rates to depreciate rapidly affecting the balance sheets of financial institutions and private borrowers. This would increase the external debt servicing cost of the private sector and the government. Therefore, it is necessary for the country to maintain a sound macroeconomic environment and adopt a more flexible exchange rate regime to encourage long-term capital flows, such as foreign direct investment, in order to deter speculative capital flows and, hence, their destabilising effects on the overall economy.

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Chronology of Capital Account Liberalisation

Year	Policy Measures
1980	Resident Non-National Foreign Currency Account Scheme was introduced
1981	Resident Guests were permitted by the Minister of Finance and planning to bring in external funds for investments in the projects approved by the Greater Colombo Economic Commission(G.C.E.C)
1988	Authorised Dealers were permitted to open and maintain Non-Resident Foreign Currency Accounts for nationals of Sri Lanka who are or have been employed abroad and for non-nationals of Sri Lankan origin who are resident outside Sri Lanka
1990	<p>Permission granted under sections 10, 11 and 15 of the Exchange Control Act to approved country funds, approved regional funds and individuals resident outside Sri Lanka to invest;</p> <ul style="list-style-type: none"> a) In a listed public company other than (b), (c), and (d), up to 40% of the issued capital. b) In a company incorporated in Sri Lanka in which investment by non-resident required the approval of the government or Foreign investment authority. c) In a commercial bank incorporated in Sri Lanka, up to the maximum limit determined by the Monetary Board in terms of the Banking Act No 30 of 1988. d) In a company incorporated for insurance business, up to the limit approved the government of Sri Lanka or the authorised body.
1992	<p>Purchase of shares in companies in Sri Lanka, by approved country funds, approved Country funds, regional funds and individuals resident outside Sri Lanka, up to 100% of the issued capital subject to;</p> <ul style="list-style-type: none"> (a) Foreign Investment in Money Lending, pawn broking, retail trade with a capital of less than US\$1 million, personal services other than for export sector or tourism sector and coastal fishing shall not be permitted (b) Foreign investment in companies established for Banking, Finance, Insurance, Trading services on the CSE, Air transportation, Coastal shipping, manufacturing arms, explosives, military vehicles and equipments, aircraft and other military hardware, manufacturing of poisons, narcotics, alcohols and dangerous drugs, producing currency and coins, production and distribution of energy and power, large scale mining of gems, Lotteries, liaison offices of foreign companies

	<p>shall be permitted only up to the extent approved by the respective authority.</p> <p>(c) For the following businesses up to 40% of the issued capital is permitted. However, a higher percentage may be approved in a case-by-case basis.</p> <ul style="list-style-type: none"> • Production of goods where Sri Lanka's exports are subject to internationally determined quota restrictions, Growing tea, rubber, coconut, cocoa, rice, sugar and spices. • Mining of no renewable national resources, Timber-based industries using local timber, • Fishing, Construction of residents, Supply of water, Mass transportation, • Telecommunications, Mass communications, Education, Professional services, • Freight forwarding and Travel/ Shipping agencies
1993	The repatriation requirement and surrender requirement imposed on exporters in terms of section 22 (4) and 6(2) (a) of the Exchange Control Act No.17 of 1971 were removed. Accordingly, exporters were permitted either to repatriate export proceeds or to retain them in foreign currency accounts in a commercial bank abroad. Commercial banks were permitted to enter into contracts for the sale of foreign exchange forward for a period up to 360 days.
1995	Commercial banks were permitted to obtain foreign currency loans up to 15% of their capital and reserves.
1997	Commercial banks were permitted to provide foreign currency loans to Non-BOI Exporters, from either their domestic Units or from their FCBU's subject to some safeguards.
2000	<p>(a) The permission is granted for foreign investment in sectors up to percentage of issued capital of the company subject to regulatory limits, requirements and conditions. Permitted foreign shareholdings are Banking institutions licensed under Banking Act (60%), Insurance (90%), Stock broking (49% or, 100% where SEC approval is granted), Other financial services (49%).</p> <p>(b) Non-resident investors were permitted to invest in Unit Trusts that contain a trust deed with a restriction that not more than 20% of the deposited property shall be invested in government securities.</p>

<p>2001</p>	<p>Sri Lankan citizens living abroad were permitted to open a special bank account titled Rupee Accounts for Non-Resident Investment (RANSI).</p> <p>Non-Resident Investors were permitted to invest in US dollar Denominated Government Bonds titled Sri Lanka Development Bonds (SLDBs)</p>
<p>2002</p>	<p>Non-Resident Investments up to 100% of the equity capital in any rupee company established in the areas of financial sector activities such as banking, finance, Insurance, stock broking. Non-Resident investments were also permitted up to 100% in activities related to infrastructure development and professional services and setting up of branch/liaison offices of companies incorporate overseas in Sri Lanka.</p>
<p>2006</p>	<p>Foreign investment in Rupee Denominated Treasury Bonds (T-bonds) to a limit up to 10% of outstanding Treasury bonds was permitted.</p>
<p>2007</p>	<p>Dual citizenship applicants were permitted to open foreign currency fixed deposit accounts with the commercial banks.</p>
<p>2008</p>	<ol style="list-style-type: none"> 1. Foreign investors were allowed to invest in Treasury Bills up to 10% of outstanding Treasury bills stocks 2. Non-Residents were permitted to open and maintain foreign currency and Rupee Fixed Deposit with commercial banks 3. Effective from 01July2008 Sri Lankans migrating permanently will be permitted to repatriate a higher amount of US\$ 150,000, as compared to US\$ 10,000 permitted earlier. This will cover allowances and personal effects such as jewellery and other goods exported. Any local proceeds of wealth in excess of US 150,000 should be deposited in a blocked account carrying interest income with a commercial bank. Of such sum, a sum of US 20,000 or its equivalent will be allowed to be remitted each year. Any balances in blocked accounts may be utilised to meet any disbursements in Sri Lanka, including investments permitted for non-residents.

Chapter 11

CAPITAL FLOWS AND THEIR IMPLICATIONS FOR CENTRAL BANK POLICIES IN TAIWAN

by
Hsiao Yuan Yu¹

1. Introduction

Capital flows have significant repercussions for developing countries. In the past decade, most of the countries in the SEACEN region received massive capital inflows due to their rapid economic development and steady export performance. The influx of foreign capital can supply the needed capital to support their economic development but it can also have an adverse impact on the economy and financial system of the recipient countries, if the capital inflows are not properly managed. Whether huge capital inflows create asset bubbles is another important issue for the countries to address. Section 1 of this report highlights the pattern of the capital flows in Taiwan. It analyses the related capital flow policies, capital flow trends in Taiwan, and identifies the possible determinants. In Section 2, an empirical analysis of capital flows is carried out, including the factors affecting capital flows. The consequences of capital inflows and the implications of capital flows for central bank policies are discussed and the conclusions are then presented.

2. General Framework and Capital Flows Management Policies in Taiwan

The balance of payment (BOP), reflecting a country's capital flows and trade, consists of three parts: current account, capital account and financial account. Current account usually reflects a country's trade surplus or deficit and is significantly important for small, open economies. Capital flows, on the other hand, are generally captured under the financial accounts of BOP after revision by the IMF, and represent the amount and direction of capital flows into and out of a country.

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Taiwan is a small island country and is typical of an open economy. Its economy is traditionally dependent on trade. Its current account was fully liberalised many years ago. The liberalisation of current account could be traced back to the 1980s when Taiwan started accumulating huge foreign exchange reserve. It was liberalised much earlier than the capital account and financial account.

The capital account, which used to represent a country's capital flows, plays a very minor role after revision of the IMF BOP standard. The items left in the capital account are capital account credit and capital account debt, which are often relatively small in comparison to the main factors, like FDI, portfolio and public and private loans in capital flows. Today, the focus on capital flows has shifted from the traditional capital account to the financial account.

There are three main parts in the financial account. They are: foreign direct investment (FDI), portfolio investments, and public and private loans. Generally speaking, all these three items are liberalised in Taiwan. Some minor restrictions are imposed on them only under certain specific conditions. Capital inflows and outflows for approved FDI are liberalised. Portfolio investments assets and liabilities are also liberalised under the non-discretionary trust account. Other investment assets and liabilities, including public and private loans, are liberalised in Taiwan as well. Only certain kinds of loans which exceed one year are required to be registered under long-term debt for record purpose. Investments in the financial account without corresponding approval are subject to the following restrictions:

- (a) Domestic company up to \$50 million per annum
- (b) Domestic resident up to \$5 million per annum
- (c) Nonresident remittance up to \$100 thousand per transaction

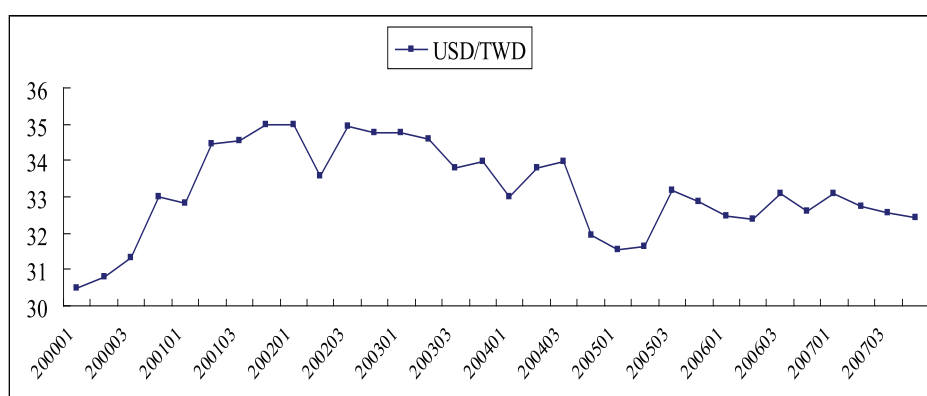
We would like to introduce the major capital flow policies of Taiwan in the following two ways: New Taiwan Dollar (TWD) exchange rate regime and the capital flow deregulations.

2.1 New Taiwan Dollar (TWD) Exchange Rate Regime

Trading USD/TWD, EUR/TWD, JPY/TWD, GBP/TWD and many other worldwide currencies in Taiwan is quite easy because the Taiwan foreign exchange market is a highly free market. The TWD exchange rate regime basically is a managed floating regime system. In principle, the TWD FX price is mainly determined by market supply and demand. The Central bank will

intervene in the foreign exchange market when two exceptions occur. One of the exceptions is seasonal interruption and the other is the abnormal factors, i.e., large flows of hot money. To maintain the orders of our foreign exchange market and reduce fluctuations of the TWD, the central bank may step in to manage the TWD in the FX market. Under the managed floating regime system, the US dollar/TWD is stabilised in a relatively smooth pattern. Figure 1 depicts the quarterly data of USD/TWD from 2000 Q1.

Figure 1
Trend of USD/TWD



2.2 Deregulations on Capital Flow Management

Capital inflow and outflow for individuals and companies are generally very free in Taiwan. Only few capital flow restrictions are imposed on short-term TWD conversions and they are:

- (a) Domestic company up to \$50 million per annum
- (b) Domestic resident up to \$5 million per annum
- (c) Nonresident remittance up to \$100 thousand per transaction

In addition to the previous few capital flow restrictions, the following major policies enlarging the Taiwan capital market and enhancing market efficiency are currently being implemented:

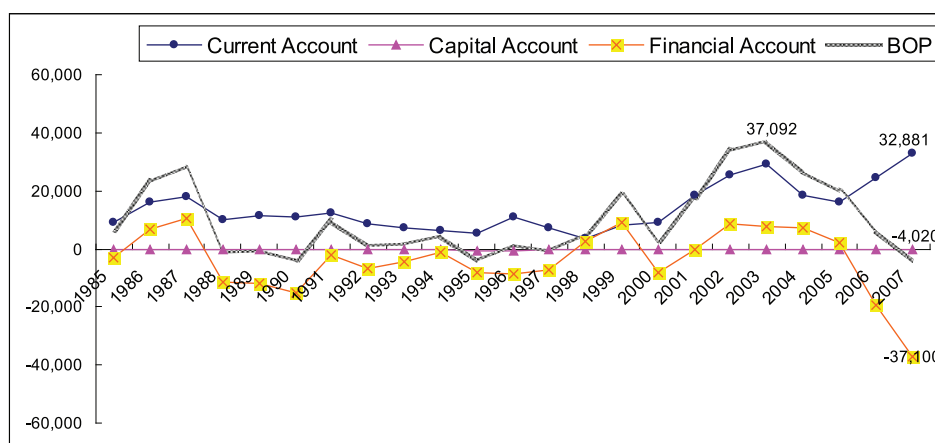
- (a) Loosen restrictions on foreign investment in domestic securities.
- (b) Promotion of the internationalisation of the domestic capital market.
- (c) Allow nonresident foreigners to take up TWD loans from local banks.

- (d) Keep approving applications on overseas securities investment.
- (e) Revise regulations to enhance capital movements.
- (f) Simplify RMB exchange business. (We opened RMB exchange business on July 1 2008)

3. Trends in Capital Flows in Taiwan

During the past decade, the current account, capital account, and financial account all recorded significant growth in Taiwan. We saw our current account continually soaring, capital account running in a breakeven position and financial account shedding. By and large, our BOP recorded large surpluses between the years 2000 and 2003, reaching a peak in 2003 at US\$37,092 million, but declined after 2003. In 2007, the BOP of Taiwan was about – US\$4,020 million. Figure 2 illustrates the trend of capital flows in the past 23 years.

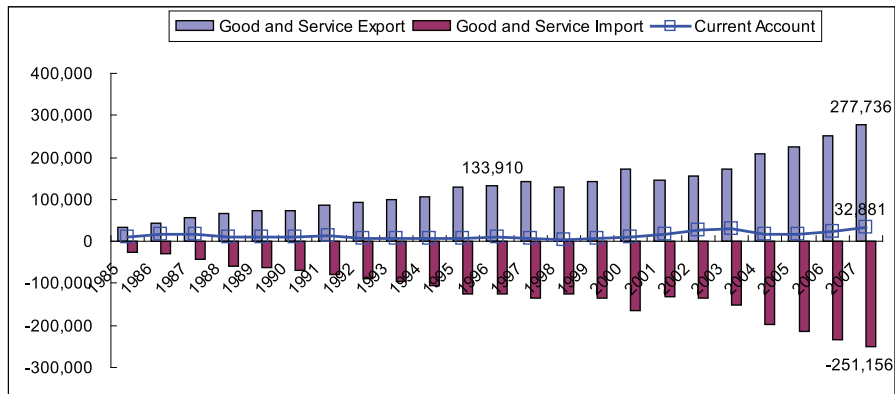
Figure 2
Trend of BOP (Taiwan)



Unit: US\$ million

In regard of the current account, we saw steady increases in both exports and imports. In 2007, good and service exports reached US\$277,736 million while good and service imports reached US\$251,156 million. This brought to our current account a surplus of US\$32,881 million in 2007. It can be noticed in Figure 3 that both the volume of exports and imports in value terms have doubled over the last decade.

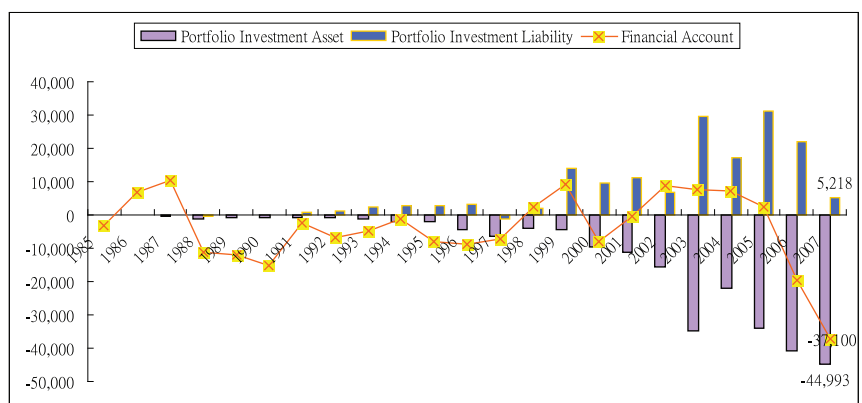
Figure 3
Current Account Trend (Taiwan)



Unit: US\$ million

The position of Taiwan's financial account is very interesting and is totally in the opposite direction as the current account. With the increased liberalisation of the capital market in Taiwan, the domestic residents and companies moved to diversify their portfolios in different countries and currencies instead of in the traditional TWD assets. This swelled the deficit in the financial account recently, especially after 2005. The negative figure in the financial account helped balance the surplus in the current account to stabilise the TWD trend. We have portfolio investment asset worth about US\$44,993 million while only US\$5,218 million portfolio investment liability in 2007. The financial account deficit reached a record high negative of US\$37,100 million in 2007. Figure 4 depicts the recent financial account trend of Taiwan.

Figure 4
Financial Account Trend (Taiwan)

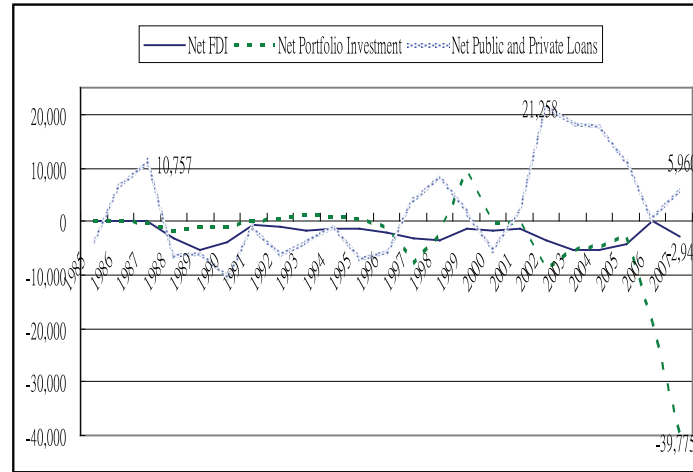


Unit: US\$ million

Further, taking a look at the three main components of financial account - FDI, portfolio investment and public and private loans - they tell different stories about capital flows in Taiwan. Figure 5 plots the net FDI, net portfolio investment, as well as the net public and private loans from the period 1985 to 2007 in Taiwan. First of all, the FDI moved in a relatively smooth path during the period. Net FDI was typically negative in Taiwan during the past 23 years. Only in the years 1985, 1986, 1987 and 2006 had Taiwan recorded a positive net inflow but the magnitudes were relatively smaller. For instance, net FDI in Taiwan 2006 was +US\$25 million while it was -US\$2,946 million in 2007. Second, turning to net portfolio investment assets and liabilities, the situation is a little different from the previous net FDI. There were huge magnitudes of portfolio investment assets and liabilities in Taiwan, especially the absolute amounts of portfolio investment assets. However, substantial capital outflows in portfolio investment assets appeared after 2005 due to a significant difference of interest rate between Taiwan and abroad. This caused the negative net portfolio investments to reach a record low of -US\$39,775 million in 2007. Finally, net public and private loans in Taiwan behaved in a very volatile manner and told a totally different story than net portfolio investment. Before 2001, the net public and private loans behaved in a most volatile as compared to the other two components of capital flows; the capital inflows were positive in some years but in the other years they were negative. The net public and private loans mounted drastically after 2002 and sustained at a high level for almost four years until 2005. This was mainly driven by the expectation of TWD appreciation during that period. This was also the main factor contributing to the positive capital inflows in the financial account between 2002 and 2005. However, the financial account balance declined dramatically after 2005 as a result of significant capital outflows in net portfolio investments.

After comparing the trends of capital flows, Figure 6 summarises some statistics of net FDI, net portfolio investment, and net public and private loans. In our sample period, the mean values of the net FDI and net portfolio investment were negative at -US\$2,287.3 million and -US\$3,620.3 million, respectively. On the other hand, the net public and private loans was positive at US\$2,188.7 million. Their corresponding medians are -US\$1,773 million, -US\$902 million and US\$285 million, respectively, and show similar signs with the mean values. Notice that the mean value of net FDI (-US\$2,287.3 million) was larger than the mean value of net portfolio investment (-US\$3,620.3 million) but their corresponding medians (-US\$1,773 million vs. -US\$902 million) were in the opposite directions. This tells us that the distributions of net portfolio investment behaved in a much more volatile manner than net FDI. This can be verified in Figure 5 and in the statistics of their corresponding standard deviations as well.

Figure 5
Trends of Net FDI, Net Portfolio Investment
and Net Loans (Taiwan)



Unit: USD million

To see the deviations among these three factors, both the net portfolio investment and net public and private loans had significantly greater deviations than the net FDI. The standard deviation and range of the net portfolio investment and net public and private loans were multiple times greater than the standard deviation and range of net FDI. Net portfolio investment was the most volatile factors among the others.

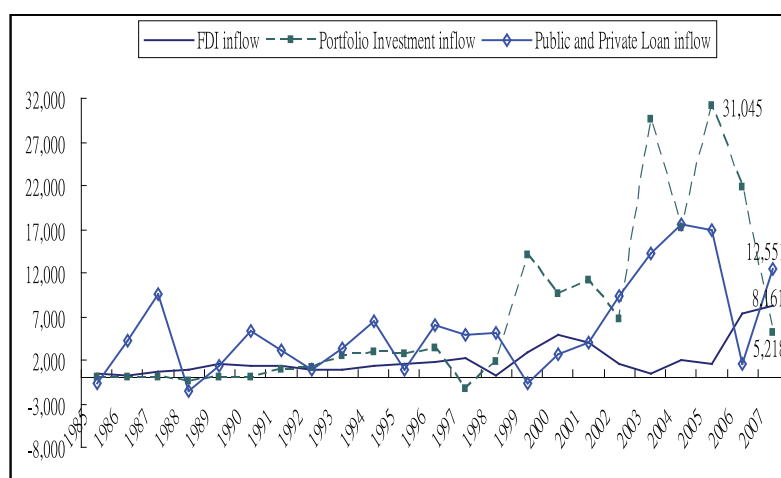
Figure 6
Statistics of net FDI, Net Portfolio Investment and Net Loans
(Taiwan)

	Net FDI	Net Portfolio Investment	Net Public and Private Loans
Mean	-2,287.3	-3,620.3	2,188.7
Median	-1773	-902	285
S.D.	1,783.4	9,376.9	8,959.0
Range	5,610	49,111	31,489
Max	263	9,336	21,258
Min	-5,347	-3,9775	-10,231

Unit: US\$ million

After comparing the trends of net FDI, net portfolio investments as well as net public and private loans, we next compare the corresponding FDI inflow, portfolio investment inflow and public and private loans inflow. Figure 7 plots the trends of inflows of these three components. The trajectory of the FDI inflow was smoothest compared to that of the other two components, and the pattern is similar as for the net flows in Figure 5. FDI inflow surged after 2005 and reached US\$8,161 million in 2007. Both the trends of portfolio investment inflow and public and private loan inflow showed more volatility. The portfolio investment inflow was more volatile than public and private loan inflow. Portfolio investment peaked at US\$31,045 million in 2005 but declined sharply soon after. It reached US\$5,218 million in 2007 which was the lowest among the three components. On the other hand, the public and private loan inflow did not surge as strongly as portfolio investment inflow after 2000 and dropped to relative low point in 2006. However, it bounced back sharply to US\$12,551 million in 2007 and was the largest contributor of capital inflows at that time.

Figure 7
Trends of FDI, Portfolio Investment
and Loans Inflows (Taiwan)



Unit: US\$ million

In the same way, we also summarise the statistics of FDI inflow, portfolio investment inflow as well as public and private inflow in Figure 8. Likewise, the pattern of FDI inflow was the smoothest, as in Figure 7. It had the lowest average of US\$2,112.3 million and median of US\$1,445 million among the three components and also the lowest standard deviation (US\$2,126.6 million) and

range (US\$7,939 million). Portfolio investment inflow had a higher average at US\$6,926 million than public and private loan inflow at US\$5,513.7 million, but a lower median at US\$2,729 million than public and private loan inflow at US\$4,174 million. This shows that the distribution of portfolio investment inflow was much more skewed than the distribution of public and private loan inflow. In addition, the portfolio investment inflow showed the most volatility and deviations of portfolio investment inflow were the greatest one among the three, with the standard deviation at US\$9,591 million and range at US\$32,291 million. The numbers are presented in Figure 8.

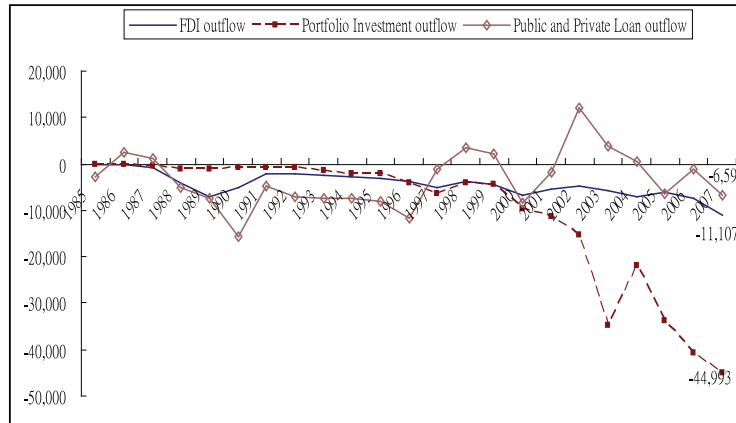
Figure 8
Statistics of FDI, Portfolio Investment and Loans Inflows (Taiwan)

	FDI inflow inflow	Portfolio Investment Loans inflow	Public and Private
Mean	2,112.3	6,926.0	5,513.7
Median	1,445	2,729	4,174
S.D.	2,126.6	9,591.0	5,474.8
Range	7,939	32,291	19,089
Max	8,161	31,045	17,520
Min	222	-1,246	-1,569

Unit: US\$ million

Turning to the scenario of capital outflows in Taiwan, the story is a little different than the previous one(s). The FDI outflow, portfolio investment outflow as well as public and private loans outflow trends are depicted in Figure 9. Obviously, the trajectory of FDI outflow was still the smoothest among the three and reached – US\$11,107 million in 2007. Public and private loans outflow were more volatile than FDI outflow but more stable than portfolio investment outflow during the relevant period. The movement of portfolio investment outflow was most volatile, after 2002, when it dropped dramatically and reached the record low at –US\$44,993 million in 2007. The factors attributed as driving the massive portfolio investment outflow were the domestic residents’ portfolio risk diversification and the popularity of offshore mutual funds in Taiwan.

Figure 9
Trends of FDI, Portfolio Investment
and Loans Outflows (Taiwan)



Unit: US\$ million

Figure 10 summarises some of the key statistics of FDI outflow, portfolio investment outflow as well as public and private loan outflow. Public and private loan outflow had the smallest absolute value of the mean at –US\$3,325 million while FDI outflow recorded a bigger average value than public and private outflow. Again, portfolio investment outflow played the key role in the trend of capital outflow. Besides, portfolio investment outflow had the biggest standard deviation and range than both FDI outflow and public and private loan outflow. This substantiates the finding that the portfolio investment outflow was the most volatile among the three components.

