Managing Capital Flows: Lessons from the Recent Experiences of Emerging Asian Economies

By

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1. Introduction

The chapter draws lessons from the recent experiences of emerging Asian economies (EAEs)[1] for managing capital inflows. While capital inflows bring about invaluable benefits, large flows, if not managed properly, can expose the recipients to various types of risks. EAEs collectively were a significant recipient of capital inflows prior to the global financial crisis. Although the Republic of Korea (hereafter Korea) and Indonesia were affected by capital outflows to some extent, most of Asia did not suffer as much as eastern European and Baltic countries did. Following the crisis, they were among the first to recover and are now experiencing a new surge of inflows. The issue of how best to manage capital inflows is therefore especially relevant for Asia. We frame our discussion primarily on the basis of the country and analytical chapters of Kawai and Lamberte (2010) with some updated information.

2. Capital Flows in Emerging Asian Economies

Degree of capital account openness

Capital account openness varies across EAEs, according to both *de jure* and *de facto* measures. First, Chinn and Ito (2009) constructed an index of financial openness based on the IMF's *Annual Report on Exchange Arrangements and Exchange Restrictions*, where a higher index value indicates greater openness (Figure 1). Except for Hong Kong and Singapore, most EAEs maintain various controls on cross-border capital flows, though many are substantially open with respect to foreign direct investment (FDI) inflows and portfolio inflows through purchases by nonresidents of domestic securities.

Second, Lane and Milesi-Ferretti (2006) developed a volume-based measure of international financial integration, defined as the ratio of the stock of assets and liabilities to GDP (Table 1). We have updated data for 2005 and 2009 by using the IMF's *International Financial Statistics* stock data, where available, or capital flow data, where stock data are not available. For Asia, the ratio generally rose for all economies from 1990 to 2009. Despite the relatively low overall de jure openness (as indicated by the Chinn-Ito index), the capital account of many economies in fact appears to have been sufficiently open to allow a sizable accumulation of external assets and liabilities over time, with the ratio exceeding or close to 100% for all but two economies in 2009.

Patterns of capital flows

EAEs saw a resurgence of capital flows after the 1997-98 Asian financial crisis, with inflows reaching $856 billion in 2007, before the onset of the global financial crisis (Table 2). The PRC's inflows rose dramatically, posting $241 billion in 2007, which accounted for 28% of the total in EAEs; India also saw rapid increases in inflows, which reached $98 billion in 2007. Capital outflows also picked up, suggesting that capital flows in the region have become increasingly two-way. The PRC and Hong Kong had

[1] Unless noted otherwise, emerging Asian economies (EAEs) include the following 14 economies: Cambodia (CAM); People's Republic of China (PRC); Hong Kong, China (HKG); India (IND); Indonesia (INO); Republic of Korea (KOR); Lao PDR (LAO); Malaysia (MAL); Myanmar (MYA); the Philippines (PHI); Singapore (SIN); Taipei,China (TAP); Thailand (THA); and Viet Nam (VNM). Of these, we pay particular attention to nine economies for which Kawai and Lamberte (2010) include country chapters.

the largest capital outflows in 2007. Together, they accounted for 60 percent of the total outflows from EAEs, followed by Singapore and Korea.

As to the composition of capital flows, FDI began to take the dominant role in the middle of the 1990s (Figure 2). By the late 1990s, FDI had accounted for more than half of all private capital inflows to EAEs. Portfolio equity inflows increased following the Asian financial crisis. Most Asian economies reduced barriers to investment on equity markets to recapitalize ailing banks and non-financial corporations. As a result, equity inflows rapidly increased in 1999, but momentum was reversed in 2000. Portfolio equity inflows resurged in 2003, peaking at $205 billion in 2007. Equity inflows turned negative (-$81 billion) in 2008 as the global crisis deepened, but rebounded strongly in 2009.

