

# **EAST ASIAN EXPERIENCES AND POLICY LESSONS IN MANAGING CAPITAL FLOWS**

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## 1. Introduction

Capital inflows provide emerging market economies with invaluable benefits in pursuing economic development and growth by enabling them to finance investment, smooth consumption, diversify risks, and expand economic opportunities. However, large capital inflows, if not managed properly, can expose capital-recipient countries to at least three types of risks (Kawai and Takagi, 2008). The first is macroeconomic risk. Capital inflows could accelerate the growth of domestic credit, create economic overheating including inflation, and cause the real exchange rate to appreciate, thus affecting macroeconomic performance in a way not consistent or compatible with domestic policy objectives such as sustainable economic growth with price stability. The second is risk of financial instability. 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. The third is risk of capital flow reversal. Capital inflows could stop suddenly or even reverse themselves within a short period, resulting in depleted reserves or sharp currency depreciation. About 15% of the large capital inflow episodes over the past 20 years ended in crisis, with emerging Asia experiencing proportionately more episodes of hard landings (Schadler, 2008). The most devastating of these episodes occurred in 1997–98. This stresses the point that emerging Asian economies need to manage these risks well so that they can enjoy the benefits of capital inflows.

Up until the subprime mortgage crisis, Asian economies had experienced surges in capital inflows. Then, the world economic condition has suddenly changed in the past year. The US subprime loan crisis that erupted in August 2007 has begun to affect the US financial system, its real economic activity and global financial and economic conditions. Economic prospects in Japan and Europe are uncertain. The financial ripples—which originated in the housing sector, securitized mortgage loans and the capital market in the US and the associated balance sheet losses of banks in the industrialized world—continue to darken the global economic outlook. Partly reflecting the renewed weakness of the US dollar and a flight to safety amid ongoing financial turmoil, oil prices broke new records at close to \$140 (now hovering around \$105) per barrel, and prices of major non-oil commodities—food in particular—have also surged to record high levels. While capital inflows in Asian economies have slowed, authorities now must have to deal with rising inflation brought about by the hikes in commodity prices and the prospects of economic slowdown in the US and other industrialized economy. However, once the global economic turmoil subsides and inflation under control, Asia, which is expected to perform better than other regions in the world, will likely experience again surges in capital inflows. Now is the most opportune time for emerging Asian economies to put in place measures to manage risks arising from such future surges.

The rest of the paper is organized as follows. Section 2 reviews some characteristics of East Asian economies. Section 3 discusses the degree of openness of selected emerging Asian economies. Section 4 presents patterns of capital flows in East Asian economies. Section 5 provides an analysis of the impacts of capital flows. An analytical model was estimated to examine the impact of capital inflows on key economic variables in India. Section 6 summarizes policy responses of emerging Asian economies to surges in capital inflows. The last section discusses policy issues and policy recommendations.

## 2. Economic Characteristics of Selected Emerging Asian Economies

Although crisis-affected Asian economies have quickly recovered from the 1997-98 financial crisis, their average growth rates are lower than what they had achieved before the crisis (Table 1). Spared from the crisis, the PRC, Viet Nam, India and Cambodia continue to post high growth rates and appear to be the fastest growing economies in the region in the post-crisis period.

Most economies in the region also showed strong increases in the trade sector (Figure 1). Exports in the region have increased since the Asian crisis due to the rapid currency depreciation after the crisis and strong global demands for Asian products. In contrast to the years before the crisis, all economies in the region except Viet Nam, India, Cambodia and Lao PDR had recently experienced current account surpluses.

One unhealthy development though is the dramatic fall in investment ratios of crisis-affected economies after the financial crisis. The Asian crisis significantly depressed private investment demand in these economies, with Korea, Malaysia, and Thailand showing the most severe declines in investments. So far, there is no clear sign of investment ratios in these countries returning to their pre-crisis levels. In contrast, the investment ratios of the PRC, Cambodia, Lao PDR, India and Viet Nam had been increasing through the years.

**Table 1: GDP Growth Rates, Current Account Balance and Investment Ratios**

	<i>GDP growth</i> (in %)			<i>Current account</i> (as % of GDP)			<i>Investment ratio</i> (as % of GDP)		
	1990- 1996	2000- 2005	2000- 2007	1990- 1996	2000- 2005	2000- 2007	1990- 1996	2000- 2005	2000- 2007
<b>CAM</b>	5.8	9.2	10.5	-5.0	-3.8	-5.3	10.8	18.2	19.3
<b>PRC</b>	10.7	9.4	10.7	1.1	3.1	10.2	31.2	37.7	37.3
<b>HKG</b>	4.9	5.2	6.3		8.1	12.7	28.2	23.0	20.9
<b>IND</b>	5.6	6.5	9.0	-1.3	0.2	-1.2	22.6	24.8	32.1
<b>INO</b>	8.0	4.7	5.9	-2.5	2.8	2.6	27.9	20.6	24.4
<b>JPN</b>	2.2	1.6	2.2	2.3	3.0	4.4	30.0	23.6	23.4
<b>KOR</b>	7.9	5.2	5.0	-1.6	2.2	0.7	37.3	29.7	28.9
<b>LAO</b>	6.5	6.2	7.9	-14.3	-2.6			28.5	32.5
<b>MAL</b>	9.5	5.2	6.1	-5.5	10.8	15.9	38.7	22.9	21.4
<b>MYA</b>	5.5	9.2	6.3	-0.6	0.0		13.0		
<b>PHI</b>	2.8	4.7	6.4	-4.0	-0.2	4.5	22.4	17.3	14.0
<b>SIN</b>	8.8	5.1	8.6	12.4	18.0	25.9	34.4	26.1	24.0
<b>TAP</b>	6.9	4.5	5.1		6.9	7.5		19.9	21.2
<b>THA</b>	8.6	5.0	5.0	-7.0	2.7	3.6	40.4	24.5	27.7
<b>VIE</b>	7.9	7.4	8.3	-8.9	-1.2	-1.7	20.2	31.3	35.2

Notes

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*GDP growth - averages for annual real GDP changes*

Investment ratio - averages for annual shares of Gross Fixed Capital Formation in GDP

Current account - averages for annual Current Account to GDP ratios

PRC GDP growth rates: data up to 2006

PRC investment ratios: data up to 2007

VIE - investment ratios: data up to 2005

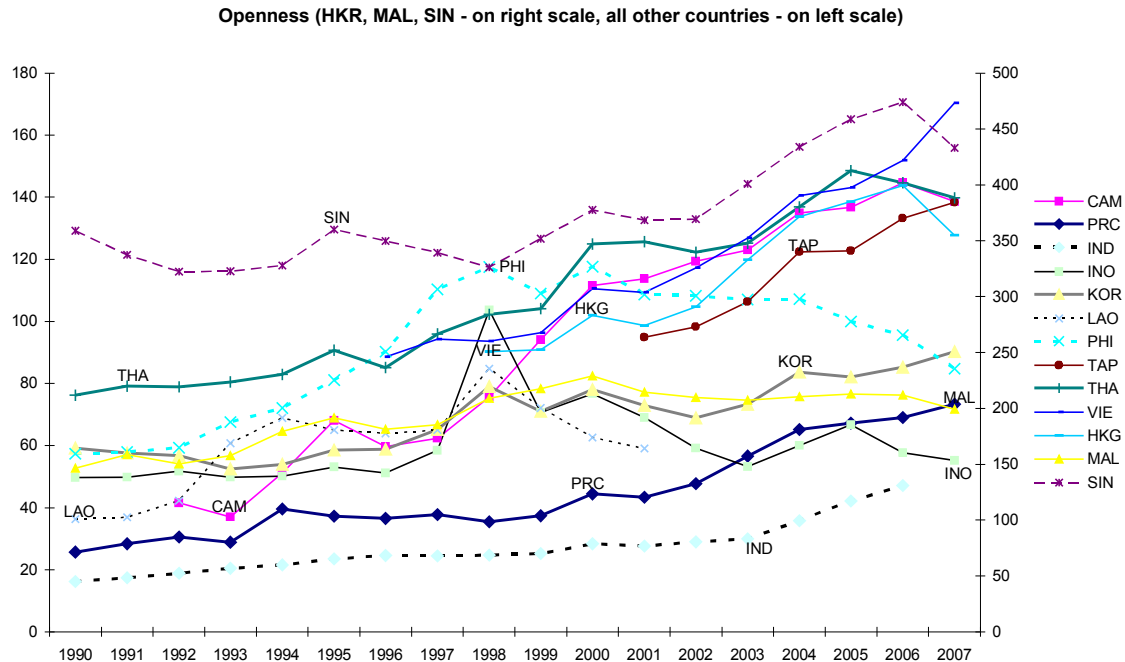
PRC, IND, KOR, THA - current account balances: data up to 2006

VIE - current account: data is not available for 1991-1994

CAM = Cambodia; PRC = People's Republic of China; HKG = Hong Kong, China; IND = India; INO = Indonesia; JPN = Japan; KOR = Korea; LAO = Lao PDR; MAL = Malaysia; MYA = Myanmar; PHI = Philippines; SIN = Singapore; TAP = Taipei, China; THA = Thailand; VIE = Viet Nam.

Sources: International Monetary Fund, International Financial Statistics (various years); World Bank, World Development Report (various years); and published national statistics by the countries included in the table.

**Figure 1: Ratio of Total Exports and Imports of Goods and Services to GDP (in %)**



Note: See Table 1 note for economy isocodes.

Sources: International Financial Statistics (IMF), national statistics.

### 3. Openness of the Capital Account

Asian economies have been opening up their economies to integrate themselves into the global economy. They have done this by eliminating or easing the restrictions and controls they have imposed on current and capital account transactions. In this section, we focus on determining the degree of the openness of the emerging Asian economies' capital accounts using both *de jure* measurement based on information reported by the International Monetary Fund (IMF) in its *Annual Report on Exchange Arrangements and Exchange Restrictions (AREAER)*, 2007 and *de facto* measurement.

The IMF classifies controls on capital transactions into the following:

- a. Controls on:
  - (1) capital market securities
  - (2) money market instruments
  - (3) collective investment securities
  - (4) derivatives and other instruments
  - (5) commercial credits
  - (6) financial credits
  - (7) guarantees, sureties, and financial backup facilities
  - (8) direct investment
  - (9) liquidation of direct investment
  - (10) real estate transactions
  - (11) personal capital transactions
- b. Provisions specific to:
  - (12) commercial banks and other credit institutions
  - (13) institutional investors

It is to be noted that the types and intensity of capital controls vary depending on the direction of capital flows (i.e., inflows and outflows) and the type of capital account transactions.

All countries have certain types of controls on capital market securities, financial credits and real estate transactions. On capital market securities, for example, Korea allows foreign investors to freely purchase shares issued by Korean companies. However, acquisitions of shares exceeding certain ratios of designated public sector utilities in the process of privatization are limited by the relevant laws. In Thailand, nonresidents may invest in Thai security companies subject to the limitation that foreign investors may not exceed 50 percent of nonvoting depository receipts. In Singapore, there are no restrictions on sale and issue of bonds or other debt securities locally by nonresidents. However, nonresident financial entities must convert Singapore dollar proceeds obtained from Singapore dollar loans (exceeding S\$5 million), equity listings, or bond issuance into foreign currency before using them to finance activities outside Singapore. This is aimed at preventing the internationalization of the Singapore dollar. In the case of financial credits to residents from nonresidents, Korea requires financial credits up to the equivalent of \$30 million<sup>1</sup> notification to foreign exchange banks. Other credits exceeding \$30 million require notification to the Ministry of Finance and Economy (MOFE). In the case of the Philippines, private sector borrowing may be freely conducted provided there is no guarantee from the government sector and the domestic banking system, and payments are funded with domestic banking system resources.

All countries have provisions specific to the commercial banks and other credit institutions. An example of provisions specific to commercial banks and other credit institutions is the differential treatment of deposit accounts in foreign exchange in terms of reserve requirement. The reserve requirement ratio, however, varies from country to country.

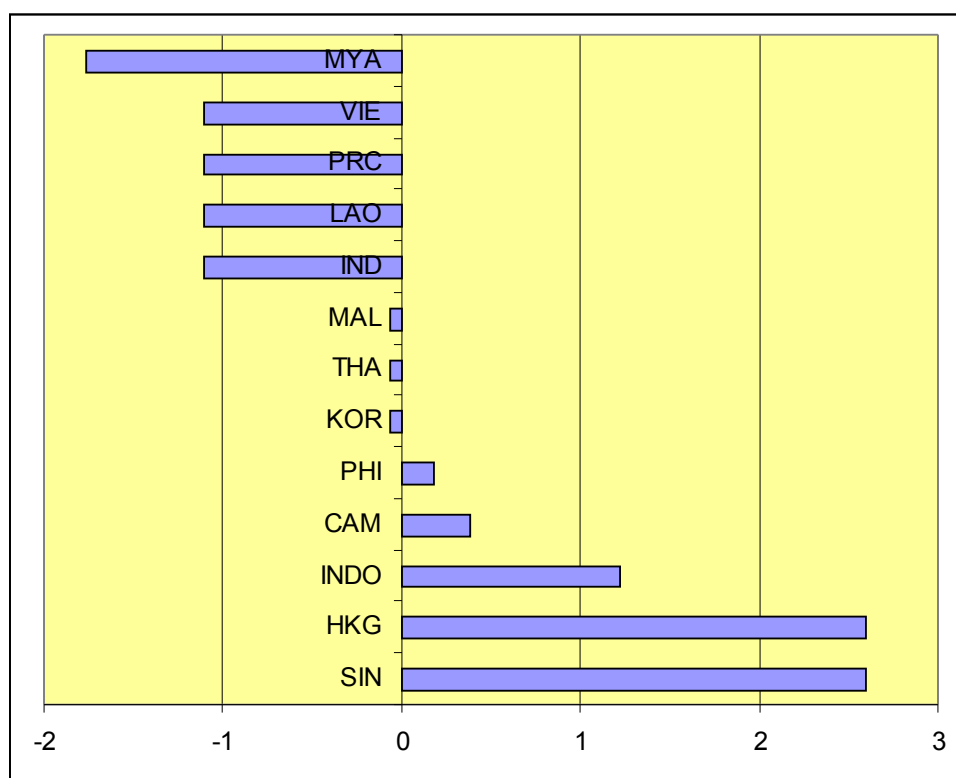
The examples discussed above are meant to emphasize the point that the type and intensity of controls on specific capital account transactions and the direction of capital

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<sup>1</sup> In this paper, \$ refers to US dollars unless otherwise specified.

flows considerably vary from country to country. This may make it difficult to make an accurate comparison of the degree of capital openness across countries. This should serve as a caveat to our attempt in making such comparison by following the IMF's dichotomous measure of capital controls. That is, regardless of the type and intensity of a specific capital control, countries are treated similarly if they impose certain controls on specific capital account transactions. Chinn and Ito (2007) have attempted to construct an index that would measure the extent of financial openness of a country using data from *AREAER*. A higher value of the index indicates greater financial openness. As shown in Figure 2, Hong Kong, China and Singapore rank first in terms of financial openness. At the other extreme are Myanmar, Viet Nam, PRC, Lao PDR and India.

