

Mohan, Rakesh; Kapur, Muneesh

Working Paper

Liberalization and regulation of capital flows: Lessons for emerging market economies

ADB Working Paper, No. 186

Provided in Cooperation with:

Asian Development Bank Institute (ADBI), Tokyo

Suggested Citation: Mohan, Rakesh; Kapur, Muneesh (2010) : Liberalization and regulation of capital flows: Lessons for emerging market economies, ADB Working Paper, No. 186, Asian Development Bank Institute (ADBI), Tokyo

This Version is available at:

<https://hdl.handle.net/10419/53666>

Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

Terms of use:

Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.



ADB Working Paper Series

Liberalization and Regulation of Capital Flows: Lessons for Emerging Market Economies

Rakesh Mohan and
Muneesh Kapur

No. 186
January 2010

Asian Development Bank Institute

Rakesh Mohan is a distinguished consulting professor at the Stanford Center for International Development, Stanford University, and a former deputy governor of the Reserve Bank of India. Muneesh Kapur is director of the Special Studies Unit, Department of Economic Analysis and Policy, Reserve Bank of India.

An earlier draft of this paper was presented at the Conference on Global Financial Crisis: Financial Sector Reform and Regulation, organized by ADBI in Tokyo (21–22 July 2009). The paper has benefited immensely from the comments on the earlier draft provided by the discussant, Eric Ramstetter, and participants Charles Adams, David Mayes, and Michael Pomerleano. The authors have also benefited from comments generously provided by Nick Hope, Anne Krueger, Ashoka Mody, and Y. V. Reddy. Views expressed in the paper are personal and do not necessarily represent those of the Reserve Bank of India.

The views expressed in this paper are the views of the authors and do not necessarily reflect the views or policies of ADBI, the Asian Development Bank (ADB), its Board of Directors, or the governments they represent. ADBI does not guarantee the accuracy of the data included in this paper and accepts no responsibility for any consequences of their use. Terminology used may not necessarily be consistent with ADB official terms.

The Working Paper series is a continuation of the formerly named Discussion Paper series; the numbering of the papers continued without interruption or change. ADBI's working papers reflect initial ideas on a topic and are posted online for discussion. ADBI encourages readers to post their comments on the main page for each working paper (given in the citation below). Some working papers may develop into other forms of publication.

Suggested citation:

Mohan, R., and M. Kapur. 2010. Liberalization and Regulation of Capital Flows: Lessons for Emerging Market Economies. ADBI Working Paper 186. Tokyo: Asian Development Bank Institute. Available: <http://www.adbi.org/working-paper/2010/01/14/3434.liberalization.regulation.capital.flows/>

Asian Development Bank Institute
Kasumigaseki Building 8F
3-2-5 Kasumigaseki, Chiyoda-ku
Tokyo 100-6008, Japan

Tel: +81-3-3593-5500
Fax: +81-3-3593-5571
URL: www.adbi.org
E-mail: info@adbi.org

© 2010 Asian Development Bank Institute

Abstract

Capital flows to emerging market economies (EMEs) have been characterized by high volatility since the 1980s. In recent years (especially since 2003), although gross as well as net capital flows to the EMEs have increased, they could not be absorbed domestically. Overall, savings have flowed uphill from EMEs to advanced economies, challenging the conventional view that capital flows to EMEs are always beneficial through augmentation of their resources leading to greater investment. Full capital account liberalization can impart avoidable volatility and have an adverse impact on growth prospects of EMEs. Available evidence is strongly in favor of a calibrated and well-sequenced approach to opening up the capital account and its active management, along with complementary reforms in other sectors. Greater caution is needed in the liberalization of debt flows.

Despite much advice to the contrary, most EMEs manage their capital accounts actively to cushion their economies from undue volatility, including interventions in the foreign exchange markets accompanied by sterilization. Sound macroeconomic and financial policies—accompanied by prudent capital account management, greater exchange rate flexibility, purposive use of prudential regulation, and continued financial market development practiced by most Asian EMEs over the past decade—have cushioned their economies from the current global financial crisis that started in 2007. They have successfully achieved a virtuous circle of continuing growth, low and stable inflation, and financial stability. How these elements can be best combined will depend on the country and on the period: There is no “one size fits all.”

Such a discretionary approach does put a great premium on the skill of policymakers and can run the risk of markets perceiving central bank actions becoming uncomfortably unpredictable. Such risk is mitigated by a record of successful management.

JEL Classification: E42, E44, E52, E58, F3, F4, G15

Contents

1.	Introduction.....	1
2.	Capital Flows to Emerging Market Economies: Stylized Facts	2
	2.1 Trends in Capital Flows to Asian EMEs	9
3.	Capital Flows to Emerging Market Economies: Theoretical Perspectives and Empirical Evidence	15
	3.1 Empirical Evidence.....	16
4.	Concluding Observations	33
	Appendix 1: Current Account Balances and Capital Flows to Select Asian EMEs	35
	References.....	39

1. INTRODUCTION

Since the early 1990s, there has been a large trend increase in the volume of private capital flows, both inflows and outflows, to emerging market economies (EMEs). Net capital inflows to EMEs jumped from an average of 8 billion United States (US) dollars during the 1980s, to an average of US\$200 billion during 2003–2006, and to a record high of US\$617 billion during 2007. The increase in cross-border capital flows to and from EMEs during the recent period has taken place in the context of very substantial increases in gross cross-border capital flows overall, including among advanced economies.

The increasing volume of private capital flows to EMEs can be attributed to their growing degree of financial openness over time, perception of continuing strong growth prospects, increasing productivity, growth in overall profitability of firms, positive interest differentials in favor of these economies, and sometimes the expectation of continuing currency appreciation. However, capital flows are not necessarily the outcome of domestic developments alone in recipient countries; they also reflect the role of push factors emanating in the source countries. The stance of monetary policy and the state of financial markets in the major advanced economies may have led to the emergence of comparatively low interest rates and overall low returns in these economies, giving rise to the search for yields.

The traditional pattern of capital flows to EMEs has been in response to the need for financing current account deficits. During the recent period, however, even as capital flows to the EMEs have jumped, current account balances, on an aggregate basis, have actually moved from modest deficits (an average of US\$28 billion during the 1980s) to substantial surpluses (US\$714 billion in 2008). These surpluses have led to increasing foreign reserves of these countries. The external financing constraint that existed up to the 1990s has not been an issue for most EMEs in the recent period. Large capital flows emerged as a problem of plenty during 2003–07 for the major EMEs, creating significant new challenges for macroeconomic management and financial stability.

Boom periods in capital flows have been frequently followed by periods of reversal of these flows on the back of both push and pull factors (Committee on the Global Financial System [CGFS] 2009). The volatility in capital flows is best encapsulated by recent developments: As a group, EMEs were projected by the IMF (in its April 2009 projections) to record capital outflows (net) of US\$190 billion in 2009 as compared with inflows (net) of US\$617 billion in 2007. Despite strong fundamentals, developing Asian EMEs were not immune to such swings: net inflows of US\$165 billion in 2007 were expected to turn into net outflows of US\$47 billion in 2009 (International Monetary Fund [IMF] 2009b). Such large swings in capital flows in a short period typically give rise to serious challenges for macroeconomic management and often impose serious costs on the real economy.

Capital flows that are well above their financing requirements are a relatively new phenomenon for EMEs. If such unrequited flows are not managed actively and appropriately, they can typically be associated with real exchange rate misalignment, credit and asset price booms, inflationary pressures, overheating, and financial imbalances culminating in a financial crisis and capital outflows. Real appreciations, not depreciations, generally worry policymakers the most outside of crisis periods (Obstfeld 2009; Grenville 2008). Since the 1980s, about 15% of the episodes of large capital inflows ended in crisis (Schadler 2008). Thus, in order to insulate their economies from undue volatility, most of the EMEs actively manage their capital accounts to varying degrees, including interventions in foreign exchange markets accompanied by sterilization. This policy response has been the norm among EMEs, despite much advice to the contrary.