Figure 10
Statistics of FDI, Portfolio Investment and Loans Outflows (Taiwan)

	FDI outflow	Portfolio Investment outflow	Public and Private Loans outflow
Mean	-4,400	-10,546.3	-3,325
Median	-4,420	-4,136	-4,615
S.D.	2,628.3	14,359.4	6,021.1
Range	11,042	44,993	27,554
Max	-65	0	11,990
Min	-11,107	-44,993	-15,564

Unit: US\$ million

4. Determinants of Capital Flows in Taiwan

Although we have a moderately neutral BOP recently, it consisted of a huge surplus in current account and a deficit in financial account, which reflected the occurrence of massive capital inflows and outflows simultaneously. From the group discussion at the first SEACEN capital flow workshop, we classify the determinants of capital flow into two parts. One set are the common factors which are at play across the different countries and the other set are the country specific factors which are operative locally and reflect the country's specific situation.

The determinants are summarised in Figure 11. Among the common factors of that determine capital flow, both inflow and outflow, we see more capital inflow determinants than capital outflow determinants.

Figure 11
Common Factors of Capital Flow Determinants

Common Factors of Capital Flow	
Inflow	Outflow
<ul style="list-style-type: none"> - Improved investment environment <ul style="list-style-type: none"> • Government policies • Quality of infrastructure • Political stability - Strong economic growth - Free trade agreement (FTA) - Capital market development - External factors <ul style="list-style-type: none"> • US economy recession • Global economy slowdown • Weak US dollar 	<ul style="list-style-type: none"> - Government policies on resident capital outflow - Risk diversification - Alternative investment opportunities

Beyond the common factors of capital flow determinants, we provide some other essential country specific factors which also potentially influence capital flow in Taiwan. Possible causes behind the significant capital inflow in Taiwan include:

- (1) Increasing export
- (2) Moderate FX policies
- (3) Sound stock market
- (4) Expectation of currency appreciation
- (5) Getting better relationship with China recently

On the other hand, the huge negative numbers in the financial account represent huge capital outflow. Possible determinants of capital outflow include:

- (1) Increasing import
- (2) Strong resident portfolio diversifications
- (3) Interest rate difference between TWD, USD and other major currencies
- (4) Popular offshore mutual funds
- (5) Political uncertainty

Besides the above plausible determinant factors influencing capital inflow and outflow in Taiwan, a simple empirical model is introduced to investigate whether some key factors are significant in capital flow determination. Our empirical model is set up as follows:

$$CF_{in} = \alpha + \beta_1 GDPGR + \beta_2 IR + \beta_3 CAR + \delta_1 WDPGR + \delta_2 WIR + \varepsilon \quad (1)$$

Equation (1) modeled the relationship between the dependent variable capital flow (CF_{in}), three internal independent variables ($GDPGR$, IR and CAR), two external independent variables ($WDPGR$ and WIR) as well as the intercept item (α). The parameters β and δ are the corresponding coefficients of the internal independent variables and external independent variables, respectively. From the first SEACEN capital flow workshop, three internal independent variables in our empirical capital flow model are domestic real GDP growth rate ($GDPGR$), domestic real interest rate (IR), and current account to GDP ratio (CAR). And the rest of the two external independent variables are world real GDP growth rate ($WDPGR$), and world real interest rate (WIR). For a tractable model, we would like to use some proxies here: we use real 12-month time deposit rate as proxy of domestic real interest rate; US real GDP growth rate for world real GDP growth rate and 1-year US LIBOR rate for world interest rate, respectively.

Following the guidelines of the SEACEN capital flow research workshop, we adopt quarterly data from 1985 to 2007 which include complete data of 92 quarters in capital flow, domestic real GDP growth rate, domestic real interest rate, current account to GDP ratio, US real GDP growth rate and 1-year US LIBOR rate.

In order to carefully build up our empirical model, we have to investigate the stationary of every variable and to check whether some of the variables have the unit root properties first. The augmented Dickey-Fuller unit root test (no constant approach) will be adopted. Our test results suggest that only capital inflow data is stationary overtime while other domestic real GDP growth rate, domestic real interest rate, current account to GDP ratio, US real GDP growth rate and US real interest rate are non-stationary overtime. However, the five independent variables become stationary after first order difference. The augmented Dickey-Fuller unit root test results are summarised in Figure 12.

Figure 12
Augmented Dickey-Fuller Unit Root Test Results

DF test	CFin	GDPGR	IR	CAR	WGDPGR	WIR
Statistics	-2.61*	-1.38	-1.16	-1.54	-1.93	-1.16
DF test	—	Δ GDPGR	Δ IR	Δ CAR	Δ WGDPGR	Δ WIR
Statistics	—	-6.44*	-5.39*	-9.36*	-9.17*	-5.30*

Source: Bloomberg and Aremos database.

* denotes significant at 95% confidence interval.

After investigating the unit root test, we should rebuild our empirical model to cover stationary variables instead of previous non-stationary variables. Thus, our empirical model would become the following equation (2).

$$CF_{in} = \alpha + \beta_1 \Delta GDPGR + \beta_2 \Delta IR + \beta_3 \Delta CAR + \delta_1 \Delta WGDPGR + \delta_2 \Delta WIR + \varepsilon \quad (2)$$

Different from previous equation (1) is that we adopt first order difference of five independent variables instead of those independent variables themselves. This correction is due to the fact those independent variables are non-stationary overtime in previous unit root test. The regression empirical results of our model are summarised in Figure 13 below. Parentheses in the Table denote the standard deviation (S.D.) of the corresponding variables.

Figure 13
Capital Inflow Empirical Model Results

	constant	Δ GDPGR	Δ IR	Δ CAR	Δ WGDPGR	Δ WIR
Estimate	3,714.24*	652.57*	442.06	-211.93	-47.89	343.33
(S.D.)	(512.64)	(302.85)	(1157.63)	(203.63)	(203.69)	(758.06)
t-statistics	7.25	2.15	0.38	-1.04	-0.24	0.45

Source: Bloomberg and Aremos database.

* denotes significant at 95% confidence interval.

According to the results of our empirical model in Figure 13, both constant and the first independent variable, difference of domestic real GDP growth rate are significant. The estimate of constant term is 3,714.24 with standard deviation 512.64 and t-statistic 7.25 which is significant at 95% confidence interval. Among the three internal variables and two external variables, only difference of domestic real GDP growth rate is significant in our empirical model. The estimate of difference of domestic real GDP growth rate is 652.57 with standard deviation 302.85 and t-statistic 2.15. Other two internal variables, difference of domestic real interest rate and difference of current account to GDP ratio, and two external variables, difference of US real GDP growth rate and difference of US real interest rate are not significant during this sample period in our empirical model. Please note that empirical results might be different in other sample periods or in other kinds of models.

Based on the previous capital inflow empirical model, we substitute capital outflow data in place of original capital inflow data and repeat the empirical model. The augmented Dickey-Fuller test shows that capital outflow data are stationary overtime in our sample; other variables behave stationary as well after first order difference. The statistic of capital outflow in the augmented Dickey-fuller test is -6.80. Then we have the empirical model as following equation (3).

$$CF_{out} = \alpha + \beta_1\Delta GDPGR + \beta_2\Delta IR + \beta_3\Delta CAR + \delta_1\Delta WGDGP + \delta_2\Delta WIR + \varepsilon \quad (3)$$

The results of the empirical model of capital outflow show that only the constant item is statistically significant under 5% level. The first order difference of domestic real GDP growth rate, domestic real interest rate, current account

to GDP ratio, world real GDP growth rate as well as world real interest rate are all insignificant in our sample. The summary of the capital outflow empirical results are presented in Figure 14.

5. Capital Flows and Monetary Policies

The recent capital flow liberalisation had significant impact on our financial account and balance of payment. Massive capital inflows in public and private loans brought in much capital to the Taiwan capital market while significant capital outflows in portfolio investment contributed to much capital flowing abroad

Figure 14
Capital Outflow Empirical Model Results

	constant	Δ GDPGR	Δ IR	Δ CAR	Δ WGDGPR	Δ WIR
Estimate	-4794.87*	239.98	-1970.04	-409.80	74.83	-733.88
(S.D.)	(531.42)	(313.95)	(1200.04)	(211.09)	(211.15)	(785.83)
t-statistics	-9.02	0.76	-1.64	-1.94	0.35	-0.93

Source: Bloomberg and Aremos database.

* denotes significant at 95% confidence interval.

as well. The net effect of capital inflow and capital outflow was increased slowly and then dropped drastically during the past five years. This net effect of financial account also dominated the development of balance of payment which resulted in a minor negative BOP in 2007. This trend could be seen from Figures 2 and 5.

Observing the trends of FDI inflow, portfolio investment inflow as well as public and private loans inflow during past five years in Figure 7, it is obvious that massive amount of capital had flowed in, especially in portfolio investment after 2002 and in public and private loans after 2001. The huge amount of capital inflow in the portfolio investment item was mainly attributed to the liberalisation of restrictions on foreign institutional investors and the globalisation of Taiwan capital market. With the liberalisation of many restrictions on foreign investors, most caps of Taiwan listed companies were amended to 100%, as compared to less than 50% previously. This policy helped attract more and more foreign investors, including investors of institutions and natural persons, in moving capital to invest in the Taiwan stock and bond markets in recent years. Portfolio investment inflow reached a record high at US\$31,045 million in 2005. This

significant trend could be easily seen in Figure 7. The second largest capital inflow in Taiwan during the past five years was public and private loans. According to Figure 7, massive amount of capital inflow appeared in the years of 2002, 2003, 2004, 2005 and 2007. From an analysis of the public and private loan inflow data, the reasons behind this surge of capital inflow could be attributed to the expectations of TWD appreciation in the private sectors. Private commercial banks would borrow first in foreign currencies and then pay back at the end of year if they have the expectation of home currency appreciation. They could make the profit between the periods of borrowing and repayment, depending on the extent of the appreciation. In years of 2002, 2003, 2004, 2005 and 2007, people expected TWD to appreciate and engaged in borrowing at the beginning of year and then paying back at the end of year. As a result, we saw a massive surge of capital inflow in private loan. Those two factors are the most important reasons explaining for the significant capital inflow in recent years in Taiwan.

Based on the previous discussion and statistics, we see an increasing capital outflow trend in the financial account in recent years. This was mainly due to the huge amount of portfolio investment outflow. Clearly there was a significant net outflow effect in the financial account after 2005 and this had a very important impact on Taiwan. As discussed, the residents in Taiwan were eager to look for alternative investment opportunities from the worldwide different asset classes motivated by risk diversification and accelerating globalisation. Domestic portfolio diversification and popular offshore mutual fund in Taiwan were the driving forces behind the outflow of home capital, resulting in big deficits in net of portfolio investment and financial account. The deficit in financial account in recent years slowed FX reserves accumulation making the balance of payment negative in 2007. This helped moderate the huge surplus of current account and deficit of financial account in Taiwan to keep the balance of payment neutral. It is to be noted that Taiwan had a huge surplus in balance of payment after 2000 reaching a peak at US\$37,092 million in 2003. Although the surplus in the balance of payment started declining after 2003, it was still positive until 2006. Then in 2007, for the first time in the past decade, the balance of payment recorded a deficit due to the significant deficit in the financial account.

For the purpose of managing the current account and financial account, some monetary policies may be adopted by governments to induce capital flows to where they are required. During the past five years, Taiwan recorded significant continuing surplus in its current account. In order to balance the huge surplus in its current account and alleviate pressure of appreciation, facilitating capital

outflow appropriately might be one of the solutions. To make a decision in monetary policies is definitely very complicated and many factors have to be taken into consideration. From the perspective of monetary policy results in Taiwan², a low-interest-rate environment seemed to work well and helped achieve the goal of managing the surplus level in its current account. The high interest rate differential between Taiwan and the other European countries and US induced Taiwan residents to assign funds offshore. This helped facilitate a moderate portfolio investment capital outflow and thus manage the surplus level of the current account in the past five years.

6. Capital Flow and Financial Stability

Capital flow now in Taiwan is quite free, compared to the past. This is also true of the banking system. During the past five years, as we have discussed earlier, private loan inflow brought in to Taiwan massive amount of capital due to the expectation of TWD appreciation. The private borrowing and lending banking behaviors did not have any serious repercussions on the financial stability in Taiwan. Our banking system and FX price did not quiver significantly because of private loan capital inflow.

However, the liberalisation of capital flow did have some impact on Taiwan. The most significant is its effect on the financial stability of the stock market. Foreign investors could freely invest in most of the listed companies in Taiwan. It is definitely beneficial for foreign institutional investors and shareholders to invest in Taiwan's listed companies as they may bring in sufficient capital, technology innovation, new research of products and some other management skills. However, in respect of the stock market, the behaviour of stocks which attract foreign investors is usually more volatile than those which not. This is mainly attributed to the short-term nature of foreign capital inflow. As we know, investors often allocate portfolio funds to different categories - long-term portfolio and short-term portfolio. Attracting long-term capital investment in Taiwanese companies is definitely a good thing for its stock market because such capital is not volatile, moving in and out often, be they foreign investment or home investment. In contrast, some of the short-term foreign capital, i.e., hot money, moved into the Taiwan stock market to invest in Taiwanese companies but they bought and sold very often. This short-term capital usually causes wide fluctuations in the stock price and increases the volatility of stocks. Such kind of capital inflows will definitely destabilise our market.

2. This meant that low- interest-rate environment in Taiwan is not necessary for the purpose of balancing surplus in current account.

In addition, the second effect of the short-term capital was its impact on the FX market. Foreign investors buying or selling domestic stocks must first exchange their foreign currencies for local currencies. For a long-term foreign investor, the capital investment in stocks will stay for the long haul since the investment goal is earning long-term dividends instead of short-term capital gains. Such long-term foreign investors will affect the FX market very slightly due to infrequent currency exchange transactions in the FX market. The situation is quite different for a short-term foreign investor. The target of short-term investors is making money from short-term capital gains, not receiving long-term dividends. This will motivate them to trade very often causing instability to both the stock market and FX market.

In order to reduce the impact on the stock market and FX market stemming from the behavior of such short-term foreign investors, the central bank monitors the capital inflows and outflows of foreign investors. The central bank encourages foreign investors to allocate their capital in the right designated underlying assets, i.e., Taiwan stock market.

7. Conclusion

Taiwan has liberalised its current account and financial account for many years. The recent trend is that the surplus in its current account has been accumulating significantly, especially after 2000. On the other hand, Taiwan recorded more and more capital outflow due to outflow of private loans and portfolio investment assets in financial account. The reasons behind the capital inflow and outflow are quite different. The two major reasons explaining capital inflows to Taiwan are: liberalisation of restrictions on foreign investment and expectation of TWD appreciation. This brought in significant in foreign capital inflows into Taiwan after 2000. The expectation of TWD appreciation pushed private banks to borrow money abroad in the years 2002, 2003, 2004, 2005 and 2007 and brought in significant capital inflows. The major reason explaining capital outflows from Taiwan is the motivation of its residents looking for alternative investment opportunities and diversifying their portfolio and risks. This brought significant capital outflow after 2002 and dominated the deficit in its financial account recently.

In order to investigate how macroeconomic factors influence capital flow, we built up an empirical model based on the first SEACEN workshop. The empirical results suggest that both capital inflow and capital outflow are stationary overtime in our sample. On the other hand, the domestic real GDP growth rate, domestic real interest rate, current account to GDP ratio, world real GDP growth

rate as well as world real interest rate are non-stationary overtime in our sample. After adopting first- order difference of those independent variables, our empirical capital inflow regression results indicate that only the constant and difference of domestic real GDP growth rate are significant to capital inflow while other variables are insignificant. Turning to the capital outflow model, only the constant item is significant to our capital outflow data. Other independent variables are all insignificant. Note that the empirical results might be different in other sample periods or models.

Two major policy tools of the central bank are FX policy and interest rate policy. From the perspective of balancing the BOP, theoretically, some monetary policy might work under certain conditions. For instance, the central bank may tend to adopt a loose monetary policy to encourage capital outflow when facing a huge surplus in its current account, if the policy target is to balance the BOP. On the other hand, the central bank may adopt a tight monetary policy to attract capital inflow when facing a huge deficit in its current account. In reality, conducting monetary policy is much more complicated than we normally think because there are many constraints and scenarios that have to be taken into consideration. Balancing the BOP is only one of the central banks' main targets. There are still lots of other proportionate targets the central bank has to deal with.

Finally, it is essential for the central bank to maintain stable capital inflow and outflow, but it is not an easy task. Promoting the inflow of long-term capital inflow could help facilitate economic growth and is beneficial for the recipient countries. Whereas, with short-term capital, the inflow can sometimes cause damage to the capital market and aggravate the volatility of the stock market because of the myopic pursuit of profits. How to manage such kind of short-term capital flow is an issue and an challenge for the central bank.

Chapter 12

CAPITAL FLOWS AND THEIR IMPLICATIONS FOR CENTRAL BANK POLICIES IN THAILAND

by

Khatharit Sitthikul and Nasha Ananchotikul¹

1. Introduction

Thailand has undergone dramatic changes over the last two decades. As one of the most successful of the newly industrialising countries in Asia, its economy made significant strides throughout most of the 1980s and 1990s, with an exception of the crisis years in 1997-98. Significant improvement in the economic fundamentals together with the strengthening of the financial system, have contributed to Thailand's impressive economic growth in the post-crisis years. The country's path of economic development has been outward-oriented, as reflected in the openness towards current and capital accounts as well as in the government policies promoting Thai exports and inward foreign investment. Unquestionably, greater real and financial integration with the global markets have brought about many benefits and helped facilitate growth and development of the Thai economy. At the same time, however, increased integration leaves the country vulnerable to external shocks. The procyclicality and volatility of capital flows can also create macroeconomic imbalances and, hence, pose important challenges for policymakers in the conduct of monetary policy.

This paper aims to shed light on Thailand's experience with capital flows over 1985-present, with a focus on their implications on economic and monetary variables as well as policy responses to manage these flows. We begin by providing in Section 2 background on the evolution of Thailand's current and capital account liberalisation. Section 3 presents the trend of capital flows during the 1985-2008Q3, followed by an empirical examination of their determinants in

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Section 4. Section 5 assesses the risks associated with large capital flows. Sections 6 and 7 discuss implications of large and volatile capital flows on monetary policy and on financial stability, respectively. The conclusions and policy recommendations are presented in Section 8.

2. General Framework and Major Capital Flows Management Policies

Thailand has long been relatively open to trade and financial flows with current account convertibility and liberal treatment of inward foreign direct and portfolio investments. Foreign direct investment, in particular, has played an important role in various stages of the country's industrialisation, especially following the shift of Thailand's general economic policy from import-substitution in the 1960s to the promotion of export-oriented growth since the 1970s. Over the period 1985-1997, foreign exchange controls on current and capital account transactions were substantially relaxed. Inflows were further promoted through a number of measures including tax and institutional reforms. There were times, however, when measures to slow down excessive inflows were necessary to maintain or restore economic and financial stability. Overall, Thailand has continued to move towards a freer regime for capital flows, with a vision to promote market-based mechanisms in driving sustainable economic growth.

2.1 Current Account and Capital Account Liberalisation

Thailand's exchange control practice had been in conformity with the IMF's Article VIII requirements even before the acceptance of the Article. There were no restrictions on foreign exchange involving payments for and receipts of current account transactions. Between 1985-1990, some foreign exchange controls were loosened, including raising the limits on the amounts of foreign exchange that could be purchased or brought in or taken out of the country for various purposes and permitting the uses of foreign exchange deposits for transit passengers and non-resident baht accounts for foreign-borrowing settlements, stock transactions, and foreign investment.

Yet, the acceptance of the Article VIII in May 1990 signified as an important milestone by marking the beginning of systematic financial reforms and capital flow liberalisation in Thailand. Three phases of foreign exchange control liberalisation were implemented. The aim was to keep the foreign exchange regime in line with the growing globalisation of economic and financial systems and greater mobility of international capital funds. The regulatory relaxation was to allow market force to play a more active role in the utilisation and allocation of capital flows.

The first phase of exchange control deregulation (May 1990) allowed commercial banks to authorise foreign exchange transactions in trade-related activities without prior approval from the Bank of Thailand (BOT), and further increased the limit on foreign exchange purchase to facility transfers and traveling expenses. The second phase (April 1991) lifted most controls related to capital account-related inflows. Non-residents, for the first time, can open foreign-currency accounts provided that funds originated from abroad. Foreign exchange earners were allowed to accept payments in baht from non-resident baht accounts without approval from the BOT and to use their foreign currency proceeds from abroad to service external obligations. The third phase (February 1994) included raising the limit on outward transfer of direct investment by residents, abolishing limit on traveling expenses, and permitting authorised banks to lend to non-residents in foreign currency without limit. In essence, these relaxations of foreign exchange controls were targeted at letting market force to play a more active role in determining cross-border capital flows and encouraging utilisation of baht in regional trade.

To facilitate continued economic growth and development of the financial system, beginning from 1992, the authorities progressively deregulated financial institutions' operations and expanded their scope of operation. The ceilings on all deposits and lending rates were removed by 1992. A number of reforms were designed to support and promote the stock market. The centerpiece of the new financial facilities was the Bangkok International Banking Facilities (BIBF) established in March 1993. The BIBF was meant to serve as groundwork for international financial services and for mobilising capital from abroad to support regional economic growth and development. Some BIBF transactions received tax privileges, encouraging more uses of foreign capital. Following the commencement of the BIBF, capital inflows into Thailand, especially short-term loans, increased at an unprecedented rate (see more details in Section 2) leading up to the financial crisis in 1997.

2.1.1 Post-crisis Liberalisation

Since the crisis, the authorities have adopted a liberalisation scheme in which sequencing and prudential regulations are the key. On the inflow, the major change was the relaxation of foreign ownership limit of Thai banks and finance companies as well as certain non-bank businesses.² This has considerably changed the

2. Since 1997, foreign banks which are financially sound and with potential to help improve productivity in management and operation of Thai financial institutions have been allowed to hold more than 49% of total shares in Thai financial institutions for ten years. Beyond ten years, if the foreign owners still end up holding more 49% of total shares, they will not be forced to sell off their shares, but they will not be allowed to acquire additional shares.

landscape of financial institutions in the country by strengthening the system through recapitalisation. Foreign ownership in real estate, previously severely restricted, was also eased to allow for greater investment flexibility and to attract a wider market. Moreover, to promote foreign investment in companies listed in the Stock Exchange of Thailand (SET), the Thai Non-Voting Depository Receipt (NDVR) Company Limited was established in 2001 as a subsidiary of the SET. Under this arrangement, the NVDR Company acts as domestic nominee for foreign investors and is not subject to foreign ownership limit.³ This creates more room for foreign participation in the Thai stock market, encouraging inward portfolio investment.

Controls on capital outflows, which were liberalised only gradually throughout the pre-crisis period, have been increasingly loosened since the second half of 2003, partly as a result of the improvement in the country's foreign reserve adequacy. This regulatory relaxation on outflows not only enhances greater international diversification, but also helps create more balanced flows and correct foreign asset-liability mismatch in the private sector's balance sheet. Residents are now allowed to invest abroad through mutual funds and other institutional investors. Since July 2003, authorised institutional investors have been allowed to invest abroad, and the asset classes and investment quota were gradually expanded. The authorities also raised the limit on direct investments abroad by Thai residents, with the aim of encouraging Thai companies to gain from greater investment opportunities in the global markets.

2.2 Policies Implemented to Manage Capital Flows

In general, Thailand has been very open to foreign capital flows, with virtually no restrictions on non-resident inflows and outflows related to genuine trade and investment. Administrative measures might sometimes be used as anti-speculative policy tools to manage capital flows. Direct controls would be the last resort and would be implemented only in situations where excessive and volatile capital flows—especially those of short-term and speculative nature—appeared to threaten the economic and financial stability. In addition to temporary direct controls, Thailand also retains prudential measures on residents' short-term external borrowing and investment abroad to limit the private sector's foreign short-term liabilities and foreign currency risk exposure. However, these measures, especially on outward investments, have gradually been relaxed since 2003.

3. The NVDR Company issues NVDRs to foreign investors who want to invest in underlying stocks, warrants, and Transferable Subscription Rights (TRS). By investing in NVDRs, foreign investors are entitled to all financial benefits (i.e. dividends, right issues or warrants, capital gains) of underlying stocks, except for voting right.

The circumstance leading up to the use of capital controls in the years 1995-97 and in the years 2006-07, as well as the specifics of these controls, are outlined below:

2.2.1 Managing Capital Inflows and Outflows during 1995-97

The reforms to promote investments in the Thai stock markets and the establishment of the BIBF during the first half of the 1990s, together with the large positive interest rate differential and the fixed exchange rate regime, induced large capital inflows to Thailand by providing attractive returns and low currency risk. A growing proportion of net inflows were short-term in nature, reaching 60% of the total in 1995. This alarming level of short-term inflows led the Thai authorities to start restricting short-term capital inflows in 1995 by imposing a 7% reserve requirement on banks' non-resident baht accounts. These restrictions were extended in 1996 to cover new foreign borrowing of less than one year by commercial banks, BIBFs, and finance companies.

In 1997 Thailand began to experience net capital outflows due to non-residents' liquidation of baht-denominated assets and debt repayment induced by lower confidence of creditors. Rising interest rates to counteract outflows aggravated the solvency and liquidity position of many banks and finance companies. In July 1997, faced with a currency and banking crisis, the authorities floated the baht and a managed floating exchange rate was adopted. Baht transfers to non-residents in all cases were temporarily restricted except for those transactions associated with exports and imports of goods and services, and direct and portfolio investment. In January 1998, this measure was abolished and replaced by the 50 million baht lending limit to non-residents to prevent internationalisation of the baht.

2.2.2 Managing Capital Inflows during 2006-08

After the crisis in 1997, there emerged a new wave of capital inflows to the country from 2002 onward. Surging inflows both in the form of direct and portfolio investments, accompanied by declining outflows of debt repayment, resulted in large capital account surpluses in 2005 and 2006. This, together with the current account surpluses due to strong exports performance, exerted considerable upward pressure on the baht. Of the total inflows, large and increasing sum of foreign capital flowed into short-term fixed income instruments with the objective of gaining from attractive yields and anticipated baht appreciation. To discourage such speculative activities, the BOT implemented a number of anti-speculation measures, such as imposing a cap on the daily

outstanding balance of non-resident baht account, prohibiting transactions comparable to Thai baht lending or selling to non-residents without underlying trade or investment in Thailand with holding period of more than three months.