**Figure 2: Degree of the Openness of the Capital Account**

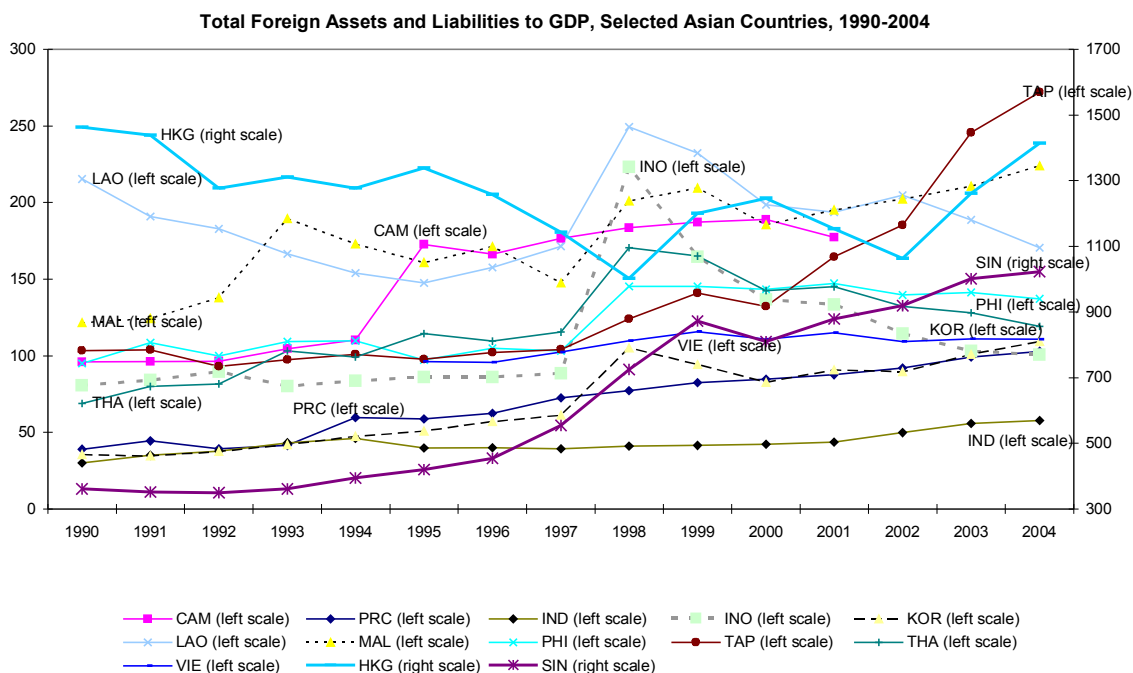


Source: Chinn and Ito (2007)

As mentioned, the *de jure* approach in measuring the degree of the capital account openness of the nine countries has certain limitations which may not reflect the real situation. *De facto*, the nine countries may have more open capital accounts and are therefore more integrated with the international financial system. Lane and Milesi-Ferretti (2006) have developed a volume-based measure of international financial integration, defined as the ratio of the sum of stock of assets and liabilities to GDP, and compiled data for several countries over the period 1970-2004. Figure 3 shows the evolution of this ratio for the nine countries from 1990 to 2004. The ratio has been generally rising for all countries. At the bottom rung are the PRC, Viet Nam and India, the same countries that are found to be least open *de jure*. However, the two transition economies were catching up fast with the other countries. Although India's ratio of total foreign assets and liabilities to GDP had remained low and flat for many years, it had started to increase

since 2002. All this suggests that *de facto* Asian economies have much more open capital accounts and that the degree of their international financial integration has been increasing especially after 1997.

**Figure 3: Ratio of the Stock of Assets and Liabilities to GDP (in percent)**



Note: See Table 1 note for economy isocodes.

Source: Lane and Milesi-Ferretti (2006).

## 4. Patterns of Capital Flows

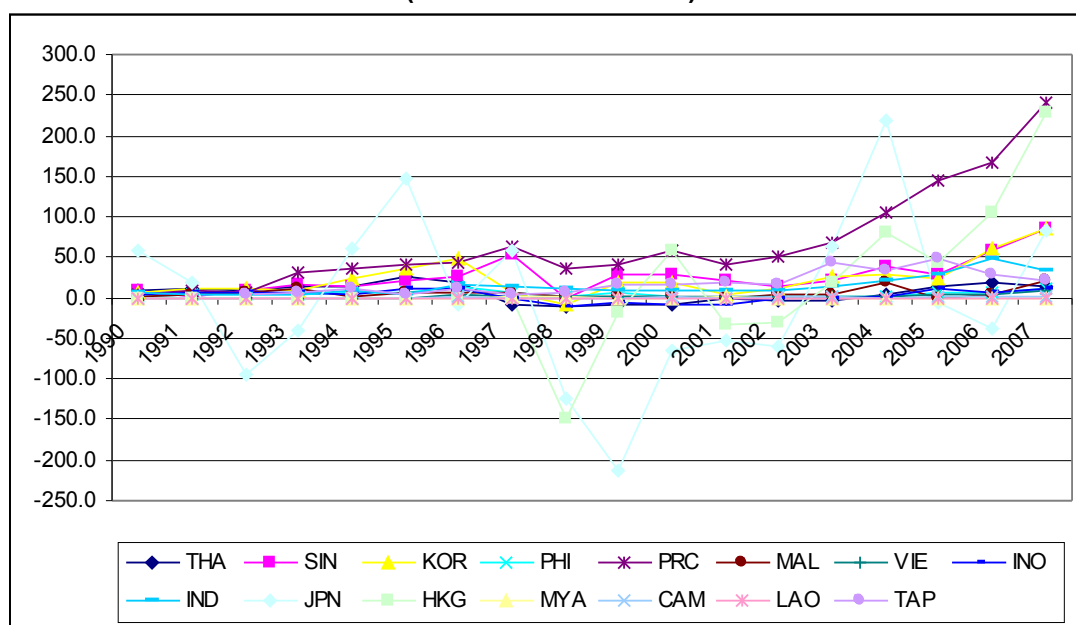
For the last three decades, cross-border capital flows among economies have increased significantly. Profit-seeking activities and diversification of risks by domestic and multinational financial institutions as well as capital account liberalization undertaken by many emerging economies contributed significantly to increasing cross-border capital flows. Since the 1990s, capital inflows on a global scale started to take on diverse forms, as investors from advanced economies diversified their assets internationally. Cross-border capital flows in general grew rapidly because institutional investors began to show a high tendency to structure diversified portfolios to lower risks in their international portfolios. In addition, the development of information and communication technology has made possible global investment and has broadened opportunities for investors to manage risks through investment in diversified financial assets across various countries.

Asian economies have experienced a resurgence in capital flows since the crisis. The total capital inflows and outflows of the emerging Asian economies, excluding Japan and Hong Kong, reached a record high of \$1,013 billion in 2007. In relation to GDP, total capital flows in these Asian economies also increased to 15.2 percent in 2006, surpassing the previous peak of about 11.5 percent in 1997. Even though more than half of net capital inflows to emerging market economies went to transition economies of

eastern and central Europe, emerging Asia's share has increased recently while flows to Latin America have remained weak. Net capital inflows for thirteen Asian economies recorded \$59 billion in 2007, which is less than 1 percent of their combined GDP.

Capital inflows in emerging Asian economies have increased since 2001 as global liquidity started to increase. Total capital inflows reached \$532 billion in 2007 (Figure 4). The PRC's capital inflows dramatically increased in recent years, reaching \$241 billion in 2007, which is 45 percent of total capital inflows in emerging Asia. India's capital inflows also increased rapidly from \$8.4 billion in 2000 to \$47.5 billion in 2006 but declined to \$33 billion in 2007.

**Figure 4: Capital Inflows in East Asia  
(in billion US dollars)**

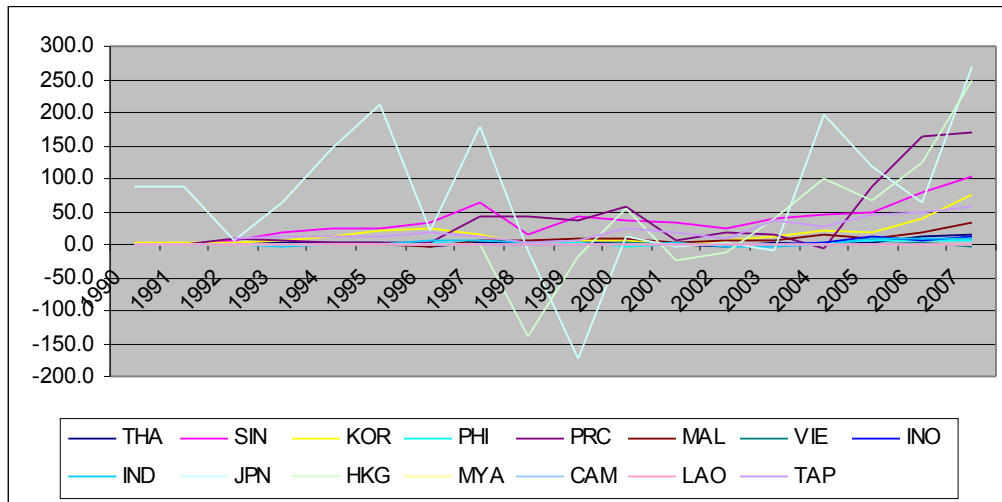


Note: See Table 1 note for economy isocodes.  
Sources: Balance of Payments Statistics (IMF), World Development Indicators (WB).

Total capital outflows in emerging Asian economies have also recently increased, reaching \$481 billion in 2007. The PRC's capital outflows of \$171 billion accounted for 36 percent of total outflows in these economies in 2007, followed by Singapore and Korea (Figure 5). Countries with more capital outflows are seeking more risk diversification for their domestic savings.



**Figure 5: Capital Outflows in Emerging Asia  
(in billion US dollars)**



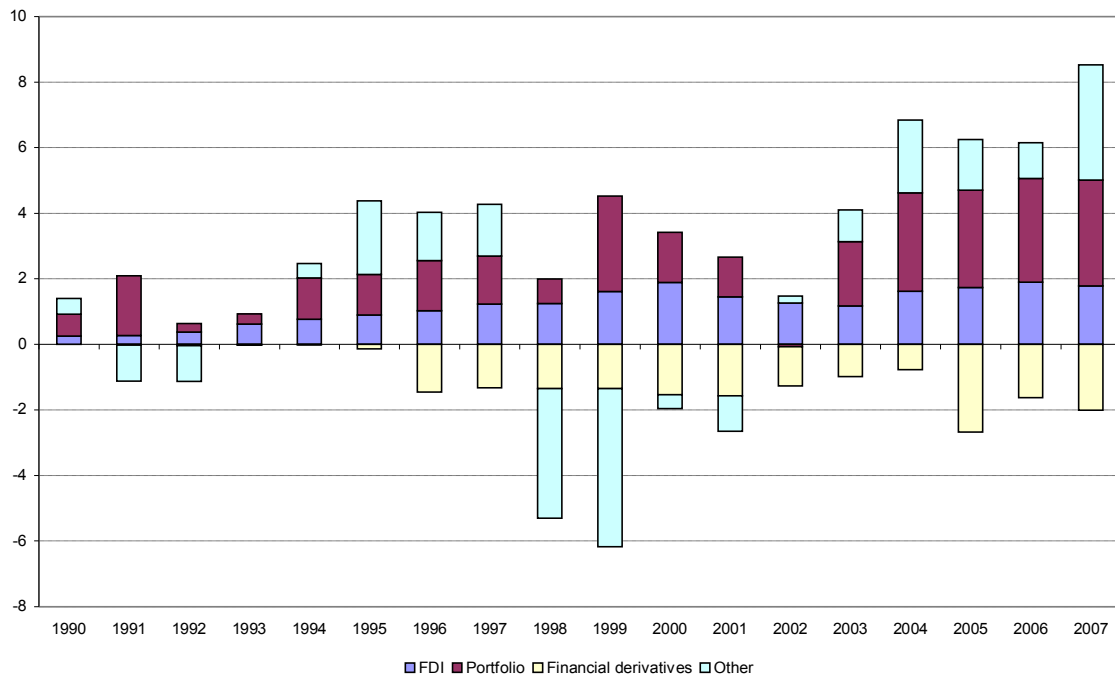
Note: See Table 1 note for economy isocodes.

Sources: Balance of Payments Statistics (IMF), World Development Indicators (WB).