Unlike portfolio equity inflows, debt securities inflows were a relatively small component of capital inflows in EAEs, although they have been on the rise, especially in Korea. Underdevelopment of the local currency bond market has been pointed out as one of the main reasons. Currently, several policy initiatives are underway to promote local-currency denominated bond markets, and debt securities inflows are expected to increase over time. Bank financing in EAEs was relatively small in the 1990s except during the three years prior to the 1997-98 crisis. Thereafter, bank financing accounted for a negligible proportion of capital inflows in Asia until 2006. In 2007 it rose sharply to almost $70 billion, with Korea accounting for almost two-thirds of the total. In 2008, bank financing turned negative (-$12 billion), with Korea accounting for almost all of it.

Impact of capital flows

Persistent current account surpluses and rising capital inflows exerted upward pressure on the exchange rates in most EAEs until right before the global financial crisis. In part to contain the appreciation pressure, the monetary authorities of most economies intervened in the foreign exchange market and thereby accumulated massive foreign exchange reserves. Total reserves held by EAEs rose from $214 billion or 5% of GDP in 1990 to $4.8 trillion or 44% of GDP in 2010, with the PRC contributing three-fifths. In 2006 and 2007, many EAEs experienced higher increases in money supply growth, indicating that sterilization was incomplete. Although goods and services price inflation had generally remained low until the global financial crisis (except for what appears to be the temporary impact of increases in world commodity prices in 2008), it has been rising in recent months. Equity prices saw a rising trend since 2003 notably in Indonesia, India, and the PRC. They dropped sharply at the onset of the global financial crisis, but recovered quickly as foreign capital returned to the EAEs.

3. Policy Responses to Capital Flows

Policy responses by EAEs until the onset of the global financial crisis can broadly be classified into sterilized intervention; interest rate reductions; and capital controls.[2]

Intervention in the foreign exchange market

The monetary authorities of all nine case study economies intervened in the foreign exchange market, at least partially sterilizing its impact. Lack of suitable government paper was often a challenge. The People's Bank of China (PBOC), when it ran out of treasury bonds, started selling its own low-yielding central bank bills (CBBs) to

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[2] This section draws on the nine country chapters of Kawai and Lamberte (2010).

commercial banks (while raising reserve requirements 15 times from September 2003 to end-2007). Likewise, the Reserve Bank of India (RBI) ran out of government securities and agreed with the government in January 2004 to put in place the Market Stabilization Scheme (MSS), which authorizes RBI to sell bonds on behalf of the government for the purpose of sterilization (while also raising reserve requirements).

Some economies resorted to creative ways of sterilization. The Bank of Korea (BOK) used its own monetary stabilization bonds (MSBs), but as the balance rose sharply, it became costly to remain so engaged. The Korean government then initiated a scheme under which it sold securities and deposited the proceeds with the BOK, thereby allowing the central bank to use the won for currency market intervention. Another case is the Bangko Sentral ng Pilipinas (BSP). After exhausting the conventional tools, in 2007, BSP opened a special deposit account (SDA) facility to banks in order to absorb excess liquidity. Later, the counterparties were expanded to include non-bank government corporations as well as banks' pension funds and trust operations.

Sterilization created its own challenges. Bank Indonesia (BI) partially sterilized intervention mainly using one-month and three-month Bank Indonesia Certificates (SBI), but as the SBI interest rates were more than 8%, the operation attracted even more portfolio inflows. BI was therefore compelled to allow the exchange rate to appreciate, partially absorbing the impact of capital inflows thereby. The State Bank of Vietnam (SBV), finding open market operations and reserve requirements less than fully effective, required commercial banks to purchase newly introduced 365-day bills in March 2008. This measure forced banks to run to the inter-bank market, pushing up the inter-bank rates sharply. As banks competed intensively to mobilize deposits to comply with the compulsory purchase of the 365-day bills, the deposit rates also rose.