However, the effectiveness of these measures combined with increased foreign exchange intervention proved to be limited as foreign investors could find other ways to speculate on the baht. As the baht continued to be highly volatile and strengthened at an accelerating pace, the BOT decided to implement the Unremunerated Reserve Requirement (URR) measure on December 18, 2006, to serve as a price-based friction on the types of inflows that are more likely to be used by currency speculators. These included new inward investments in the form of foreign loans, fixed income instruments, mutual funds, property funds, currency swaps, and non-resident baht accounts without proofs of genuine trade and long-term investment underlying. These incoming funds were subject to 30% withholding at the banks without interests and would get the full amount of reserve back after one year. If the funds have remained in Thailand for at least one year, the customer will be refunded in full the amount of the reserve withheld. A penalty would apply to funds remaining in Thailand for less than one year, in which case the customer will be refunded only two-thirds of the reserve withheld. Inflows below US\$20,000 as well as inflows related to trades in goods and services, foreign direct investment, and equity investment in the stock market were exempted from the URR measure.

The BOT gradually relaxed the URR measure over the subsequent period by providing a full-hedging requirement as an alternative to the URR for some types of inflows. The measure proved adequate to stabilise the baht and reduce the size of inflows to a more manageable level. However, aware of the potential adverse effects of the URR measure on domestic businesses and its ineffectiveness in the long run, after a careful consideration of changes in the environment and other relevant factors, the BOT decided to uplift the URR measure on March 3, 2008.

3. Trends of Capital Flows in Thailand since 1985

The chronology of economic conditions and capital flows to Thailand over the past two decades can be roughly divided into three periods: before the crisis (1985-1996), during and after the crisis (1997-2002), and the recent years (2003-2008Q3).

3.1 Key Economic Indicators

3.1.1 Pre-crisis Period (1985-1996)

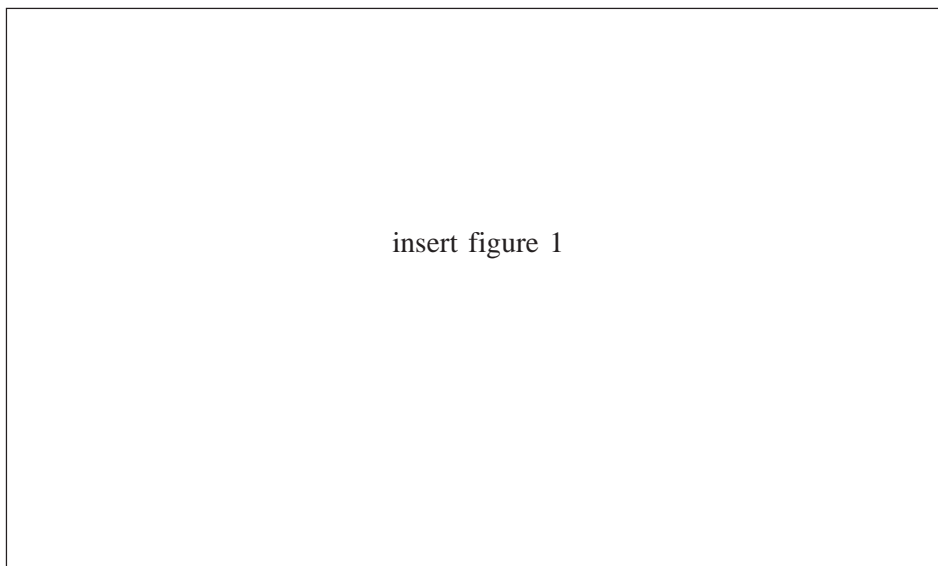
The Thai economy exhibited an impressive growth during the decade beginning with the year 1985 with the average annual growth close to 9%. This remarkable pace of economic growth was considerably influenced by waves of financial liberalisation implemented over this period. After the abolition of interest rate ceilings on time deposits in 1989 and all other deposits and loans in 1992, the domestic interest rates subsequently increased—3-month deposit rate averaged 9.4% per annum while the MLR averaged 13% per annum. The differences between domestic and foreign interest rates were also reduced, though still existed. Dismantlement of foreign exchange controls, competitive interest rates, together with the pegged exchange rate regime, led to greater flows of foreign funds into the country. The rapid economic expansion also brought about relatively high inflation at 4.3% per annum on average.

In regard of external stability, as more and more Thai businesses financed their investment from foreign sources instead of from domestic finances—owing to the negative saving-investment gap, persisting current account deficits, and the promotion of the BIBF, Thailand's external debt became roughly doubled from \$43.6 billion in 1992 to \$108.7 billion in 1996, equivalent to 66% of GDP. Since these loans tended to be denominated in foreign currency and to be on a short-term basis while the investment horizons were long term, this created large currency and maturity mismatches which, in turn, raised the degree of balance of payments vulnerability. The large volume of imported capital funds also adversely contributed to stock and property price bubbles and the country's current account deficits during this period (average 5.1% of GDP).

3.1.2 During and After the Crisis (1997-2002)

The crisis brought about the devaluation of the baht and the adoption of the managed-float exchange rate regime on July 2, 1997 to replace the pegged exchange rate regime. The baht subsequently lost more than half of its value to reach its lowest point of 56 baht to one US dollar in January 1998. The economy contracted markedly by 10.5% in 1998. Yet it was able to bounce back quickly and to expand at an annual average of 4.2% in 1999-2002, thanks to the robust growth of the export sector (accounted for 36% of the GDP in 1997 and 55% of the GDP in 2000) spurred by the baht depreciation. The current account recorded surpluses. This export-

Figure 1
Key Macroeconomic Indicators



Note: For year 2008, data are from the first half of the year.

led growth was also reflected in the rise in the degree of economic openness (the sum of export and import values to GDP) which increased from 61% of GDP before the crisis to 93% of GDP in the post-crisis period.

As for the rate of inflation, after its peak at over 8% in 1998, it was brought down substantially in the subsequent years in line with a low-inflation phenomenon in the major countries and peer economies. The inflation rate in Thailand during 2000-2002 averaged at merely 1.3% per year. It should be noted that this low inflation was concurrent with the adoption of the inflation-targeting monetary policy framework in Thailand in May 2000.

3.1.3 The Last Five Years (2003-2007)

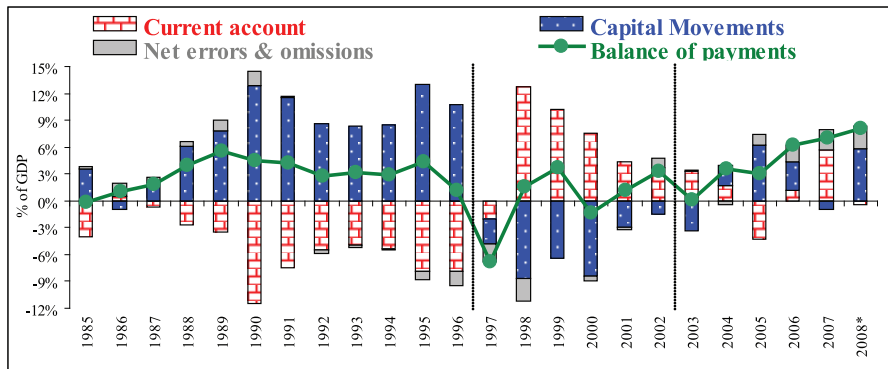
Upon its full recovery from the crisis, the Thai economy achieved outstanding performance with an annual growth rate of around 7% in 2003 and 2004, the highest level since 1995. The overall economic growth was mainly driven by growing domestic demand and partially by booming exports benefiting from competitive exchange rate as well as from the healthy global economy. The overall balance of payments recorded increasing surpluses throughout this period, exerting upward pressure on the baht, especially in 2006, when both the current

and the capital account registered surpluses. The only year during this period in which the current account recorded a deficit was 2005. This sudden turnaround was caused chiefly by the Thai government's decision to terminate the oil price subsidy programme.^{4,5}

Despite the overall robust export performance, during the past three years, the economy slowed to grow at a relatively lower rate due largely to the shrinking domestic demand. The key factors responsible for this domestic economic slack include continued political uncertainties, which dampened investor confidence, and higher oil prices, which lowered domestic consumption and investment and spurred the rate of inflation. A slower growth is expected in 2008 and 2009 in the context of extraordinarily weak outlook of the world economy caused by the on-going global financial crisis.

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4. Thailand's diesel subsidy since January 2004 came about after it was foreseen at the time that the global oil price would skyrocket. While the subsidy has assisted Thai economic growth to continue its momentum, the prolonged effect of the oil price hike has caused a growing fiscal burden on the government budget. Having underestimated the time frame of the soaring oil price, the oil subsidy became unsustainable. The government, led at the time by Thaksin Shinawatra, finally took the action to lift the cap on the diesel price. This end of the subsidy programme edged the producers towards the real market price and allowed the producers to become more prudent about their oil consumption.
 5. Interestingly, China's entry to the World Trade Organisation (WTO) in 2001 contributed to boosting, not damaging, Thailand's export growth: Thai exports to China increased more than five fold in value between 2000 and 2007, with exports share doubled from 4.1% of total exports in 2000 to 9.7% in 2007. This can be explained by the *triangular* international trade pattern arising from Chinese integration into the world production network: East Asian countries export intermediate goods to China for processing, and China, in turn, exports final products to the United States and Europe.

Figure 2
Evolution of Overall Balance of Payment (% of GDP)

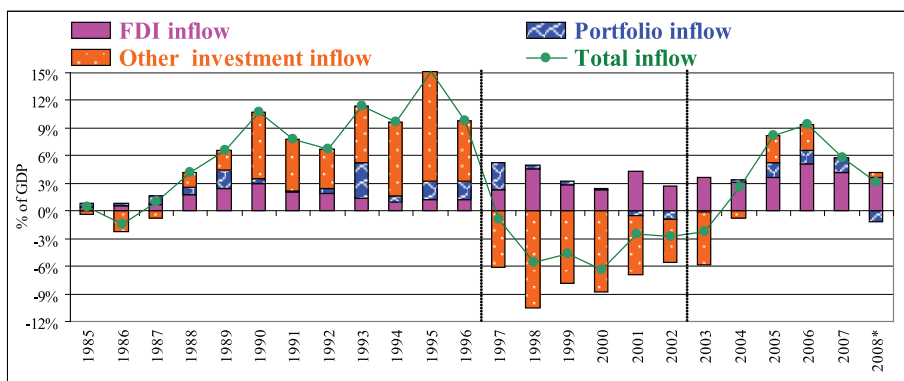


3.2 Capital Flows

3.2.1 Pre-crisis Period (1985-1996)

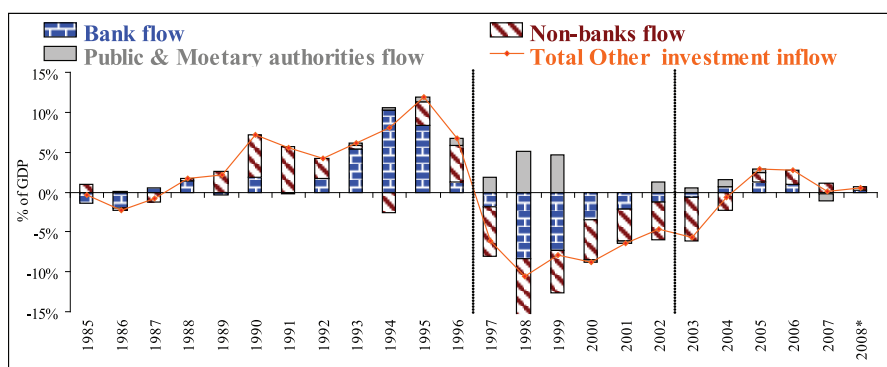
During this period, the gross capital inflow recorded on average 7.8% of GDP per year with its peak at 15% of GDP in 1995. The FDI inflow started to pick up since 1985 after the Plaza Accord that resulted in a surge in the value of yen, leading to Japanese businesses relocating and expanding their production bases in the Southeast Asian countries, including Thailand. At the same time, the portfolio investment inflow was steadily increasing owing to Thailand's strong macroeconomic performance, attractive returns on investment, and the capital market liberalisation. This flood of inflows into the stock market drove the stock price growth to achieve an average of 27% per annum.

Figure 3
Evolution of capital inflows (% of GDP)



After 1990, the role of FDI and portfolio investments in the Thai financial development began to subside as the “other investment” (comprised mostly of bank loan and non-bank private loan) assumed its importance, with bank loan alone accounted for 66% of the net capital flow. The inflow under the other investment category reached its peak at 12% of GDP in 1995. Because of the lower cost of financing and the lower risk of exchange rate, non-bank private loan from abroad was on a rise since the late 1980s, while bank-related inflow spiked up after the establishment of the BIBF in 1993. One major attraction of BIBF loans was tax privileges—even over domestic borrowings—given to BIBF borrowers, including those on juristic income tax, special business tax, and interest income tax. Consequently, Thai businesses shifted from domestic loans as well as external non-bank loans to the BIBF. Over-borrowing through the BIBF was one of the key factors that led to the financial crisis in 1997.

Figure 4
Composition of other investments — Inflows (% of GDP)



3.2.2 During and After the Crisis (1997-2002)

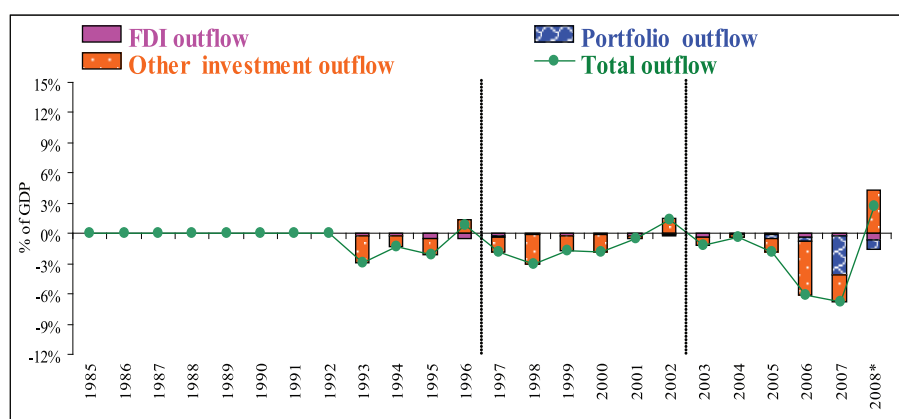
The gross capital inflow during the five years following the onset of the crisis registered large negative numbers—averaging at -3.8% of GDP per annum in 1997-2002—indicating substantial capital reversal during this period. Most of the reversal was in form of the repayment of external debts—BIBF and non-bank loans—made during the economic boom prior to the crisis. The largest reversal at -5.6% of GDP occurred in 1998 largely due to the gloomy economic outlook and the loss of confidence in Thai borrowers’ ability to repay debt.

FDI inflow, however, was generally not affected by the crisis. To the contrary, large FDI flows flooded into Thailand in the aftermath of the crisis to take advantage of the baht depreciation, which translated into cheaper assets and production costs for foreign businesses. The increase in FDI inflows played a key role in offsetting the severe effects of sudden stops and reversal of foreign loans and other investments on the Thai economy.

The dramatic baht depreciation also directly caused the price of Thai stocks to be cheaper in dollar terms, making them attractive to international portfolio investors. The resulting large inflows in terms of portfolio investment in the third quarter of 1997 also helped cushion the private sector's net outward capital flows. However, the continued baht depreciation in 1998 brought capital loss to the investors as well as it deteriorated investors' confidence. This, together with the impact of the September 11 terrorist attack in the U.S., brought about the net withdrawal of portfolio investment in 2001-2002.

In regard to the resident outflows, after the floating of the baht, the higher currency risk has led to higher foreign exchange hedging demand by Thai businesses. This, in turn, resulted in an increase in cross-border bank activity, as recorded under the "other investment" category, since banks had to square foreign-asset position in order to meet the net foreign exchange exposure requirement. However, the gross outflow by residents was still at a relatively low level during this period partly due to the existing controls on outward investments.

Figure 5
Evolution of capital outflows (% of GDP)



3.2.3 *The Last Five Years (2003-2007)*

Inflows to Thailand have increasingly shifted from being dominated by bank loans during the pre-crisis period to more from FDI and portfolio investment over recent years. Foreign bank loans have declined significantly as both the official and private sectors paid down the external debt and sought alternative financing via domestic financial markets. This waning importance of bank loans manifested in the level of external debt, which has declined substantially from 48.8% of GDP in 2002 to 29.4% in 2007.⁶ Moreover, of the total outstanding external debt, the share of baht-denominated debt has continued to increase. This, together with higher hedging ratio by Thai exporters/importers, implies a substantial reduction of Thailand's vulnerability to currency exposure compared to the pre-crisis period.

FDI has become the most important component accounting around 80% of the gross capital inflow over the last five years. This is due to a significant shrinkage of cross-border bank loans mentioned above as well as the promising growth prospects of the Thai economy that attracted increasing inward investment. Portfolio investment inflow has also been on an increasing trend owing to several factors, such as the increase of international institutional investors, the recent lack of confidence in the U.S. economy, further financial liberalisation, innovative trading instruments in the stock market, such as non-voting depository receipt (NVDR) as well as the higher yields and local currency appreciation. However, being of short-term nature, portfolio flows are highly sensitive to news and investor sentiment and, hence, apparently unstable.

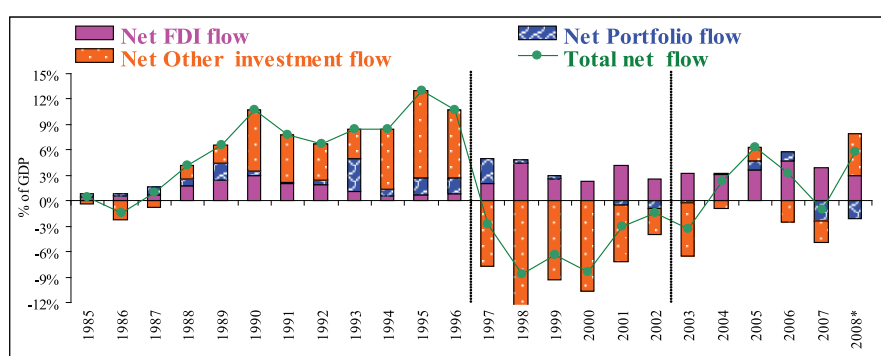
Since 2003, the Thai authorities have further relaxed restrictions on capital outflows by residents both in forms of direct and portfolio investment. This was aimed to promote greater acquisition of foreign assets so as to bring overall benefits to the economy through more balanced capital flows and improved wealth diversification.

Gross capital outflow has surged considerably from 2005 onward, reaching 6.8% of GDP in 2007. While FDI outflow has not been very responsive to the policy stimulation, outward portfolio investment, on the other hand, has increased quite impressively following the further liberalisation of portfolio investment through institutional investors. The major component of the gross outflow remains in the form of foreign currency deposits by the banking sectors as appeared under the

6. The denominator here has been adjusted to be compliant with the World Bank method, i.e., calculated as a three-year moving average GDP.

other investment flows. This type of outflows reflects largely the increase in foreign asset holding by the banking sector to square their foreign asset positions as a result of being the counterparty to the BOT's swap agreements and clients' foreign exchange derivative agreements. It is important to note that, rising demand—be it from exporters, importers, or other market participants—for foreign exchange hedging against exchange rate appreciation or depreciation has potentially induced volatility of the net capital flow in the recent years.

Figure 6
Evolution of Net Capital Flows (% of GDP)



Note: * For the year 2008, flows are cumulated over the first nine months of the year.

To summarise, the Thai economy in the post-crisis has come to rely more on FDI as a major source of foreign funds. Reduced reliance on foreign bank loans helped to improve Thailand's external balance sheet position by making it much less sensitive to exchange rate changes and less exposed to the risk of capital reversal compared to the past. Moreover, the adoption of a managed-float exchange rate regime was a key to reduce vulnerability to crises as well as promote microeconomic efficiency as businesses need to learn to price in and manage FX risks.

On the current account side, international trade has grown significantly in terms of its importance relative to Thailand's overall economic structure, as confirmed by an increase in the degree of trade openness from the pre-crisis average of 61% of GDP to 106% of GDP over the last five years. The continued robust performance of the export sector has supported the country's economic growth at times of falling domestic demand. In addition, the resilience of the Thai economy to potential volatility of capital flows and exchange rate has been further improved through more balanced capital flows as a result of gradual liberalisation of resident outflow, as well as through more efficient risk management practice by the private sector and the large accumulation of foreign exchange reserves during the recent years, which will later be discussed in this paper.

Since gross capital flows have been increasingly large and volatile over the years, to make the picture more complete, we shall next examine what are the key drivers of capital flows to Thailand, so as to assess the potential risks of a shift in these factors.

4. Determinants of Capital Flows

This section aims to identify the key determinants of capital flows in the case of Thailand. The focus is on the “push” and the “pull” factors in influencing different types of inflows, especially those of a short-term nature. The results of this exercise will help us understand better the nature of capital flows and for us to have a greater awareness of the potential vulnerability related to these flows. The ability to identify the determinants of large flows will also help the authorities in designing an effective capital-flow monitoring system.

4.1 Analytical Framework

The relevance of pull (internal) and push (external) factors has been at the heart of the economic debate and empirical studies on what drives capital flows into emerging market economies. The pull factors may include domestic variables such as robust economic performance, financing needs, expectations of exchange rate appreciation, high expected returns relative to the rest of the world as well as improved governance institution, credit rating, economic and financial reforms, and political stability. The push factors often discussed in the literature include slow growth and lack of investment opportunities in major economies, excess global liquidity, and international investors’ view on risk in the market, among others.

Although in practice it is difficult to assess the relative importance of these two sets of variables, such a judgment would help determine whether capital inflows are likely to be permanent or temporary. For instance, if capital inflows were motivated primarily by strong macroeconomic performance and improved governance of the domestic economy, then such inflows would tend to be more stable and productive. On the other hand, inflows driven by excess liquidity of the global financial market and low-risk environment based on the market view tend to be temporary and volatile, pouring into emerging markets to make speculative profits from relatively more attractive yields and expected local currency appreciation. This latter case heightens the risk of a sudden reversal of the inflows if global liquidity dries up or there is a sudden change in investor’s attitude towards risk.

We consider the following pull and push factors in determining capital inflows in Thailand during 1993Q1-2008Q3⁷: 1) Thailand's real GDP growth, 2) current account balance to GDP, 3) world real GDP growth, 4) market view on risk, 5) real interest rate differential between Thailand and the major economies, 6) growth of global liquidity, 7) exchange rate appreciation, and 8) stock return differential.⁸ Figure 7 introduces the short-hand notations and provides a description of the variables.

Based on economic reasoning, the prospect of economic prosperity should be a positive factor that draws foreign capital into the host country. Current account balance measures the extent to which the country needs to finance current account deficits: in a relatively flexible exchange rate regime, current account deficits should, in principle, coincide with capital account surpluses. The slower growth of the advanced economies as well as the low-risk investment environment causes investors based in these countries to look overseas in the search for better yields elsewhere, especially in emerging markets. Along the same line, the relatively high interest rates, strong stock market performance as well as expectations of local currency appreciation in emerging markets make investments in those economies appealing. Lastly, the high growth of global liquidity means international capital is more abundant, readily available for investing where expected returns are above average.

The graphic illustration of the relationships between aggregate capital inflows and the above potential factors are shown in Figure 8 below. We can make an observation by eye-balling these time series plots that Thailand's economic growth seems to predict capital flows quite well before and during the crisis, but not in the subsequent period. Current account balance is more or less a mirror image of capital inflows around the zero line, but this relationship seems to break since early 2006. Most strikingly in this graphic analysis is the relationship of investors' view on risk and the inflows: the (inverse of) VIX index closely synchronises with the dynamics of capital inflows in Thailand throughout the whole sample period. A similar pattern is observed for the global liquidity factor. However, the relationship evidently breaks down at the end of the sample period, coinciding with the onset of the global financial crisis of 2008. This may be caused by the

7. Thailand began to record *quarterly* GDP data from 1993Q1 onwards. Observations in the regression models include quarterly data in 1993 regardless of the year-on-year growth variables that require 1992 data. The quarterly 1992 data are approximated by the method of extrapolation using annual 1992 figure and average quarterly distribution during 1993-1995.

8. Although political instability in Thailand during the recent years is likely an important factor that discourages part of the capital inflows, it is not included in the regression model due to the lack of a quantitative indicator of political conditions.

way the global liquidity index is constructed—as a growth of U.S. monetary base plus reserves held at the Federal Reserves in custody for foreign central banks. The fact that the U.S. government unconventionally made several rounds of rate cuts and extensive liquidity injections in attempt to prevent a crisis could have caused the U.S. money base to expand substantially, inflating the measure of “global liquidity” under this definition. Notwithstanding these apparent bivariate relationships, in the next subsection, we conduct a formal econometric test in order to reach empirically sound conclusions.