Turning to the composition of capital inflows, foreign direct investment (FDI) is known to be a more stable source of capital compared to other types of investment flows. To attract more FDI, governments provide special incentives to foreign firms to set up companies in their economies. They believe that: (i) FDI gives positive externalities to the recipient country, such as transfer of technology and management skills; and (ii) it is costly for FDI to reverse direction, so it is less volatile. FDI relies on long-term profits of investor companies, having less sensitivity to international interest rates. FDI began to take the dominant role in total capital flows in the middle of the 1990s (Figure 6). By the late 1990s, FDI accounted for more than half of all private capital flows to emerging Asian economies as portfolio investment shrank. The total size of FDI inflows in selected Asian economies amounted to \$230 billion in 2007, of which the PRC took more than half of the total. FDI is expected to remain an important source of capital flows in the region.

Portfolio transactions were almost negligible in most emerging market economies in the 1980s, but in the following decade, portfolio investment inflow such as bonds (especially for Latin American economies) and stocks (especially for Asian economies) began to expand its proportion in the total capital inflow to emerging market economies. It is usually difficult to expect active cross-border portfolio investment in a country without well-developed macroeconomic policy instruments, or with a weak financial system. Nevertheless, the fundamental reason for the extensive spread of portfolio investment across regions is the international diversification of assets by advanced economies. Thus, cross-border portfolio investment in emerging market economies has been rising due to increases in the demand for bonds and stocks of emerging markets by institutional investors of the United States, Japan, and Europe. Bottom-low interest rates and a slowdown of the economic growth of major advanced economies are other significant reasons for the rise in portfolio investment in emerging market economies. At the same time, emerging market economies have loosened regulatory measures on domestic portfolio investment through capital account liberalization, leading to the expansion of international portfolio investment.

**Figure 6: Gross Capital Inflows, by Type  
(in percent of GDP)**

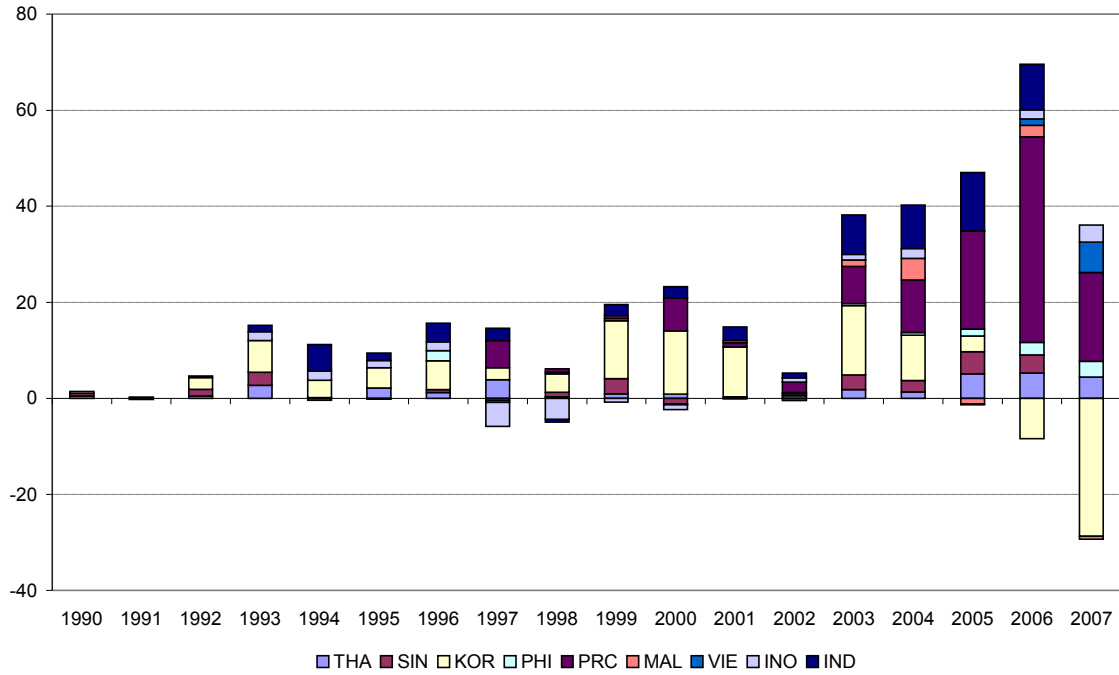


Note: See Table 1 note for economy isocodes.

Sources: Balance of Payments Statistics (IMF), World Development Indicators (WB).

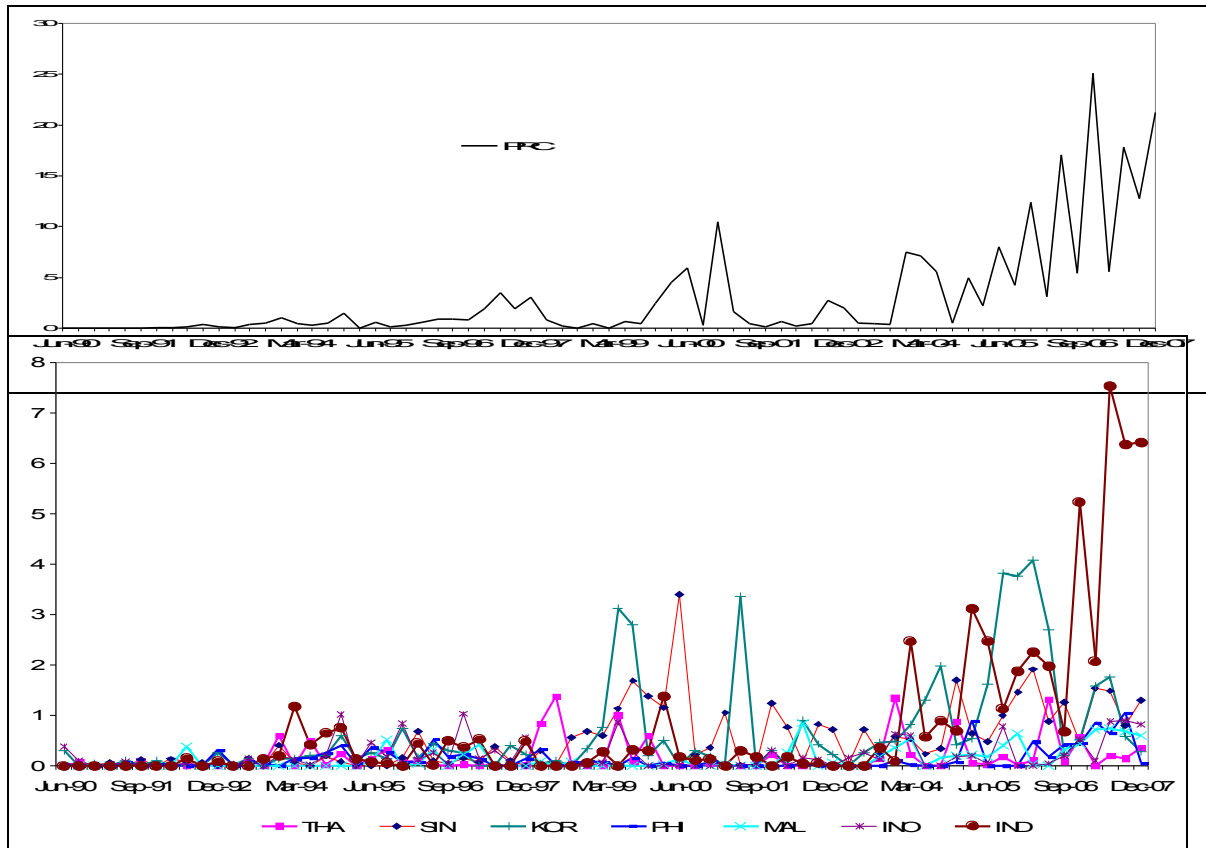
Equity inflows have increased in the region since the crisis. Most Asian economies have reduced barriers to investment on equity markets to recapitalize ailing banks and non-financial corporations. As a result, equity financing rapidly increased in 1999, but its momentum was reversed in 2000 due to the burst of the IT bubble. Equity inflows resurged in recent years in the region from \$4.8 billion in 2002 to \$84 billion in 2006, but declined in 2007 to \$12.2 billion. However, the recent increases in equity inflows were dominated by the PRC (Figure 7). Moreover, equity inflows have shown volatile movements in recent periods as the US subprime loan turmoil deepened (Figure 8).

**Figure 7: Equity Inflows, by Country  
(in billion US dollars)**



Note: See Table 1 note for economy isocodes.  
Source: Balance of Payments Statistics (IMF).

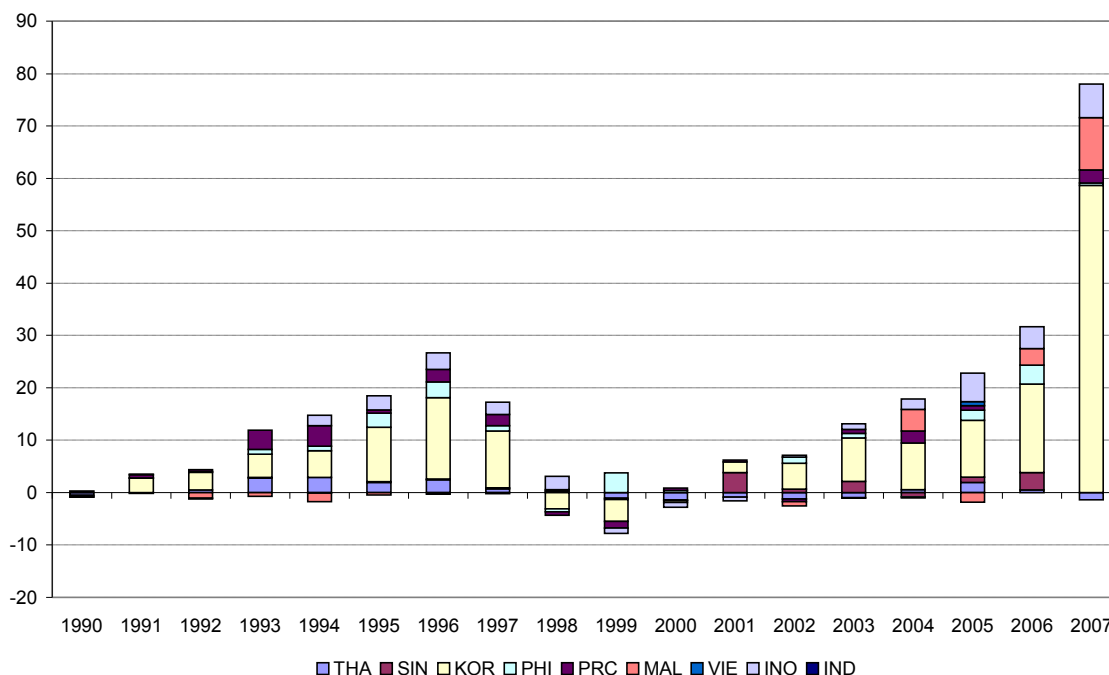
**Figure 8: Equity Inflows  
(in billion US dollars)**



Note: See Table 1 note for economy isocodes.  
 Source: Bank for International Settlements website.

Unlike equity, debt financing still comprises a relatively small component of capital inflows in the emerging Asian economies. Underdevelopment of the bond market has been pointed out as one of the main reasons behind the Asian crisis. Ideas to promote regional bond markets have been proposed and are currently under close examination. In recent years, however, debt financing inflows are increasing, especially in Korea (Figure 9).

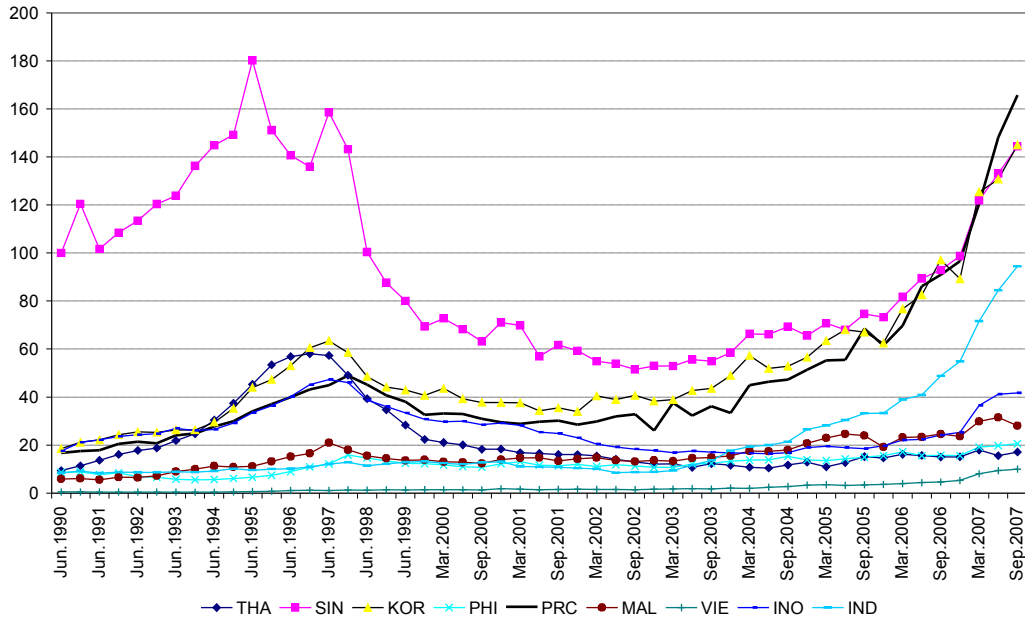
**Figure 9: Debt Securities Inflows  
 (in billion US dollars)**



Note: See Table 1 note for economy isocodes.  
 Source: Balance of Payments Statistics (IMF).

Bank financing has shown the most volatile flows in Asia. It has plummeted twice: first in the early 1990s and again after the 1997 Asian crisis. Since then, bank lending had accounted for only a negligible amount of capital flows in Asia. However, bank loans are picking up in recent years for the PRC, Korea, and Singapore, and, to a lesser extent, India (Figure 10).