Interest rate policy

When a large interest rate differential attracts additional foreign capital, the monetary authorities may need to narrow the gap by lowering domestic interest rates. This explains why the PBOC was cautious in tightening monetary policy: when it raised interest rates it made sure to maintain a 3% spread in favor of the dollar LIBOR, with the intention of letting the renminbi appreciate at 3% per annum. Likewise, in India, while the RBI raised the reverse repurchase and repurchase rates between January 2006 and April 2007, it reduced the interest rates on non-resident deposits. Similar interest rate cuts were observed in Indonesia (from January 2006 to December 2007), the Philippines (from March 2007 to March 2008), and Thailand (from January to July 2007). Viet Nam was an exception, however, as the SBV raised all official interest rates in February 2007 in order to contain the acceleration of money supply growth and inflation.

Capital controls

Use of capital controls was exceptional. Prior to the global financial crisis, only four EAEs tightened or introduced capital controls to stem the tide of capital inflows. Two cases should clearly be separated. In one case, countries with a tightly controlled regime reversed the pace of capital account liberalization. In 2006, the PRC restricted the ability of foreign banks to borrow dollars abroad to fund dollar assets within the country, which was subsequently reinforced by the regulation that banks meet an increase in reserve requirements with dollar deposits with the central bank. In 2007, India tightened limits on external commercial borrowing by placing a cap on the amount of foreign exchange domestic firms could convert into rupees; also introduced controls

against "participatory notes," which are over-the-counter derivatives sold by a registered foreign institutional investor to a non-registered investor.

The other case involved measures introduced by a country with a substantially open capital account regime, especially with respect to capital inflows. On 18 December 2006, Thailand imposed a 30% unremunerated reserve requirement (URR) on all equity and short-term securities investment inflows with maturities of less than one year, which was however lifted on the following day for equity flows. The URR for fixed income inflows remained until March 2008. There is statistical evidence to suggest that capital inflows shifted to equity flows, but the econometric analysis of Coelho and Gallagher (2010) shows that the Thai URR reduced the overall volume of inflows by 0.75% of GDP (which was marginally significant statistically).[3] In 2007, Korea re-imposed limits on lending in foreign currency to Korean firms, while restricting foreign banks' swapping dollars borrowed abroad for won. These measures were intended to slow down foreign banks' funding of their branches in Korea.

4. Managing Capital Inflows in the Post-Crisis Era

As the world's engine of growth, Asia has seen a resumption of capital inflows. Conventional macroeconomic tools seem to offer limited effectiveness in managing large capital inflows, especially given the large balance of foreign exchange reserves many of the economies have accumulated. Allowing the exchange rate to appreciate is often the best way to cope with large capital inflows (this is the standard response of most industrial countries), but emerging economies are naturally reluctant to allow a significant appreciation of their currencies. In view of this limited policy space, some EAEs have introduced prudential and other regulatory measures affecting capital inflows and foreign exchange positions in the post-global financial crisis era (Table 3).

Prudential and other regulatory measures

In assessing the prospective usefulness of prudential and other regulatory measures limiting capital inflows or what the IMF (2011) calls capital flow management measures (CFMs), it is important to bear in mind the following considerations for EAEs:

- ASEAN member states are committed to creating an ASEAN Economic Community (AEC) by 2015, which is defined to be a region characterized by free movement of investment and freer movement of capital. It is difficult for any of these countries to reverse the process of capital account liberalization by introducing new barriers to capital mobility except during an emergency on a temporary basis.
- Hong Kong and Singapore, as major international financial centers, cannot be seen to be taking any measure to restrict the freedom of international investors to move funds across borders. Given the depth of their financial markets and the robust regulatory regimes in place, use of CFMs is probably not necessary except during a crisis (they have recently introduced prudential measures to contain upward pressure on real estate prices).
- Cambodia and Lao PDR have virtually no domestic financial markets to speak of. This means that, in the foreseeable future, no large portfolio inflows are expected, even though their capital account regime is fairly open. The same can also be said about Myanmar, whose capital account is all but fully closed.