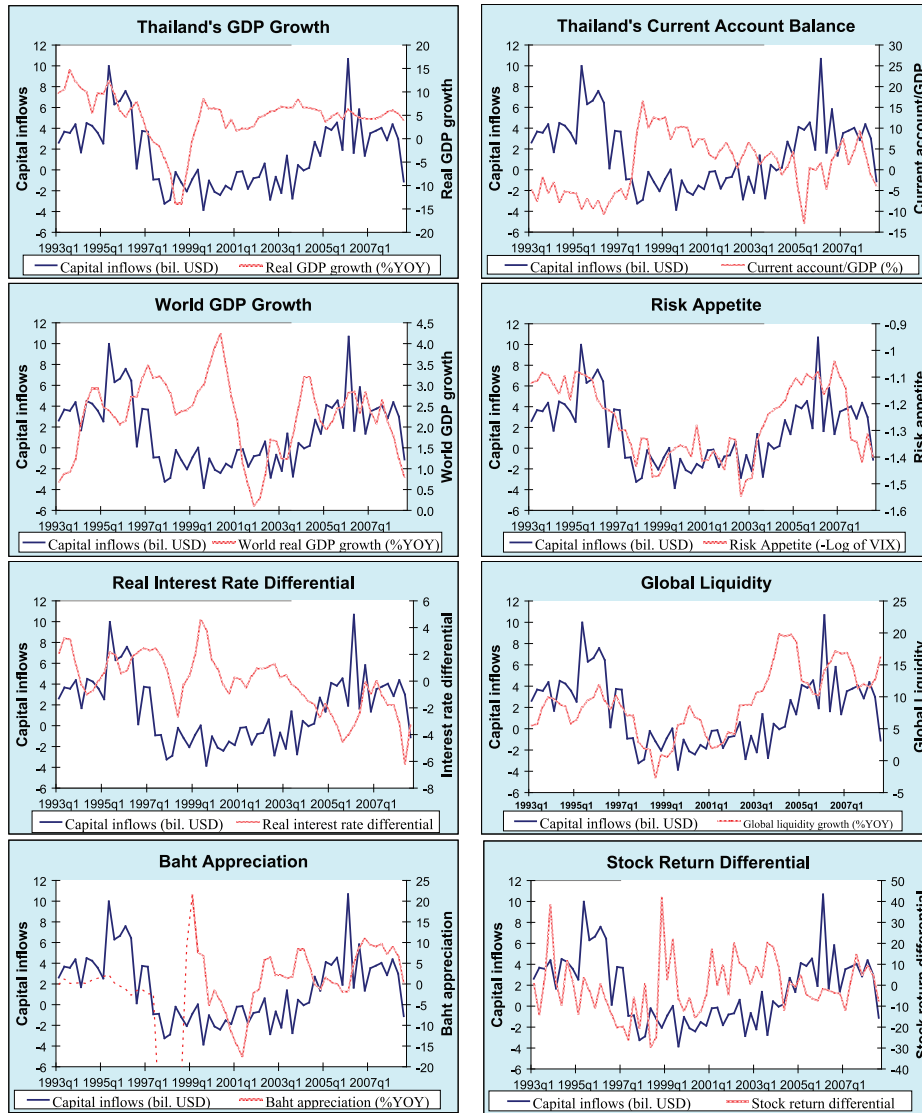
Figure 7
Description of Variables

Variable	Notation	Description
<i>Capital flows</i>		
Total capital inflow	CF_TOT	Log of total capital inflow
FDI inflow	CF_FDI	Log of FDI inflow
Portfolio investment inflow	CF_PORT	Log of portfolio investment inflow
Other investment inflow	CF_OTH	Log of other investment inflow
<i>Pull factors</i>		
Real GDP growth	GDP	Real year-on-year GDP growth rate (%)
Current account to GDP	CA	Current account surplus to GDP ratio (%)
Real interest rate differential	INTDIF	The difference between real 12-month deposit rate in Thailand and the GDP-weighted average of 12-month LIBOR rates of the currencies of the G3 economies
Exchange rate appreciation	BAHTAPP	Year-on-year rate of change of USD/Baht (%) (Positive = appreciation of Baht relative to USD)
Stock return differential	STOCKDIF	Thailand’s total stock return subtracted by the overall total stock returns (GDP-weighted) averaged for the G3 countries
<i>Push factors</i>		
World real GDP growth	WGDP	GDP-weighted average of real year-on-year GDP growth of the G3 countries (%)
Market view on risk	VIX	Log of VIX index ¹ (Increases in VIX = investors perceive higher risk)
Global liquidity	GLOLIQ	Year-on-year growth (%) of U.S. monetary base plus reserves held at the Federal Reserves in custody for foreign central banks

Note: * G3 = The U.S., Japan, and the euro area.

9. VIX is a symbol for the Chicago Board Options Exchange Volatility Index which is a measure of implied volatility of S&P500 index options. This index is often viewed as a proxy for market view on risk and uncertainty. The higher the VIX index, the riskier is the investment environment perceived by investors. It is sometimes referred to as a *fear* index.

Figure 8
Capital Inflows and Potential Determinants



4.2 Econometric Investigation

Based on the discussion of the potential determinants of capital flows above, we employ econometric methods to test the importance of each factor in influencing capital inflows to Thailand. A basic regression model would be specified as:

$$CF = \alpha + \beta X + \delta Z + \varepsilon \quad (1)$$

where CF is one of the capital flow variables specified in Figure 7; X is a vector of the pull factors, Z push factors; α denotes a constant term; $\hat{\alpha}$ and $\hat{\delta}$ are a vector of coefficients on X and Z , respectively; finally, ε represents a disturbance term.

The time-series variables used in all regression models in this paper are quarterly data running from 1993Q1 to 2008Q3. Since most time-series economic variables tend to establish strong trends and thus are non-stationary, running simple OLS regressions on these variables can give rise to misleading or spurious values of R^2 and t-statistics. Therefore, we will first test for non-stationarity due to the presence of a unit root for each variable in the model, before proceeding with an appropriate estimation model based on the test results.

4.2.1 Unit Root Tests

We use the Augmented Dickey-Fuller (ADF) test to determine whether the variables in question contain a unit root. For a sequence y_t , the test is carried out in the context of the model:

$$\Delta y_t = \mu + \gamma y_{t-1} + \sum_{i=2}^p \phi_i \Delta y_{t-i} + v_t \quad (2)$$

The parameter of interest is γ . Under the null hypothesis of a unit root, $\gamma = 0$, i.e., the y_t contains a unit root. The test-statistic is compared with the critical values in the Dickey-Fuller table. The optimal number of lags is determined using the Schwarz's Bayesian information criterion (SBIC). The results of the unit root tests on the levels and the first differences of the variables are summarised in Figure 9.

Figure 9
Augmented Dickey-Fuller Tests

Variable	Level				First difference		
	Test statistics	5% critical value	Lag length	Presence of unit root	Test statistics	5% critical value	Lag length
CF_TOT	-2.113	-2.910	1	Yes	-14.861	-2.910	0
CF_FDI	-1.398	-2.910	1	Yes	-13.486	-2.910	0
CF_PORT	-2.273	-2.910	1	Yes	-13.832	-2.910	0
CF_OTH	-2.195	-2.910	1	Yes	-13.284	-2.910	0
GDP	-2.771	-2.910	1	Yes	-5.774	-2.910	0
CA	-2.329	-2.913	4	Yes	-6.56	-2.912	3
WGDP	-2.063	-2.909	0	Yes	-4.623	-2.910	0
VIX	-2.031	-2.909	0	Yes	-8.997	-2.910	0
INTDIF	-2.114	-2.909	0	Yes	-6.514	-2.910	0
GLOLIQ	-1.417	-2.909	0	Yes	-5.617	-2.913	6
BAHTAPP	-5.195	-2.910	1	No	-7.032	-2.912	2
STOCKDIF	-6.130	-2.909	0	No	-12.286	-2.910	0

Based on the test results, all the variables can be treated as non-stationary and integrated of order I(1), except for the exchange rate appreciation and stock return differential which appear to be stationary.

4.2.2 Cointegration Tests

To test for cointegration of the $I(1)$ variables, we employ the Johansen (1995) maximum likelihood method. Since, in order to employ the Johansen's method, all the included variables must be integrated of the same order, we have to leave out the exchange rate appreciation and stock return differential from the regression model. Moreover, when we investigate the correlations among the independent variables, it appears that the VIX index and the global liquidity measure are strongly and significantly correlated (correlation = -0.598, prob. = 0.001), thus, we also drop the latter from the model to avoid multicollinearity problem.

Under this approach, all the variables in the model are viewed as endogenous, with each expressed as a linear function of lagged values of itself and all other variables. This set of equations can be represented in the form of a vector autoregressive equation, a VAR. Manipulation of this vector equation produces a vector error correction model (VECM) of which the parameters are then estimated simultaneously via maximum likelihood. This VECM takes into account the fact that there is an equilibrium or a long-run relationship between the non-stationary variables.

The first step of the Johansen method is to determine the number of cointegrating vectors in this system, which is equal to the rank of the matrix of coefficients associated with the variables in the VECM equation. The test results for the case of total capital inflows are shown in Figure 10. (The rank test results for the case of individual components of inflows are omitted here.)

Figure 10
Cointegration Rank Test

Vectors: CF_TOT, GDP, CA, WGDP, RISKAPP, INTDIF				
Max rank	Eigenvalue	Trace Statistic	5% Critical Value	Prob.
r = 0*	0.458	129.817	95.754	0.000
r = 1*	0.421	93.092	69.819	0.000
r = 2*	0.405	60.294	47.856	0.002
r = 3	0.260	29.183	29.797	0.059
r = 4	0.122	11.109	15.495	0.205
r = 5	0.054	3.333	3.841	0.068

Note: * denotes rejection of the hypothesis at the 5% level

The rank test based on trace statistics indicates that 3 cointegrating equations at the 5% level for the case of total capital inflow. The test for each of the three components of capital flows consistently rejects the null hypothesis of no cointegration, but the results are omitted here to save space.

4.2.3 VECM Estimation

We now estimate the parameters of multivariate cointegrating VECM under the Johansen (1995) procedure with the number of cointegrating equations suggested by the rank test above. The lag length of the variables is selected by SBIC. By normalising the co-integrating vector with respect to the capital flow variable, the model estimation can be expressed in a single equation, which represents a long-run relationship between the capital flow variable and the other variables, as follows:

$$CF_t = \hat{\beta}_0 + \hat{\beta}_1 GDP_t + \hat{\beta}_2 CA_t + \hat{\beta}_3 WGDP_t + \hat{\beta}_4 VIX_t + \hat{\beta}_5 INTDIF_t \quad (3)$$

The short-run dynamics of the long-run equation above can be expressed in the form of error correction representation as:

$$\begin{aligned} \Delta CF_t = & \hat{\lambda}_0 + \hat{\alpha}(ECM_{t-1}) + \sum_{i=1}^p \hat{\gamma}_{1i} \Delta CF_{t-i} + \sum_{i=1}^p \hat{\gamma}_{2i} \Delta GDP_{t-i} + \sum_{i=1}^p \hat{\gamma}_{3i} \Delta CA_{t-i} + \sum_{i=1}^p \hat{\gamma}_{4i} \Delta WGDG_{t-i} \\ & + \sum_{i=1}^p \hat{\gamma}_{5i} \Delta VIX_{t-i} + \sum_{i=1}^p \hat{\gamma}_{6i} \Delta INTDIF_{t-i} \end{aligned} \quad (4)$$

where ECM represents the error correction term:

$$ECM_t = CF_t - \hat{\beta}_0 - \hat{\beta}_1 GDP_t - \hat{\beta}_2 CA_t - \hat{\beta}_3 WGDG_t - \hat{\beta}_4 VIX_t - \hat{\beta}_5 INTDIF_t \quad (5)$$

The short-run dynamics (Equation 4) describe the way in which the system adjusts or corrects back to the long-run equilibrium, where the point at which $ECM_t = 0$ can be thought of as an equilibrium of the system. The coefficient on the ECM_{t-1} in Equation 4, is the speed of adjustment. Figure 11 presents the estimated coefficients of the long-run relationship between capital flows and the other variables as in Equation 3, and the estimates for in Equation 4.

4.2.4 Discussion of Results

Based on the estimated results for the whole sample period (Columns 1-4), domestic economic growth appears to be one of the important drivers of overall capital flows to Thailand. The results suggest that a 1 percentage point increase in Thai GDP growth leads to a 1.9% increase in FDI inflow and a 7.3% increase in other investment inflow. But it causes the portfolio inflow to decrease by 0.9%. However, when we consider the results over the more recent period, that is, 2000 onwards (Column 7), the portfolio inflow is also positively determined by the growth in domestic GDP. Overall, the results strongly suggest procyclicality of capital flows to Thailand.

As expected, the current account balance relative to GDP has a negative relationship with capital inflow. When the CA/GDP ratio is 1 percentage point lower, total capital inflow tends to increase by 4.9% (Column 1). This is consistent with the balance of payments concept for a relatively flexible exchange rate regime in which capital inflows are needed to finance current account deficits. Interestingly, however, for the latter half of the sample period, FDI inflow seems to be positively associated with current account surplus (Column 6). A plausible explanation is that strong current account performance coincides with robust economic growth during this period, which, in turn, leads to expansion of foreign direct investments either in terms of new investments or increases in direct loans from parent to subsidiary companies.

The world real GDP growth also establishes interesting results. The impact of world economic growth on FDI is *positive* and significant both for the whole sample period (Column 2) and for the recent period. On the contrary, its effects on portfolio and other investment inflows are statistically significant only for the latter period and signify *negative* relations (Columns 7-8). In light of these results, FDI expansion to emerging markets appear to be driven by healthy economic growth of the countries of the parent companies, while lack of investment opportunities in mature economies due to their slow growth seems to be a stronger motivation for portfolio and other investment flows.¹⁰

The interest rate differential factor produces mixed results on different forms of inflows. The estimates suggest that an increase in the real interest rate differential between domestic interest rate and the world interest rate induces portfolio investment inflow, but this is offset by its effect on FDI and other investment inflows in the opposite direction.

What is worth highlighting is the importance of the measure of market view on risk as a determinant of capital inflows. Focusing on the latter period, this measure is significantly and negatively correlated with inflows across all types. A 10% decrease in the VIX index causes FDI, portfolio investment, and other investment inflows to rise by 3.9%, 3.2%, and 13.9%, respectively. Moreover, based on Granger causality tests (Figure 12), while causality is not detected between most of the other potential determinants and capital flow variables, the test results support the causation from the VIX index to portfolio and other investment flows, albeit not to FDI flow. Similarly, when this measure is replaced by the global liquidity index, the main results remain unchanged, implying that global liquidity is another important capital flow determinant. Interestingly, when the VIX index and the global liquidity index are both present in the model, the global liquidity becomes insignificant, suggesting relative less relevance of the global liquidity index than the VIX.

As for the speed of adjustment, which is captured by the alpha coefficient, short-term inflows appear to have strong negative feedback in the short-run dynamic, possibly reflecting the volatile nature of this type of flows. On the other hand, the

10. The results from this exercise with regard to FDI should be taken with caution. This is because other, more conventional, determinants of FDI are not included in this model. For example, according to the Eclectic (OLI) Paradigm by John Dunning, FDI is motivated by *ownership advantages* (firm-specific advantages), *location advantages* (country-specific advantages), and *internationalisation advantages*. Absence of these factors as explanatory variables could be a reason for the low R2 of the FDI regressions.

system of FDI inflows produces an alpha coefficient that is small (Column 2) or is not statistically different from zero (Column 6), which is consistent with the fact that FDI flows are generally regarded as a persistent type of flows that tend not to fluctuate in the short-run. All the above results stress the need to distinguish among different types of investment when analysing capital flows as they are driven by different factors, possess different characteristics, and evolve differently through time.

In sum, the surge of short-term capital flows to Thailand in the recent years has been both pulled by domestic economic performance and pushed by external factors, including global liquidity, investors' view on risk, and economic conditions of major economies, with the external factors appear to play relatively more important role. How development of capital flows has complicated the conduct of monetary and exchange rate policies will be discussed in the following section.

Figure 11
Vector Error Correction Estimates
 Dependent Variables: Log of capital inflow

	Whole Sample (1993Q4-2008Q3)				2000Q1-2008Q3			
	Total (1)	FDI (2)	Portfolio (3)	Other (4)	Total (5)	FDI (6)	Portfolio (7)	Other (8)
Real GDP growth (%)	0.0760 [3.437]	0.0192 [3.666]	-0.0093 [5.347]	0.0735 [5.210]	0.0557 [2.199]	0.0113 [0.833]	0.0319 [2.358]	0.0114 [0.236]
Current account to GDP (%)	-0.0493 [2.371]	0.0010 [0.220]	-0.0038 [2.419]	-0.0549 [3.977]	-0.0201 [1.585]	0.0623 [9.394]	-0.0503 [7.509]	0.0392 [1.616]
World real GDP growth (%)	0.3947 [3.892]	0.0898 [3.751]	0.0137 [1.716]	0.0634 [0.971]	0.1899 [4.193]	0.2130 [9.029]	-0.0829 [3.621]	-0.7000 [7.938]
VIX (Log)	0.6114 [1.426]	0.3655 [3.698]	-0.2724 [8.282]	-0.2385 [0.856]	-1.0679 [7.450]	-0.3938 [5.428]	-0.3195 [4.402]	-1.3866 [5.080]
Real interest rate differential	-0.1987 [4.143]	-0.0955 [8.397]	0.0142 [3.766]	-0.0612 [2.001]	-0.0433 [1.662]	-0.0993 [7.217]	0.1234 [8.898]	-0.1493 [2.950]
Constant	5.6560	7.3526	9.3997	8.5499	11.0757	10.0543	9.4352	13.5376
<i>Alpha</i>	-0.1873 [1.516]	-0.1915 [2.963]	-1.5624 [4.728]	-0.5106 [1.685]	-0.6814 [3.379]	-0.0029 [0.021]	-0.7858 [6.366]	-0.1217 [0.459]
Observations	60	60	60	60	35	35	35	35
Adjusted R ²	0.37	0.41	0.62	0.25	0.67	0.34	0.84	0.40

Note: Coefficients are obtained from normalising the cointegrating vector with respect to the corresponding capital flow variable.

Figure 12
Granger Causality Tests

H ₀ : X Granger-causes Y		Y							
		CF_FDI	CF_PORT	CF_OTH	GDP	CA	WGDP	VIX	INTDIF
X	CF_FDI				0.0737 (0.929)	0.273 (0.762)	0.256 (0.775)	0.29215 (0.7478)	1.368 (0.263)
	CF_PORT				0.508 (0.604)	1.321 (0.275)	2.474 (0.093)	0.7243 (0.489)	1.855 (0.166)
	CF_OTH				4.806 (0.012)	8.884 (0.000)	0.169 (0.845)	0.2449 (0.7836)	1.449 (0.244)
	GDP	1.132 (0.330)	0.511 (0.603)	1.807 (0.174)					
	CA	0.895 (0.415)	2.576 (0.085)	0.079 (0.924)					
	WGDP	1.278 (0.287)	0.404 (0.670)	0.179 (0.836)					
	VIX	0.426 (0.655)	5.779 (0.005)	3.406 (0.040)					
	INTDIF	2.688 (0.077)	6.866 (0.002)	2.529 (0.089)					

Note: F-statistics and probability (in parentheses) are shown in the table. Significant at 5% level highlighted in bold face.

5. Capital Flows and Associated Risks

This section assesses the potential vulnerability of Thailand to risks associated with large capital flow movements in recent years, including macroeconomic risks, financial stability risks, and risk of sudden capital reversal. Overall, large macroeconomic imbalances, such as asset price bubbles and financial mismatches, have not been observed in Thailand. It also appears that Thailand has established relatively strong resiliency to various types of risks potentially caused by capital movements.

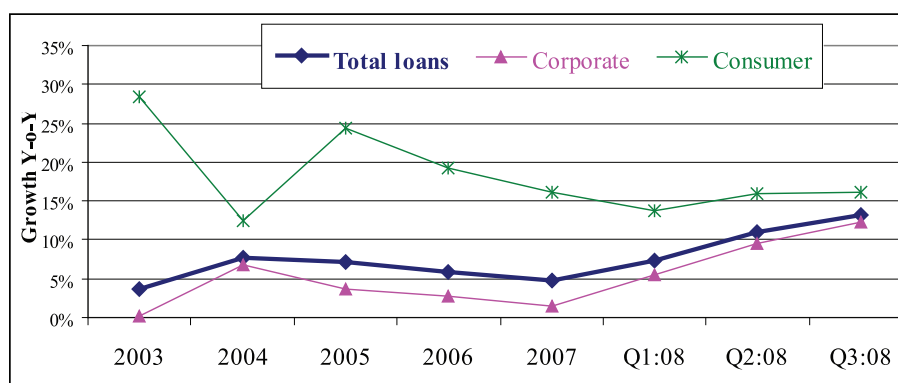
5.1 Macroeconomic Risks

5.1.1 Domestic Credit Growth

The impact of capital inflows on credit growth would depend on the extent to which these inflows go into financing domestic credit, which, in turn, depends on the cost of funding of foreign relative to the domestic market. During the last five years, the interest rates in Thailand have not been substantially higher than the world interest rates or interest rates in the region. This is partly due to the existence of ample liquidity in the banking sector as a result of the softening demand for investment and capital market development. The cost of domestic funding is thus not too high to drive Thai businesses to seek foreign funding. As aforementioned, after the crisis Thai banks and business turned to favour domestic borrowing to limit their FX and external exposure. Therefore, capital inflows

and domestic credit have not been closely correlated in Thailand in recent years. Moreover, since the crisis Thai commercial banks have moved away from collateral-based lending to a risk-based approach as well as improved credit analysis, risk management and good corporate governance, all of which help harness excessive domestic credit growth and limiting credit risks in the banking system.

Figure 13
Loan Growth and Components of Loans



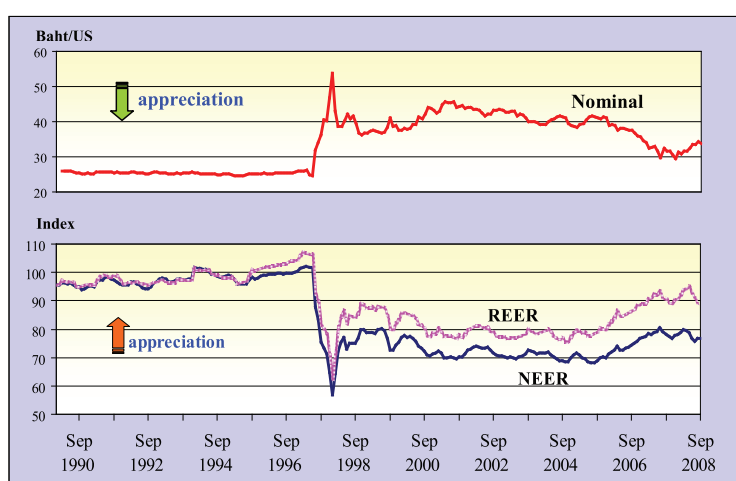
5.1.2 Exchange Rate Appreciation

As shown in Figure 14, the baht began to strengthen gradually starting from 2001. At the beginning, this was largely due to the current account surplus which was to some extent offset by the capital account deficits as a result of debt repayments made by both the public and the private sectors. After 2005, however, the upward pressure on the baht intensified owing to the surpluses in *both* of the current account and the capital account. On the current account, while exports continued to expand satisfactorily, imports growth declined sharply, following the abolishment of the government's oil price subsidy programme as well as softened domestic demand due mainly to rising concerns over political uncertainties. Yet, most of the upward pressure on the baht in 2006 came from the capital account.¹¹

11. It is worth noting that the outflows in the banking sector mainly reflected the increase in banks' holding of foreign currency deposits or short term instruments to square their foreign exchange position as a result of being the counterparty to the BOT's swap agreements, which is one of the channels the BOT uses to sterilise its FX intervention. Therefore, the overall capital account position will underestimate the upward pressure on the baht in this case. If the outflows associated with the swap agreements between the BOT and the banking sector were taken out, the adjusted figure for the capital account in 2006 would be much higher, comparable to the figure in 2005.

The sharp increase in the balance of payments surpluses from \$ 5.4 billion in 2005 to \$12.7 billion in 2006, with most of the surpluses coming from the capital account, led to a rapid baht appreciation of more than 16% against the US dollar, making the baht one of the world's most rapidly appreciating currency in 2006. The real effective exchange rate (REER) also established the same rapid appreciating trend during this period, implying deteriorating export competitiveness which could damage the overall economic growth, if left unchecked. The URR was thus carried out to suppress this threat to the economy.¹²

Figure 14
Nominal Exchange Rate, NEER, and REER

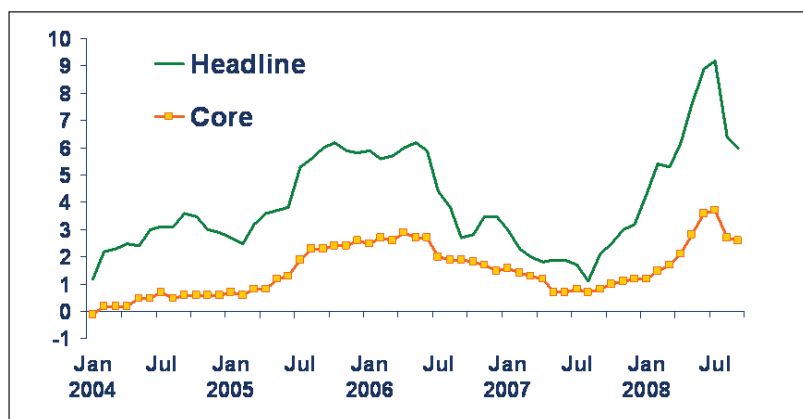


5.1.3 Inflation

Large capital inflows may create important pressure on domestic prices, but this has not been the case for Thailand. This is because softened domestic demand and exchange rate adjustments during the time of large inflows, together with a credible inflation-targeting monetary policy regime, have contributed to anchoring price stability to a large extent. As discussed in Section 3, the rate of inflation in the recent years has been driven largely by increases in the oil price that pass-through to production costs. Recently, however, since the oil price has continued to fall dramatically after peaking in July of 2008, the rate of inflation has also eased off.

12. However, in the third quarter of 2007, the baht turned around and depreciated moderately due mainly to capital outflow by non-residents at the first signs of the U.S. subprime problem, before starting to appreciate again until the first quarter of 2008. The depreciation resumed in March 2008 and continued thereafter as the U.S. credit market turmoil turned out to be a worldwide financial crisis.

Figure 15
Headline and Core Inflation



5.1.4 Volatility of Capital Flows

As discussed in Section 3, capital inflows have picked up sharply during the last five years. FDI, which is often perceived as long-term, stable foreign investments, has become the most important source of foreign financing for Thailand (Figure 16), while reliance on cross-border bank loans has declined substantially compared to the pre-crisis period.

Figure 16
Private Non-bank Capital Flows

(Million USD)	Average 1993-1996	Average 2004-2007
Non-resident net flows (Inflow)	7,549	11,195
Foreign direct investment	1,833	7,235
Portfolio investment	3,224	2,706
Other investments	2,492	1,253
Resident net flows (Outflow)	-636	-4,861
Thai direct investment	-592	-557
Portfolio investment	-6	-3,073
Other investments	-38	-1,232

This should not be a cause for complacency, however. Although the country may have less exposure to a sudden stop or reversal of short-term foreign borrowings (more details below), other forms of risks may arise as a result of increasing financial integration. First, portfolio investments, another type of short-term capital flows, have been even more volatile during the recent years (Figure 17). Increases in portfolio investment flows likely reflect the movement of funds away from developed countries to seek higher potential yields in emerging markets, including Thailand, to speculate in the local equity and bond markets as well as on the local currency. Our empirical investigation also finds that supportive global conditions, such as excess liquidity, economic growth slowdown in the U.S. economy, and investors' view on risk, are also responsible for the recent surge in short-term capital inflows. Since these investments have no long-term commitment, they are ready to flow out anytime when the opportunity for making profits or global liquidity begins to dry up and investors perceive higher risk. Figure 18 shows that foreign participation, measured by the buy-sell volume, in the Stock Exchange of Thailand (SET) has increased substantially from 2003-2007.

Second, while somewhat more stable, the volatility of FDI flows has also increased. This could reflect large but sporadic flows of FDI in terms of equity investment, direct loans, and recapitalisation between parent and subsidiary companies in a more recent period. Third, other forms of long-term capital inflows may no longer be considered stable balance of payments items. In this changing world, trading of innovative financial instruments that are derived upon long-term contracts effectively add volatility to the overall capital flows. For example, creditors or debtors can change their FX hedging ratio on long-term loans, depending on the direction of exchange rate changes. Furthermore, long-term liability holders themselves rarely remain passive when balance of payments problems arise. They can quickly build up hedges which, in effect, result in immediate cross-border capital movements in the banking sector as well as pressure on the local currency. (Further discussion on hedging-related flows is in Section 5).