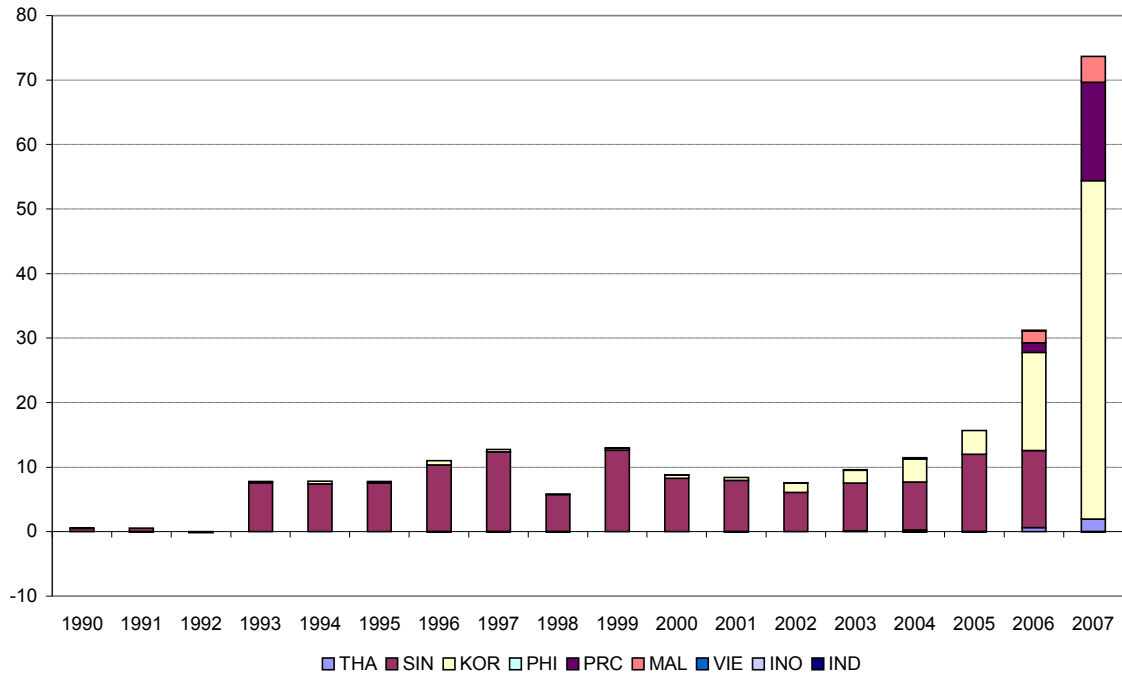
**Figure 10: Bank Loan Inflows  
(in billion US dollars)**



Note: See Table 1 note for economy isocodes.  
Source: Bank for International Settlements website.

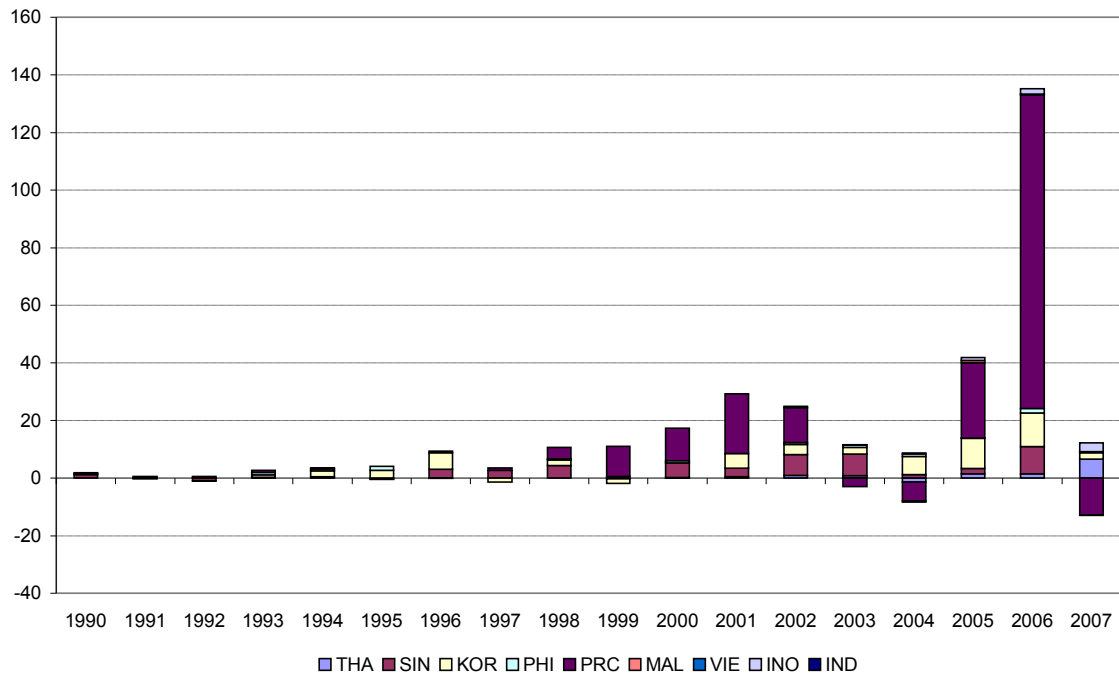
Since the Asian financial crisis, the type of capital outflows has changed as the size of total capital outflows has increased. Capital outflows have different types. Equity outflows increased dramatically in 2007, which was mainly dominated by the PRC, Korea and Singapore (Figure 11). Debt outflows also increased in 2006. The size of the PRC's debt outflows recorded \$109 billion in 2006, which was 69 percent of the total debt outflows for the year (Figure 12). In 2007, however, PRC's debt securities outflows turned negative.

**Figure 11: Equity Outflows  
(in billion US dollars)**



Note: See Table 1 note for economy isocodes.  
Source: Balance of Payments Statistics (IMF)

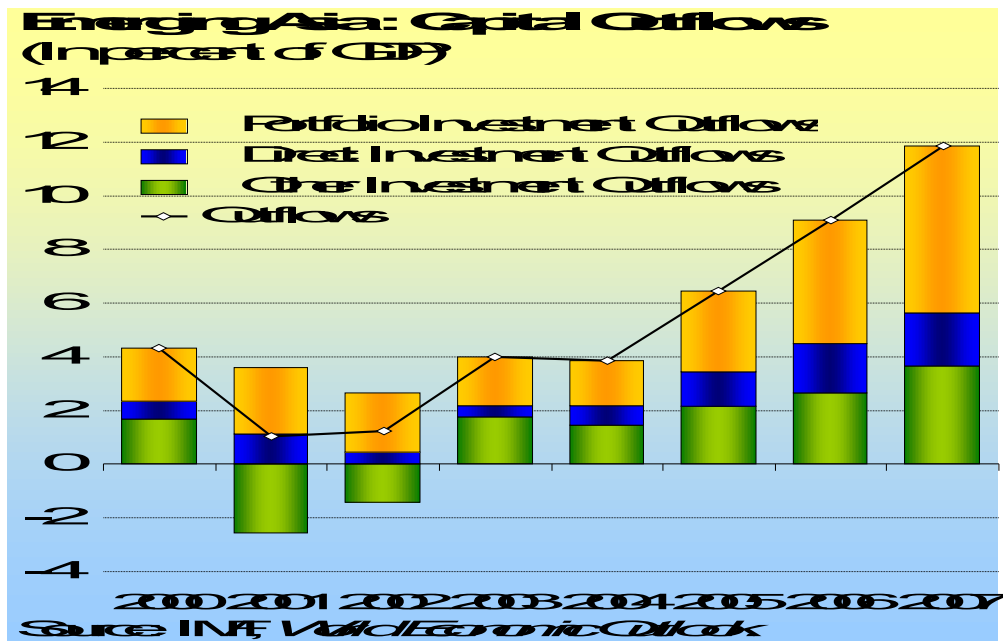
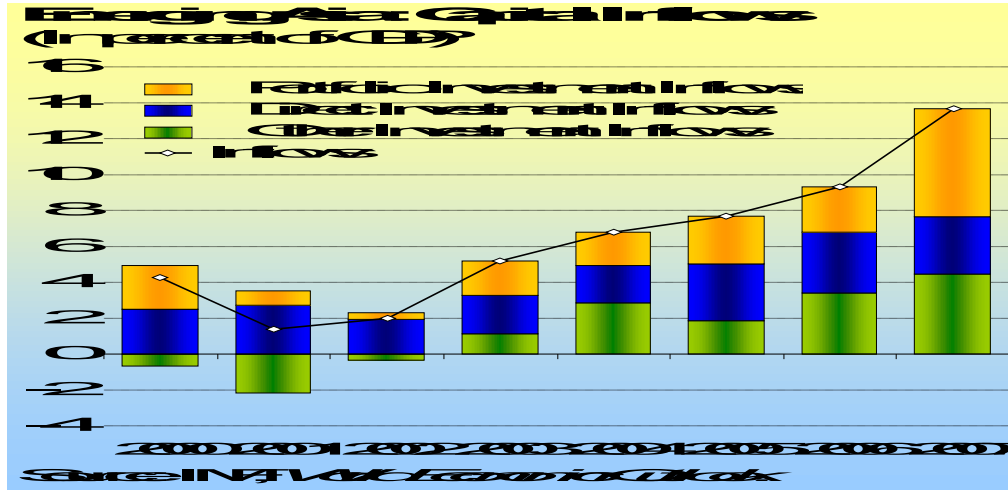
**Figure 12: Debt Securities Outflows  
(in billion US dollars)**



Note: See Table 1 note for economy isocodes.  
Source: Balance of Payments Statistics (IMF).

Even though more than half of net capital inflows to the world's emerging market economies went to transition economies of eastern and central Europe, emerging Asia's share has increased recently while flows to Latin America have remained weak. It is noteworthy that the volatility of net capital inflows in the region is generally high and varies across countries, suggesting the need to closely monitor capital flows in these economies (Figure 13 which is taken from Burton, 2008).

Figure 13. Measures of Volatility of Net Capital Inflows



## 5. Impact of Capital Flows

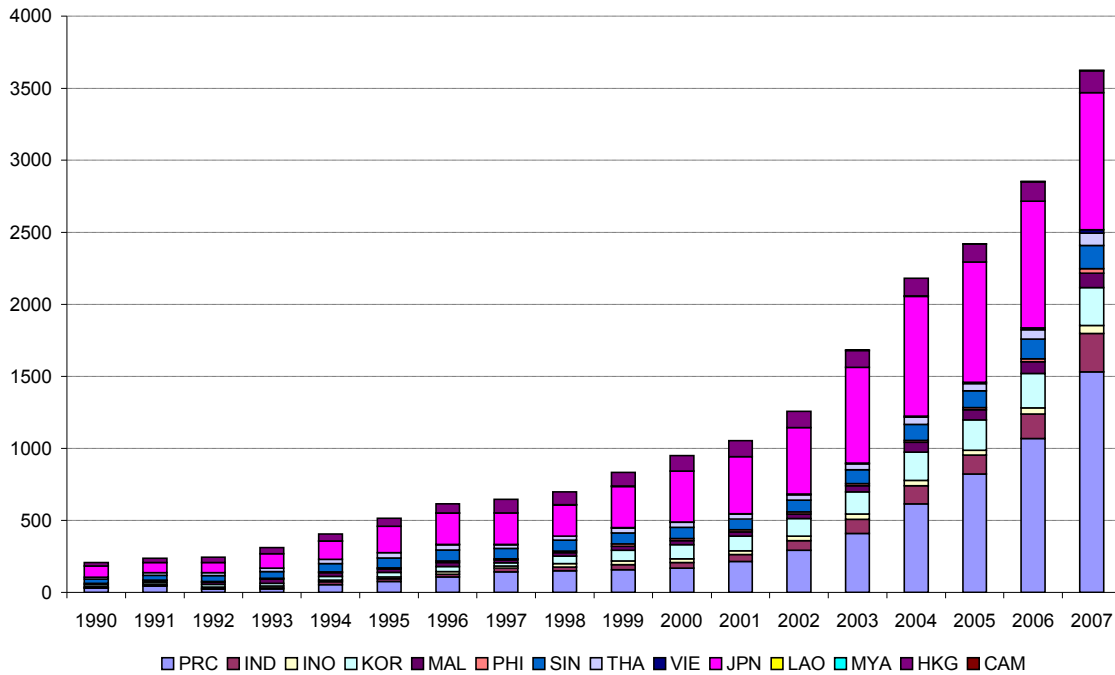
Foreign capital inflows contribute to the growth of domestic economies in various ways. First, foreign capital can help finance domestic investment and contribute to long run economic growth. Second, foreign portfolio inflows provide a better chance to develop the local capital markets since they provide more liquidity and price discovery mechanisms. Furthermore, a country can be subject to peer pressure to adopt more globally accepted measures and standards for the financial system when they have more foreign capital inflows in the market. However, large capital inflows can suddenly stop and reverse, producing undesirable macroeconomic outcomes. Large capital inflows followed by a sudden stop and massive reversal of capital can generate a boom-bust cycle. In fact, the current economic conditions in the region have already raised some concerns. More specifically, most Asian currencies have appreciated markedly and asset prices have been rising sharply. There is fear that this may be the initial phase of the boom-bust cycle, following capital inflows.

### 5.1. The case of India

One of the significant changes in the region's landscape since the Asian financial crisis is the huge accumulation of foreign reserves regardless of whether or not the country was affected by the crisis. Countries may have different motives for holding huge reserves, which may include, among others: (i) maintaining confidence in monetary and exchange rate policies; (ii) enhancing the capacity to intervene in foreign exchange markets; (iii) limiting external vulnerability so as to absorb shocks during times of crisis; (iv) providing confidence to the markets that external obligations can always be met; and (v) reducing volatility in foreign exchange markets (Mohan, 2006). All of these economies have been running sizeable surpluses in their current accounts. While experiencing current account surpluses, some of these economies—in particular, Japan, PRC, Korea, and India—have also received large capital inflows since 2003. The bulk of the current account and capital surpluses have been added to their reserves. Indeed, the reserve accumulation in most Asian economies has been the result of sterilized intervention for stabilizing either the nominal or real effective exchange rate with the objective of maintaining their export competitiveness. At end- 2007, total reserves held by East Asian economies, excluding Taipei,China, stood at \$3.6 trillion, or almost 60 percent of the total, up from a little over \$390 billion in 1998, with PRC contributing \$1.5 trillion and Japan, \$953 billion (Figure 14).