[3] But they show that it did not affect the real exchange rate or the composition of inflows.

- The PRC and India (and, to a lesser extent, Viet Nam) still maintain extensive restrictions on capital inflows (as well as on capital outflows). For these countries, use of capital controls only represents a reversal of the gradual capital account liberalization process.[4] Just as well, they could decelerate the pace of capital account liberalization over the coming years.
- Except for Hong Kong and Singapore, the other EAEs maintain some restrictions on capital inflows, with tighter controls on outflows. Even Indonesia, arguably the most financially open economy in the rest of the region, is known to subject banking flows to tight control. In these economies, portfolio inflows take place mainly through purchases by nonresidents of domestic securities.
- Korea, as an OECD country, has little leeway in consistently deviating from the policy of free capital mobility.

These considerations suggest that (i) use of outright capital controls (or what the IMF (2011) calls residency-based CFMs) is relevant only for a handful of EAEs (e.g., Indonesia, Malaysia, Philippines, and Thailand); (ii) purchases by nonresidents of domestic securities are the main (or the only) target of any potential CFMs; and (iii) use of outright capital controls (that explicitly discriminate against foreign investors) is increasingly ruled out as a feasible policy option, especially if it is pursued by individual countries. This last point is clearly borne out by the types of measures that have been introduced by some of these countries recently to limit capital inflows or inflow volatility (see Table 3). Except for the Indian measure, the other measures (introduced by Indonesia, Korea, and Thailand) are carefully designed not to discriminate against foreign investors. The pressing question for emerging Asia's policymakers is not when or in what sequence to employ CFMs. It is rather what non-residency-based CFMs are effective in mitigating the risk of capital inflows (if not directly reducing the purchases by nonresidents of domestic securities) as they preserve their commitment to an open capital account regime.

Collective action

At the regional level, collective action is an insufficiently explored tool. For example, if loss of international price competitiveness is the reason for not allowing currency appreciation, a country's authorities can cooperate with their competitor neighbors in similar circumstances to take the action simultaneously (Kawai, 2008). This would lead to a concerted appreciation of currencies in the face of persistent capital inflows in the region. Another area of cooperation would be to coordinate the introduction of prudential and other regulatory measures, including outright capital controls, given the recognition that individual countries are finding it increasingly difficult to do so alone. Collective action is helpful in two ways. First, if these measures are either introduced as part of regional efforts or sanctioned by a regional decision, there would be less punitive reaction from international investors (as was the case with Thailand in December 2006). Second, these measures, if effective in one country, would divert more capital inflows to its regional neighbors. Without a regional framework, use of prudential and other regulatory measures to limit capital inflows could turn into a tool of beggar-thy-neighbor policy.

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[4] In these countries, it is not very useful to talk about the effectiveness of any new capital control measure, independently of the effectiveness of the overall control regime within which it is introduced. Given the extensive administrative apparatus, they can always take measures to make capital controls work.