Against this backdrop, this paper undertakes a critical review of the lessons for capital account management for EMEs. Section 2 reviews stylized facts in regard to capital flows to the EMEs since the 1970s. Section 3 assesses the theoretical and empirical literature on the benefits of capital account liberalization on growth. Lessons for sequencing of capital account liberalization and country experiences in regard to management of capital accounts are also discussed. The impact of the ongoing global financial crisis on the Asian EMEs is compared with those in the emerging European economies, and the factors responsible for the differential impact are also highlighted. Concluding observations and key lessons are set out in Section 4.

2. CAPITAL FLOWS TO EMERGING MARKET ECONOMIES: STYLIZED FACTS

Private capital flows to EMEs have grown rapidly since the 1980s, but with increasing volatility over time. Large capital flows to the EMEs can be attributed to a variety of push and pull factors. The pull factors that have led to higher capital flows include overall improvement in macroeconomic management that has led to strong growth in the EMEs over the past decade, macroeconomic stability accompanied by reduction in inflation, along with opening up of the capital account in varying degrees. The major push factor can be attributed to the stance of monetary policy in the advanced economies that led to low interest rates, perceived low financial returns, and the resulting risk mispricing. Periods of loose monetary policy and search for yield in the advanced economies encourage large private capital outflows to the EMEs and reversal in periods of tighter monetary policy. Thus, swings in monetary policy in the advanced economies have led to cycles and volatility in capital flows to the EMEs (Mohan 2009a; Mohan 2009b), over which the EMEs have little control. Innovations in information technology have also contributed to the increased two-way movement in capital flows globally. Overall, in response to these factors, capital flows to the EMEs have grown over time since the early 1980s, but have been associated with increasing volatility (CGFS 2009).

After remaining nearly flat in the second half of the 1980s, private capital flows jumped to an annual average of US\$124 billion during 1990–1996. The data on capital flows in this paper are based on the World Economic Outlook Database (IMF 2009b) released in April 2009. With the onset of the Asian financial crisis, total private capital flows fell to an annual average of US\$86 billion during 1997–2002. Beginning in 2003, a period coinciding with the low interest rate regime in the US and other major advanced economies and the concomitant search for yield, such flows rose more than threefold to an annual average of US\$285 billion during 2003–2007, reaching a peak of US\$617 billion in 2007 (Table 1 and Figure 1). As noted earlier, the EMEs as a group are projected to have witnessed outflows of US\$190 billion in 2009—the first contraction since 1988 (IMF 2009b). Among the major components, while direct investment flows have generally seen a steady increase over the period, portfolio flows and other private flows (bank loans and so on) have exhibited substantial volatility. While direct investment flows largely reflect the pull factors, portfolio and bank flows reflect both the push and the pull factors. It is also evident that capital account transactions have grown much faster relative to current account transactions, and gross capital flows are a multiple of both net capital flows and current account transactions.

**Table 1: Capital Flows (Net) to Emerging and Developing Economies
(US\$ billion)**

Item	1980s	1990–1996	1997–2002	2003–2006	2007	2008	2009
All Emerging and Developing Economies							
Current account balance	-28	-83	4	364	633	714	262
Private capital flows, net	8	124	86	201	617	109	-190
Direct investment, net	12	61	161	208	359	459	313
Private portfolio flows, net	6	65	2	-25	39	-155	-235
Other private capital flows, net	-9	-2	-77	19	219	-195	-268
Official flows, net		-13	8	-90	-101	-60	58
Change in reserves	-10	-58	-114	-550	-1258	-866	-266
Developing Asia							
Current account balance	-15	-23	40	154	406	422	481
Private capital flows, net	12	59	11	82	165	128	-47
Direct investment, net	5	32	59	83	138	223	162
Private portfolio flows, net	1	17	-3	-23	11	-66	-192
Other private capital flows, net	6	11	-45	23	15	-29	-16
Official flows, net	6	0	1	-19	-37	-13	-11
Change in reserves	-11	-37	-80	-309	-673	-634	-514
Africa							
Current account balance	-10	-8	-6	12	11	12	-73
Private capital flows, net	4	3	4	20	33	24	30
Direct investment, net	1	2	11	20	32	32	28
Private portfolio flows, net	0	2	2	7	10	-16	1
Other private capital flows, net	3	-1	-9	-7	-8	8	2
Official flows, net		2	6	0	5	11	15
Change in reserves	0	-3	-6	-35	-62	-54	22
Central and Eastern Europe (CEE)							
Current account balance	-6	-6	-18	-54	-122	-142	-59
Private capital flows, net	1	5	25	81	174	147	-38
Direct investment, net	0	5	15	35	72	64	30
Private portfolio flows, net	0	3	3	18	-7	-13	-6
Other private capital flows, net	1	-2	7	28	109	96	-62
Official flows, net	4	1	1	-4	-6	7	27
Change in reserves	2	-2	-10	-18	-31	-10	37
Commonwealth of Independent States (CIS) and Mongolia							
Current account balance	6	-1	20	71	71	109	1
Private capital flows, net	-6	-3	-4	27	127	-127	-119
Direct investment, net	0	2	5	13	27	44	17
Private portfolio flows, net	0	1	-1	3	14	-37	2

Item	1980s	1990–1996	1997–2002	2003–2006	2007	2008	2009
Other private capital flows, net	-6	-5	-8	11	86	-135	-138
Official flows, net		1	-4	-17	-6	-1	25
Change in reserves	-1	1	-8	-73	-168	33	94
Middle East							
Current account balance	14	-12	24	152	254	342	-10
Private capital flows, net	-11	26	-1	-30	11	-121	-30
Direct investment, net	0	3	8	15	4	11	18
Private portfolio flows, net	3	10	-7	-25	-31	-12	-14
Other private capital flows, net	-14	13	-2	-20	38	-120	-33
Official flows, net	4	2	-6	-38	-59	-76	-9
Change in reserves	-3	-4	-9	-79	-192	-151	47
Western Hemisphere							
Current account balance	-17	-33	-55	29	13	-28	-77
Private capital flows, net	9	33	52	22	107	58	13
Direct investment, net	6	18	63	43	86	84	59
Private portfolio flows, net	1	32	9	-4	42	-11	-24
Other private capital flows, net	2	-16	-20	-17	-21	-15	-21
Official flows, net	7	5	11	-13	2	11	11
Change in reserves	2	-14	-1	-35	-132	-50	49

Notes:

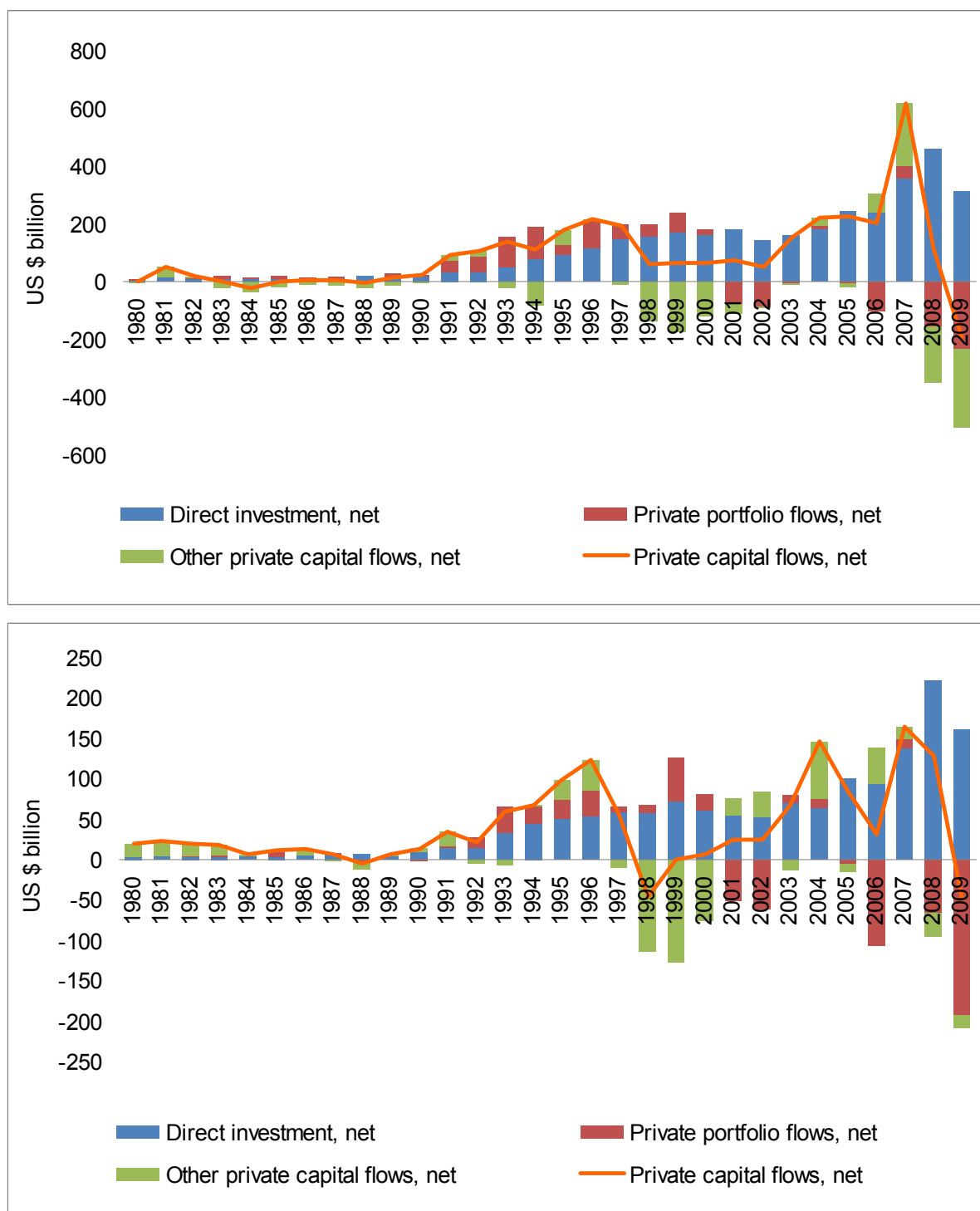
Data in columns 1990–1996 to 2007 are annual averages for the respective periods.

Data for 2009 are IMF projections.

Negative sign in “change in reserves” denotes increase in reserves.

Source: IMF (2009b).

**Figure 1: Capital Flows to All EMEs and Developing Asia
(US\$ billion)**



Source: IMF (2009b).

There are several distinguishing features of the large private capital flows that have taken place in recent years. First was the coexistence of large current account surpluses in many of the recipient countries, particularly in Asia. Second, the large and sudden increase in capital flows

that took place was to EMEs in Commonwealth of Independent States (CIS) and Central and Eastern (CEE) countries (Table 1). Their sudden reversal in 2008 and 2009 has led to predictable balance of payment and macroeconomic crises. Third, a pattern of significant two-way flows has emerged, particularly in Asian EMEs.

Reversals of capital flows to the EMEs are often quick, as again shown by the current financial crisis, necessitating a painful adjustment in bank credit and a collapse of stock prices. Such reversals also result in the contraction of the central bank's balance sheet through the depletion in foreign assets in the form of declining foreign exchange reserves, which may be difficult to compensate through as rapid an accretion of the highest quality domestic assets. These developments can then lead to banking and currency crises, large employment and output losses, and huge fiscal costs, as observed in the European EMEs in 2009. Thus, the boom-and-bust pattern of capital inflows can, unless managed proactively, result in macroeconomic and financial instability. Hence, the authorities in the EMEs need to closely and continuously watch financial and economic developments in the advanced economies, and simultaneously actively manage their capital account.

Underlying the sharp expansion in the volume of net capital flows has been an even more significant growth in gross inflows and gross outflows, particularly from 2003 onward (CGFS 2009). Gross inflows and gross outflows can have greater impact on daily exchange rate movements and expectations relative to net flows, and are often more important from policymakers' point of view. Private capital inflows by nonresidents to all EMEs, taken together, jumped from an annual average of US\$200 billion during 1998–2000, to US\$800 billion in 2003–2006, and then to US\$2.1 trillion in 2007. Over the same time periods, private capital outflows by residents from the EMEs rose from US\$100 billion, to US\$600 billion, and then to US\$1.5 trillion (Table 2a). Capital inflows to and capital outflows from the EMEs, as a proportion of their gross domestic product (GDP), were 14% and 10% in 2007; for developing Asia, these ratios (as % of their GDP) amounted to 16% and 13%, respectively (Table 2b). Although net capital flows to developing Asia as percent to their GDP have been somewhat lower as compared with other regions (as noted earlier), it is interesting to note that the underlying inflows and outflows to developing Asia were higher than that to all regions (except the Middle East).

**Table 2a: Private Capital Inflows and Outflows to Emerging and Developing Economies
(US\$ billion)**

Region/Item	Average 1998–2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
All Emerging and Developing Economies										
Private capital flows, net	108	69	54	150	220	223	203	617	109	-191
Inflow	222	170	167	419	667	842	1314	2130	754	525
Outflow	113	101	113	269	447	619	1112	1513	645	715
Africa										
Private capital flows, net	9	1	2	5	13	26	35	34	25	30
Inflow	15	14	14	19	26	45	70	63	41	34
Outflow	7	13	12	14	13	19	35	29	17	4
Central and Eastern Europe (CEE)										
Private capital flows, net	35	6	26	42	61	100	120	174	147	-38
Inflow	38	15	29	53	93	118	174	217	156	-52
Outflow	2	9	3	11	31	18	54	44	9	-13
Commonwealth of Independent States (CIS)										
Private capital flows, net	0	7	16	19	3	30	55	127	-127	-119
Inflow	2	11	23	46	63	112	161	284	154	-4
Outflow	2	4	7	27	60	82	106	157	282	115
Developing Asia										
Private capital flows, net	-15	19	24	63	144	83	32	164	128	-47
Inflow	57	58	81	215	355	392	558	931	327	465
Outflow	71	39	57	153	212	309	527	767	199	512
Middle East										
Private capital flows, net	1	-7	0	1	-18	-55	-50	11	-121	-30
Inflow	18	-3	10	31	67	84	246	414	-67	7
Outflow	17	4	10	30	85	139	297	403	54	37
Western Hemisphere										
Private capital flows, net	78	43	6	20	17	39	11	107	58	13
Inflow	92	76	30	54	64	90	105	221	143	74
Outflow	14	32	24	34	47	51	94	114	85	61

Note: Data for 2009 are IMF projections.

Source: IMF (2009b).

**Table 2b: Private Capital Inflows and Outflows to Emerging and Developing Economies
(% of respective regional GDP)**

Region/Item	2001	2002	2003	2004	2005	2006	2007	2008	2009
All Emerging and Developing Economies									
Private capital flows, net	1.1	0.8	2.0	2.5	2.1	1.6	4.0	0.6	-1.1
Inflow	2.6	2.5	5.6	7.5	7.9	10.5	13.9	4.1	3.1
Outflow	1.6	1.7	3.6	5.0	5.8	8.9	9.9	3.5	4.2
Africa									
Private capital flows, net	0.3	0.4	0.9	1.8	3.1	3.7	3.0	1.9	2.7
Inflow	3.3	3.1	3.3	3.6	5.4	7.3	5.7	3.2	3.0
Outflow	3.0	2.7	2.5	1.8	2.3	3.6	2.6	1.3	0.3
Central and Eastern Europe (CEE)									
Private capital flows, net	1.0	4.2	5.5	6.5	8.8	9.4	10.9	7.9	-2.6
Inflow	2.7	4.6	6.9	9.8	10.4	13.7	13.7	8.4	-3.5
Outflow	1.7	0.5	1.4	3.3	1.6	4.3	2.8	0.5	-0.9
Commonwealth of Independent States (CIS)									
Private capital flows, net	1.6	3.4	3.3	0.3	3.0	4.2	7.5	-5.8	-7.6
Inflow	2.7	4.9	8.0	8.1	11.2	12.3	16.7	7.1	-0.2
Outflow	1.0	1.5	4.7	7.7	8.2	8.1	9.2	12.9	7.4
Developing Asia									
Private capital flows, net	0.8	0.9	2.1	4.1	2.1	0.7	2.8	1.8	-0.6
Inflow	2.4	3.0	7.2	10.2	9.8	11.9	15.9	4.5	6.1
Outflow	1.6	2.1	5.1	6.1	7.7	11.2	13.1	2.8	6.8
Middle East									
Private capital flows, net	-0.1	0.0	0.2	-2.1	-5.4	-4.2	0.8	-6.7	-1.9
Inflow	-0.5	1.5	4.4	8.0	8.3	20.4	29.7	-3.7	0.4
Outflow	0.6	1.5	4.2	10.2	13.6	24.6	28.9	3.0	2.3
Western Hemisphere									
Private capital flows, net	2.1	0.3	1.0	0.8	1.5	0.3	2.9	1.4	0.4
Inflow	3.7	1.7	2.9	2.9	3.4	3.4	6.1	3.4	2.1
Outflow	1.6	1.4	1.8	2.1	1.9	3.0	3.1	2.0	1.7