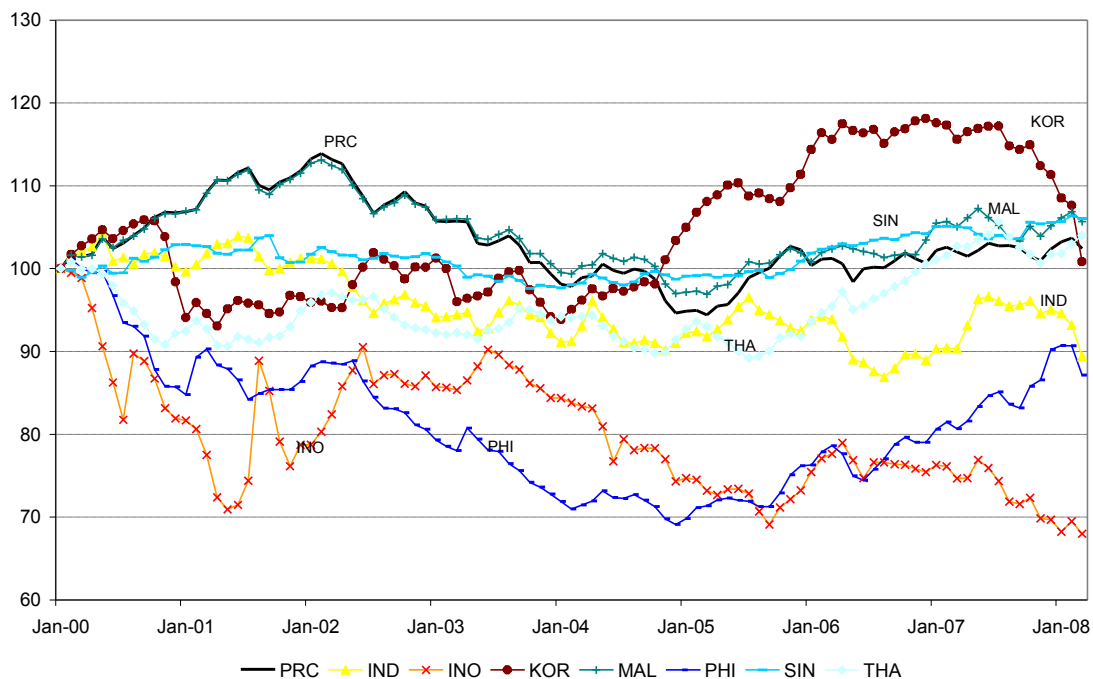
**Figure 14: Foreign Exchange Reserve Accumulation  
(in million US dollars)**



Note: See Table 1 note for economy isocodes.  
Source: International Financial Statistics (IMF).

The combination of prolonged current account surpluses, increasing capital inflows and the weakening of the US dollar had exerted pressure on the exchange rates in these economies. As shown in Figure 15, the real effective exchange rates in emerging Asian economies have shown a general tendency to appreciate since the early 2000s regardless of their exchange rate regimes. The Korean won appreciated by 20 percent since 2000, and the Thai baht, by 18 percent during the same period. Other currencies generally follow suit. However, since late 2006, some currencies such as the Korean won and Indonesian rupiah depreciated slightly as a result of an increase in capital outflows in these countries. In the first half of 2008 when global liquidity had further tightened, most countries in East Asia had experienced significant nominal depreciation of their currencies.

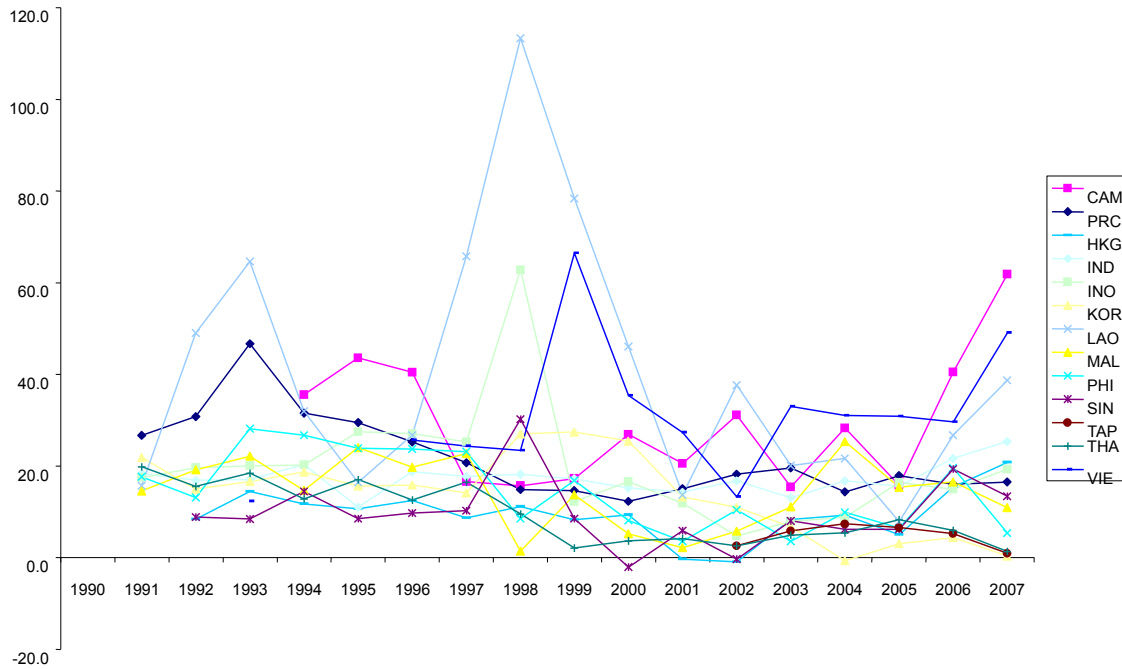
**Figure 15: Real Effective Exchange Rates**



Note: See Table 1 note for economy isocodes.  
 Source: Bank for International Settlements website.

Most economies in Asia have exhibited relatively stable growth in money supply since 1998. Crisis-hit countries—Indonesia, Thailand and Korea—had higher growth rates on money supply during the crisis periods of 1997-1999, but they have returned to normal growth rates since 2000. In recent years, however, Cambodia, Viet Nam, Lao PDR and, to a certain extent, India have experienced much more rapid increases in money supply compared to those of other East Asian economies (Figure 16).

**Figure 16: Growth Rates of Money Supply  
(in percent)**



Note: See Table 1 note for economy isocodes.

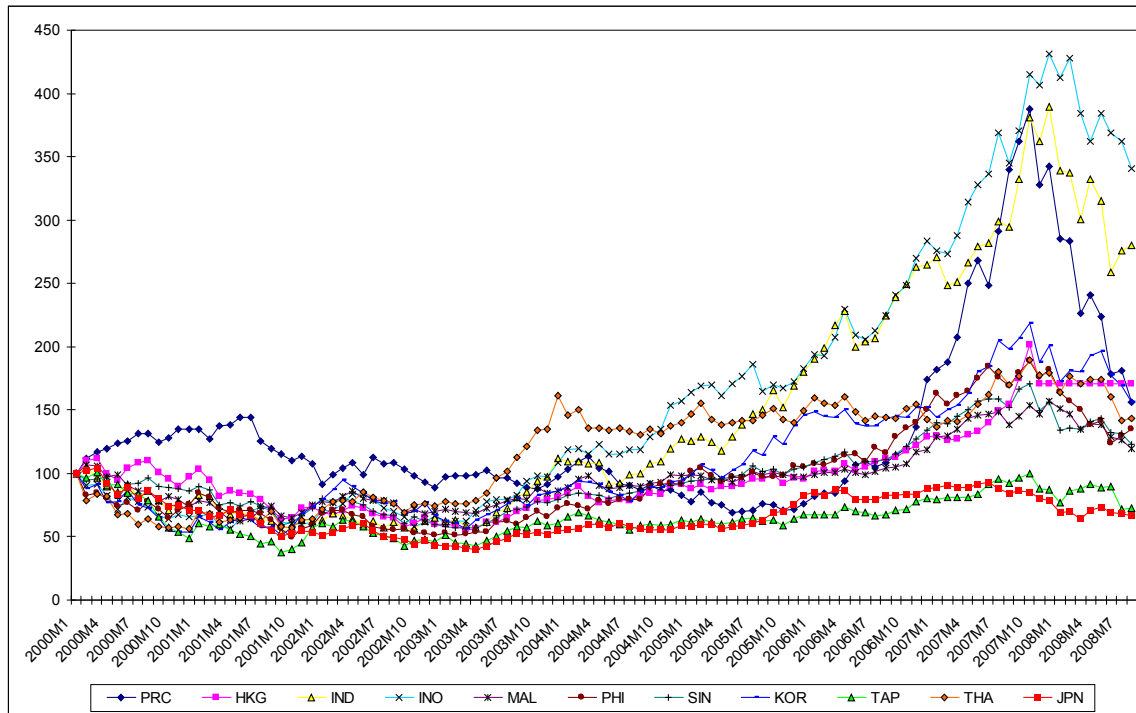
Source: International Financial Statistics (IMF).

Foreign capital inflows can affect asset prices in three ways. First, foreign portfolio inflows can directly affect the demand for assets. For example, capital inflows to the stock markets of emerging market economies increase the demand for stocks. Since stocks in emerging economies are few, such an increase in demand raises prices of stocks to levels not supported by fundamentals. In addition, such capital inflows may affect other markets subsequently. Sensing that stock prices are already overvalued, some market participants, including domestic investors, may move to other asset markets, such as the real estate market, and exert upward pressure on other asset prices. Second, capital inflows if not completely sterilized may result in an increase in liquidity, which in turn can boost asset prices. Third, capital inflows tend to generate economic booms in the country and lead to an increase in asset prices. Past studies have documented economic booms following capital inflows. Monetary expansion following capital inflows contributed to a large degree to economic booms. Capital inflows due to a fall in the world interest rate can lead to consumption booms and investment booms. A lowering world interest rate would also decrease the domestic interest rate, which could lead to investment booms. For a debtor country, a fall in the world interest rate will induce income and substitution effects, which can lead to consumption booms.

Equity prices in most Asian economies have increased markedly since late 2003 (Figure 17). Indonesia's equity market started to boom in 2003. The PRC and India showed strong price hikes on equity markets for the last three years. Recently, however, most equity prices in the region dropped significantly due to the worsening of the US subprime mortgage crisis, causing global liquidity crunch, and risk increases in global equity

market that ensued. Economies that saw significant rise in equity prices before the subprime crisis have experienced sharp drops in equity prices beginning in October 2007. Again, this shows the volatility of portfolio investment.

**Figure 17: Equity Prices, 2000:1 – 2008:8  
(January 2000=100)**

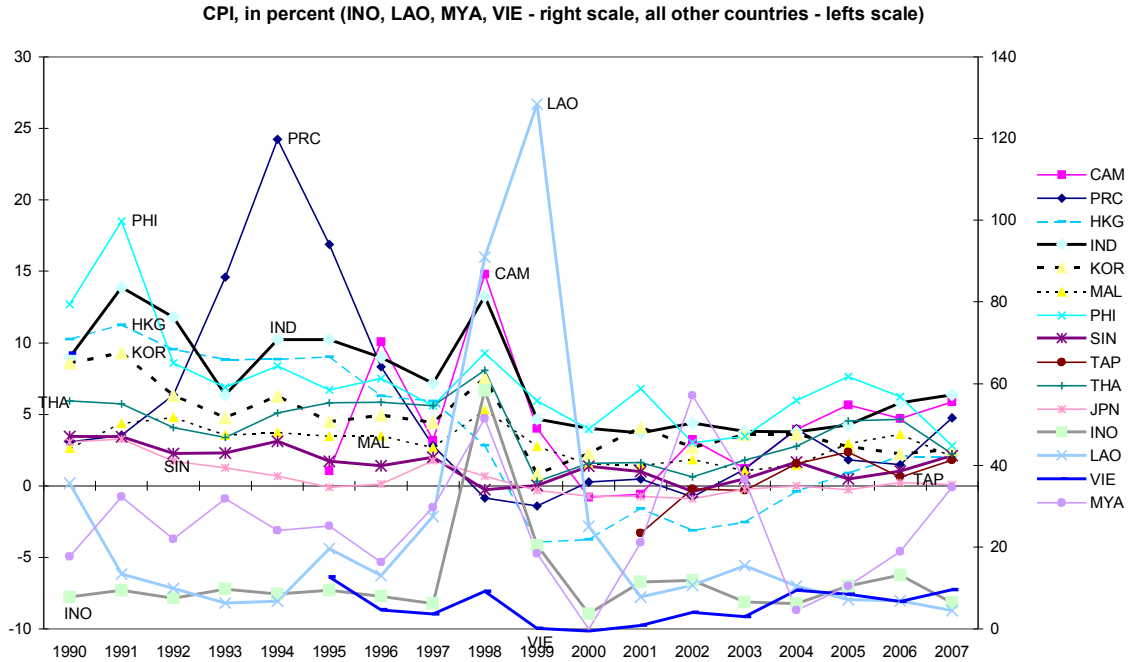


Note: See Table 1 note for economy isocodes.  
Sources: Stock exchanges.

On the other hand, inflation has stayed at lower levels, albeit inflation rates in Indonesia, Philippines, and Viet Nam have been generally higher than those of other economies in East Asia (Figure 18).<sup>2</sup> It is to be noted, however, that inflation rates in East Asian economies have increased dramatically during the first half of 2008, caused mainly by huge increases in the prices of food and non-food commodities including oil.

<sup>2</sup> Inflation rates elsewhere have also declined, indicating that external factors also helped in containing inflation in countries in the region.

**Figure 18: Inflation Rates  
(in percent)**



Note: See Table 1 note for economy isocodes.  
Sources: World Development Indicators (WB), national statistics.