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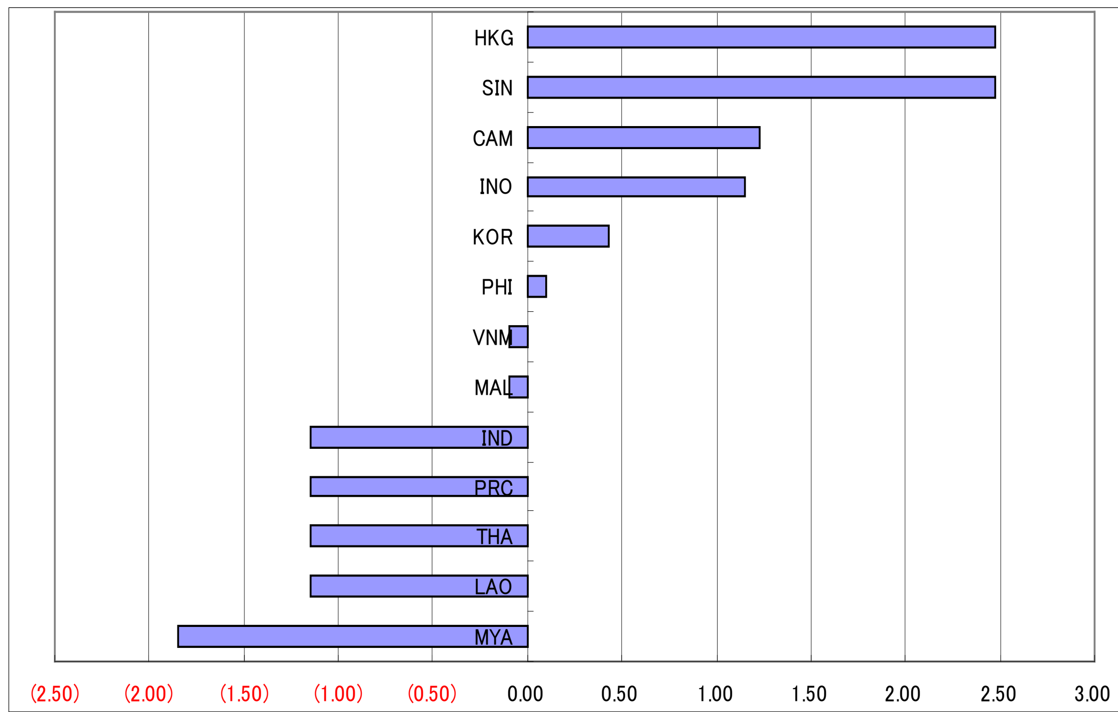
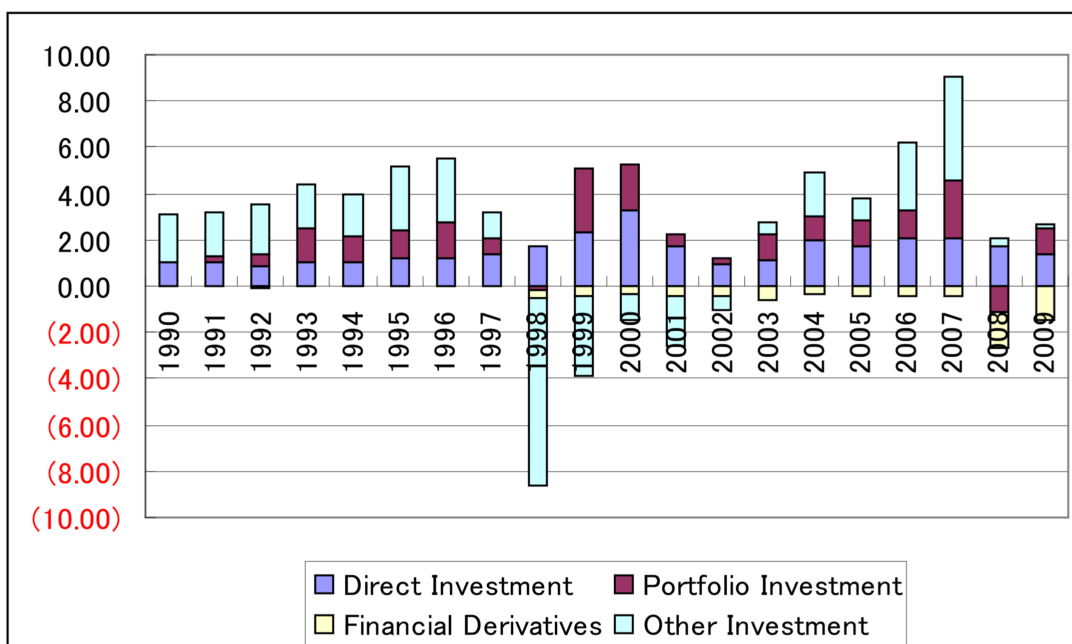
Figure 1: *De jure* Capital Account Openness in Emerging Asia, 2009