Figure 17

Volatility of Capital Flows

Volatility of non-resident flows		1993-1999	2000-2007
Direct investment	Inward	0.46	2.12
	Outward	0.50	3.50
	Net	0.63	1.93
Portfolio investment	Inward	0.73	6.44
	Outward	0.77	7.24
	Net	1.37	1.42
Other investment	Inward	0.25	0.67
	Outward	0.19	0.72
	Net	2.91	8.26

Note: Volatility is measured by the coefficient of variation of monthly capital flow data. Other investment includes bank loans, trade credits, currency and deposits, and others.

5.2 Financial Stability Risks

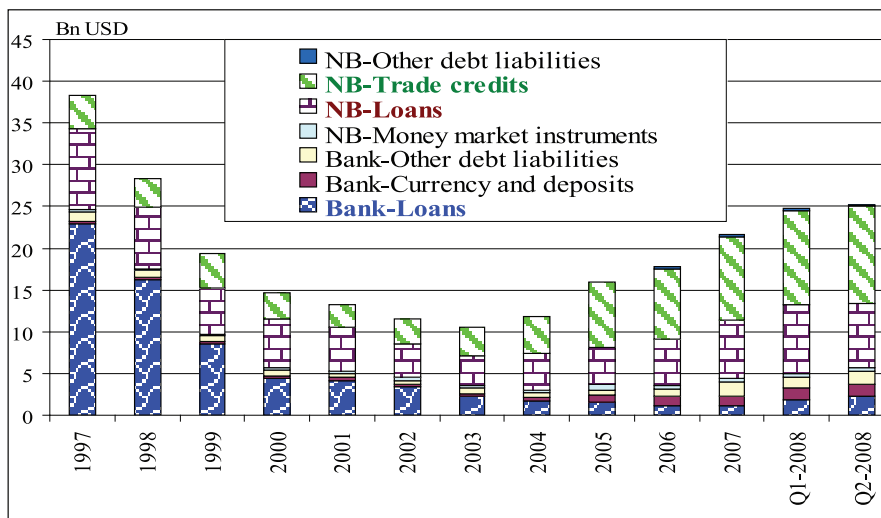
5.2.1 Maturity and Currency Mismatches

The substantial reduction in inflows in terms of banks loans is reflected in the external debt profile of Thailand at end-2007, compared to end-1996. Not only that the overall external debts declined markedly from 60% of GDP at end-2006 to stand at 24% of GDP at end-2007 (Figure 19), but also the proportion of short-term to the overall external debt outstanding also decreased especially in the banking sector. Moreover, the increasing proportion of the new foreign borrowings is denominated in Thai baht, which curtails currency mismatches in Thailand's asset-liability position. (Baht-denominated external debt accounted for 15% of total external debt in the public sector and 27% in the private sector at end-2008Q1.) These could imply that the country's vulnerability to currency and maturity mismatches of the 1997 crisis nature has been considerably reduced. Moreover, the composition of short-term external debt has also increasingly shifted to trade credits (Figure 20)—reflecting increasing imports—which are considered relatively less sensitive to a shift in investor confidence at times of a crisis.

Figure 18
External Debt

	End 1996			End 2007		
	Total amount (mil. USD)	% of Gross external debt	% GDP	Total amount (mil. USD)	% of Gross external debt	% GDP
Gross external debt	108,742	100.0%	59.8%	61,738	100.0%	23.6%
<i>Short-term</i>	47,743	43.9%	26.2%	21,641	35.1%	8.3%
Official	34	0.0%	0.0%	20	0.0%	0.0%
Bank	28,858	26.5%	15.9%	3,960	6.4%	1.5%
Non-bank	18,851	17.3%	10.4%	17,661	28.6%	6.7%
<i>Long-term</i>	60,999	56.1%	33.5%	40,097	64.9%	15.3%
Official	5,118	4.7%	2.8%	2,644	4.3%	1.0%
Bank	13,011	12.0%	7.2%	2,401	3.9%	0.9%
Non-bank	42,870	39.4%	23.6%	35,052	56.8%	13.4%

Figure 19
Composition of Private Short-term External Debt: By Instrument



5.2.2 Asset Prices

Given the relatively large share of foreign ownership in the Stock Exchange of Thailand (SET) compared to other domestic asset markets, inflows and net buy/sell position of foreign investors over a short-time span have been very influential in the movement of equity prices, both through direct impact and through signaling effects as many retail domestic investors tend to take the cue from

foreign investors' decisions. As of the end of 2007, the foreign ownership share of the total market capitalisation in the SET was around 35%. The share of transactions attributed to foreign investors is similarly high. In fact, overall the past years, the investment decisions by foreign investors - especially those in response to the URR announcements in Thailand and the concerns over the subprime crisis in the global market - have been particularly important in explaining the volatility of equity prices in Thailand.

Figure 20
Portfolio Equity Inflow and Stock Performance

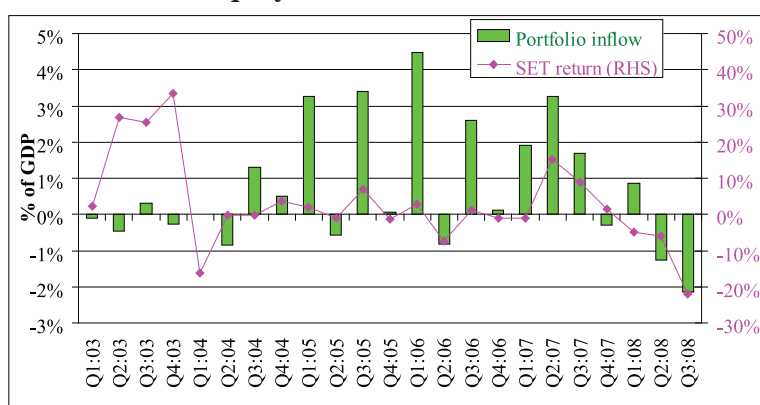
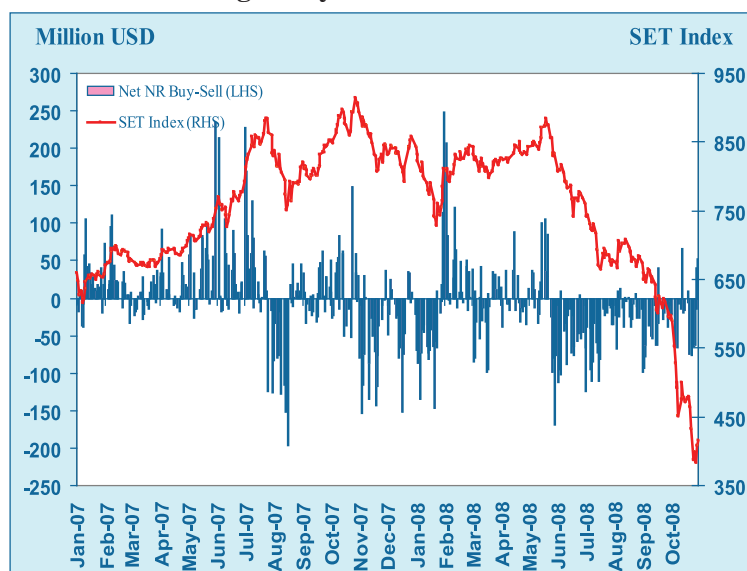
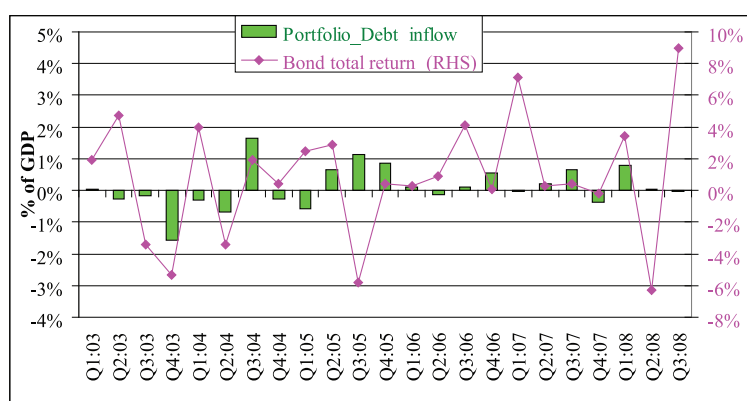


Figure 21
Net Foreign Buy-sell and the SET Index



As for the bond market, since the share of foreign holdings of Thailand's public bonds are relatively small, foreign investors' influence on the price of bond has not been as significant compared to their role in the stock market. Moreover, the share of foreign ownership has continued to decline since the implementation of the capital control in December 2006 despite the introduction of a full hedge requirement as an alternative to the URR.

Figure 22
Portfolio Debt Inflow and Bond Performance

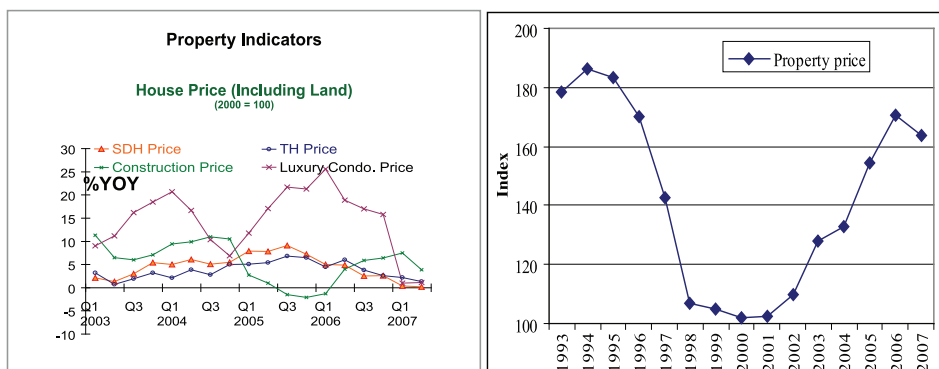


The property prices in Thailand have risen steadily since 2002 in line with the pick up of activities in the property sector. However, this is not necessarily indicative of house price bubbles since most part of the rise in prices was accounted by the increase in costs of construction materials. Moreover, as the experience from the last crisis remains vivid, all the stakeholders are more cautious about their strategies and decisions regarding housing businesses: banks become more prudent in making mortgage and land development loans; land developers become aware that good reputation is the most important selling factor in a competitive housing market; customers become more selective and tend to buy houses that are built before sale. Foreign investors, however, do play a significant role in the relatively rapid price increases of luxury condominium in the central business district as well as of the housing projects in many popular report towns, such as Phuket and Samui.¹³ But the overall pace of price increases

13. Foreigners are not allowed to purchase land, except when they invest at least 40 million baht in a Board of Investment (BOI)-approved project. The BOT also prohibits mortgage lending to foreigners. They are, however, allowed to buy condominium units provided that they do not make up more than 40% of the condominium's unit-owners. In addition, under the law on property leasing, foreigners doing business in Thailand were allowed to lease real property primarily for commercial or industrial purposes as well as to lease land for at least 30 years but not exceeding 50 years, renewable for another 50 years.

has been moderate. A recent study also finds that there is no obvious housing price bubble in most East Asian countries, including Thailand.¹⁴ However, the Thai authorities continue to keep close monitoring on this sector for imbalances.

Figure 23
Property Price Indicators



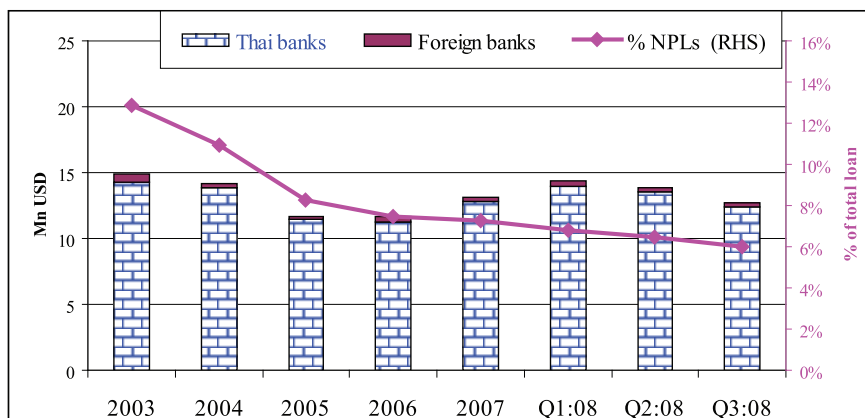
Note: SDH Price = Single, detached house price; TH Price = Townhouse price

5.2.3 Quality of Loans

A widely used indicator of loan quality is the ratio of non-performing loan (NPL) to total loans in the system. After the crisis, NPLs peaked at \$73.7 billion or 48 % of total loans in May 1999 as a result of severe economic contraction, while also reflecting low quality of the loans made during the pre-crisis period, largely due to easy bank access to relatively cheap foreign loans through BIBFs. Although several measures had been implemented to resolve the NPL problem, the NPL was still considered high in the post-crisis period. As a result, the Thai Asset Management Corporation (TAMC) was established with the objective to resolve the NPL problem in financial institutions by transferring part of NPLs from state-owned financial institutions and asset management companies. Since then, the financial sector has continued to strengthen its risk management and loan provisioning framework. Consequently, NPLs declined substantially to stand at \$12.7 billion or equivalent to 6 % of total loans as of the third quarter of 2008.

14. Glindro, et al (2008).

Figure 24
Total Loans and NPLs



5.3 Risk of a Sudden Reversal

The risk of sudden reversal of financial flows can be measured by the size of mobile capital relative international foreign reserve. This “vulnerability indicator” is calculated as the sum of short-term foreign currency debts and foreign holdings of local equities and debt securities, divided by the existing stock of foreign exchange reserves (Sim, 2008).

According to an analysis by Sim (2008), Thailand’s vulnerability indicator appears considerably low (54% of international foreign reserves) compared to its peer group (for example, Indonesia 230%, Korea 208%). This indicates Thailand’s relatively strong resilience to the risk of capital flight.

Figure 25
Vulnerability Indicator

	Short-Term Debt	NR Holding of stocks	NR Holding of Bonds	External Mobile Capital	Total international Reserve	Vulnerability index
Indonesia	39,054	79,000	13,300	131,354	57,108	230
Korea	260,446	194,000	49,900	504,346	242,215	208
Philippines	17,497	18,500	0	35,997	37,093	97
Taiwan	85,223	162,000	1,480	248,703	282,087	88
Malaysia	25,427	39,000	32,100	96,527	136,453	71
India	36,617	140,000	5,000	181,617	307,219	59
Thailand	26,363	35,000	1,500	62,863	117,050	54
Vietnam	2,000	6,000		8,000	23,872	34
China	269,572	2,000		289,572	1,808,828	16
Singapore				n.a.	252,180	n.a.
Hong kong				n.a.	158,100	n.a.

Source: CitiBank Research

6. Capital Flows and Monetary Policy

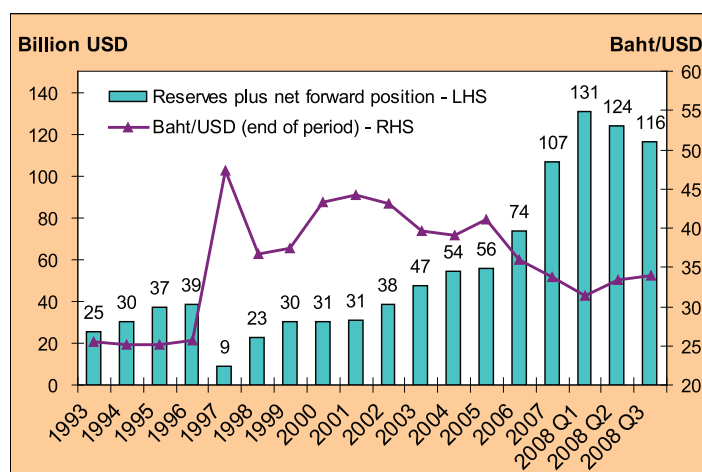
As it is well-known by the theory of “trilemma,” under a floating exchange-rate regime, capital mobility complicates the conduct of monetary policies by affecting monetary variables, such as exchange rate and domestic liquidity, and by creating a tradeoff between internal and external imbalances. The fact that capital flows these days are so large, so rapid, and so volatile, tends to add to the perception of policy complexity. In the wake of the crisis in 1997, policymakers have grown wary of international capital flows and tend to take preemptive measures to correct the imbalances brought about by large inflows to reduce the possibility of a sudden reversal. Available policy tools to manage capital flows include greater exchange rate flexibility, FX intervention, interest rate policy, fiscal policy, capital outflow relaxation, and capital controls.

In the case of Thailand, under the managed float regime, the BOT has largely allowed the overall direction of the baht to adjust to changes flexibly to changes in market fundamentals. This helps facilitate macroeconomic real adjustment as well as promote microeconomic efficiency and risk management. Over the recent years, however, the BOT had to implement a series of measures to slowdown the pace of exchange rate appreciation since massive capital inflows, especially those of short-term and speculative nature, led the baht to appreciate more rapidly than economic fundamentals would support. Because

the export sector has been the major economic growth engine for Thailand (accounting for 56% of GDP in 2006) especially at the times when domestic demand were weakened due to political uncertainties, prompt policy reactions to the surge in capital inflows were warranted before it would lead to a significant slowdown in the overall economic growth through excessive exchange rate appreciation. The measures employed by the BOT included FX interventions, capital outflow liberalisation, anti-speculative measures, and capital controls. (As an inflation targeting central bank, the BOT has chosen to reserve interest rate policy for dealing primarily with inflation and domestic economic growth, not to use it as a main policy tool to manage capital flows.)

In response to the strong and persistent baht appreciation in 2006, the BOT stepped up the conduct of FX purchase operations, which resulted in a marked increase of net reserves (gross reverses plus net forward positions) of roughly US\$41 billion from the end of 2005 through the end of 2007, or equivalent to 35% average annual growth. This rapid accumulation of reserves, though helpful in strengthening the economy’s resiliency to external shocks, does complicate the operation of monetary policy.¹⁵

Figure 26
Thailand’s Foreign Exchange Reserves, 1993-2008Q3



15. Coinciding with the recent baht depreciation as a result of the global financial crisis, foreign exchange reserves has been depleting since the second quarter of 2008 after peaking at \$131 billion in March. Thanks to the earlier accumulation of reserves, the high level of foreign exchange reserves provides sufficient cushion for a potential sudden stop or reversal caused by the global financial meltdown.

As mentioned earlier, FX interventions to reduce the speed of baht appreciation resulted in the rapid accumulation of FX reserves. It also simultaneously caused a rise in domestic liquidity which poses an additional policy challenge in terms of liquidity management. The BOT normally sterilises the monetary impact of intervention in order to avoid inflationary effects as well as to maintain the policy rate at the level set by the monetary policy committee. However, in theory, sterilisation can entail substantial costs. First, sterilisation that is designed to prevent a decline in domestic interest rates at the same time maintains the incentives for continuing capital inflows, thus perpetuating the problem. Moreover, sterilisation often implies quasi-fiscal costs because it generally involves the central bank exchanging high-yield domestic assets for low-yield reserves. The BOT has mainly sought to sterilise excess liquidity through issuing BOT bonds, for its relative efficiency in absorbing liquidity on a large scale and with longer maturities. However, the direct cost arising from interest rate differentials on assets and liability of the BOT's balance sheet has not been a big concern so far, since Thai domestic interest rates are on average comparable to foreign interest rates. But indirect costs, including the cost arising from FX revaluation loss on the BOT's balance sheet and the impact of large bond issuances on the yield curve, would prove continuation of FX interventions to be too costly to carry out if capital inflows were to persist.

The BOT also adopted a series of measures aimed at discouraging short-term speculative capital inflows, such as posing quantitative restrictions on short-term borrowing (maturity not over three months) of Thai baht from non-residents, and limiting the daily outstanding balance of non-resident baht account (NRBA) to the maximum amount of 300 million baht per non-resident. On December 4, 2006, as the baht continued to appreciate rapidly, the BOT required non-residents to hold securities for longer than three months and allowed domestic financial institutions to borrow baht from non-residents without underlying trades or investments in Thailand only for a maturity of longer than six months.

As described in Section 2, regulatory restrictions on outward investments by Thai residents have been relaxed substantially, which could potentially help mitigate the upward pressure on the baht—a side benefit in addition to the benefits of better investment diversification, more balanced capital flows, and greater investment opportunities for Thai investors.

Nevertheless, these measures combined with increased FX interventions proved to have limited effectiveness partly because foreign investors can find other alternative instruments to speculate on the baht. The baht continued to be highly volatile and strengthened with an accelerating pace. On December 18,

2006, the BOT announced the implementation of the 30% URR measure on short-term capital inflows which required them to be deposited with the central bank for one year with no interest. Capital flows of amounts below US\$ 20,000 and those related to trade in goods and services, foreign direct investments, and foreign investments in the stock market were exempted from such measure. To alleviate the burden of the URR measure on the business sector, the BOT has gradually relaxed the measure over the subsequent period by providing a full hedging requirement as an alternative to the URR for selected types of inflows and exempting loans with an amount not exceeding US\$ 1 million and with maturity over one year from both the URR and the full hedge requirement. Businesses having a natural hedge may be considered for an exemption from both measures on a case-by-case basis.

The URR measure proved to break the momentum of the baht appreciation and was crucial in ensuring the baht stability. However, aware of the adverse effects of the capital control on domestic market development, investor confidence, as well as its ineffectiveness in the long run, the BOT intended to use this measure only temporarily. After careful consideration of changes in the environment and factors on February 29, 2008, the BOT announced the lifting of the URR measure. To facilitate the adjustment process after the lifting of the URR, the Thai authorities continued to relax capital outflow regulations as well as supported the SME businesses by announcing a soft loan programme for SMEs through the financial institutions for a period of three years and a facility to purchase foreign currency that SMEs sold forward to financial institutions for a period of six months.

7. Capital Flows and Financial Stability

During the 1997 crisis, Thailand had experienced sudden and massive reversal of foreign capital mostly in the form of debt callback and sudden stop of short-term loans in the banking sector (mainly through BIBFs) and withdrawal of portfolio investments in the capital markets. The occurrence and consequences of the crisis have shown that international capital flows, when they support the buildup of imbalances and disequilibrium in economic and financial sectors, can greatly destabilise the economy once growing financial weaknesses cause external as well as domestic investors to reassess their willingness to finance a country. This section focuses on the evolution of capital flows in the banking sector and policy implemented to deal with the potential risks to financial stability.

7.1 Capital Flows in Banking Sector in the Last Five Years

Capital flows in the banking sector can be less comprehensible than capital flows in the other sectors because they sometimes involve unobvious capital movements. They reflect the change in the external position on banks' balance sheet: inflow (outflow) to the banking sector is captured by a decrease (increase) in banks' foreign asset or an increase (decrease) in banks' foreign liability. We divide our analysis of bank flows according to their maturity, i.e., short-term and long-term flows.

Figure 27
Capital Flows in Banking Sector

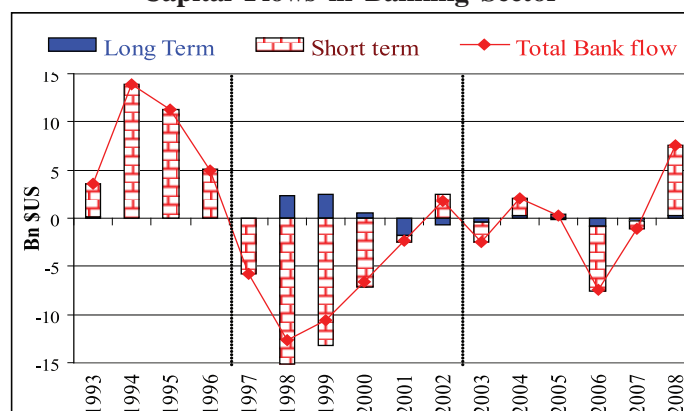
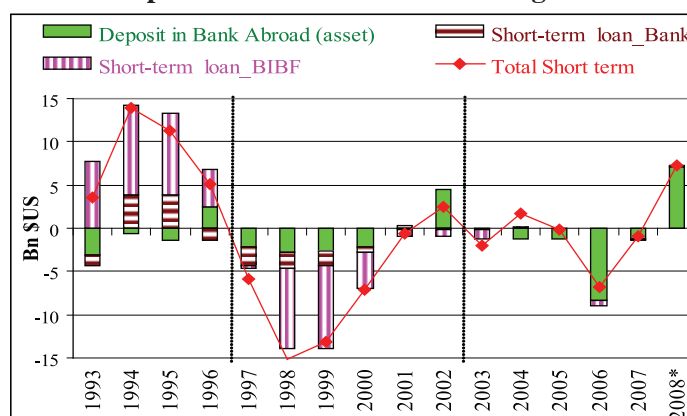


Figure 28
Composition of Short-term Banking Flow



7.1.1 Long-term Bank Flows

As illustrated in Figure 28, long-term capital flows have played a relatively insignificant role in the Thai banking sector throughout the financial history of Thailand. The jump during 1998-99 was due to FDI into the banking sector in the form of recapitalisation and mergers and acquisitions of several domestic banks in the aftermath of the crisis. The 49% foreign ownership limit was relaxed for banks and domestic banks were encouraged to find foreign strategic partners to help improve productivity, capital base, and overall financial strength. As a result, four domestic banks have become majority-owned by foreign banks.¹⁶ An additional four Thai banks were merged with foreign partners during 2006-07 to strengthen their strategic and financial positions in the domestic market.¹⁷

7.1.2 Short-term Bank Flows

The overall movement of bank flows has been dominated almost exclusively by the short-term component. In the pre-crisis period, most of the short-term bank flows were channeled through the BIBFs and commercial banks. These foreign-currency-denominated funds, by way of rolling over the short-term loans, were then used to finance long-term domestic projects that yielded long-term baht returns. The implied stability of the exchange rate promised by the peg exchange rate regime made FX hedging seem unnecessary. This created both currency and maturity mismatches that on both the banks' and Thai corporations' balance sheets. As the imbalances became more obvious, foreign investors started to doubt the sustainability of the fixed exchange rate and the ability of Thai borrowers to continue servicing external debts. Short-term bank flows stopped to flow in and existing foreign loans were called back. Unlike portfolio flows, for debt flows there was no price mechanism—i.e., that prices drop as large sum of money exits the security exchanges and hence make the securities attractive as expected returns become higher—that would otherwise have counteracted the disincentive of remaining in the country.