## 5.2. The case of India

How much capital inflows influence domestic economy? This question is relevant in India, which is one of the emerging market economies. As past experience shows, emerging market economies have experienced a series of boom-bust cycles that are related to capital flows. It begins with a boom stage of credit expansion, investment increases, asset prices rise, and increasing capital inflows, and ends up with a bust stage when all reverses. The recent coincidence of huge capital inflows and asset price appreciation in Asia has raised concerns on the possibility of future crisis.

We examine the effects of foreign capital inflows on various economic variables in India, especially asset prices, using a VAR (Vector Auto-Regression) model. It is assumed that an economy is described by the following structural form equation:

$$G(L)y_t = \epsilon_t \quad (1)$$

where  $G(L)$  is a matrix polynomial in the lag operator  $L$ ,  $y_t$  is an  $m \times 1$  data vector,  $m$  is the number of variables in the model, and  $\epsilon_t$  denotes a vector of structural disturbances. Assuming that structural disturbances are mutually uncorrelated,  $\text{var}(\epsilon_t)$  can be denoted by  $\Lambda$ , which is a diagonal matrix where diagonal elements are the variances of structural disturbances. We estimate the following reduced form VAR.

$$y_t = \Pi y_{t-1} + \eta_t \quad (2)$$

where  $B(L)$  is a matrix polynomial in the lag operator  $L$ , and  $\text{var}(\epsilon_t) = \Sigma$ .

There are several ways of recovering the parameters in the structural form equation from the estimated parameters in the reduced form equation. The identification schemes under consideration impose recursive zero restrictions on contemporaneous structural parameters by applying Cholesky decomposition to the reduced form residuals,  $\Lambda$ , as in Sims (1980). Note that our statistical inference is not affected by the presence of non-stationary factors since we follow a Bayesian inference.

In the basic model, the data vector,  $y_t$ , is  $\{CAP\_IN, EXE, CPI, EQ, GDP\}$  where  $CAP\_IN$  is the log of a capital inflows which include foreign direct investment and portfolio investment in India,  $EXE$  is the log of exchange rate (Indian rupee/US dollar)  $CPI$  is a consumer price index and  $EQ$  is Indian stock price index, and  $GDP$  is a gross national product of India.<sup>3</sup> Quarterly data for the period 1991-2006 were used for the estimation of the model.

Figures 19 report the impulse responses, with 90 percent probability bands for 10 quarter horizon, of each variable to capital inflows shocks and other macroeconomic variables.

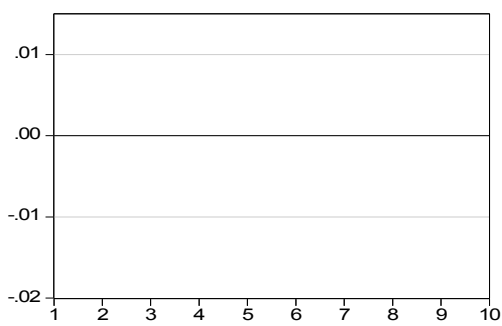
To understand the nature of capital inflows or portfolio inflows shocks, we first examine the impulse responses of capital inflows to major macroeconomic variables. First, capital inflows induce currency appreciation up to 3 quarters, but such effects are not statistically significant. This may be due to the sterilization measures adopted by India in the face of huge capital inflows. Second, capital inflows also contribute to decrease in price level. This might be caused by currency appreciation also. Capital inflows also increase domestic equity prices for at least 2 quarters. This might be related to the nature of capital flows, since there has been a huge increase in equity inflows in India especially in recent quarters. On a contrary, capital flows into India have little impact on economic growth in India.

According to impulse response function analysis, capital inflows in India have significant impacts on major economic variables such as exchange rates, inflation and equity prices. If not properly managed, such capital inflows can lead to asset price hikes, which could cause a boom-bust cycle that has typically occurred in most emerging economies experiencing periods of surges in capital inflows.

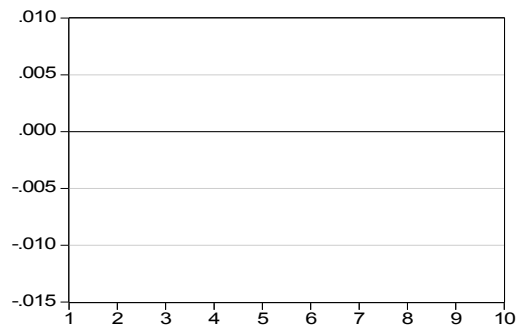
### Figure 19. Impulse Response Function, India

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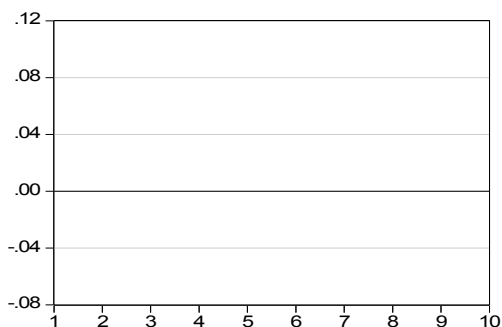
<sup>3</sup> One important aspect of identifying the effects of capital inflows on asset prices is that there are simultaneity between capital inflows and asset prices. That is, capital inflows can affect asset prices, but changes in asset prices can also induce capital inflows. To minimize such a problem, we use the end-of-period data for asset prices, and treat capital inflows as contemporaneously exogenous to asset prices in recursive VAR model. We also try to control various factors that may affect asset prices and capital inflows simultaneously.



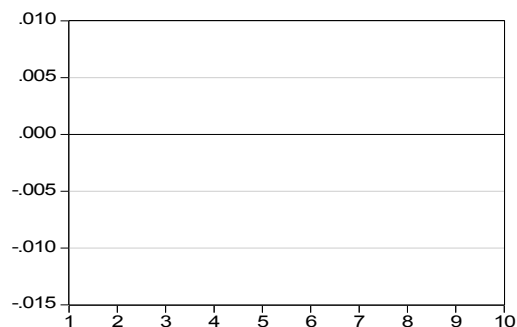
Response of exchange rate to capital inflows



Response of inflation to capital inflows



Response of share prices to capital inflows



Response of GDP to capital inflows

## 6. Policy Responses of Asian Economies

Policy responses of emerging Asian economies' monetary authorities to large capital flows fit into three categories: intervention in the foreign exchange market through open market operation, which may be partially or fully sterilized, or raising reserve requirement ratio, or a combination of both; interest rate policy; and capital controls. A summary of such responses based on nine country studies done by various authors is presented in Table 2.<sup>4</sup>

<sup>4</sup> Under capital controls, only a few key measures are mentioned to illustrate the direction of capital controls.

**Table 2: Policy Responses to Large Capital Inflows, Selected Asian Countries**

Country	Intervention in the Foreign Exchange Market	Interest Rate Policy	Capital Controls	
			Inflows	Outflows
China, People's Republic	Sterilized intervention: People's Bank of China (PBC) initially sole T-bonds and later replaced them with its own Central Bank Bills (CBB). Adjusts reserve requirement ratio to mop up excess liquidity.	Raised the benchmark rates.	After the PRC's World Trade Organization (WTO) accession, FDI flows were liberalized entirely. Non-residents are allowed to open yuan accounts in the PRC and to buy A shares via the qualified foreign institutional investors (QFII). Relaxed restriction on domestic institutions' issuance of bonds abroad.	Relaxed rules on Chinese enterprises' overseas investment. Residents are allowed to convert yuan to foreign exchanges up to \$50,000 per annum. The range of qualified students who are allowed to bring out large quantities of foreign exchanges for studying abroad has been widened. Residents are allowed to buy foreign equities via the QDII.
India	Sterilized intervention: The Reserve Bank of India sells regular government bonds and special bonds under the Market Stabilization Scheme. Adjusts reserve requirement ratio to mop up excess liquidity.		Portfolio inflows are allowed through foreign institutional investors (FIIs). In 2007, the government introduced fresh capital controls against "participatory notes," which are OTC derivatives sold by a financial firm which is a registered FII to an investor who is not registered..	Individuals are now permitted to take \$200,000 per person per year out of the country. Since 2004, Indian companies have been allowed to invest in entities abroad up to 200% of their net worth in a year.
Indonesia	Sterilized intervention: Bank Indonesia sells government bonds and central bank certificates.		The government exerted effort to attract foreign investments. One such effort was approval of the Investment Law in March 2007. The Law provides equal treatment between domestic and foreign investors, binding international arbitration, the elimination of forced divestiture (considered as a guarantee against	



			nationalization), land use rights up to 95 years (from 35 years previously), and extended residency permits for foreign investors. Bank Indonesia has moved to limit rupiah transaction and foreign exchange credit to restrict speculative movements.	
Korea	Sterilized intervention: Bank of Korea (BOK) uses monetary stabilization bonds while the Ministry of Finance issues treasury bills and deposits proceeds with the BOK.		Re-imposed limits on lending in foreign currency to Korean firms.	All direct restrictions on original transactions of current and capital transactions have been removed with the exception of the ceiling of \$3 million on overseas real estate investments. In 2005, granted tax incentives to portfolio investments abroad.
Malaysia	Sterilized intervention: Sells securities in the conduct of its open market operation.			No restriction on repatriation of capital, profits, dividends, interest, fees or rental by foreign direct investors or portfolio investors. Licensed onshore bank and approved merchant banks may invest abroad as long as they comply with certain laws. Residents, companies and individuals with no domestic borrowing are free to invest abroad. Allow investment banks in Malaysia to undertake foreign currency business subject to a comprehensive supervisory review on the capacity of the investment banks.
Philippines	Sterilized intervention: The Bangko Sentral ng	Reduced the reverse repurchase rate.		Encouraged private sector capital outflows through

	<p>Pilipinas sells government securities. It opened a special deposit accounts facility for banks, pension funds and trust operations of banks but later was phased out due to the high quasi-fiscal cost associated with this intervention. Adjusts reserve requirement ratio to mop up excess liquidity.</p>			<p>further liberalization of foreign exchange transactions such as: a symmetrical limit of 20 percent of unimpaired capital (oversold/overbought positions); increased limit of outward investment by Philippine residents to \$12 million/year; and increased limit on allowable foreign exchange purchases by residents from banks to cover payments to foreign beneficiaries for non-trade purposes without supporting from \$5,000 to \$10,000.</p>
Singapore	<p>Carries out intervention in the foreign exchange market to directly influence the value of the currency and defend the band.</p>			
Thailand	<p>Sterilized intervention: Sells government bonds. Recently, sold bonds to purchase US dollars in the spot market and sold US dollars in the forward market.</p>	<p>Reduced the repurchase rate.</p>	<p>Imposed 30% unremunerated reserve requirement on all capital inflows less than 1 year on 18 Dec. 2006, but reversed the following day in the case of inflows to the equity market. This was removed in March 2008.</p>	<p>Relaxed the regulation on foreign portfolio investment by institutional investors. Allowed companies registered in the Stock Exchange of Thailand to purchase foreign currencies to purchase assets abroad up to \$100 million per year. Provided Thai residents with greater flexibility in depositing foreign currencies in domestic financial institutions.</p>
Viet Nam	<p>Sterilized intervention: State Bank of Vietnam sells T-bills and central bank bills. Adjusts reserve requirement ratio to mop up excess liquidity.</p>	<p>Raised all official rates (refinancing, discount and basic rates).</p>		

Sources: Various country studies.

## 6.1. Intervention in the foreign exchange market

All nine countries have intervened in the foreign exchange market to reduce pressure on their domestic currencies to appreciate but have sterilized such intervention through various ways.<sup>5</sup>

The People's Bank of China (PBC) initially started to use reverse T-bonds repos in June 2002 to deal with surges in foreign exchange inflows (Laurens and Maino, 2007). A few months later, it ran out of T-bonds, so it started selling its own low-yield central bank bills (CBBs) to commercial banks. To complement the open market sale of CBBs, PBC reversed its policy of reducing the reserve requirement and raised the reserve requirement ratio 15 times during the period September 2003 to end-2007, from 7 percent to 14.5 percent. Required reserves of banks earn 1.89 percent. According to Yu (2008) these measures have raised the share of low yield assets of commercial banks to 20 percent of total assets. Nonetheless, the PBC was able to sterilize 8 trillion yuan of the 11 trillion yuan high-powered money it created as of October 2007 when it intervened in the foreign exchange market. Despite this massive sterilization measure, Yu thinks that the PRC's financial system is still flooded with excess liquidity, which he attributes to the low demand for money.

The Reserve Bank of India (RBI) conducted open market sales of government securities from its portfolio to neutralize the effect of its purchases of foreign exchange on the monetary base. However, it ran out of government securities in late 2003 (Shah and Patnaik, 2008). In January 2004, the Government of India (GOI) and RBI agreed to put in place the Market Stabilization Scheme (MSS), which authorizes the latter to sell bonds on behalf of the government for the purpose of sterilization. The proceeds of the sale of government securities are deposited with the RBI and can be used only for redeeming or buying back securities issued under the MSS to ensure there is no impact on the monetary base. There is a ceiling on the sale of government securities under the MSS which can be revised through mutual consultation between RBI and GOI. As pointed out by Sha and Patnaik, a key strength of MSS lies in the fact that it makes the cost of sterilized intervention more transparent. Interest payments for MSS face scrutiny in the budget process. RBI also reversed its policy of phasing out reserve requirements and raised reserve requirement ratios. Neither measure has prevented significant acceleration of monetary aggregates. Inflation has risen after 2004 and has remained stubbornly high since then.

Bank Indonesia (BI) intervenes in the foreign exchange market mainly using one-month and three-month Bank Indonesia Certificates (SBI) to sterilize its intervention. Currently, SBIs bear interest rates of more than 8 percent, which could attract more portfolio inflows since non-residents are allowed to hold such certificates. Since the BI is committed to its inflation targeting monetary framework, it has allowed the exchange rate to absorb the impact of capital inflows (Titiharuw and Atje, 2008). Also, BI has been more likely to be confronted by depreciation threats rather than appreciation.

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<sup>5</sup> As will be discussed below, Singapore's situation is different from the rest of the emerging Asian economies considered in this study.