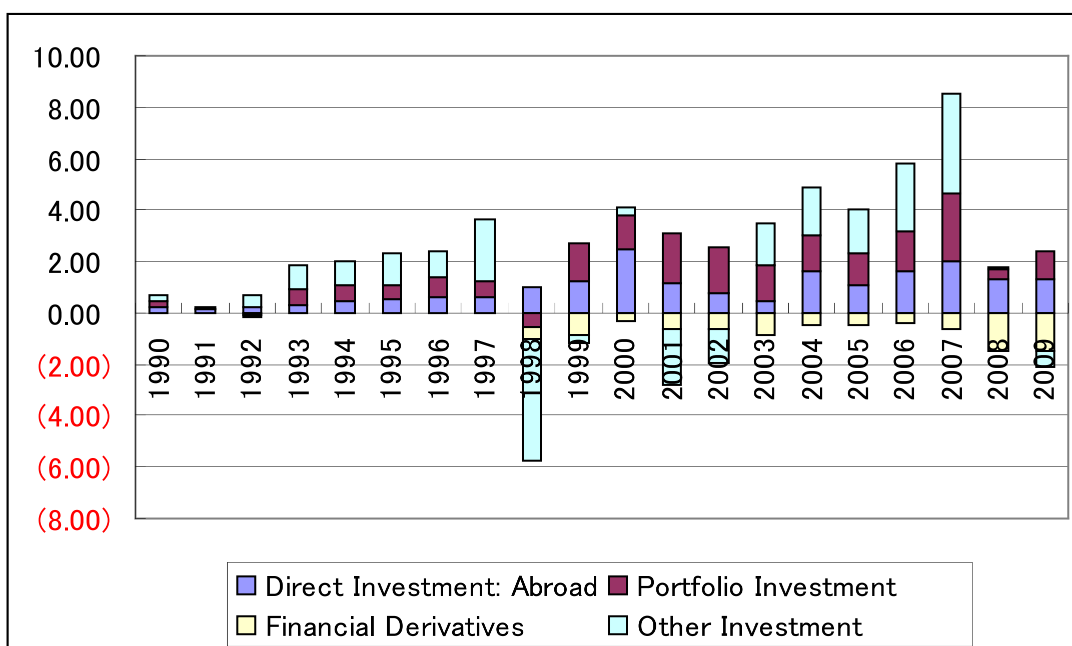
Source: Chinn and Ito (2009).

Figure 2: Composition of Capital Flows in Emerging Asia, 1990-2009 (% GDP)

A. Inflows



B. Outflows



Sources: International Financial Statistics (IMF); World Development Indicators (World Bank); CEIC accessed on 15 April 2011.

Table 1: External Assets and Liabilities as a Share of GDP in Emerging Asia, 1990-2009 (%)

Economies	1990	1995	2000	2005	2009
Cambodia (CAM)		96.3	176.8	145.2	156.0
China, People's Republic of (PRC)	38.9	58.7	84.7	90.6	108.3
Hong Kong, China HKG)	1462.9	1338.6	1246.5	1434.5	2097.1
India (IND)	30.2	39.7	42.3	49.1	64.1
Indonesia (INO)	80.6	86.2	136.8	86.1	76.9
Korea, Republic of (KOR)	35.4	50.9	82.7	107.5	161.9
Lao PDR (LAO)	215.3	147.5	198.7	148.0	153.2
Malaysia (MAL)	121.6	160.8	185.5	183.9	242.2
Philippines (PHI)	95.0	97.3	143.3	114.7	99.2
Singapore (SIN)	361.3	419.5	809.5	966.7	1216.4
Taipei,China (TAP)	103.4	97.7	132.3	257.0	369.7
Thailand (THA)	68.8	114.4	142.7	135.1	168.0
Viet Nam (VNM)		96.2	110.7	100.2	129.8

Sources: For 1990, 1995 and 2000, the figures came from Lane and Milesi-Ferretti (2006), except for Taipei, China, whose figures were obtained from the China Economic Information Center (CEIC) database. For 2005 and 2009, the figures were calculated using IMF IFS stock data, where available, or capital flow data, where stock data are not available. For Lao PDR and Viet Nam, the latest data are for 2007.