Note: Data for 2009 are IMF projections.

Source: IMF (2009b).

These developments could also be attributed to the greater role of portfolio investors on the back of increased financial openness in recent years and the emergence of overall excess liquidity globally. Higher capital outflows also reflect increased institutional investment by pension funds and mutual funds. The rise of institutional investors often helps local markets to deepen and broaden. A more diversified and resilient structure of domestic financial intermediation can actually help achieve a safer and more effective use of foreign investment in domestic assets.

These data show that there has been a significant opening of the capital accounts in EMEs, and particularly in Asia. Domestic market participants are increasingly looking at global capital markets for minimizing their financing costs and diversifying their investments. Such large expansion in two-way flows could be expected to have significant effects on the behavior of private market participants, more than might be implied if one looked at net flows alone. It is possible that even if the net capital flows are not absorbed in the domestic economies, as demonstrated by the increase in foreign exchange reserves, individual market participants could still have benefited from better access to global financial markets in both directions.

While capital inflows to and outflows from EMEs have recorded strong growth over the past decade, the absolute volume of these capital inflows and outflows remains relatively small compared with those among the group of advanced economies. Global capital inflows rose from 5.0% of world GDP in 1998 to more than 17% of world GDP in 2007, the bulk of which was on account of advanced economies. The high volume of sustained inflows and outflows is best captured in the stock of external assets and liabilities. For advanced economies, both external assets and liabilities in 2007 exceeded 220% of their GDP, twice the ratio from a decade earlier (Milesi-Ferretti 2009). For the group of EMEs, external liabilities rose from 70% of their GDP in 1998 to 88% in 2007; over the same period, their external assets recorded relatively faster increase from 57% to 88%, the result of large current account surpluses and a large increase in official reserve holdings.

2.1 Trends in Capital Flows to Asian EMEs

The major Asian EMEs, with the exception of India, have consistently recorded growing current account surpluses since the Asian financial crisis (Appendix 1). This reflects the decline in investment rates in most of the economies that were affected by the financial crisis of the late 1990s. Although the investment rates remain below the precrisis peaks even after a decade, they are still higher than those in most other parts of the world (Kawai and Lamberte 2008). On the other hand, rates of investment in the People's Republic of China (PRC) and India have risen since the Asian crisis and now exceed those of the crisis-affected economies (Table 3). These patterns are mirrored in real GDP growth rates. India, which had growth rates that were among the lowest in the precrisis period, is now exhibiting growth rates that are the second highest in the region (Table 4). Thus, the current account deficit observed in India is not unexpected, but the PRC's growing surplus, despite rising investment, is surprising. Net capital accounts also show divergent patterns (Appendix 1). In 2007, India was exceptional and emerged as the largest recipient of capital flows in the region, with net capital flows of US\$108 billion (9.2% of GDP), even exceeding the PRC (US\$70 billion or 2.1% of GDP). In net terms, capital flows received by developing Asia were largely explained by the PRC and India. Net capital flows received by other Asian EMEs, taken together, were near zero, despite significant increases in gross flows.

**Table 3: Gross Domestic Capital Formation in Asian EMEs
(% of GDP)**

Country	1990	1995	1996	1997–2002	2003–2006	2007
China, People's Rep. of	36.1	41.9	40.4	36.8	43.1	44.2
India	26.0	26.2	24.0	24.5	33.0	39.1
Indonesia	30.7	31.9	30.7	20.9	24.7	24.9
Republic of Korea	37.5	37.7	38.9	29.9	30.1	29.4
Malaysia	32.4	43.6	41.5	28.0	21.7	21.9
Philippines	24.2	22.5	24.0	20.3	15.7	15.3
Taipei, China	23.0	25.2	23.1	22.0	21.0	21.5
Thailand	41.4	42.1	41.8	24.2	27.9	26.8

Sources: ADB (2008); Reserve Bank of India.

**Table 4: Real GDP Growth in Asian EMEs
(%)**

Country	1990–96	1997–2002	2003–2006	2007	2008	2009
China, People's Rep. of	10.8	8.4	10.5	13.0	9.0	7.5
India	5.5	5.3	8.4	9.3	7.3	5.4
Indonesia	7.3	1.0	5.3	6.3	6.1	3.5
Republic of Korea	7.9	4.5	4.1	5.1	2.2	-1.8
Malaysia	9.5	3.4	5.9	6.3	4.6	-4.5
Philippines	2.8	3.4	5.4	7.2	4.6	0.0
Taipei, China	6.9	4.2	4.7	5.7	0.1	-7.5
Thailand	8.6	0.8	5.8	4.9	2.6	-3.0

Note: Data for 2009 are IMF projections.

Sources: IMF (2009b, 2009e); latest IMF Article IV Consultation Reports (Public Information Notices) for respective countries.

At the aggregate level, net capital flows to developing Asia (in US\$ billion) in recent years (US\$165 billion in 2007) were only slightly above the net inflows received in 1996 (US\$123 billion). For all EMEs, in contrast, the 2007 peak (US\$617 billion) was far above the 1996 levels (US\$212 billion), as shown in Figure 1. As noted earlier, CIS, CEE, and the Western Hemisphere have emerged as the major recipients in the recent period. Importantly, in 2007, net capital flows to developing Asia, as percent to its regional GDP at 2.8%, were fewer than half of the peak of 6.1% recorded in 1996. Among other regions, net capital flows to CEE EMEs were as high as 10.9% of their regional GDP, followed by those to CIS EMEs (7.5% of their regional GDP). For all EMEs taken together, net capital flows were 4% of their aggregate GDP (Table 5 and Figure 2).

Table 5: Capital Flows (Net) to All EMEs: Regionwise
(% of GDP of respective region)