The Bank of Korea (BOK) uses its own monetary stabilization bonds (MSBs) to sterilize the effect of its intervention in the foreign exchange market. Since the stock of MSBs has risen so much after several years of intervening in the foreign exchange market, making it more costly for the BOK to use the MSBs for sterilization purposes, the Korean government came in to assist the BOK in its sterilization measure by selling government securities and depositing the proceeds with the BOK. Reserve requirements have not been used for fine tuning liquidity in the system.

Bank Negara Malaysia conducted sterilized operations to overcome inflationary pressure and to stabilize interest rates in the face of massive net inflows of portfolio funds (Foong, 2008). Exchange rate volatility has been relatively small due to foreign exchange intervention by the central bank to maintain orderly market conditions.

Yap (2008) has pointed out that not only has the Bangko Sentral ng Pilipinas (BSP) intervened more heavily in the foreign exchange market after the crisis, sterilization has apparently been more pronounced. The BSP conducts open market operation using government securities. It is prohibited by law to issue its own securities. As the need to intervene more in the market to reduce liquidity, the BSP opened in 2007 a special deposit account (SDA) facility to banks offering yields almost twice as high as the government T-bills. The BSP later relaxed the rules on the SDA allowing non-bank government corporations, pension funds and trust operations of banks to access it. Despite a series of BSP interest rate cuts that also trimmed SDA yields, the SDAs were still much more attractive than any other fixed-income instruments in the country. Capital inflows driven by interest rate differentials could continue putting pressure on the currency. Aside from its open market operation to mop up excess liquidity, the BSP has also maintained high reserve requirement ratios on bank deposits. The BSP raised the regular reserve from 9 percent to 10 percent in July 2005. It also raised on the same date the liquidity reserve ratio, from 10 percent to 11 percent.

The Bank of Thailand (BOT) has been intervening in the foreign exchange market to prevent rapid appreciation of the baht in the face of massive influx of foreign capital especially in recent years using T-bonds. The intervention was intensified in July 2007 when the baht hit its strongest value against the US dollar. With a considerable increase in reserves during August and September 2007, the BOT sold foreign currency in the forward market for hedging purposes (Kanit, 2008). Exporters were also selling US dollars in the forward market due to the lack of confidence in the US currency. Accompanied by other measures such as lowering the repurchase rate, this intervention helped in stabilizing the onshore exchange rate of the baht. However, the baht has appreciated continually in the offshore market. Accordingly, the BOT had spent \$600 million by the end of 2007 for exchange rate intervention.

The State Bank of Vietnam (SBV) has been engaged in sterilized intervention in the foreign exchange market using T-bills and its central bank bills. In June 2007, it raised the reserve requirement ratio for deposits under 12 months from 5 percent to 10 percent. Such measures were apparently ineffective as the money supply expanded sharply in 2007 and the inflation rate jumped to 12.6 percent (Vo and Pham, 2008). By the end of December 2007, the SBV widened the trading band of VND/US\$ to  $\pm 0.75$  percent and raised the

reserve requirement ratios by one percentage point. In the second week of February 2008, the SBV decided to issue on 17 March 2008 365-day bills with a coupon rate of 7.8 percent, which is slightly higher than the SBV refinancing rate but lower than the rediscount rate and requested a compulsory purchase by 41 commercial banks. This has forced banks to run to the inter-bank market, causing rates to go up to 25-30 percent. The SBV tried to loosen up the liquidity in the inter-bank market by pumping money into the system. Since the deposit rate started to rise as banks competed intensively to mobilize deposits to comply with the compulsory purchase of the 365-day bills, the SBV stepped in to control the situation by issuing a directive requesting all commercial banks not to raise the annual deposit rates to more than 12 percent and promising to meet liquidity of the banking system through the inter-bank market at reasonable rates.

Vo and Pham (2008) made the following comments on this episode:

The “liquidity chaos” once again shows how high the cost could be if the policy of keeping nominal stability of exchange rate persists in conjunction with the maturity mismatch problem in the banking system or even only in some commercial banks (due to weak supervision) and the inappropriate policy actions leading to more serious macroeconomic policy inconsistency. The fact that the SBV had to use some administrative measures to control the situations would have higher costs due to distortions in resource allocations. This action, though temporary and necessary, can be seen as a step backward to the process of improving monetary instruments. The movements of some key macroeconomic variables in the first two months of 2008 would make the policy option more complicated. Inflation rose by more than 6%. The rise in deposit interest rates by banks could soften the liquidity problem but it imposes higher risk for several banks.

Singapore is in a completely different situation from the rest of the emerging Asian economies included in this study. It has been running surpluses averaging 5 percent of GDP since the crisis and has been experiencing net positive contributions to the Central Provident Fund (CPF). Both have the effect of withdrawing funds from the domestic financial system, causing the money supply to shrink and putting pressure on the Singapore dollar to appreciate. To avoid such appreciation, the MAS re-injects funds into the domestic financial system through its foreign exchange operations that use the Singapore dollar to purchase the US dollar (Chow, 2008).

## **6.2. Interest rate policy**

Interest rate differentials can exist and persist because foreign and domestic assets are not perfect substitutes. However, in an environment wherein there are no restrictions on inflows and outflows of capital and domestic currency is expected to appreciate further, a sufficiently large interest rate differential can attract more interest-sensitive foreign capital. Thus, monetary authorities need to narrow that gap without necessarily changing their monetary stance.

In Thailand, the BOT reduced its key rate, the repurchase rate, five times during the period January-July 2007 from 4.75 percent to 3.25 percent (Kanit, 2008). In the Philippines, the BSP reduced its policy rate, the reverse repurchase rate, five times during the period March 2007-March 2008 from 7.5 percent to 5 percent. Considering that the BSP's SDAs of varying maturity, from overnight to as long as six months, offer a premium of 1.0-1.5 percentage points over the BSP overnight borrowing rate of 5 percent, the effectiveness of such a move needs watching.

In Viet Nam, interest rates were left unchanged throughout 2006 and 2007, but to contain the recent surge in the money supply, the SBV raised all official interest rates on 1 February 2007 from 6.5 percent to 7.5 percent for the refinancing rate, from 4.5 percent to 6.0 percent for the discount rate, and from 8.25 percent to 8.75 percent for the basic rate (Vo and Pham, 2008).

In the PRC, the PBC has been very careful in its move to tighten monetary policy by raising the interest rate because it is concerned with the impact of carry trade (Yu, 2008). Thus, it manages the domestic interest rate to maintain a 3-percent spread in favor of the US\$ London Inter-Bank Offered Rates with the intention of letting the yuan appreciate at the rate of 3 percent per annum. Yu argues that investors will most likely be interested in getting hold of other assets that yield 10-20 percent return a year. And as long as capital controls in the PRC are still working, the PBC can raise interest rates to tighten monetary policy without having to worry about hot money inflows in general and carry trade in particular.

In general, interest rate policy stances in emerging Asian economies support the narrowing in the differential between foreign and domestic interest rates, albeit the interest differential has remained in some countries such as India, Indonesia and the Philippines (Table 3).<sup>6</sup> Such differentials, however, have widened in mid-2008 as most Asian economies raised domestic interest rates in response to rising inflation.

**Table 3: Interest Rate Differential between US T-bill Rate and Domestic Interest Rates**

Country	2000	2001	2002	2003	2004	2005	2006	2007
<b>PRC</b>	-3.59	-1.20	0.37	0.97	0.88	-0.90	-2.20	-0.57
<b>IND</b>	3.23	4.06	4.38	4.50	3.32	2.23	1.64	2.75
<b>INO</b>	7.72	12.96	13.61	9.16	6.02	5.94	7.31	3.53
<b>KOR</b>	2.46	2.23	4.17	3.54	2.74	1.12	0.11	0.79
<b>MAL</b>	-2.98	-0.66	1.12	1.78	1.03	-0.67	-1.49	-0.95
<b>PHI</b>	8.75	7.86	7.64	8.09	7.63	6.16	5.03	3.56
<b>SIN</b>	-3.66	-1.76	-0.80	-0.37	-0.41	-1.11	-1.77	-2.09
<b>THA</b>	1.11	2.37	3.46	2.75	3.72	1.98	0.76	0.34
<b>VIE</b>	-0.42	2.04	4.31	4.82		2.98	0.01	

Notes:

See Table 1 note for economy isocodes.

PRC - deposit rate

USA, IND, MAL, SIN, VIE - treasury bills rate

<sup>6</sup> As mentioned above, Viet Nam adjusted all official rates in February 2008.

KOR, THA - government bond yield

INO - SBI rate

PHI - reverse repo rate

Sources: IFS, national statistics.

### 6.3. Capital controls

Although there have been recent impositions of capital controls to slow down inflows of foreign capital—moves such as Thailand’s imposition of the 30 percent unremunerated reserve requirement on all capital inflows, which were all recently lifted; Korea’s re-imposition of limits on lending in foreign currency to Korean firms; and Indonesia’s move to limit rupiah transaction and foreign exchange credit to restrict speculative movements—the general trend in the region is towards liberalization of the capital account. Countries that have more open capital accounts have begun to ease controls especially on capital outflows to reduce net inflows.

The three countries that have more capital controls, namely the PRC, India and Viet Nam, have also started loosening up their restrictions on capital inflows and outflows. The PRC’s process of liberalizing its capital account started in the mid-1980s, but was put on hold when a financial crisis struck the region in 1997-98. The process was re-launched after the PRC acceded to the World Trade Organization (WTO) and accelerated in 2003 to reduce appreciation of the yuan and improve resource allocation (Yu, 2008). Some results from the liberalization are visible. For instance, under its Qualified Domestic Institutional Investors (QDII) scheme which was introduced in June 2006, a total of \$26.782 billion have been remitted outward for purposes of investing in foreign equities. Under its Qualified Foreign Institutional Investors (QFII) scheme, 47 QFIIs had been granted an aggregate investment quota of \$9.995 billion as of 30 October 2007.

The PRC’s QFII scheme is, however, more restrictive compared to the scheme used by India. More specifically, India’s Foreign Institutional Investors (FII) scheme has no quantitative restrictions or limitations on which global financial firms can participate in the Indian market (Sha and Patnaik, 2008). India’s newly introduced capital control against participatory notes, which aimed at reducing capital inflows that was causing difficulties for the implementation of the pegged exchange rate, has had so far limited impact. India’s relaxation of controls on outward capital flows has produced desirable results. More specifically, outbound flows have risen to 5 percent of fixed capital formation in 2006.

What has been the experience of countries that impose restrictive capital controls? Speculative capital inflows have slipped into the country through different legitimate channels such as trade accounts, FDI and investment accounts as well as illegitimate channels such as money transfers via underground financial institutions and smuggling (Yu, 2008). In Viet Nam, the large value of errors and omissions in the balance of payments (BOP) may reflect the shortcomings of controls on short-term capital inflows. In India, a current account transaction can actually be a capital account transaction. For instance, a survey of banks found that roughly half of the remittance flows were used for acquiring financial assets, and that the correlation coefficient between the rupee-dollar

interest rate differential and remittance flows proved to be as high as 0.8 (Sha and Patnaik, 2008).

## 7. Policy Issues and Recommendations

To manage persistently large capital inflows, policymakers in the region must address the following questions:

- Of the measures tried before, which work better and why?
- What other domestic policy options should be mobilized?
- Is there a scope for collective action, particularly at the regional level?

This section discusses possible policy measures to manage surges in capital inflows, which are summarized in Table 4.

### 7.1 Doing more of what has been tried before

***Sterilized intervention.*** Sterilization has been the favorite tool applied by many emerging Asian economies to prevent nominal and real exchange rate appreciation and economic overheating. Because net foreign exchange inflows from the current and capital accounts have been sustained for quite some time now, intervention in the foreign exchange market has been unidirectional, making sterilization an increasingly costly method of preventing overheating of the economy.<sup>7</sup> The need to allow greater exchange rate flexibility is thus becoming more compelling. Making this an attractive policy option for the region's authorities is an important challenge that is explored below.

As of end-2007, total foreign exchange reserves in the world were more than US\$5 trillion with the emerging Asian economies accounting for half of it. However, there is a growing consensus—based on standard measures of reserve adequacy, e.g., in terms of months of imports of goods and services, and in terms of ratios (of reserves) relative to external debt, to GDP, or to domestic money supply—that these foreign exchange reserves are excessive. Even though it is difficult to come up with a reliable estimate of the optimal level of reserves, the current total foreign reserves in Asia exceed the level that is needed for mitigating abrupt capital reversals or external financing in crisis. The countries' apparent desire for large reserves may be reduced if there is a credible reserve-sharing arrangement at least at the regional level. Such an arrangement, like an expanded, multilateralized Chiang Mai Initiative, would collectively insure member countries against short-term capital reversals without each member holding unnecessarily large reserves, which is costly.

***Strengthening national financial markets.*** One important lesson learned from the Asian financial crisis and from the recent US subprime crisis is that the banks and other financial

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<sup>7</sup> Some estimates for the period 2000–2007 suggest that sterilization has become increasingly costly as capital inflows are sustained for a long period.



institutions must be well governed and their risk management capacity must be high. Thus, there is now great appreciation of the importance of financial-sector supervision and regulation in each country, in inducing banks and non-bank financial institutions to manage large capital inflows in a prudent way. Efforts must be intensified to (i) improve prudential regulations such as limiting the practice of concentrating lending to a few individuals or business entities and moving towards Basel 2 capital adequacy standards, (ii) ensure stronger governance and risk management of financial institutions through greater transparency and better disclosure, and (iii) enhance the capacities of regulatory bodies.

At the same time, reforms to accelerate the development and deepening of domestic capital markets and to put in place efficient market infrastructure must be pursued to enhance the absorptive capacity of domestic financial markets to match large capital inflows. The Asian Bond Markets Initiative (ABMI) is in support of such national efforts. The growth of domestic capital markets would provide alternative channels for intermediating ample domestic savings and foreign funds for domestic investment and would help alleviate the burden put solely on the banking sector.