16. These included Ratanasin Bank acquired by United Overseas Bank (Singapore), Nakhonthon Bank by Standard Chartered Bank (United Kingdom), Bank of Asia by ABN Amro (Netherlands), and Thai-Danu Bank by DBS Bank (Singapore).

17. They were Bank of Ayudhaya partnered with GE Capital International Holdings Corporation (United States), Bank Thai with Newbridge (Netherlands), Thai Military Bank with ING Bank (United States), and Thanachart Bank with Bank of Novascotia (Netherlands).

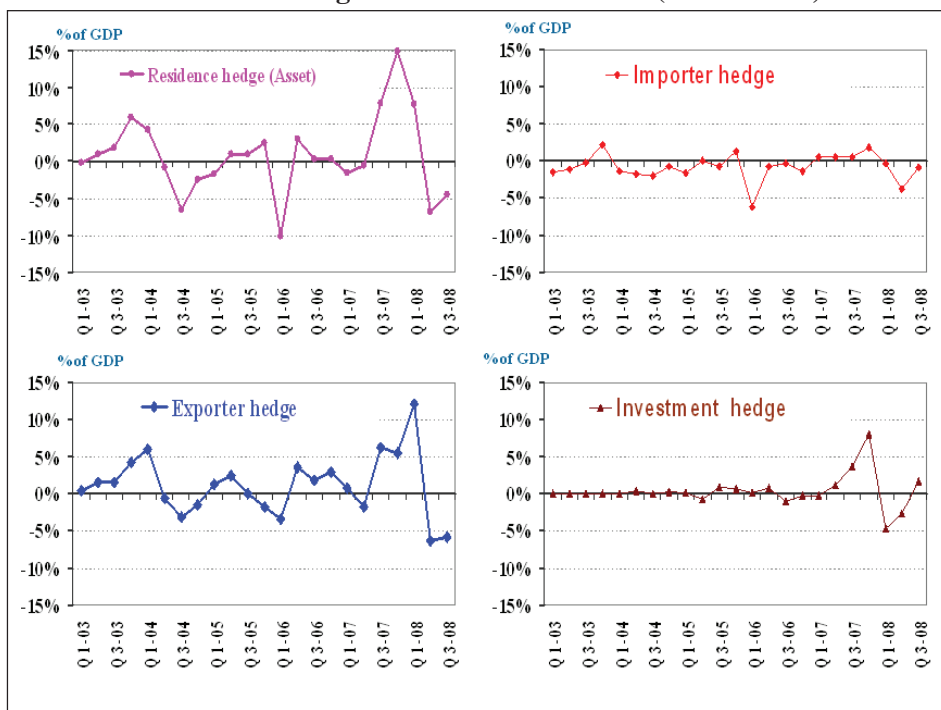
The expensive lessons learned from the crisis have led Thai banks and businesses to be wary of relying heavily on external debt. Most of them have switched to domestic sources for financing. Foreign creditors have also become more prudent in making loans. These resulted in substantially reduced inflows in form of foreign debt. Moreover, at the beginning of 2004, the BOT developed the Financial Sector Master Plan (FSMP) in order to carry out a major reform of the Thai financial system. The FSMP eliminated the tax distortion and regulatory arbitrage problems of the BIBFs, which partly contributed to the diminishing role of short-term external loans in the bank flow in Thailand.

7.1.3 Residents Hedging

During the last five years, deposits in bank abroad (Nostro accounts) by Thai banks have become the most important component of Thai bank flow. An increase (decrease) in banks' deposit in Nostro accounts are recorded as bank outflow (inflow) from the perspective of Thailand. A Thai domestic bank increases or decreases its deposits abroad mainly to manage their FX position, inclusive of all foreign currencies, to remain below 20% of the bank' capital to comply with the prudential regulation under the BOT's risk-based supervisory framework. Under this FX position limit, if customers buy or sell FX derivatives with a bank, the bank almost always squares its net FX position by increasing or decreasing its deposit abroad at the end of the day regardless of the maturity of the derivatives.¹⁸ As a result, capital flows occur almost immediately in the banking sector even though there has not been any delivery of the foreign exchange between banks and customers.

18. Even though the bank's net FX position is much below 20% of capital, the bank usually squares its additional FX exposure imposed by FX derivative transactions with exporters/importers. This is because what banks expect to gain from agreeing to be the counterparty of FX transactions is mainly from transaction fees and not so much from FX speculation by leaving their FX positions open.

Figure 29
Residence Hedge-related Bank Flows (% of GDP)



A sharp increase in demand of Thai exporters for FX hedging, by selling outright forwards on their future export receipts, was one of the factors driving capital inflows to Thailand in the past years through the banking sector, from the fact that Thai banks have to decrease their foreign asset holdings abroad to square their net FX positions in response to increased FX forward obligations. However, beginning from the second half of 2007, after further regulatory relaxation on outward investments, investment hedging has been another important component in Thai bank flow. Nonetheless, investment hedges do not have significant effect on the exchange rate since most of the FX hedges by institutional investors are in the form of swap contracts, which involve buy or sell FX today with an agreement to reverse the transaction with an equal amount on a specified future date, hence leaving the bank's net FX position unaffected. Since banks do not need to adjust their FX position in this case, this does not generate either capital inflow or outflow via banks.

7.2 Central Bank Policy Related to Capital Flows and Financial Stability in Recent Years

A root cause of the banking crisis was also poor corporate governance and risk management in financial institutions. Lending practices with collateral-based lending did not involve proper credit assessment. Collateral-based lending was also highly risky given the asset price bubble leading up to the crisis, particularly in the property markets. Moreover, the financial liberalisation allowed domestic corporations greater access to external funding through the banking sector, particularly in the form of shorter-term loans without exchange rate hedge. The crisis provided important lessons which led to a concerted effort on the part of banks and regulators to improve corporate governance and risk management. The BOT implemented two major policy approaches to improve financial stability: the Financial Sector Master Plan (FSMP) and the risk-based supervision with international standards.

7.2.1 Risk-based Supervision

Thailand's supervisory system is moving towards risk-based supervision which covers three key areas: capital adequacy, risk management and good corporate governance. The BOT places great emphasis on the management's roles and responsibilities in providing a robust risk management system that corresponds to their business operations and strategies and is in line with international standards. Proper risk management must include using the appropriate tools to manage five key risks, namely, strategic risk, credit risk, market risk, liquidity risk and operational risk.

At present, the BOT is in the course of moving from the capital adequacy framework under Basel I to the New Basel Capital Accord (Basel II), applicable to all financial institutions in 2008. The new guideline for regulatory capital will not only cover all the major risks faced by financial institutions, but will also be more responsive to the increasing risks of financial institutions and the more complex financial market conditions.

7.2.2 Financial Sector Master Plan (FSMP)

In order to further address structural weaknesses and develop a stable and efficient financial sector, the BOT developed the Financial Sector Master Plan (FSMP) as the medium-term (5-10 years) development plan for the Thai financial sector. The master plan seeks to ensure a financial landscape which is sound and free from such structural weakness, while providing a transition path to

strengthen the financial institutions, via merger and upgrading or orderly exit. The key measures to increase efficiency in the financial sector, by reducing the number of small players and eliminating regulatory arbitrage, are the licensing rationalisation scheme and the “one presence” policy.¹⁹ Under the new licensing scheme, by reducing the number of licenses and allowing commercial banks to better take advantage of the economy of scope and scale, the authorities have removed the overlapping scopes of business that posed regulatory arbitrage problems among the financial institutions. This effort is reinforced by the “one presence” policy which requires financial conglomerates with more than one type of deposit-taking financial institution within their group to merge their holdings, further reducing regulatory arbitrage in the system.

The FSMP began to be implemented at the beginning of 2004. Following the merging and upgrading of the finance companies and credit fonciers to commercial or retail bank status, discontinuation of IBFs and consolidation under the “one presence” policy, the number of financial institutions under the supervision of the BOT is expected to decline from 83 to about 37.

7.2.3 Deposit Insurance System

The Deposit Insurance Act has been passed by the Legislature on 19 December 2007 and announced in the Government Gazette on February 13, 2008. This move will pave the way for the removal of a blanket deposit guarantee, a legacy of the crisis. It is aimed to address moral hazard and promote risk management in the financial sector. The Act allows for a one million baht per person per bank guarantee limit. The guarantee is expected to cover 98% of depositors. However, the implementation of the Act has been delayed due to the global financial crisis, as the Thai authorities deem the postponement necessary to safeguard confidence in the Thai banking sector amid the global turmoil.

8. Conclusion and Policy Recommendations

Financial liberalisation and a consequent growing integration into the global markets have spurred the growth as well as the volatility of gross capital flows in Thailand during the past two decades. Thailand experienced strong increases

19. Licensing rationalisation created a new deposit-taking regime occupied by only four types of financial institutions, namely commercial banks, retail banks, foreign bank branches and subsidiaries of foreign banks. Licenses for International Banking Facilities (IBFs) have been discontinued to eliminate tax distortion. Qualified finance companies, credit fonciers, and stand-alone IBFs are allowed to be upgraded to either commercial or retail banks.

in gross inflows in the early 1990s and in mid-2000s. What is special about the more recent wave of inflows to Thailand, compared to the previous one, is that it was taking place against the background of much stronger external currency account positions and a substantial acceleration in foreign exchange reserves accumulation. In addition, the composition of the capital inflows has also altered—from being dominated by bank loans to having FDI as a major component, while portfolio inflows also increased considerably. Although Thailand's vulnerability to the old types of capital flow-related risks has been much reduced, this should not be a cause for complacency to the Thai authorities since new form of risks may be underway, especially those stemming from the (mis)use of increasingly more complex financial instruments.

Based on our empirical investigation, the pick-up in capital flows to Thailand in 2005-2006 reflected, for the most part, the country's improved macroeconomic fundamentals as well as external investment environment, particularly the weak outlook on economic growth of the major economies, ample global liquidity and international investors' perception of market risk. The facts that (1) capital flows are procyclical and (2) the external determinants are beyond the control of domestic policy, forewarn policy makers of plausible channels of risks through imbalances and external financial linkages. This may call for counter-cyclical policy to correct any economic imbalance before it evolves into a catastrophe, as well as proactive safeguards against the volatility and the risk of a sudden reversal that could arise from external shocks.

In Thailand, the risk to financial stability in terms of overheating, asset price bubbles, and rapid credit growth were limited, thanks to the developments in the domestic capital markets and improvement in prudential measures. Albeit, there were two key macroeconomic challenges faced by the Thai policymakers in the recent years—namely, the rapid real exchange rate appreciation and domestic liquidity management. Sterilised FX interventions and temporary capital controls were used to manage the excessive capital inflows and their impact. However, these policy measures do not come without a cost and could be ineffective, especially when the inflows persist for a long time.

A long-run approach to managing capital flows would be to create economic and investment environment conducive to more long-term and productive types of capital flows and to increase the economy's capacity to absorb foreign investments through improvements in market infrastructure, structural reforms, labor productivity, and product competitiveness. Other policy tools such as financial supervision and regulation to reduce the risk inherent with large capital flows—including their role in accentuating business cycles, their destabilising impact on

financial prices, and the upshot of a sudden stop—should also be strengthened to prevent a potential crisis caused by a shift in capital flows. The fact that, so far, Thailand has proved quite resilient to the current global financial crisis that has greatly decelerated capital inflows into the country should not be a cause for complacency. As long as the country is still part of this financially integrated world, consistent and properly-designed policies to manage capital flows aimed at promoting long-term stability and economic growth are a must, while potential vulnerabilities need to be closely monitored.

Regarding capital outflows, the remaining regulations on capital outflows by residents should be relaxed gradually to bring more balance to the net flows and to encourage international risk sharing. The *gradual* approach towards outflow liberalisation should be emphasised, especially in light of the current global crisis in the major economies. The spillovers from the turmoil in the U.S. and European credit markets have so far been limited in Thailand due to the low exposure of domestic investors to these markets, thanks partly to some limitations on residents' outward investment and the conservative investment strategy and risk management of Thai banks and institutional investors. Going forward, a stepped liberalisation towards a free capital flow regime should be taken cautiously, and concurrently with continued improvement in financial literacy and risk management in all economic sectors, including the non-financial businesses and households.

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Chapter 13

CAPITAL FLOWS AND THEIR IMPLICATIONS FOR CENTRAL BANK POLICIES IN VIETNAM

by
Ngo Thi Thu Tra¹

1. General Framework and Major Capital Flows Management Policies

1.1 Current Account and Trade Liberalisation.

In December 30, 2005, Vietnam was recognised by the IMF as completing its member obligation to fully liberalise its current account in compliance with the Fund's Article VIII (compared with 1968 for Malaysia, 1990 for Thailand and 1996 for Mongolia). Payments and transfers for current account transactions can now be freely made through the commercial banks. The requirement for the economic institutions to surrender their foreign exchange was gradually reduced from 80% (1998) of their foreign currency revenues to 50% (1999), 40% (2001), 30% (2002), and finally abolished in April 2003.

Besides, the Vietnamese Government is continually adjusting its policies to encourage remittance from overseas. Fee on remittance receipt was lifted in 1982 and income tax on remittance receipt was exempted in 1999. The local beneficiaries are allowed to withdraw or hold remittance in foreign currencies since 1999. At the same time, many institutions were licensed to carry out remittance transfer service. As a result, remittances into Vietnam increased dramatically from US\$0.95 billion (1998), \$2.6 billion (2003), over \$3 billion (2004), \$4.1 billion (2005), \$4.1 billion (2006), and to \$6.4 billion in 2007.

With its open and liberalised trade policies, Vietnam is well integrated into the world economy. As a member of the AFTA, APEC and, most recently, the WTO, together with the associated advantages, Vietnam has emerged as one of the most attractive destinations for global investors, especially in the period of 2006-2007.

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Being an official member of the WTO, however, also means that Vietnam is obliged to cut tariffs, remove domestic protection and further open the door to fierce competition, allowing foreign investors entry into its commercial and financial markets. This has brought about many challenges as well as opportunities to Vietnam's economy and its policy development and management.

1.2 Capital Account Liberalisation

Together with a fully liberalised current account, Vietnam has removed many restrictions on its capital account, taking significant steps towards a fully liberalised capital account. Since its issuance of the first Law on Foreign Investment in 1988, Vietnam has continually amended as well as issued many new and relevant laws and legal provisions to create a transparent and favorable legal framework to encourage foreign investment, especially FDI into the country.

1.2.1 Foreign Direct Investment (FDI) Policy

In 2001, the State Bank of Vietnam (SBV), the central bank, removed the requirement of foreign currency self-balancing applied to FDI enterprises. FDI enterprises can buy foreign currencies from commercial banks for their legal needs. The government even guaranteed to sell foreign currencies to some important FDI projects. The door to FDI inflows has been cast open wider and wider with each passing year. The compulsory requirement on export ratio or limitation on the ratio of capital contribution made by technology transfer, and employment in FDI projects, were removed. The withholding tax on profit remittance of FDI projects was lowered and subsequently abolished. The limitation of 30% for foreign ownership in FDI enterprises was abolished, with some exceptions. As a result, Vietnam has witnessed a sharp and continuous increase of FDI inflows since 1988.

1.2.2 Portfolio Investment: Foreign Indirect Investment (FII) Policy

Vietnam's stock market initially came into play in July 2000 with few listed companies. In order to encourage foreign portfolio investment (FII) as an important drive towards domestic capital market growth, the Vietnamese Government issued a regulation in 2003 on capital contribution and share holding by foreign investors in Vietnamese enterprises. Under this regulation, foreign investors can contribute capital or buy shares up to a maximum equivalent of 30% of Vietnamese enterprises' legal capital. Individual investors are tax-exempted for their income from capital contribution or share purchase in Vietnamese enterprises.

For further FII encouragement, on 12 December 2004, the SBV removed the requirement of FII to remain at least one year in the country before it can be repatriated. Foreign investors are allowed to buy foreign currencies to transfer their invested capital and profit out of the country freely at any time after fulfillment of tax and other obligations. Therefore, there is currently no regulation restricting the withdrawal of foreign investment out of the country. However, foreign capital on arrival is required to be converted into the local currency and held in a specialised account with a commercial bank to realise the investment in Vietnam.

The permitted room for foreign participation was increased from 30% in 2003 for both listed and unlisted companies to 49% in 2005 for listed companies, except banks.

Foreign holdings of valuable papers issued by financial institutions are limited up to 50% while there is no restriction on foreign holdings of listed bonds in Vietnamese stock market.

1.2.3 Outward Investment Policy

Besides stimulative policies to attract foreign investment, the government also gradually liberalised its external investment policy. Before 2005, domestic enterprises could use only foreign currencies from their current account revenue for investment abroad. Since 2005, they can also use foreign currencies bought or borrowed from eligible banks for overseas investment.

1.2.4 External Borrowing Policy

Vietnam also adopted relatively open external borrowing policies. Enterprises are allowed to borrow overseas to fund their permitted, registered business activities and are self-responsible for repayment as contracted. Loan registration after contracting and periodical reports of loan disbursement to SBV are required only for medium-term and long-term loans. Disbursement of such loans can only be made after duly complying with the requirement of loan registration with the SBV. External borrowing by public sector should meet SBV's relevant requirements and be subject to the nation's annual total commercial credit ceiling. Individuals can borrow overseas as long as they meet the conditions set by the SBV.

1.2.5 Overseas Lending Policy

In terms of external lending policy, the financial institutions can extend financial and commercial credit overseas. Registration and periodical reporting to SBV are required after entering the contract. Economic institutions can lend overseas only with approval of the Prime Minister and registration with SBV. Individuals are not permitted to lend overseas.

1.3 Other Relevant Policies

1.3.1 Monetary and Fiscal Policies

During a long period from 1999-2006, Vietnam adopted accommodative monetary and fiscal policies in order to boost local investment and consumption for economic growth and cope with the potential threat of deflation under the impact of the Asian financial crisis. The SBV gradually liberalised its interest rate policy, shifting from direct to indirect management. Deposit and lending interest rates of both local and foreign currencies were fully liberalised in June 2002. At the same time, the SBV continues to announce the SBV's directive interest rate (so-called base rate) as a reference for the market. However, it is stipulated under the Civil Law of Vietnam that the local currency interest rates should not exceed 150% of the SBV's base rate with a view to avoiding extremely high rate loans. The amendment of the Civil Law regarding this issue is proposed.

1.3.2 Exchange Rate Management Policy

In 1991, the SBV reformed its exchange rate management mechanism from multi-exchange rate system into a unified one. The SBV announced the daily official rate of USD/VND as the central rate for commercial banks to determine their trading exchange rates within a certain band set, and adjusted when necessary by the SBV's Governor for each particular period. Vietnam's exchange rate regime at that time was classified by the IMF as conventional peg.

In February 1999, the SBV abolished the announcement of official rate, shifting into calculating and announcing the daily inter-bank weighted average exchange rate as the reference for commercial banks' trading exchange rate determination within a certain band. This was a significant change in Vietnam's exchange rate policy as it moved from subjective management mechanism into market-oriented one. As a result, the exchange rate mechanism of Vietnam was classified as managed floating by the IMF in 1999.

Table 1
Exchange Rate Developments of VND 1997-2007

USD/VND / Year	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Inter-bank weighted average rate (end year)	11175	12985	14210	14501	15070	15368	15608	15739	15875	16091	16114
Yearly change (%)	1.1	16.2	9.4	2.0	3.9	2.0	1.6	0.8	0.9	1.4	0.1
Inter-bank weighted aver. rate (annum aver.)	11127	12203	13935	14155	14786	15243	15475	15704	15816	15963	16126
Yearly change (%)	0.9	9.7	14.2	1.6	4.5	3.1	1.5	1.5	0.7	0.9	1.0
Vietcombank's selling rate (end year)	12293	13894	14030	14515	15085	15406	15647	15778	15915	16055	16030
Yearly change (%)	10.2	13.0	1.0	3.5	3.9	2.1	1.6	0.8	0.9	0.9	-0.2
Vietcombank selling rate (annual aver.)	11689	13263	13945	14169	14801	15270	15513	15743	15856	15995	16086
Yearly change (%)	5.9	13.5	5.1	1.6	4.5	3.2	1.6	1.5	0.7	0.9	0.6

In parallel with the SBV's frequent intervention in the domestic foreign exchange market to prevent it from excessive or unreasonable fluctuations, the allowed trading band of commercial banks was gradually widened from $\pm 0,1\%$ (2/1999) to $\pm 0,25\%$ (7/2002), $\pm 0,5\%$ (12/2006) ; $\pm 0,75\%$ (12/2007); $\pm 1\%$ (3/2008) and $\pm 2\%$ (6/2008), $\pm 3\%$ (12/2008).

Vietnam's capital account has been liberalised and quite open. Apart from some regulations limiting the maximum level of participation that can be made by foreign investors in Vietnam's companies or in some special areas, Vietnam's Government does not impose any restrictions on capital inflows and withdrawals. On the one hand, this liberal policy framework has created strong incentives for the stimulation of foreign investment, resulting in great opportunities for economic development. On the other hand, it has led to increasing dramatic fluctuations of capital flows into and out from the country, creating series of unpredictable mini-shocks in foreign exchange market. Vietnam's macroeconomic policy framework is complicated by the dilemma of the "Impossible Trinity."

By the Theory of the Impossible Trinity, a country cannot simultaneously achieve the three main goals of macroeconomic policies: flexible capital flows, stable exchange rate, and monetary autonomy. As a result, every country that liberalises its capital account should adopt a flexible exchange rate policy if it aims to maintain monetary autonomy. However, a relatively stable exchange

rate is viewed by the Vietnamese Government as a key factor to the country's economic development. Therefore, increasing the flexibility of capital flows into the country posed great challenges to Vietnam in its efforts to maintain its exchange rate management policy.

2. Trend of Capital Flows in Vietnam since 1985

Along with its course of economic reforms and global integration, Vietnam attracted an increasingly significant amount of foreign investment in contributing to its economic development. Since 1995 until now, the surplus in its capital account has been rising (except 2000).

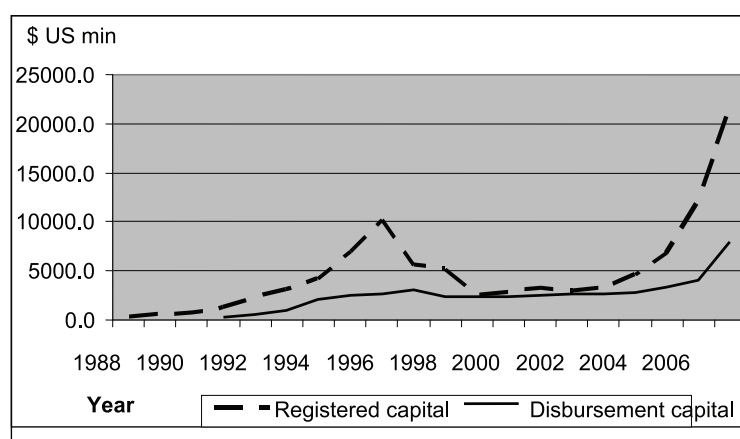
2.1 Inflows

2.1.1 FDI Inflows

FDI contributed the highest proportion in Vietnam's capital inflows. Since 1998 with the enforcement of its Law on Foreign Investment up to December 2007, Vietnam attracted \$99.6 billion of registered FDI capital, of which US\$45.5 billion had been realised.

As can be seen from Figure 1 below, FDI inflows in Vietnam recorded the first peak in 1996 and then cut into half in 1997-1998 under the impact of the Asian financial crisis. FDI inflows in Vietnam recovered in 2000 and have since increased dramatically from Vietnam's accession to WTO.

Figure 1
FDI into Vietnam 1988-2007

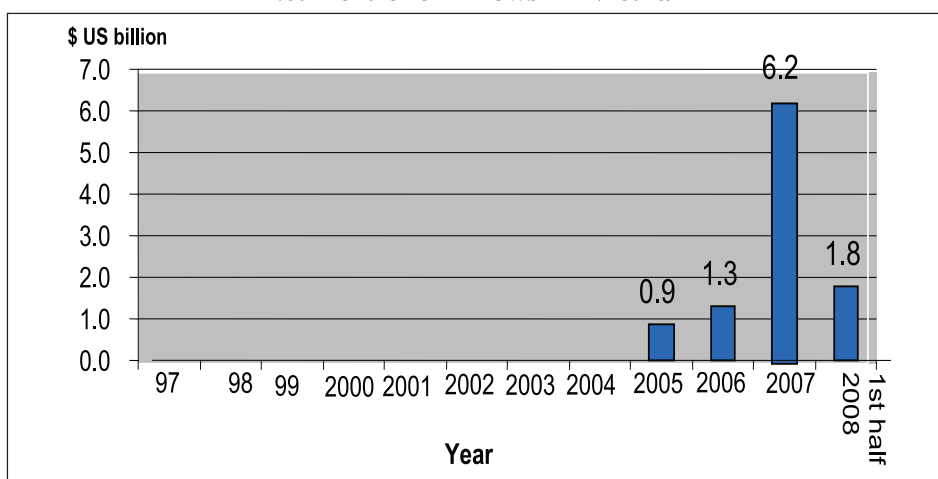


The registered amount of FDI recorded at US\$21.3 billion in 2007, exceeding the total registered amount of US\$20.8 billion for the whole period of 2001-2005. It continued to reach US\$64 billion in 2008, equal to three times the registered amount of the previous year. The disbursement was US\$11.5 billion in 2008, increasing by 43.2% against 2007.

2.1.2 FII Inflows

Until 2004, foreign portfolio capital (FII) inflows into Vietnam were insignificant given its infant stock market and poorly developed money market. However, Vietnam witnessed an amazing surge of foreign portfolio inflows, which rose from nearly zero in 2004 to the record of US\$6.2 billion in 2007 amidst the boom of Vietnam's stock market and the perceived attractiveness of Vietnamese economy after its WTO entry.

Figure 2
Net Portfolio Inflows in Vietnam

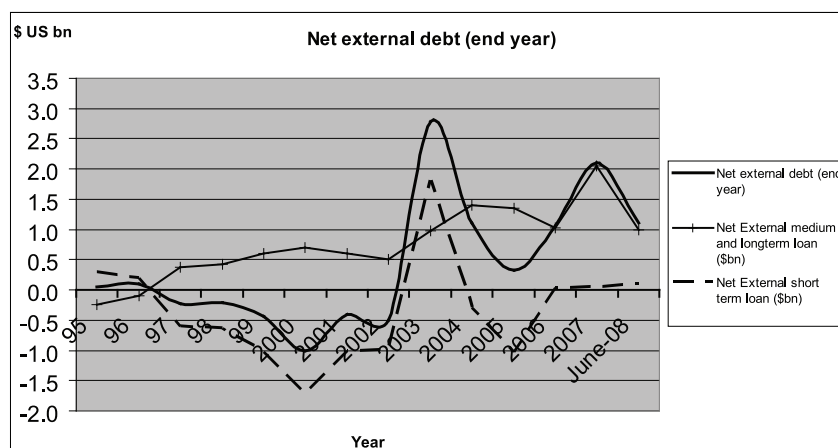


Besides its positive effects on the local capital market development, the sudden surge of foreign portfolio inflows had posed many challenges to Vietnam's nascent financial and money market. However, there has been a declining trend in net portfolio inflows into Vietnam since the second quarter of 2008 as the inflows dropped and the withdrawal amount plummeted. The net portfolio inflows to Vietnam were just US\$1.8 billion for the first half of 2008, just equal to 27.7% of the total FII inflows of Vietnam in the last year.