Table 2: Capital Flows in Emerging Asia, 1990-2009 (US$ billion)

Year	Gross Capital Flows	Gross Capital Flows (% of GDP)	Capital Inflows	Capital Inflows (% of GDP)	Capital Outflows	Capital Outflows (% of GDP)	Net Inflows	Net Inflows (% of GDP)
1990	52.85	4.18	42.96	3.40	9.90	0.78	33.06	2.62
1991	55.01	4.17	50.79	3.85	4.22	0.32	46.57	3.53
1992	72.10	5.11	56.14	3.98	15.97	1.13	40.17	2.85
1993	133.06	8.63	97.91	6.35	35.15	2.28	62.76	4.07
1994	148.74	8.10	108.13	5.89	40.61	2.21	67.53	3.68
1995	209.30	9.43	155.76	7.02	53.54	2.41	102.22	4.61
1996	243.94	9.81	181.56	7.30	62.39	2.51	119.17	4.79
1997	277.68	11.00	143.10	5.67	134.58	5.33	8.52	0.34
1998	-198.11	-8.34	-128.14	-5.40	-69.97	-2.95	-58.17	-2.45
1999	151.26	5.72	73.76	2.79	77.50	2.93	-3.75	-0.14
2000	332.11	11.41	167.11	5.74	165.00	5.67	2.10	0.07
2001	47.70	1.59	32.29	1.08	15.41	0.51	16.88	0.56
2002	95.19	2.89	55.93	1.70	39.26	1.19	16.66	0.51
2003	260.85	7.04	149.21	4.03	111.65	3.01	37.56	1.01
2004	479.42	11.20	300.36	7.02	179.06	4.18	121.30	2.83
2005	571.24	11.56	310.28	6.28	260.96	5.28	49.32	1.00
2006	973.47	16.79	499.91	8.62	473.57	8.17	26.34	0.45
2007	1,595.29	22.22	855.97	11.92	739.32	10.30	116.65	1.62
2008	237.95	2.88	91.13	1.10	146.82	1.78	-55.69	-0.67
2009	318.60	3.67	271.67	3.13	46.93	0.54	224.74	2.59

Sources: International Financial Statistics (IMF); World Development Indicators (World Bank); CEIC.

Table 3. Capital Flow Prudential and Other Regulatory Measures Announced or Adopted by Emerging Asian Economies, 2010-11

Emerging Asian Economies	Measures
India	• June 2010: limited the amount of short-term bonds that could be sold to foreign investors (while raising the overall ceiling for FII investment in debt in September 2011)
Indonesia	• June 2010: imposed a one-month holding period for SBIs while announcing the introduction of longer-term (9-12 months) SBIs (from August/September); introduced new regulations on banks' net foreign exchange open positions • January 2011: re-introduced a cap (in relation to capital) on oversees short-term borrowing by banks while requiring banks to set aside a higher percentage of their foreign exchange holdings as reserves • May 2011: lengthened the one-month SBI holding period to six months • July 2011: restricted investment by banks in foreign currency bonds issued in the domestic market in circumvention of measures to restrict foreign currency loans
Korea	• June 2010: placed limits on foreign exchange derivatives positions, in relation to the capital base of financial institutions; further restricted the use of foreign currency loans by banks within Korea; and tightened regulations on the foreign currency liquidity ratio of domestic banks • December 2010: announced the introduction of a tax on banks' foreign exchange borrowing and the re-instatement of withholding tax on interest income from government bonds (from January 2011)
Thailand	• October 2010: re-imposed withholding tax on interest income and capital gains from foreign bond holdings

Sources: relevant central bank publications and press reports.