Item	1980s	1990–1996	1997–2002	2003–2006	2007	2008	2009
All EMEs							
Private capital flows, net	0.2	2.5	1.4	2.1	4.0	0.6	-1.1
Direct investment, net	0.3	1.2	2.6	2.1	2.3	2.5	1.9
Private portfolio flows, net	0.1	1.3	0.1	-0.2	0.3	-0.8	-1.4
Other private capital flows, net	-0.2	-0.1	-1.3	0.2	1.4	-1.0	-1.6
Official flows, net	—	-0.2	0.1	-0.9	-0.7	-0.3	0.3
Change in reserves	-0.3	-1.2	-1.8	-5.5	-8.2	-4.7	-1.6
Developing Asia							
Private capital flows, net	1.5	3.7	0.4	2.3	2.8	1.8	-0.6
Direct investment, net	0.5	2.0	2.7	2.2	2.4	3.1	2.1
Private portfolio flows, net	0.1	1.1	0	-0.4	0.2	-0.9	-2.5
Other private capital flows, net	0.8	0.6	-2.2	0.6	0.3	-0.4	-0.2
Official flows, net	0.7	0.1	0.1	-0.5	-0.6	-0.2	-0.1
Change in reserves	-1.2	-2.5	-3.4	-8.2	-11.5	-8.8	-6.8
Africa							
Private capital flows, net	1.1	0.7	0.8	2.4	3.0	1.9	2.7
Direct investment, net	0.3	0.5	2.5	2.6	2.9	2.5	2.5
Private portfolio flows, net	0.0	0.5	0.4	0.8	0.9	-1.2	0.1
Other private capital flows, net	0.8	-0.3	-2.0	-1.0	-0.8	0.6	0.2
Official flows, net	—	—	1.4	0.2	0.5	0.9	1.3
Change in reserves	0.1	-0.7	-1.5	-4.3	-5.6	-4.2	1.9
CEE							
Private capital flows, net	0.3	1.0	4.3	7.6	10.9	7.9	-2.6
Direct investment, net	0.0	1.0	2.5	3.2	4.5	3.4	2.1
Private portfolio flows, net	0.1	0.6	0.5	1.7	-0.5	-0.7	-0.4
Other private capital flows, net	0.2	-0.6	1.2	2.6	6.9	5.2	-4.3
Official flows, net	1.2	0.2	0.1	-0.3	-0.4	0.4	1.8
Change in reserves	0.5	-0.4	-1.6	-1.7	-2.0	-0.5	2.5
CIS and Mongolia							
Private capital flows, net	-0.7	-0.1	-1.6	2.7	7.5	-5.8	-7.6
Direct investment, net	—	—	1.2	1.3	1.6	2.0	1.1
Private portfolio flows, net	—	—	-0.4	0.2	0.8	-1.7	0.1
Other private capital flows, net	-0.6	-0.8	-2.3	1.1	5.1	-6.2	-8.8
Official flows, net	—	-0.1	-1.0	-1.7	-0.3	0.0	1.6
Change in reserves	-0.1	-0.2	-2.0	-7.6	-9.9	1.5	6.0
Middle East							
Private capital flows, net	-2.7	6.1	0.0	-2.8	0.8	-6.7	-1.9
Direct investment, net	0.0	0.7	1.4	1.7	0.3	0.6	1.1

Item	1980s	1990–1996	1997–2002	2003–2006	2007	2008	2009
Private portfolio flows, net	0.6	2.3	-1.2	-2.7	-2.2	-0.7	-0.9
Other private capital flows, net	-3.3	3.1	-0.2	-1.8	2.7	-6.6	-2.1
Official flows, net	0.9	0.4	-1.0	-3.9	-4.2	-4.2	-0.6
Change in reserves	-0.6	-0.7	-1.5	-7.9	-13.7	-8.3	2.9

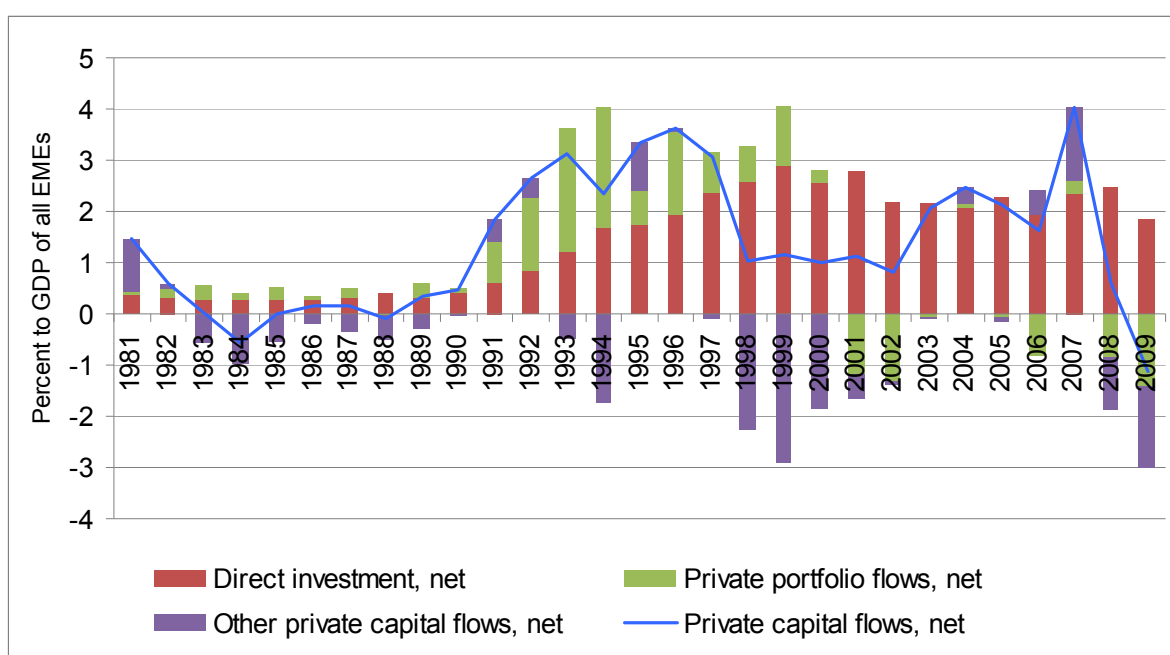
Western Hemisphere

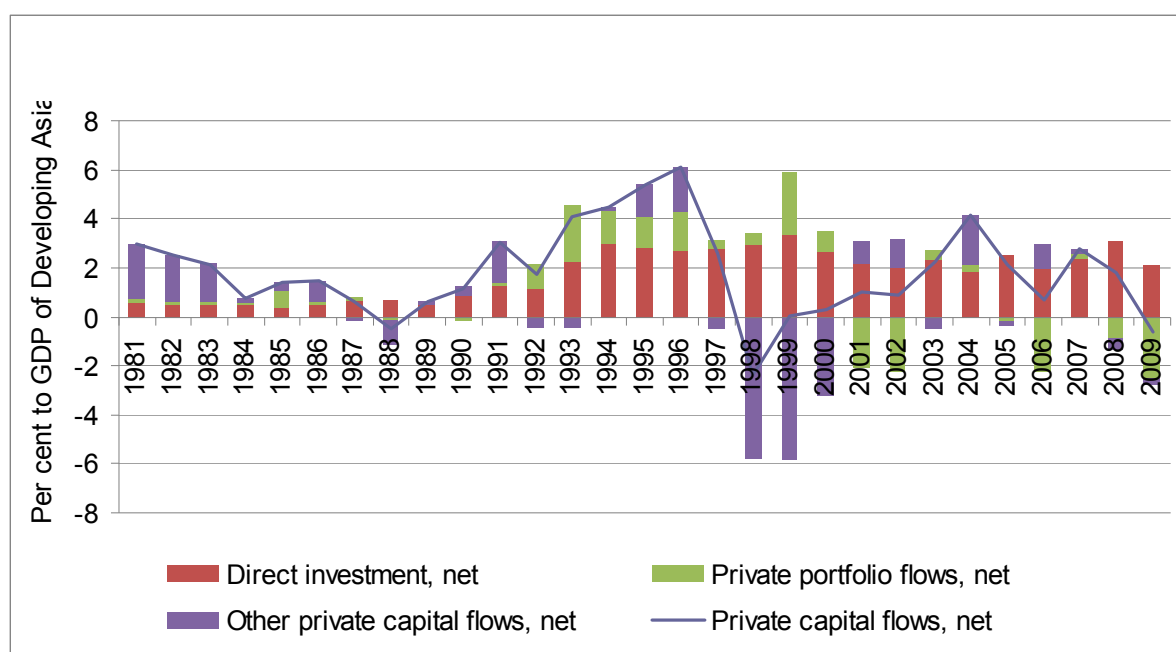
Private capital flows, net	1.1	2.0	2.5	0.9	2.9	1.4	0.4
Direct investment, net	0.7	1.1	3.1	1.8	2.4	2.0	1.7
Private portfolio flows, net	0.2	2.0	0.4	-0.2	1.2	-0.3	-0.7
Other private capital flows, net	0.2	-1.1	-1.0	-0.7	-0.6	-0.3	-0.6
Official flows, net	0.9	0.3	0.6	-0.5	0.0	0.3	0.3
Change in reserves	0.3	-1.0	0.0	-1.4	-3.6	-1.2	1.4

Note: Data from the 1980s to 2006 are annual averages for the respective periods; data for 2009 are IMF projections.