2.1.3 External Debt

Vietnam's net external debt only made a positive contribution to its capital account since 2003. By the end of 2007, the total outstanding external debt of the country was US\$23.2 billion, of which, short-term debt incurred by private sector was only US\$0.2 billion, accounting for 0.9% of total external debt. Approximately 97-98% of Vietnam's external debt consists of medium and long-term loans under the form of ODA or commercial loans incurred by enterprises for machines and equipment purchase. Its total short-term external debt was equal to 1/95 of its foreign exchange reserve by the end of 2007, far below the alarming limit of 1/2 specified by the IMF. The ratio of Vietnam's external debt/exports has gradually decreased from 82% in 1997 to 37.8% in 2007, far below the maximum permitted level of 200% specified by the IMF. As a result, there is not much risk of sudden capital flight for its external debt.

Figure 3
Vietnam's Net External Debt (End Year)



According to the IMF and WB ratings, Vietnam is not included in the list of High Indebted Poor Countries (HIPC). All the external debt sustainability indicators of Vietnam have always been well below the IMF or WB's applicable debt thresholds, reflecting Vietnam's mostly concessional and long-term structure of external debt, as well as its dynamic export sector. The annual debt service of Vietnam has been always in the range of 7.3-13.9% of its exports of goods and services, which is lower than the highest border of the permitted safety range.

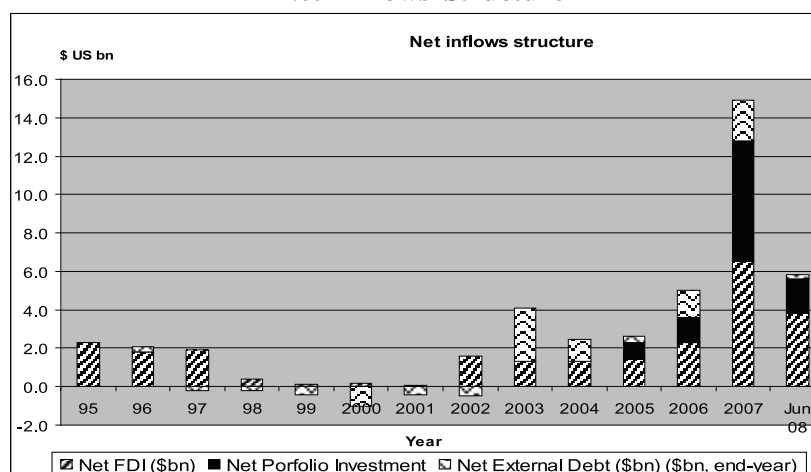
Table 2
Vietnam's External Debt Sustainability Indicators

Indicators (%)	97	98	99	2000	2001	2002	2003	2004	2005	2006	2007	Applicable Safety Threshold
PV of External Debt /GDP	37.5	37.9	34.2	39.3	40.3	37.6	34.2	33.9	32.0	30.2	29.0	< 45%
PV of External Debt/ Exports	82.0	82.0	70.0	70.0	70.9	63.0	57.0	45.5	42.0	39.0	37.8	< 200%
Debt Service/Exports	12.8	13.9	12.8	10.5	10.6	7.5	7.5	7.3			3.94	< 25%

2.1.4 Structure of Net Capital Inflows

As far as the capital structure is concerned, FDI has always contributed the biggest proportion in Vietnam's total net inflows (except the year 2003). This is a good reflection of a healthy capital structure, facilitating sustainable development of Vietnam's economy in the long term. However, the sudden increase of portfolio investment into Vietnam since 2005 is noteworthy and necessitated an appropriate response as it raised the proportion of short-term and volatile capital in Vietnam's capital structure.

Figure 4
Net Inflows Structure



2.2 Capital Outflows

Because of the limited financial capability of Vietnamese enterprises and great demand of capital for domestic economic development, the outward flow of investment and lending during the past years was insubstantial. There were just 280 FDI projects abroad with a registered capital of US\$1.26 billion made by Vietnam during the period of 1989- 2007, of which only approximately 17% has been realised. No portfolio investment and almost no overseas lending was registered during the same period.

A significant and most volatile part of Vietnam's capital outflows is its banking system's investments abroad in the placement of deposits with foreign banks. The volume of this part of capital outflows is primarily subject to the interest rate developments in the world market. In the years 2000 and 2001 when the world's interest rates went up, with the FED fund rate climbing to the highest level over 40 years, Vietnam witnessed huge capital outflows (US\$2.1bn in 2000 and US\$1.2 billion in 2001), being the domestic banks' overseas investments from their huge amount of domestic deposits in foreign currencies. This was one of the main reasons for Vietnam's capital account deficit in the year 2000.

3. Determinants of Capital Flows in Vietnam

3.1 Possible Causes behind Surge in Capital Inflows into Vietnam

3.1.1 External Factors

The sharp depreciation of the US dollar in the international markets since 2002, together with the economic recession starting in the US since 2001, induced global investors to seek for investment opportunities outside the US and in US currency-denominated assets. The economic conditions in many other regions were also not good for new and high-return-oriented investors. Many big countries started to cut down interest rates to cope with the threat of economic recession and weakening financial systems, therefore undermining the attractiveness of their local currency-denominated assets.

On the other hand, it comes out obviously that, the more integrated and globalised the world's market, the more diversified the outreach of global portfolio investors looking for investment. In such a context, Asia has emerged as the most attractive destination for global investors thanks to its continual high economic growth, cheap labor, and large emerging market, which promises high returns from high-yielding assets.

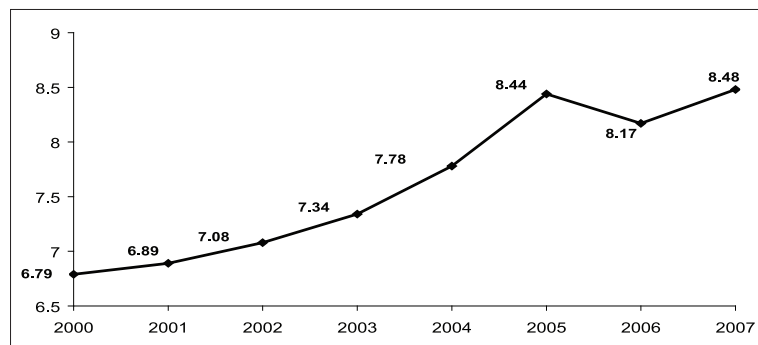
3.1.2 Internal Factors

Vietnam's outstanding economic achievement and its advantages as a newly emerging market are the main driving forces behind the strong capital inflows into the country in recent years, especially in the context of the current global economic recession.

(i) Fast Growing Economy

Over the last 13 years from 1995-2007, Vietnam achieved great success in economic development, attaining on average a growth rate of 7.58% annually, much higher than the average rate of 6.5% of the whole region. With GDP growth rate of 8.5%, Vietnam was the second fastest growing economy in Asia after China in 2007. Characterised by a stable political environment, Vietnam is viewed to have great potential for strong economic growth, thanks to its comparative advantages, such as cheap labor force, newly established and cheap stock and real estate market, newly established financial and foreign exchange markets.

Figure 5
Vietnam's Economic Growth Rate (2000-2007)



(ii) High Demand

As a developing country with a widening savings-investment gap, there is high demand in Vietnam for foreign capital for economic development. On the other hand, as a newly emerging market with numerous under-capacity industries and huge demand for equitisation, Vietnam offers tremendous opportunities for foreign investment.

(iii) Easy Access

With its fully liberalised current account, open-trade policy and quite liberalised capital account accompanied by foreign investment incentives and stable exchange rate regime, Vietnam offers to be an attractive and easily accessible destination for foreign investments, especially after its WTO's membership.

(iv) Great Interest Rate Differential

The expectation of stable exchange rates of VND makes the great interest rate differential between local and international monetary markets (8% in 2007 and 12% in early 2008) even more attractive for foreign portfolio investment.

Table 3
Vietnam's Selected Macroeconomic Indicators (1995-2008)

Indicators	95	96	97	98	99	2000	2001	2002	2003	2004	2005	2006	2007	6/2008
Real GDP Growth rate (%)	9.5	9.3	8.2	5.8	4.8	6.8	6.9	7.1	7.3	7.8	8.4	8.2	8.5	6.5
CPI inflation (% change, over Dec. Dec.)	16.9	5.6	3.6	8.9	0.1	-0.6	0.7	4.0	3.0	9.5	8.4	6.6	12.6	18.4
Nominal 3 month deposit rate (%/annum end of year)	-	-	8.1	9.7	4.0	4.3	5.4	6.7	6.1	6.7	7.8	7.9	12.0	17.5
Real interest rate (based on CPI end year)	-	-	4.5	0.8	3.9	4.9	4.7	2.7	3.1	-2.8	-0.6	1.3	-0.6	-0.9

3.2 Possible Causes behind a Decline in Capital Inflows since Quarter II of 2008

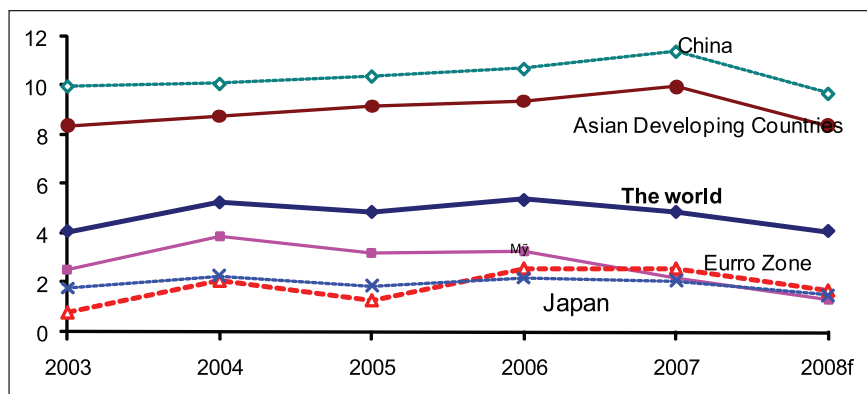
Since the second quarter of 2008, Vietnam has witnessed a declining trend of net capital inflows as less portfolio capital inflows are pouring into the economy and more portfolio capital withdrawn out of the country both due to external and internal reasons. However, committed FDI continued to soar and recorded US\$31.6 billion in the first half of the year, equal to 3.7 times the total of 2007's committed FDI, which exceeded the total registered amount of FDI for the whole period of 2001-2005.

3.2.1 External Factors

Erupting in the United States in August 2007, the sub-prime credit crisis has spread quickly worldwide and swelled out into the largest-ever global financial crisis since the Great Depression of 1929-1933. The crisis triggered huge losses and massive collapse of major global financial and banking institutions, badly shaking all the major financial markets throughout the world. It also led to a credit crunch and liquidity tightening in the world inter-bank market, inducing capital withdrawals of foreign institutional and individual investors out of developing countries, including Vietnam, due to the need of liquidity support for their parent companies and their increasing risk adverse appetite.

The worsening global economic recession is a main cause contributing to a decline in capital inflows into Vietnam in recent months.

Figure 6
World's Economic Growth (2003-2008)



3.2.2 Internal Factors

Performing on the back of the external economic situation and sharp price movements in the world market, the Vietnamese economy experienced overheated growth during the past one year and seemingly went into an adjustment period accompanied by some macroeconomic uncertainties.

(i) Double-digit Inflation and Economic Slowdown

After many good years of control over inflation, Vietnam's CPI index climbed to double-digit level at 12.6% in 2007 and continued to mount up to 21.87% just in first nine months of 2008, nearly doubling the total CPI index increase of the

previous year. The monthly increase of CPI index recorded the highest level in the past 16 years at 5.3%/month in May 2008. High inflation turned the domestic real interest rate into negative, triggering a strong reduction in consumption spending and a slowdown of the whole economy. Vietnam's economic growth rate decreased from 8.4% in 2007 to 6.23% in 2008.

Figure 7
Vietnam's Monthly CPI Index in 2007

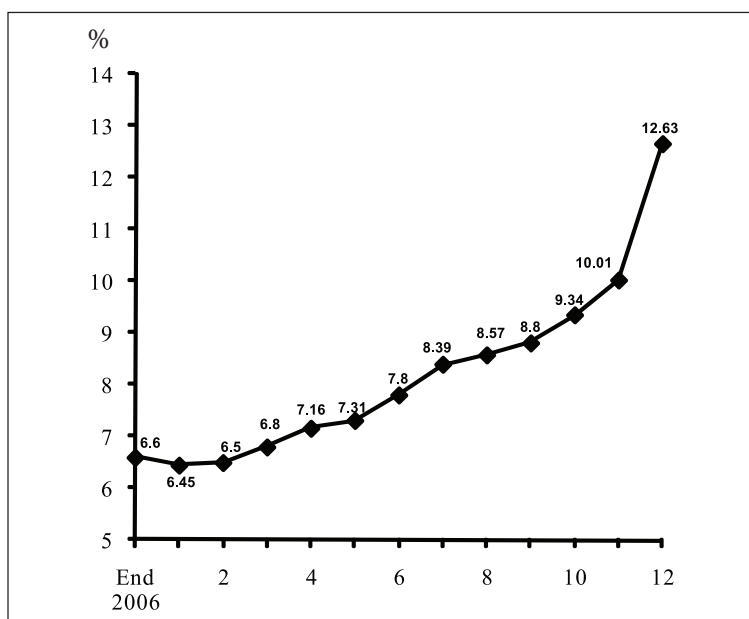
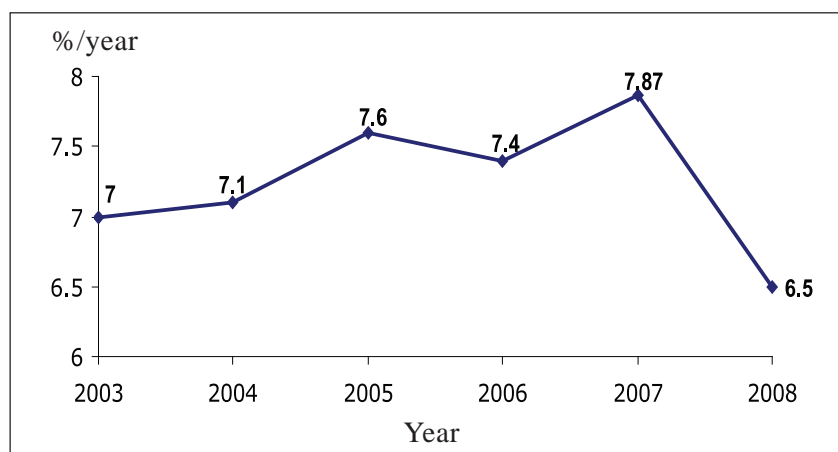


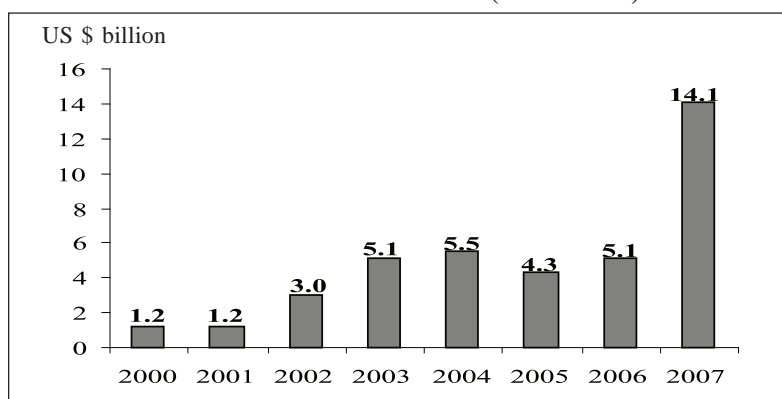
Figure 8
Vietnam's First 6-month Economic Growth (2003-2008)



(ii) Huge Trade Deficit

On the one hand, the growth of foreign trade activities as a result of open trade policy and current account liberalisation, created various export opportunities for Vietnamese enterprises. On the other hand, it contributed to push up the country imports. Import tariff reduction under commitments to WTO also encouraged the country's imports to meet its accelerating aggregate demand. Additionally, the dramatic increase of FDI inflows themselves contributed a main drive for the country's increasing imports of machines, equipment and input materials. Consequently, Vietnam's trade deficit has quickly widened from US\$5.1 billion in 2006 to \$14.1 billion in 2007 (equivalent to -11.9% of GDP) and continued escalating to reach the record level of US\$14.8 billion just in the first half of 2008.

Figure 9
Vietnam's Trade Deficit (2000-2007)



(iii) Widening Budget Deficit

As a result of an expanding fiscal policy implemented by the Vietnamese Government since 1999 to facilitate economic growth and living quality improvement, the state budget deficit widened to -5.9 % of GDP in 2007.

(iv) Strong Adjustment in Stock and Real Estate Markets

After the boom in late 2007 and early 2008, both the real estate market and stock market experienced a strong adjustment reflected in a freezing real estate market and a drop of almost 70% of VN Index just in six months.

(v) *Credit Rating Downgrade*

Given some signs of domestic macroeconomic imbalances and concern among foreign investors about the resilience of the Vietnamese economy and the banking system to the worsening global financial market, Moody and Standard & Poors lowered Vietnam's credit rating from "stable" or "positive" to "negative". However, this agency still maintains a positive assessment with regard to the long-term outlook and prospects of Vietnam's economic growth.

Table 4
Credit Rating Outlook of some Asian Countries Rated by S&P
(May 2008)

	Credit Rating on Internal Debt	Credit Rating on External Debt
Vietnam	BB+	BB
Indonesia	BB+	BB-
China	A	A
Thailand	A	BBB+
Malaysia	A+	A-

Vietnam's huge trade deficit together with its widening budget deficit raised concern among investors about the sustainability of Vietnam's balance of payment, especially in the context of flexible capital flows and deepening global financial crisis. In addition, the on-going increase of domestic inflation rates and signs of liquidity tightening in the banking system added more anxiety to foreign and even local investors regarding the country's economic prospects and the potential devaluation of the Vietnamese Dong. This badly affected the confidence of foreign investors over Vietnam's short-term economic prospects and triggered a partial withdrawal of foreign short-term investment out of the country in the middle of 2008.

4. Implications of Capital Flows for Central Banks Policies and Its Response

Alongside great opportunities for economic growth and market development that can be reaped from capital inflows, the increasing volatility of capital flows in and out of the country pose tough challenges to the SBV. The greatest

challenge may be the problem of the impossible trinity, which is manifested in the tremendous difficulties of SBV in maintaining a stable VND exchange rate and independent monetary policies under the impact of strong fluctuations in capital flows in recent times.

4.1. Implications of Rocketing Capital Inflows for Central Bank Policies and Its Response

4.1.1 Exchange Rate Management Policies

(i) Implications

A surge in capital inflows into Vietnam, especially since late 2006, significantly changed the balance between demand and supply in the local foreign exchange market. In the past, the demand for foreign currencies was always greater than the supply, the VND was hence always under the pressure of depreciation. Dramatic increase of capital inflows, especially portfolio capital pushed up the supply of foreign currencies in domestic foreign exchange market to outweigh the market demand, thus creating the first-ever upward pressure on VND. Instead of always quoting their trading exchange rates at the ceiling of the controlling band as in the past, all banks then traded at floor rates. The black market witnessed for the first time in its history the drop of US dollar/VND exchange rate to a level far below trading rates in the official markets.

The situation became more serious in the first quarter of 2008 when the supply of foreign currencies from capital inflows continued to increase to over-exceed the market demand, putting the local currency under strong pressure of appreciation. The wide expectation of further VND appreciation due to the forecast of continuously increasing capital flows into the economy induced market participants to flee or stay away from US dollar or US dollar-denominated assets. Local people and companies rushed to convert their foreign currency holdings into Vietnamese dong to avoid further depreciation of US dollar and to make benefit from high VND interest rates. Banks did not want to be long in foreign currencies as the market demand for foreign currencies declined sharply while the exchange rate of US dollar/VND dropped day by day both in the official and black markets. At the same time, the local inter-bank market started to face tightening liquidity of VND. As a result, the SBV was facing tremendous challenge in maintaining its primary objective to keep exchange rate stable and competitive for export promotion.

(ii) Central Bank's Response

a. Exchange Rate Adjustment

Instead of trying to keep the reference rate under as little change as in the past, the SBV proactively adjusted the reference exchange rates towards gradual appreciation of VND to keep pace with market movements. The exchange rate trading band was widened two times from $\pm 0.25\%$ applied since 2002 to $\pm 0,5\%$ and then $\pm 0,75$ in 2007 and another time to $\pm 1\%$ on March 2008 (see Table 8). Consequently, the VND appreciated 1.12% in the official market and 1.4% in the black market in the first quarter of 2008 for the first time ever.

b. Foreign Exchange Intervention and Sterilisation

In parallel with the reference rate adjustment, the SBV also intervened to stabilise the domestic foreign exchange market by purchasing foreign currencies from commercial banks to prevent local currency from too much appreciation. By doing so, the SBV, on the one hand, helped reduce foreign currency over-supply, easing upward pressure on VND. On the other hand, it consolidated its foreign exchange reserve, which climbed from US\$10.4 billion from late 2006 to US\$19.6 billion by the end of 2007.

However, this inevitably led to the increase of local currency in circulation, pushing up inflation, thus badly affecting the VND Real Effective Exchange Rate and the economy's external competitiveness, creating difficulties in monetary policy formulation. Great efforts were made by the SBV to neutralise these adverse effects through intensive open market operations and other creative measures in money market (see in 4.1.2).

c. Other Relevant Policies

In order to help ease upward pressure on VND due to over-supply of foreign currencies, the SBV encouraged prepayment of external debt by enterprises and banks, and modified its regulations to allow importers to get loans in foreign currencies.

4.1.2 Monetary Policies

(i) Implications

a. Inflation Increase

As Vietnam is a dollarised economy, the mounting supply of foreign currencies resulted from high capital inflows since late 2006 had not only exacerbated dollarisation in the economy but also increased the total broad money in circulation, leading to inflation hike, making central bank's monetary policies more complicated. The central bank's efforts of forex intervention to relieve upward pressure on the local currency also played a part in raising the money supply in the economy, thus pushing up the inflationary pressure.

b. Overheated Credit Growth and Volatile Inter-bank Market

As a result of the strong surge in capital inflows, followed by great investment opportunities and greater local currency supply under a loosened monetary policy to neutralise abundant foreign currencies in the forex market, the growth rate of the Vietnamese banking system quickly mounted up from 25% in 2006 to 53% in 2007, and with domestic credit equaled to 98.3% GDP in 2007, instead of 40-75% of GDP as in the last period.

Table 5
Vietnam's Selected Monetary Indicators (2000-2007)

Indicators	2000	2001	2002	2003	2004	2005	2006	2007
Broad money supply (M2,% of GDP)		46.3	52.2	53.6	57.5	63.9	70.9	83.2
Broad money supply (M2,% yoy change)	39.0	25.5	17.6	25.0	30.4	28.8	28.9	37.8
Domestic credit (% of GDP)		39.7	44.8	51.8	58.2	69.8	75.0	98.3
Domestic credit (% yoy change)	38.1	23.2	25.6	32.4	31.0	40.6	24.7	53.0

In addition, the scarcity of VND in the banking system induced a fierce competition of interest rates, which then almost became a race among commercial banks, creating disorders in the banking system, segmenting the inter-bank market and worsening the partial liquidity problems.

c. Boom and Price Bubble in Real Estate and Stock Market

The surge of capital inflows in 2006 and 2007 was seen as one of the main sources of the price bubble in the real estate market and the boom of the stock market in Vietnam in the same period. The VN Index increased nearly six times and the daily trading volume in Vietnam's stock market grew up more than 10 times just within one year. The fast growth of these markets in 2006 and 2007 fuelled inflationary pressure and induced the growing demand for risky investment into these markets, risking social and economic consequences should the bubble collapse.

Figure 10
Vietnam's Booming Stock Market



(ii) Central Bank's Response

In order to contain inflation, the SBV started tightening its monetary policies by sharply increasing its directive interest rates, restricting credit expansion and raising reserve requirements. SBV's base interest rate was raised from 8.25%/annum in 2007 to 8.75%/annum in early 2008 and then quickly was lifted to 12%/annum in May 2008 and continuously to 14% one month later. SBV's financing rate and discount rate were also adjusted upward in accordance with movements in the base interest rate.

Table 6
SBV's Directive Interest Rate Adjustment (2006-2008)

	2006	2007	2/2008	19/5/2008	11/6/2008
Base Rate (%)	8.25	8.25	8.75	12	14
Refinancing Rate (%)	6.5	6.5	7.5	13	15
Discount Rate (%)	4.5	4.5	6	11	13

The reserve requirement was raised from 5% to 10% as applied to local currency and up from 8% to 10% as applied to foreign currencies in June 2007. Both reserve requirement ratios were increased by an additional 1% in February 2008. The scope of reserve requirement was expanded to include deposits of all maturities.

In order to help stop the interest rate race among commercial banks that emerged in February 2008, the SBV temporarily required all commercial banks to maintain deposit interest rates not exceeding 12%/annum to regain the stability of money flows in the inter-bank market. Accordingly, the interest rate race quickly ended, depositors had no demand for shifting their deposits among banks and SBV's interest rate ceiling was rescinded immediately. The SBV then coordinated with the Vietnam Association of Banks for commercial banks to hold dialogue and reach consensus on maximum rates for deposit mobilisation so as to stabilise the inter-bank monetary market.

Besides, the SBV tried to sterilise the adverse impact of its forex intervention on inflation pressure through many ways, such as open market operations, increase of commercial banks' required reserve ratio, sale of central bank bills to commercial banks with diversified maturities from 14 days to 364 days in order to draw money back from circulation.

In February 2008, the SBV issued and required commercial banks to buy central bills with the total value of VND 20,300 billion (equivalent to approximately US\$1.28 billion). Banks had over one month for fund resource preparation. They could even borrow money from SBV to buy adequate central bank's bills as required. Banks operating at rural areas or owing small amount of own capital (less than VND 1000 billion) were not required to buy central bank's bills.