**Controls on capital inflows.** Capital controls are a common tool for limiting capital inflows in emerging market economies. While capital controls can take a variety of forms, for countries that have substantially liberalized the capital account, more market-based controls—such as the Chilean unremunerated reserve requirement imposed on capital inflows—have been the predominant option in recent years. Thailand adopted this measure in December 2006, but encountered a severe side effect of rapidly falling stock prices, suggesting that designing and implementing capital inflow control is not an easy task. To these economies, returning to the days of draconian capital controls or recreating a system of extensive administrative controls is no longer a viable option.

Evidence on the effectiveness of capital inflow controls is mixed. Country experiences suggest that the best market-based controls can be expected to do is to lengthen the maturity of inflows; such controls can have little impact on the volume. The effectiveness of capital control measures tends to weaken over time as agents in the markets find ways to circumvent them. At the same time, capital controls can produce adverse effects: they tend to increase domestic financing costs, reduce market discipline, lead to inefficient allocations of financial capital, distort decision-making at the firm level, and be difficult and costly to enforce. To the extent that capital controls are effective only for relatively short periods of time, such measures might be used at the time of surges of inflows rather than as a permanent measure (Grenville, 2008). But again, effective implementation is not an easy task. Administering capital controls requires high administrative capacity, as country authorities must constantly look out for unwanted flows—often disguised—entering through other channels.

The story may be different for countries such as the PRC and India, which have not substantially opened their capital accounts and maintain restrictions on some types of capital transactions. In a way, they have been successful in managing the process of gradual capital account liberalization by moving to adopt investor-based controls and prudential-like measures. Capital account liberalization needs to be well-sequenced, proceed within an integrated framework to improve macroeconomic and financial-sector

management, and be accompanied by the development of institutions that can ensure markets' continued stability.

***Easing restrictions on capital outflows.*** Countries with significant capital controls have tried easing restrictions on capital outflows in a limited manner to reduce net capital inflows. Easing restrictions on capital outflows is expected to generate some capital outflows, reduce the size of net capital inflows, and hence mitigate the upward pressure on exchange rates. This is the policy that used to be pursued by many East Asian economies, like Japan, Korea, and Taipei, China during the periods of large balance of payments surpluses. It has been adopted by the PRC in recent years.

As these measures are expanded, it must be kept in mind that a more liberal capital outflow policy could invite more capital inflows. Thus, to be effective, these measures need to be combined with other measures mentioned above, such as strengthening financial sector supervision.

## **7.2. Exploring other options**

The countries in the region can explore other policy options that they have not rigorously pursued in the past in order to contain, mitigate, or cope with the adverse impact of surges in capital inflows.

***Fiscal policy tightening.*** In emerging Asia, fiscal policy has not yet been explored thoroughly as an instrument for managing large capital inflows. Although there is no definitive theoretical presumption on the impact of fiscal policy on capital flows, evidence from country experiences suggests that countries that use fiscal tightening tend to perform better than others in managing the adverse consequences of large capital inflows (Schadler, 2008). Tightening fiscal policy or more generally making the fiscal policy stance countercyclical to surges in capital inflows has often been found to help reduce the risk of an overheating economy and the appreciation pressure on the domestic currency. This lessens the need for the monetary authorities to engage in costly and often ineffective sterilized intervention in the foreign exchange market. Exploring ways to make fiscal policy flexible in the face of surges in capital inflows therefore should receive high priority.

The appropriateness of this policy for emerging Asia must be assessed carefully because in recent years, most economies in the region have been running very slim fiscal deficits, if not fiscal surpluses. Tightening fiscal policy further can be achieved only if governments are willing to forego the provision of some basic services or curtail much needed investment in infrastructure. A realistic option in the face of surges in capital inflows and the associated economic boom would be to exploit the automatic stabilizer function of the budget. That is, the government may implement planned infrastructure investment and basic services delivery without increasing spending out of higher tax revenues or reducing tax rates. This automatic fiscal tightening can offset the impact of the economic boom associated with surges in capital inflows and lead to a better macroeconomic outcome.

***Rebalancing growth.*** In the context of the economies affected by the 1997–98 financial crisis—Indonesia, Korea, Malaysia, Philippines, and Thailand—there is a need to increase private investment, thus refocusing the engine of growth from external demand to

domestic demand. Public investment especially in soft and physical infrastructure is a key measure to stimulate domestic demand in the short run.

In the context of the PRC, there is a need to reduce savings. The PRC's investment-GDP ratio is very high and the savings-GDP ratio is even higher. The challenge for the PRC is to reduce corporate and household savings and redirect investment towards soft investment with high social rates of return. One effective way would be for the authorities to absorb a large portion of corporate savings (or undistributed profits) through lower interest subsidies to, and/or collection of larger dividends from, state-owned enterprises and through generally higher taxes on private corporations. The revenues could be spent on social sector protection (such as health, education, pension reform), environmental improvement, energy efficiency, and rural sector development.

Although these measures are not intended to contain or mitigate the adverse impacts of large capital inflows, they are desirable not only in and of themselves, but also in order to reduce the current account surpluses and hence to minimize upward pressure on the exchange rate.

### **7.3. Scope for collective action**

The broad consensus in the academic literature, as well as our review of recent country experience in Asia, seems to suggest that none of the available tools to deal with large capital inflows at the individual country level is a panacea, as each involves significant costs or brings about other policy challenges. If policies taken by individual countries are of limited effectiveness, is there any room for collective policy action by a group of countries to deal with large capital inflows? Not surprisingly, relatively little has been said about the potential for collective action, given the presence of general skepticism among economists and policymakers on such approaches and the resulting reluctance of countries to pursue them. However, in the absence of effective national measures to manage excessive capital flows, and given the frequent and compelling need to do something about them, it is time to start thinking outside the box.

**Global solutions.** On the global level, we have observed over the past several decades that there is cyclicity in global capital flows and that the pattern of capital inflows to specific emerging market economies closely matches that of global capital flows into all emerging and developing countries. One global solution, therefore, is to reduce the cyclicity of global capital flows.

The global initiatives of recent years have focused mainly on transparency as a way to minimize the volatility of capital flows. Behind the transparency initiatives is the idea that better quality information leads to a global allocation of resources that is based more on economic fundamentals, hence leading to a more efficient and stable global flow of capital. While there is no doubt that transparency can minimize surprises in the revelation of unfavorable information and hence sudden reversals, it is difficult to believe that transparency alone can eliminate the broader boom-and-bust cycles of capital flows (Metcalf and Persaud, 2003).

The volatility of global capital flows may well be intrinsic to the way financial markets operate. Proponents of such a view point to evidence suggesting that the incidence of crises has not declined despite the increase in transparency, as evidenced by the US subprime crisis. From this perspective, the role of imperfect and asymmetric information is key in creating herd behavior or “information cascades” that lead to market myopia. “Supply-side” reforms in advanced economy financial markets can be a solution to the problem. Ocampo and Chiappe (2003), for example, proposed that a countercyclical element be included in the regulation of financial intermediation and capital flows (see also Griffith-Jones and Ocampo, 2003). However, such drastic reforms of the regulation of capital flows in source countries are not forthcoming and are unlikely to receive wide support in the near future.

**Regional exchange rate coordination.** If no effective global responses are forthcoming, a search for a cooperative solution could begin in our neighborhood. At the regional level, collective action can expand the menu of options available to individual countries. There are three relevant dimensions to regional cooperation in Asia: exchange rate cooperation, financial market supervision and integration, and capacity building on financial supervision and regulation.

If loss of competitiveness is the reason for not allowing its currency to appreciate, a country can cooperate with its competitor neighbors in similar circumstances to take the action simultaneously. Collective currency appreciation is a solution to this dilemma because it allows the economies experiencing large capital inflows to maintain macroeconomic and financial stability without much affecting the international price competitiveness and, hence, the growth prospect of individual countries within Asia (see Kawai, 2008). Such collective appreciation would spread the adjustment costs across Asia, thus minimizing and balancing the costs from the perspective of individual economies.

In order for collective currency appreciation to become a viable policy option, there must be an effective mechanism of intensive policy dialogue and cooperation. The existing policy dialogue processes among the region’s finance ministers (such as ASEAN+3)<sup>8</sup> and central bank governors (such as the Executives’ Meeting of East Asia-Pacific Central Banks [EMEAP]) can play a critical role in fostering the establishment of such a mechanism.

**Regional financial market surveillance and integration.** One of the main factors behind the severity and simultaneity of the Asian financial crisis was the large impact of swings in international investor sentiments and the spread of the contagious effects throughout the region. To mitigate the impact of investor herd behavior and financial contagion, it is critical for the region’s policymakers to intensify their monitoring of financial markets and exchange information on a continuous basis. From this perspective, the surveillance and monitoring of regional financial markets is an important area for regional cooperation.

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<sup>8</sup> ASEAN+3 consists of the 10 members of the Association of Southeast Asian Nations (ASEAN) plus the PRC, Japan, and Korea.

It is high time for the region to introduce institutions that conduct meaningful financial market surveillance and address common issues for financial market deepening and integration. This could be best accomplished by establishing a new, high-level “Asian Financial Stability Dialogue” on regional financial-sector issues (ADB, 2008). This forum would bring together all responsible authorities—including finance ministries, central banks, and financial supervisors and regulators—to address financial market vulnerabilities, regional capital flows, common issues for financial-sector supervision and regulation, and efforts at regional financial integration through greater harmonization of standards and market practices.

**Capacity building.** The lessons of the Asian crisis reiterated the need for a sound regulatory and supervisory framework. The role of regulation and supervision in such a situation is to promote financial market stability and minimize systemic risk. Regulators and supervisors must therefore be well trained so that they will be prepared to deal with handling increasing financial risks in the markets, including financial contagion. In line with this, regional cooperation on capacity building for financial regulators and supervisors can be enhanced. This would be another important function for the “Asian Financial Stability Dialogue.”

**Table 4. Summary of Policy Measures**

	<b>Policy tools</b>	<b>Intended outcome</b>	<b>Possible limitations</b>	<b>Evidence on effectiveness</b>	<b>Recommended policy responses</b>
<b>Macroeconomic measures</b>	Sterilized intervention	Prevent nominal and real appreciation while neutralizing the growth of base money	Rising quasi-fiscal cost; higher interest rates that attract additional inflows; unable to prevent real appreciation over the medium term due to eventual inflation	Some evidence of effectiveness in the short term, but not in the medium to long term	Limit the use of sterilized intervention as a short-run measure; reduce international reserves through a reserve-sharing arrangement (like a multilateral Chiang Mai Initiative)
	Greater exchange rate flexibility	Direct monetary policy for macroeconomic management; discourage speculative capital inflows by creating two-way risks	Loss of international price competitiveness	Limited evidence on the response of speculative flows	Allow greater flexibility through regional cooperation (see the discussion of regional collective action)
	Fiscal policy tightening	Contain inflationary pressure; discourage capital inflows by reducing interest rate pressure; prevent real appreciation	Lack of flexibility and timeliness; a natural limit to the degree of tightening; reduction of the provision of some basic services and infrastructure investment; possibility of a positive signaling effect to attract additional inflows	Some evidence of effectiveness in preventing real appreciation and keeping better growth performance following capital flow reversals	Exploit the automatic stabilizer function of the budget; that is, the government may implement planned infrastructure investment and basic services delivery without increasing spending out of higher tax revenues or reducing tax rates

<b>Structural measures</b>	Financial sector reform	Minimize the negative impact of capital flow reversals by promoting risk management	Not achievable in the short run	n.a.	Strengthen financial-sector supervision and regulation; develop and deepen capital markets
	Controls on capital inflows	Limit capital inflows	High administrative capacity required, which is lacking in many emerging market economies	Some evidence of effectiveness in lengthening the maturity of inflows without much impact on the volume; effectiveness tends to weaken over time	For financially open economies, carefully design selective, temporary, market-based controls and avoid a system of extensive administrative controls. For financially closed economies, pursue capital account liberalization in a well-sequenced way together with institutional development
	Easing restrictions on capital outflows	Reduce net inflows by encouraging outflows; allow residents to diversify risks	Insufficient pent-up demand for foreign assets; possibility of a positive signaling effect to attract additional inflows	Some evidence of promoting additional capital inflows	Ease outflow controls together with complementary measures such as strengthening financial sector supervision
	Rebalancing growth	Reduce current account surpluses by refocusing sources of growth from external to domestic demand; contain upward pressure on the real exchange rate	Policymakers' reluctance to abandon existing policies	n.a.	For former-crisis economies, stimulate infrastructure investment. For PRC, reduce corporate and household savings and redirect investment toward social sector protection
	Further trade liberalization	Reduce current account surpluses by encouraging imports; contain upward pressure on the real exchange rate	Failure of net imports to rise when the tradables sector becomes more competitive as a result; possibility of a positive signaling effect to attract additional inflows	n.a.	Sustain ongoing efforts to liberalize trade

<b>Collective action</b>	Global solutions	Greater transparency	Minimize the volatility of capital flows by strengthening the role of fundamentals	Lack of sufficient attention to fundamentals by market participants	Occurrence of crises despite the rise in transparency	Support ongoing international transparency initiatives
		Countercyclicality in financial regulation	Minimize herd behavior resulting from imperfect and asymmetric information	Unlikely to receive wide support	n.a.	Consider this measure as part of the agenda for future research
	Regional solutions	Regional exchange rate coordination	Maintain macroeconomic and financial-sector stability without much affecting international price competitiveness	Not viable without a mechanism for conducting intensive policy dialogue and cooperation	n.a.	Utilize existing policy dialogue processes such as ASEAN+3 ERPD and EMEAP to achieve collective currency appreciation
		Regional financial market surveillance/integration	Monitor regional financial markets and capital flows; mitigate the impact of investor herd behavior and financial contagion	Not viable without an effective institution	n.a.	Establish a new, high-level "Asian Financial Stability Dialogue" on regional financial-sector issues
		Regional	Enhance capacity of financial	Not viable without an effective	n.a.	Include this measure among



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