Source: IMF (2009b).

Figure 2: Capital Flows to All EMEs and Developing Asia: Percent to Respective GDP





Source: IMF (2009b).

Net capital flows received by India in 2007 were nearly 15 times more than those in the precrisis period: Unlike other Asian countries, outflows were relatively small despite substantial liberalization of the policy regime in regard to capital outflows. For the remaining major Asian EMEs, including the Republic of Korea (hereafter Korea), net capital flows in 2007 were less than US\$10 billion each (Appendix 1). Even as net capital flows in all these economies do not show any jump, however, the underlying capital inflows and outflows reflect massive increases in two-way movements.

Korea's experience during this period is interesting. The current account has been in surplus since the crisis. The financial account shows large swings in gross inflows and outflows. Incoming foreign direct investment has been small, while Korean companies have increasingly been investing abroad. The portfolio investment account exhibits high volatility. Foreign bond purchases by domestic financial institutions have increased since 2001, and equity investments abroad by residents picked up sharply in 2006 (US\$15 billion as compared with US\$4 billion in 2005). Some of this has resulted from the capital account liberalization implemented under the IMF program after the crisis (Kim and Yang 2008). For Korea and the Philippines, net capital flows in 2007 were similar to those in the precrisis period.

Malaysia and Thailand recorded net capital outflows in 2007. For Malaysia, net capital outflows reflected higher foreign direct investment abroad, carry trades, and repayment of central Government external debt (Foong 2008). In Taipei, China, net capital flows were broadly balanced from 2000–2006, reflecting large outflows on account of foreign direct investment and portfolio investments. In 2007, net capital outflows jumped substantially on the back of large overseas portfolio equity investments.

Overall, in contrast with current account balances, the capital account in most Asian EMEs reflects somewhat differentiated country-specific behavior and trends (Table 6). As a proportion of GDP, net capital inflows to all Asian EMEs, except India, in the period 2003–2007 were substantially lower than that in the precrisis period. In retrospect, India was a clear outlier in Asia with respect to capital flows in 2007, despite its policy of active capital account management. Why this happened and how the macro economy was managed in the face of such flows clearly needs further research.

**Table 6: Net Capital Inflows to Asian EMEs
(% of GDP)**

Country	1990–1996	1997–2002	2003–2006	2007	2008
China, People's Rep. of	3.2	1.2	2.9	2.1	—
India	2.1	2.1	3.3	9.2	0.8
Indonesia	3.7	-3.9	-0.2	0.7	-0.4
Korea	2.3	0.5	1.7	0.8	-5.4
Malaysia	9.3	-3.9	-3.4	-5.8	—
Philippines	7.4	3.2	0.3	2.1	-2.7
Taipei, China	—	0.3	0.0	-10.0	-0.4
Thailand	10.3	-6.8	2.1	-1.2	4.7

Sources: IMF International Financial Statistics CD-ROM; Reserve Bank of India ([http://www.rbi.org.in/scripts/AnnualPublications.aspx?head=Handbook of Statistics on Indian Economy](http://www.rbi.org.in/scripts/AnnualPublications.aspx?head=Handbook%20of%20Statistics%20on%20Indian%20Economy)); Bank of Thailand (<http://www.bot.or.th/English/Statistics/EconomicAndFinancial/ExternalSector/Pages/StatBalanceofPayments.aspx>).

The current and capital accounts taken together have led to persistent surpluses in the overall balance of payments in all Asian EMEs. As a result, the real exchange rate in all the major economies experienced appreciation pressures between 2003 and July 2007 (just prior to the onset of the subprime crisis in the US), regardless of the exchange rate regime followed (Table 7). Since then, as a consequence of capital account reversals emanating from the global financial and economic crisis, most countries in the region have experienced large depreciation pressures. The PRC's exchange rate reflects a contrary trend: some real depreciation in the first period and strong real appreciation in the latter period.

**Table 7: Movements in Nominal and Real Effective Exchange Rates
(%)**

	PRC	India	Indonesia	Korea	Malaysia	Philippines	Taipei, China	Thailand
Nominal Effective Exchange Rates								
January 2003 to April 2009	11.8	-14.3	-28.6	-22.0	-4.8	0.9	-8.2	8.2
January 2003 to July 2007	-3.5	2.0	-14.1	15.5	-1.5	6.5	-5.4	14.2
July 2007 to April 2009	16.0	-15.9	-16.9	-32.5	-3.3	-5.3	-2.9	-5.3
Real Effective Exchange Rates								
January 2003 to April 2009	15.6	-0.1	0.4	-17.8	-3.7	25.0	-14.5	13.7
January 2003 to July 2007	-1.1	15.8	10.7	18.5	-1.7	23.1	-10.5	20.3
July 2007 to April 2009	16.8	-13.7	-9.3	-30.6	-2.0	1.6	-4.4	-5.5

Note: Positive value indicates appreciation and negative depreciation of the index.

Source: Bank for International Settlements (<http://www.bis.org/statistics/eer/index.htm>).

In brief, although net capital flows generally exhibited an unprecedented rise from 2003–2007 for EMEs, the experience of Asian EMEs was more varied. They also experienced large increases in gross capital flows. What was common among Asian EMEs, with the notable exception of India, was the occurrence of sustained large surpluses in their current accounts. In contrast, the Eastern European countries exhibited large current account deficits and a corresponding increase in large capital account inflows, which finally could not be sustained, being subject to reversals in 2008 and 2009 with the onset of the global financial crisis. The large portfolio inflows experienced in 2007 have led to their reversal in 2008 and 2009. This high volatility in cross-border capital flows induces great

macroeconomic and financial instability in EMEs. Unlike previous periods, the problem encountered by Asian EMEs has been the management of excess flows, either on the current account or capital account, not of shortages. Accordingly, most EMEs have been observed to manage their capital accounts somewhat actively, both through some forms of capital controls and through interventions in the forex market (Grenville 2008).

3. CAPITAL FLOWS TO EMERGING MARKET ECONOMIES: THEORETICAL PERSPECTIVES AND EMPIRICAL EVIDENCE

There has been a very active, contentious, and continuing academic debate on the benefits to be gained from capital account liberalization in terms of economic performance. In principle, the free flow of capital across borders should lead to a more efficient allocation of resources between savers and investors across the world: Capital would flow from countries with abundant capital (low returns) to capital-scarce countries (higher risk-adjusted returns). This cross-border flow of capital, along with technical know-how, should also increase growth in the recipient countries. Availability of external capital should also help nations to smooth consumption and investment in response to exogenous shocks. Thus, one should expect capital account liberalization to be associated with higher growth and lower volatility in consumption and investment.

Whereas there is widespread agreement among economists on the desirability of open trade in goods, there is much more disagreement with respect to the virtues of financial openness. Even strong proponents of free trade such as Bhagwati (1998) have expressed considerable doubt with respect to the gains to be had from unfettered trade in assets. In his recent comprehensive review of capital account liberalization, Obstfeld (2009: 71) notes that “concrete evidence of gains from financial globalization—at least gains of the type traditionally claimed on the basis of simple economic theory— has proved hard to document in any definitive way.” Thus, although a good portion of mainstream economists continue to support broad opening of the capital account, many—such as Bhagwati (1998), Rodrik (1998), Cooper (1999), Stiglitz (2003), Obstfeld (2009), and Rodrik and Subramanian (2009)—have expressed reservations about such broad-based opening. Much of this thinking was induced by the Asian crisis, and the ongoing global financial crisis will no doubt give rise to further questioning of the merits of financial globalization. What is also of interest is that a review of actual policies followed shows that full capital account opening has been viewed with caution by almost all Asian EMEs.