In order to calm down the overheated credit growth and consolidate the soundness of the financial system, the SBV issued comprehensive instructions

and implemented specific measures to monitor and control the scale, quality of banking credit, especially bank lending for high risks areas, such as stock investment and stock trading. Commercial banks were advised to keep credit growth below 30% for the whole year 2008. Under the directive of the central bank issued in July 2007, commercial banks' total outstanding loans for stock investment and stock trading and loans guaranteed by stocks were restricted below 3% of their total outstanding loans. Since February 2008, the banks' total outstanding loans and commercial papers discounted for the purpose of stock investment are not to exceed 20% of their legal capital. Intensive inspection were carried out by the central bank to scrutinise the commercial banks' risky lending activities for consumption, stock, real estate investment and trading or credit guaranteed by stocks, with the purpose to ensure the safety of the banking system in the context of a booming market.

Concurrently while tightening monetary policy to curb inflation, the SBV increased its short-term liquidity support to the banking system through open market operations and other channel of capital funding. Funds were assigned with first priority for development of business, export activities, major national projects and for rural and agricultural development. Money was injected by the SBV on a timely basis into some small banks to help them overcome temporary liquidity difficulties and ensure the stability of the whole system.

4.1.3 Balance of Payment Sustainability

The dramatic increase of capital inflows into the economy accumulated a high capital account surplus for Vietnam, which was the crucial offsetting resource for its huge current account deficit. It helped to improve its overall balance of payment. However, the country's consumption of increasing capital inflows, particularly portfolio investment, also entailed a greater accumulation of its future external debt obligation, putting the economy under more volatile foreign currency positions.

The consumption of greater capital inflows not only pumped more foreign currencies into the economy but also pushed up the aggregate demand of the economy, especially for importing of machines, equipments, raw materials and luxury goods, thus contributing significantly to the country's widened trade deficit and deteriorated Vietnam's balance of payment sustainability. Vietnam's trade deficit suddenly climbed up to US\$14.1 billion for the year 2007, nearly tripling the amount of 2006, and reached the equivalent of 25.7% of its export revenues

for the same period, and continued to swell out to US\$14.8 billion just in the first half of 2008.

Table 7
Vietnam Balance of Payment (2000-2008)

Indicators	2000	2001	2002	2003	2004	2005	2006	2007
Current Account balance (\$billion)	0.6	0.7	-0.7	-1.9	-1.6	-0.5	-0.2	-7.0
Current Account (% GDP)	2.1	2.2	-1.9	-4.9	-3.4	-0.9	-0.3	-9.3
Trade Balance	0.4	0.6	-1.1	-2.6	-2.3	-2.4	-2.8	-10.4
Trade Balance (% GDP)	1.4	1.9	-3.0	-6.7	-4.9	-4.3	-5.1	-13.8
Capital Account Balance (\$billion)	-0.7	-0.3	1.1	4.1	2.4	2.6	4.5	17.5
Net FDI (\$billion)	0.2	0.1	1.6	1.3	1.3	1.4	1.8	6.6
Portfolio Investment						0.9	1.3	6.2
Net External Debt (\$billion)	-1.0	-0.4	-0.5	2.8	1.1	0.3	1.4	2.1
Currencies and Deposit							-1.5	2.6
Overall BOP	0.1	0.2	0.4	2.2	0.8	2.1	4.2	10.1
Gross FX reserves (\$billion end year)	3.0	3.4	3.7	5.6	6.3	8.6	11.5	20.0

(i) Central Bank's Response

The SBV proactively cooperated with other relevant ministries to seek solutions to curb the import increase and encourage exports. On the other hand, the SBV closely monitored developments of capital flows in and out of the country in order to predict fluctuations in the balance of payment. The SBV also actively intervened in the foreign exchange market to buy foreign currencies for building up its international reserve while easing upward pressure on its local currency at the same time.

(ii) Policies Effects

Due to SBV's flexible exchange rate and monetary management, Vietnam's monetary and forex markets as well as exchange rate and interest rate developments were gradually stabilised. The liquidity of the banking system was improved. The inter-bank market overnight lending rate quickly went up. However, these positive developments may coincide with a start of a declining trend in net capital inflows as a consequence of the worsening situation in the global economy and financial markets.

4.2 Implications of a Declining Trend in Capital Inflows for Central Bank Policies and Its Response

4.2.1 Exchange Rate Management Policy

(i) Implications

a. Pressure of Depreciation on Local Currency

Since the second quarter of 2008, Vietnam witnessed a sign of decline in net capital inflows into the economy, mainly in net portfolio inflows. This led to a decreasing supply of foreign currencies available in the economy. Meanwhile, the demand for foreign currencies continued to increase as the trade deficit kept widening until the middle of the year. The VND was facing serious downward pressure in both the official and black markets.

Turning from negative foreign currency positions maintained in the previous period, when the local foreign exchange market was flooded by foreign currencies, the domestic banks were not well prepared for the sudden decline in net portfolio inflows, especially for the demand of short-term capital withdrawal out of the country. Hence, banks encountered a shortage of foreign currencies to meet the demand of importers and short-term foreign investors who wanted to convert their funds into foreign currencies to transfer home. The local currency was, therefore, under depreciation pressure.

Consequently, the exchange rate escalated to exceed 19.000 VND/US dollar in the black market while the SBV's reference rate was still at 16.500 VND/US dollar, followed by the quoted trading exchange rate of commercial banks to be kept at around 16.800 VND/US dollar as bounded by the controlled trading band of 1%. Meanwhile, the 1-year forward exchange rate of US dollar/VND in VND's overseas NDF market mounted up to 23.000 VND/US dollar.

Most of the economy's important demand of foreign currencies relied on the supply of the central bank. Trading volumes in foreign exchange market dropped dramatically both in inter-bank and retail market.

The SBV was once again facing serious difficulties in maintaining the stability in the foreign exchange market, but this time to protect the local currency from strong depreciation while preserving their foreign exchange reserve. This situation was not only the result of net portfolio investment decline but also of speculative activities in the foreign exchange market.

(ii) Response

The SBV continued implementing flexible exchange rate policies through flexible adjustment of exchange rate levels and trading bands as well as intensive foreign exchange intervention.

a. Exchange Rate Downward Adjustment

In parallel with selling US dollar into the market to improve its foreign exchange liquidity, the SBV proactively adjusted its reference exchange rate upward gradually in alignment with market developments. Specifically, the SBV's reference rate were strongly adjusted upward twice by 2% and 3%, respectively, in June and in December 2008 in order to better reflect the balance between demand and supply in inter-bank foreign exchange market. Around the same time, the controlled trading band was also widened from $\pm 1\%$ to $\pm 2\%$ to give more room for commercial banks to adjust their trading rates in accordance with market fluctuations. Besides, the depreciation of VND was also aimed at export promotion in the context of the global economic recession.

After each adjustment, the SBV's reference exchange rate was maintained relatively stable to signal the market about a period of stabilisation. On the other hand, the central bank tightened its supervision to request commercial banks to comply with the official trading band, fix the cross-exchange rate with the third currencies based on the US dollar/VND exchange rate, and not to add fee to raise the actual traded exchange rates.

Table 8
SBV's Exchange Rate Adjustment

Time of Adjustment	Permitted Trading Band (against IWAER)
25/2/1999	+ 0.1%
1/7/2002	± 0.25%
2/1/2007	± 0.5%
25/12/2007	± 0.75%
10/3/2008	± 1%
11/6/2008	± 1 %; increase IWAER by 2% (322 d/USD) for one time from 16139 -> 16461
27/6/2008	± 2%
07/11/2008	± 3%
24/12/2008	± 3% and increase IWAER by 3% from 16494 -> 16989

b. Intensive Foreign Exchange Intervention

The SBV aggressively intervened to stabilise the domestic foreign exchange market and defended its exchange rate regime by selling foreign currencies to commercial banks, thus reducing the imbalance between the demand and supply of foreign currencies and improving the market's foreign currency liquidity. Besides, the SBV continued to closely monitor commercial banks' daily net open position and used it as a basis for intervention consideration.

4.2.2 Monetary Management Policy

(i) Implications

The decline of net portfolio capital inflows into Vietnam impacted on the Vietnamese stock and real estate markets in two significant ways. Firstly, it led directly to a decrease in the total trading volume of the stock market, which used to rely considerably on the purchasing power of foreign investors. Secondly, it badly affected the sentiment of local investors in the stock and real estate markets.

The sharp fall of stock and real estate prices created great difficulties both for sectors in raising funds for their business operations and for the Government

in implementation of its schedule for state-owned enterprise equitisation. It exacerbated the adverse impact of the on-going tightening monetary policy on economic growth.

The massive sale of government bonds by foreign investors, on the one hand, created some disorder in the domestic monetary market and created pressure on the local currency in the foreign exchange market. On the other hand, it brought about opportunities for the local banks to buy government bonds at a low price, improving their balance sheets, increasing instruments for them to participate in open market operations with the central bank.

(ii) Response

In order to cope with the potential threats and adverse impact arising from uncertainties in the global financial market, recession in the world's economy and the threat of capital flight, the SBV proactively implemented comprehensive measures to consolidate the banking system, facilitate major economic activities and promote exporting industries. It adopted flexible but prudent monetary policy to maintain its primary objective of inflation control. Besides, the SBV proactively took prudent measures for controlling the pace and quality of credit growth as well as in tightening the prudential regulations for banks.

Since the fourth quarter of 2008 when the monthly CPI index showed signs of declining, the SBV started to gradually loosen its monetary policy to promote lending activities to stimulate economic growth in the context of global economic recession and drastic fluctuations in the world's capital market.

Within a period of three months from late October 2008 to January 2009, the SBV cut its target interest rates six times from 14% to 7% as applied to the base rate, from 13% to 6% as applied to the discounting rate, and from 15% to 8% as applied to the refinancing rate.

The reserve requirement ratio was lowered and lowered while the interest rate paid on the mandatory local currency reserve of commercial banks maintained with the central bank was raised from 1.2% to 3.6% (29/8/2008), 5% (24/9/2008), and then to 10% recently. The SBV also hiked the interest rates paid to the central bank's obligatory bills held by commercial banks to encourage commercial banks to lower their lending rates. The SBV also allowed commercial banks to use their holding of central bank's obligatory bills to participate in transactions of refinancing or clearing before expiration.

All these measures of the SBV were aimed at stimulating improvement in the capability of the banking system in capital mobilisation and credit extension, thus increasing liquidity, maintaining the sustainability of the system and contributing to domestic investment and economic growth stimulation. Furthermore, the Vietnamese Government and SBV resolved to apply a special policy of interest rate subsidy to facilitate individuals and institutions in maintaining and developing their production and business activities in the context of the global economic recession.

Additionally, a new set of policies were adopted to counteract the recession of the stock market and encourage the resilience of domestic investors in order to reduce the impact of foreign capital in the development of this important capital market.

4.2.3 Balance of Payment Sustainability

(i) Implications

The sudden decline in net portfolio inflows necessitated strong intervention by the SBV to stabilise the domestic foreign exchange market and protect the value of its local currency. The decline in net capital portfolio inflows directly impacted in lowering Vietnam's capital account surplus, contributing to a sharp deterioration in its overall balance of payment from a high surplus of US\$10.2 billion in 2007 down to \$0.5 billion in the first half of 2008.

(ii) Response

In order to maintain the soundness of Vietnam's balance of payment, the SBV actively cooperated with the other relevant ministries to implement comprehensive measures to curb inflation, promote exports and preserve its international reserve. The SBV established a new, fast daily reporting system through the commercial banks to monitor the movement of foreign portfolio investment.

Besides, various steps were taken by the SBV to improve its communication to the public. Foreign exchange reserves and monetary data was published and updated frequently on mass media. Weekly statements on monetary and banking operations were posted on SBV's Vietnamese and newly launched English-language websites. Regular press conferences and interviews were held by the central bank leaders to communicate the central bank's stance and new policy decisions regarding monetary and exchange rate policy. These moves of the

SBV has helped to bolster the confidence not only of the local people but also of foreign investors on the transparency, consistency of central bank policies and the stability of the banking system. The timely release of international reserve data, published the time first-ever, helped to allay the ungrounded concern of a sharp fall in Vietnam's international reserves that might lead to a potential crisis in its balance of payment.

4.3 Implications of Capital Flows Fluctuations for Central Bank Policies and Its Response

(i) Implications

The flexible movement of capital flows, especially portfolio investment, has increased the volatility of the forex market and the vulnerability of the financial and banking system.

As portfolio investment is usually of a short-term and volatile nature, it is also called hot money. It can flow in and out of the country very rapidly in response to changing conditions in the global and domestic economies and in the financial market. The flexible movement of short-term capital flows subjected the forex market to many unpredictable mini-shocks, continuously generating short-term shortage of demand or supply of foreign currencies and segmenting the forex market, thus creating difficulties for exchange rate and monetary policies and threatening the sustainability of domestic banking system.

(ii) Response

In order to protect the domestic economy and financial market from the adverse effects of the increasing flexible capital flows, the SBV enhanced its supervision and inspection over the money market and set up a fast reporting system to provide for appropriate market assessment and timely intervention. It gradually overhauled its banking supervision approach and reformed the structure and institutional framework of financial supervision. A specialised and dedicated Banking Supervision Agency and National Committee of Finance Supervision were established.

Additionally, the SBV took comprehensive measures to improve the liquidity of commercial banks both in VND and in foreign currency, and strengthened the resilience of the banking system to withstand the increasing fluctuation of international capital flows. The measures include:

- Enhancing controls for credit risk, especially credit extension for investment in securities and real estate.
- Promoting privatisation of state-owned commercial banks with a view to strengthening their financial capacity and improving their banking management capability.
- Modifying the regulations on the issuance of licenses for the establishment and operation of joint-stock commercial banks and foreign banks.
- Modifying the principles of loan classifications and setting detailed limitations on financial investment by credit institutions: Under the requirement of the SBV, by the year 2008, commercial banks were required to build internal credit-rating systems to facilitate their loan classification and credit quality management.
- Strengthening the financial capability of the banking system by setting out and implementing the following agenda of increasing the regulatory capital applicable for banks in accordance with the directive of the Prime Minister:

Table 9
Regulatory Capital Applicable for Various Types of Banks in Vietnam

No.	Type of credit institutions	2008	2010
1.	State-owned commercial banks	VND 3000 billion	VND 3000 billion
2.	Joint stock commercial banks	VND 1000 billion	VND 3000 billion
3.	Joint-venture banks	VND 1000 billion	VND 3000 billion
4.	100% foreign-owned banks	VND 1000 billion	VND 3000 billion
5.	Foreign bank branches	\$ 15 million	\$ 15 million
6.	Investment Banks	VND 3.000 billion	VND 3000 billion
7.	Development Banks	VND 5.000 billion	VND 5000 billion
8.	Cooperative Banks	VND 1.000 billion	VND 3000 billion
9.	Finance Companies	VND 300 billion	VND 500 billion
10.	Finance Leasing Companies	VND 100 billion	VND 150 billion

(Reference Exchange Rate: 1 US\$ = VND 16.900)

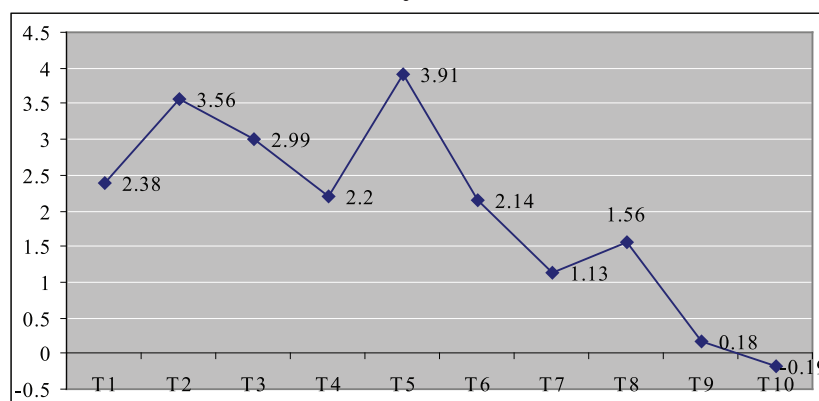
(iii) Policy Effects

Thanks to the appropriately flexible and prudent management of exchange rate, monetary policies and banking supervision enhancement made by the SBV, the Vietnamese economy quickly overcame the macroeconomic uncertainties.

Despite the adverse impact of the global economic recession and financial crisis and of the domestic macroeconomic uncertainties, Vietnam achieved a GDP growth rate of 7.4% in the first quarter of 2008. It recorded GDP growth of 6.3% for the whole year of 2008, a growth rate though lower than the previous year but still higher than that of many countries in the region and in the world.

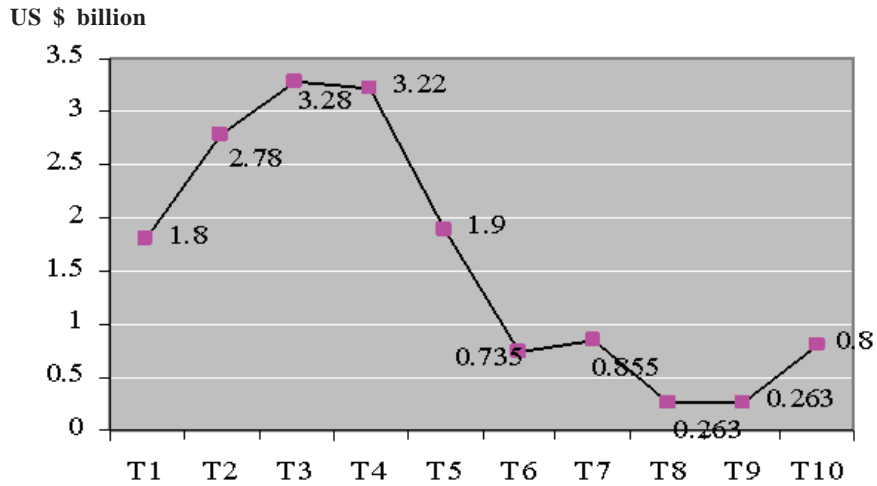
The SBV was successful in controlling inflation. The monthly CPI index was lowered to below 2% since July 2008, and turned marginally negative in October 2008. Inflation rate was 19.89% for the whole year 2008 in comparison with 2007.

Figure 11
Vietnam's Monthly CPI index in 2008



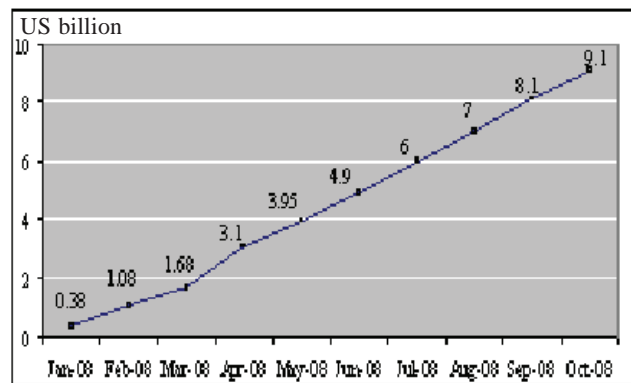
The trade deficit was gradually reduced and maintained under control. It remained below US\$1 billion since June 2008, and totalled US\$17.5 billion for the whole year of 2008. The overall balance of payment was slightly positive.

Figure 12
Vietnam's Monthly Trade Deficit in 2008



FDI inflows still increased to a record level attaining the registered amount of US\$59.36 billion in the ten months of 2008, of which US\$9.1 billion was realised . FDI inflows increased 38.3% against the same period of the previous year. This is evidence to show that foreign investors are still confident in the medium and long-term prospects of the Vietnamese economy.

Figure 13
Disbursement of FDI in Vietnam in 2008



The financial and banking system quickly consolidated both in scale and in depth, liquidity and solvency were maintained during the most volatile periods of capital flows fluctuations. Despite the fact that the international banking system is still struggling with liquidity problem, the Vietnam banking system was kept stable and safe without any bankruptcy or bank failures. The NLP ratio was about 3% of outstanding loans; the capital adequacy ratio was better than the previous year and nearly 10%. Money was injected by the SBV into some small banks which faced a liquidity shortage to restore their liquidity. The deposit and lending interest rate were quickly reduced both in wholesale and retail markets.

The commercial banks consolidated their internal inspection and audit control systems, enhancing internal monitoring. They adopted more prudent procedures in regard of loan evaluation and assessment. Credit quality as well as banks' corporate governance and management capability improved significantly.

The local foreign exchange market was quickly stabilised after each mini-shock in the supply or demand of foreign currencies due to capital inflow fluctuations. The exchange rate of US dollar/VND became quite stable around 17000 both in the official and parallel market. The differential between the exchange rate in the official and parallel market was insignificant.

With a fluctuation of over 9% of VND exchange rate in both ways (appreciating and depreciating) for the whole year of 2008, Vietnam's exchange rate policy was progressively more flexible but still under management. The SBV was quite successful in its innovative forex intervention strategy to stabilise the exchange rate and foreign exchange market. Though the intervention volumes were great during the years of 2007 and 2008, they did not deteriorate the national foreign exchange reserve, thanks to the SBV's appropriate management of reserve, buying in when market was over-supplied with foreign currencies and selling out when market was in shortage of foreign currencies. Confidence in the value of the VND and Vietnam's economic prospects was restored and strengthened.

5. Conclusion

Together with a fully liberalised current account, Vietnam removed many restrictions on its capital account, taking significant steps towards a liberalised capital account. Since its issuance of the first Law on Foreign Investment in 1988, Vietnam continuously amended and issued many relevant legal documents to create a transparent and favorable legal framework to encourage foreign investment, especially FDI into the country. Apart from some regulations limiting

the maximum level of participation of foreign investors in Vietnam's companies or in some special areas, Vietnam's Government does not impose any restrictions on capital inflows or withdrawals.

With its liberalised trade policies and a quite open capital account, Vietnam is well integrated into the world economy. Being a member of the AFTA, APEC and, most recently, the WTO, Vietnam has emerged as an attractive destination for global investors, especially in the period of 2006-2007, attracting an increasingly significant amount of foreign investment contributing to its economic development.

Since 1995 until now, Vietnam's capital account surplus has been rising (except 2000), of which, FDI is always the main part (except the year 2003). This is the advantage of Vietnam in maintaining a healthy capital structure, facilitating its sustainable economic development. However, the sudden surge of portfolio investment inflows into Vietnam since 2005 and their fluctuations trending downwards during 2008 are noteworthy and necessitated an appropriate policy response as it raised the proportion of short-term and volatile capital in Vietnam's capital structure.

Alongside the great opportunities for economic growth and market development that can be reaped from strong capital inflows, the increasing flexibility of capital flows in and out of the country posed tough challenges to the SBV. The greatest challenge may be the problem of the 'impossible trinity', which was clearly manifested in the difficulties of the SBV in maintaining the desired exchange rate stability and monetary autonomy under the impact of strong fluctuations in capital flows.

The mounting supply of foreign currencies that resulted from high capital inflows not only exacerbated the dollarisation in the economy, but also increased the total broad money, leading to inflation hike, overheated credit growth, price bubble in real estate and stock markets, making central bank's tasks in managing monetary policies more complicated.

The volatility of capital flows, especially portfolio investment, created instability in the domestic forex market by causing continuous shifts between short-term surplus and shortage of foreign currency supply and exerting upward and downward pressure on the local currency exchange rate. This not only made things more complicated for the central bank in the formulation and management of its monetary and exchange rate policies, but it also increased the volatility of the forex market and tested the soundness of the domestic financial and banking system.

The strong capital inflows, on the one hand, built up a high surplus in Vietnam's capital account, thereby serving as a crucial resource for its balance of payment improvement and facilitating its international reserve consolidation. On the other hand, they pushed up the demand for imports, thus deteriorating its trade balance.

In order to cope with the side-effects of the increasingly volatile capital flows, the SBV adopted flexible exchange rate policies, tightened monetary policies for inflation control and initiated comprehensive measures to improve the liquidity of commercial banks and enhance the central bank's supervision over the money market and banking system. Developments of capital flows in and out the country are subject to close surveillance by the SBV to prepare for any fluctuations in the balance of payment.

Due to the appropriate and timely response of the SBV, the Vietnamese economy rapidly surmounted the macroeconomic uncertainties. The economy grew by 6.3% in 2008 in spite of the adverse impact of the world's economic recession and the global financial crisis. Inflation was successfully controlled and the trade deficit was narrowed. FDI inflows still increased to reach a record level with the registered amount of US\$ 59.36 billion in the first ten months of 2008.

The financial and banking system consolidated rapidly both in scale and in depth, and liquidity and solvency were maintained during the most volatile periods of capital flow fluctuations. The commercial banks raised their working capital, consolidated their internal inspection and audit control systems, enhancing internal monitoring. They adopted prudential procedures in respect of loan evaluation and assessment. As a result, credit quality as well as the banks' corporate governance improved significantly. The local foreign exchange market stabilised quickly after each mini-shock in supply or demand of foreign currencies. Confidence in the value of VND and in the outlook of Vietnam's economic prospects was restored and strengthened.

Since the last quarter of 2008, Vietnam's economy was starting to be affected by the worsening global economic and financial situation. In this context, the SBV, once again, showed its promptness and flexibility when it proactively made a big policy shift from a tightened to a prudently loosened monetary policy and implemented comprehensive measures to stimulate demand and facilitate economic growth. Appropriate and massive measures were taken in a timely manner to mitigate the adverse effects of the external environment on the domestic economy.

The lesson of experience of Vietnam teaches us that the capital account liberalisation should be conducted in a gradual and orderly manner in alignment with a strengthened banking system and a flexible exchange rate mechanism. The macroeconomic policy adjustments should be carried out in a consistent and timely manner to help strengthen the sustainability of the financial system and promote confidence in the local currency, and to act as a cushion for unpredictable fluctuations in capital flows. The banking supervision and internal controls need to be further strengthened to prevent banks from taking risky or volatile positions. The quality and timeliness of the banks' reporting systems should be enhanced and the early warning system, both at the macro and microeconomic levels, should be quickly established to trace and prepare for any signals of instability.

While further efforts should be made to improve the trade balance so as to minimise the vulnerability of overall balance of payment to capital flight, a set of technical measures may be established to exercise indirect and effective control on hot money flows. Additionally, an effective and intensive public communication strategy can make a significant contribution to bolster public and investor confidence. The central bank's stance on monetary and exchange rate policy should be made more transparent to the public, which will help to protect the markets from psychological shocks. The public is to be made aware about the objectives and implications of macroeconomic policy adjustments to create consistent incentives for economic development.

According to the assessment of the world's leading financial institutions, such as the World Bank, the IMF, etc., in spite of the inevitable adverse impact of the global economic recession, Vietnam's economic prospects shine bright in the medium-term. Vietnam remains an attractive destination for global investors. Effective capital flow management is a tough, but critical task for Vietnam. It is a vital challenge for the country to meet, now and in the near future, if it is to get the most benefit from further integration and from globalisation of the international capital market, while minimising the side-effects.

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