The theoretical benefits expected from financial globalization are predicated on the assumption that resources would flow from developed capital-abundant economies to less-developed, capital-scarce economies with opening of the capital account. Capital would then flow toward activities exhibiting higher returns and higher productivity. As EMEs move toward the global production possibilities frontier, they would show higher productivity, higher profitability, and higher growth. The recent experience of Asian economies has been the opposite: Their savings rates have exceeded their investment rates, so resources have been flowing in the “reverse” direction. In such a situation, the traditional gains expected from full opening of the capital account in terms of greater investment and growth are clearly absent. In the presence of relatively high investment rates, it is difficult to argue that such benefits would have accrued if the exchange rate had adjusted enough to create a current account deficit, leading to absorption of capital flows, from which all the expected benefits would then follow. The evidence relating to the increase in two-way flows does, however, suggest that there could be some microeconomic gains to market participants through improved access to global capital markets, as long as the authorities can manage the macroeconomic effects of such excess flows.

3.1 Empirical Evidence

What is the evidence with respect to the expected benefits of opening of the capital account? Empirical evidence does not seem to support the theoretical propositions on the expected benefits (CGFS 2009). Prasad, Rajan, and Subramanian (2007) find a positive correlation between current account balances and growth among nonindustrial countries—a reduced reliance on foreign capital is associated with higher growth, contrary to the theoretical case. This result could be attributed to the fact that even successful developing countries have limited absorptive capacity for foreign resources, either because their financial markets are underdeveloped or because their economies are prone to overvaluation caused by rapid capital inflows. In a similar vein, Rodrik and Subramanian (2009) argue that developing economies are more likely to be constrained by investment opportunities rather than by the availability of savings; in such circumstances, foreign finance can often aggravate the existing investment constraint by appreciating the real exchange rate and reducing profitability and investment opportunities in the traded goods sector, which have adverse long-run growth consequences. Given the existence of relatively high levels of investment and growth rates in Asian economies, even this argument is difficult to sustain.

In view of the failure to find empirical evidence of the beneficial effects of capital account liberalization on growth, some have argued that benefits of financial globalization may be indirect rather than direct. Indirect or “collateral” benefits of financial opening could be in the form of better financial sector development, institutions, governance, and macroeconomic stability, which then help growth prospects. Such indirect effects are likely to be far more important than any direct impact via capital accumulation or portfolio diversification (Kose, Prasad, Rogoff, and Wei 2009). According to Kose, Prasad, and Terrones (2009), indirect benefits of financial opening could collectively show in productivity growth. However, it is difficult to understand how there could be positive effects on productivity growth without corresponding positive effects on overall growth.

The indirect benefits are not straightforward, however; they are dependent upon certain “threshold” levels of financial and institutional development. The thresholds are lower for foreign direct investment and portfolio equity liabilities, compared with those for debt liabilities (Kose, Prasad, and Taylor 2009). There is an important issue of causality here: Is it the opening up of the capital account that leads to indirect benefits, or is it the gradual development of domestic financial markets that allows the benefits of subsequent opening up of capital account to be reaped? Thus, a coordinated and calibrated approach to simultaneous movement in financial market and sector development and a gradual opening up of the capital account might be expected to lead to a better outcome. As such, unless the strengthening of local financial institutions and improvement of macroeconomic policies are in place, the liberalization of capital flows can entail dangers.

Rodrik and Subramanian (2009) and Obstfeld (2009) reach a skeptical conclusion about the benefits, whether direct or indirect, of financial opening. Rodrik and Subramanian (2009: 136) note that “If you want to make an evidence-based case for financial globalization today, you are forced to resort to fairly indirect, speculative, and, in our view, ultimately unpersuasive, arguments.” Similarly, Obstfeld (2009), based on his comprehensive review, comes to the conclusion that there is strikingly little convincing documentation of direct positive impact of financial opening on the economic welfare levels or growth rates of developing countries. There is also little systematic evidence that financial opening raises welfare indirectly by promoting collateral reforms of economic institutions or policies (Kim and Yang 2008). Instead, opening the financial account does appear to raise the frequency and severity of economic crises. As Obstfeld (2009: 104–105) notes, “Financial openness is not a panacea—and it could be poison. The empirical record suggests that its benefits are most likely to be realized when implemented in a phased manner, when external balances

and reserve positions are strong, and when complementing a range of domestic policies and reforms to enhance stability and growth.”

Henry (2007) argues that the empirical methodology of most of the existing studies is flawed because these studies attempt to look for permanent effects of capital account liberalization on growth, whereas the theory posits only a temporary impact on the growth rate. Once such a distinction is recognized, opening the capital account within a given country is found to generate economically large and statistically significant effects, not only on economic growth but also on the cost of capital and investment. The beneficial impact is, however, discernible only from liberalization of equity flows. The free movement of debt flows is not found to be associated with any positive impact on growth. Instead, liberalization of debt flows—particularly short-term, dollar-denominated debt flows—may cause problems. On the other hand, empirical evidence indicates that countries derive substantial benefits from opening their equity markets to foreign investors (Henry 2007). Foreign direct investment and portfolio liabilities boost productivity growth, whereas debt liabilities have a negative impact (Kose, Prasad, and Terrones 2009). However, as Kose, Prasad, Rogoff, and Wei (2009) argue, the significant positive impact of equity market liberalization on growth could be masking the impact of other supportive reforms because equity market liberalization typically takes place only when governments are sure that supportive conditions are in place.

Large volatility in sudden and substantial exchange rate movements constitutes an important channel through which capital flows can potentially have an adverse impact on the domestic economy. The impact of exchange rate changes on the real sector is significantly different for reserve currency countries and for developing countries. For the reserve currency countries, which specialize in technology-intensive products, the degree of exchange rate pass-through is low, enabling exporters and importers to ignore temporary shocks and set stable product prices despite large currency fluctuations. Moreover, mature and well-developed financial markets in these countries help to absorb the risk associated with exchange rate fluctuations with negligible spillover on the real activity. On the other hand, for the majority of developing countries that specialize in labor-intensive and low- and intermediate-technology products, profit margins in the intensely competitive markets for these products are very thin and vulnerable to pricing power by large retail chains. Consequently, exchange rate volatility has significant employment, output, and distributional consequences (Mohan 2004). These observations are supported by empirical evidence contained in a paper by Aghion, Bacchetta, Ranciere, and Rogoff (2009). The paper finds that in countries with less-developed financial sectors, exchange rate volatility has a significant negative impact on productivity growth; the effects are small or insignificant in countries with developed financial systems, however. For less-developed economies, the effects can be large: They found that a country such as Zambia (with a credit-to-GDP ratio of 15% in 1980) would have gained 0.94% of annual growth had it switched from a flexible to a totally rigid exchange rate. A country such as Egypt (with a credit-to-GDP ratio of about 27%) would have gained 0.43% growth per year by adopting a uniform pegged exchange rate.

In the context of substantially large capital flows to the EMEs from 2003–2007, it is generally argued that deep financial markets would be helpful for channeling such capital flows efficiently. The merit of such an argument is subject to doubt in light of recent experience. If capital flows reach levels as high as 10% of GDP or more per annum, as they did for some countries during 2007, it is arguable that even a highly advanced financial system could have intermediated such capital flows efficiently and in a stable manner. For such a large volume of capital flows to be fully absorbed, an equivalent current account deficit, a large real appreciation, or any combination thereof would be the immediate consequence. These outcomes would in turn be manifested in asset price and credit booms and financial imbalances. All these options are clearly unsustainable and can lead to future fragility, as revealed by the developments in some Asian economies during the Asian financial crisis of 1997 and in Eastern European nations and the Baltics in the current global financial crisis.

It is interesting to note that the large capital flows that came to the US to finance its large current account deficits during most of the 2000s are argued by some to have contributed to the global financial crisis. Domestic demand growth in the US was stoked by the extended accommodative monetary policy, leading to higher overall growth than would otherwise have been expected, widening of the current account deficit, and the consequent flow of private capital in the initial stages (Mohan, 2009b; Mohan 2009c). If an accommodative monetary policy had not been followed for an extended period and interest rates been higher, it is possible that US growth would have been lower, leading to lower current account deficits and lower inward capital flows. The IMF (2009a) notes that global imbalances contributed to low interest rates and to large capital inflows into US and European banks, which then contributed to a search for yield, higher leverage, and the creation of riskier assets. In a similar vein, Bernanke (2009) observes that the US and some other advanced countries experienced large capital inflows for more than a decade, even as real long-term interest rates remained low. In the later stages, the inward capital flows were mainly official recycled capital flows.

This characterization of the problem ignores the fact that large capital inflows received by the US and other industrial economies merely reflected the recycling of the large excess flows received by the EMEs from these industrial economies. This, in turn, could be attributed to the excessively accommodative monetary policy in the US and other industrial economies from 2002–2004.

The risk-management systems of the private sector and government oversight of the financial sector in the US and some other industrial countries failed to ensure that the inrush of capital was prudently invested. “In certain respects, our experience parallels that of some emerging-market countries in the 1990s, whose financial sectors and regulatory regimes likewise proved inadequate for efficiently investing large inflows of saving from abroad” (Bernanke 2009). If large capital inflows to the economies with the most advanced financial markets and intermediaries are believed to have led to inefficient intermediation culminating in the severest financial crisis since the Great Depression of the 1930s, the pitfalls of advocating a free run for capital flows in the EMEs are not imaginary.

On balance, an assessment of the available empirical literature suggests that full capital account liberalization *per se* does not lead to higher growth in EMEs. Instead it can impart avoidable volatility and have an adverse impact on growth prospects of the EMEs. A majority of historical crises are preceded by financial liberalization. Surges in capital inflows often precede external debt crises at the country, regional, and global level since 1800 if not before (Reinhart and Rogoff 2008). Available evidence is strongly in favor of a calibrated and well-sequenced approach to opening of the capital account and its active management by authorities, along with complementary reforms in other sectors and taking into account country-specific features (Mohan 2007a; CGFS 2009; Obstfeld 2009; Grenville 2008).

3.1.1 Capital Account Liberalization: Sequencing

There is consensus about the appropriate sequencing of opening of the capital account among economists and practitioners (Obstfeld 2009; Kim and Yang 2008; Yu 2008; among others). Foreign direct investment flows should be the first to be liberalized because they are among the most stable flows and also provide enhanced management and technical know-how. Next to be liberalized should be portfolio equity inflows.

Greater caution is needed in the liberalization of debt flows. Indeed, it is interesting to note that almost all studies and authors find that debt flows have an adverse impact on growth, especially in economies with underdeveloped financial markets. However, even if the domestic financial markets in the EMEs were well developed, it is not apparent that a fully free regime in regard to debt flows would be stabilizing. Given the relatively higher growth rates as well as higher inflation rates in the EMEs, it is apparent that interest differentials favor EMEs. Such growth- and inflation-induced interest rate differentials are likely to

continue in the coming years and decades. During periods of low interest rates and yields in the advanced economies—the source countries for capital flows—a freer regime could potentially lead to large volumes of capital inflows to the EMEs, which could reverse as monetary policy gets normalized in the advanced economies. This can impart large volatility to capital flows and induce macroeconomic and financial instability. As Grenville (2008) noted, capital inflows reflect an ongoing structural disequilibrium: Foreign capital will be attracted by the higher returns and the prospect of currency appreciation. In this environment, the exchange rate will be poorly anchored by fundamentals, which would then threaten the stability of the financial system. With the intensification of capital inflows and consequent exchange rate appreciation, even greater inflows take place in the short term, putting more upward pressure on the real exchange rate. With this overshooting of the exchange rate, the trade and current account deficits eventually begin to rise, leading to a subsequent fall in international confidence and a consequent sudden reversal of capital flows. Thus, as long as interest differentials favor EMEs on a structural and sustained basis, a more cautious approach to liberalization of debt flows, especially short term, is warranted. In particular, investments by foreigners in government securities should be subject to some ceilings to avoid excessive arbitrage-led flows.

Regarding debt flows, *ceteris paribus*, the policy preference could be in favor of local currency-denominated liabilities relative to foreign currency-denominated liabilities. In terms of various categories of resident entities, there may be merit in more stringent prudential restrictions on access of financial intermediaries, especially banks, to external finance relative to corporates. Whereas the failure of a nonfinancial corporate entity does not have any systemic implications, bank failures do involve adverse substantial systemic consequences. The adverse implications for financial stability on the back of the boom-and-bust pattern associated with capital inflows are created and exacerbated by the banking system. In boom periods, excess liquidity generated by capital inflows, if not sterilized effectively by the central bank, can lead to relaxation of lending standards, and generate credit and investment booms and financial imbalances.

For example, banks in EMEs such as Russia, Korea, and the PRC raised copious amounts of external flows during 2002–2008, mostly in the form of debt, which were mirrored in credit booms in these economies, as shown in Table 8 (CGFS 2009). Although the official sector increased its foreign assets in the form of foreign exchange reserves, many private sector entities (banks and nonbank entities) contracted substantial foreign liabilities, which then led to difficulty when the capital reversal took place and foreign credit markets tightened. As capital flows reverse on the back of domestic or exogenous foreign shocks, sharp adjustments in the real and financial sectors can result in large loan losses for banks, with the possibility of increasing nonperforming assets in the real economy. The failure in a particular bank leads to loss of trust even in healthy banks, which can freeze money and credit markets and have a further downward spiral effect on real economic activity, as has occurred in the ongoing global financial crisis. It is well known that banks are leveraged entities and are, therefore, special. As recent developments show, bank failures in one country lead to contagion effects in other countries. Accordingly, as in the current episode of financial stress, governments can be forced to extend the scale and scope of guarantees on bank deposits and even on nondeposit liabilities owed to foreigners. Thus, a liberal regime in regard to banks' access to foreign capital can be destabilizing and lead to huge fiscal costs.

Table 8: Bank for International Settlements (BIS) Reporting Bank Flows to Banks in Emerging Markets (2002–2008)
(US\$ billion)

Top Recipient Economies					Top Lending Countries	
	Loans	Debt Securities	Equities	Total		Loans
Russia	73.2	93.2	15.6	182.0	United Kingdom	83.7
Singapore	149.5	20.4	0.2	170.0	United States	76.2
Korea	89.5	64.1	10.2	163.7	Austria	63.7
PRC	80.4	20.2	47.2	147.7	Germany	52.1
Hong Kong, China	54.4	34.1	6.2	94.7	France	44.7
India	58.7	14.5	15.7	88.9	Netherlands	38.0
Brazil	29.6	33.8	8.4	71.8	Belgium	31.8
Poland	46.4	-4.2	1.6	43.8	Sweden	22.3
Taipei, China	35.0	2.9	4.3	42.2	Switzerland	12.8
Turkey	28.6	8.1	3.3	39.9	Finland	10.9

Note: Data in this table are cumulative flows between 2002 and the first half of 2008.

Source: CGFS (2009).

A related issue is foreign ownership of domestic banks. The larger presence of foreign banks can increase the vulnerability of the domestic economy to foreign shocks, as happened in Eastern European and Baltic countries. Significant liquidity and capital shocks to the parent foreign bank can force it to scale down its operations in the domestic economy, even as the fundamentals of the domestic economy remain robust. Thus, domestic bank credit supply can shrink during crisis episodes, as happened in some countries in 2009.

Regarding liberalization of outflows, restrictions can be relaxed for corporate entities, institutional investors, and individuals—in that order. The difficulty is that during periods of rising capital inflows resulting from the perception of higher financial returns in EMEs, including arbitrage flows, the liberalization of outflows can actually result in even greater net inflows. Domestic residents tend not to take advantage of the diversification opportunity offered in the light of higher expected returns domestically. Speculative inflows get strengthened by the increased confidence in repatriating these flows. Thus, it is important to liberalize outflows carefully, both in terms of timing and the categories of outflows.

3.1.2 Managing Large Capital Inflows

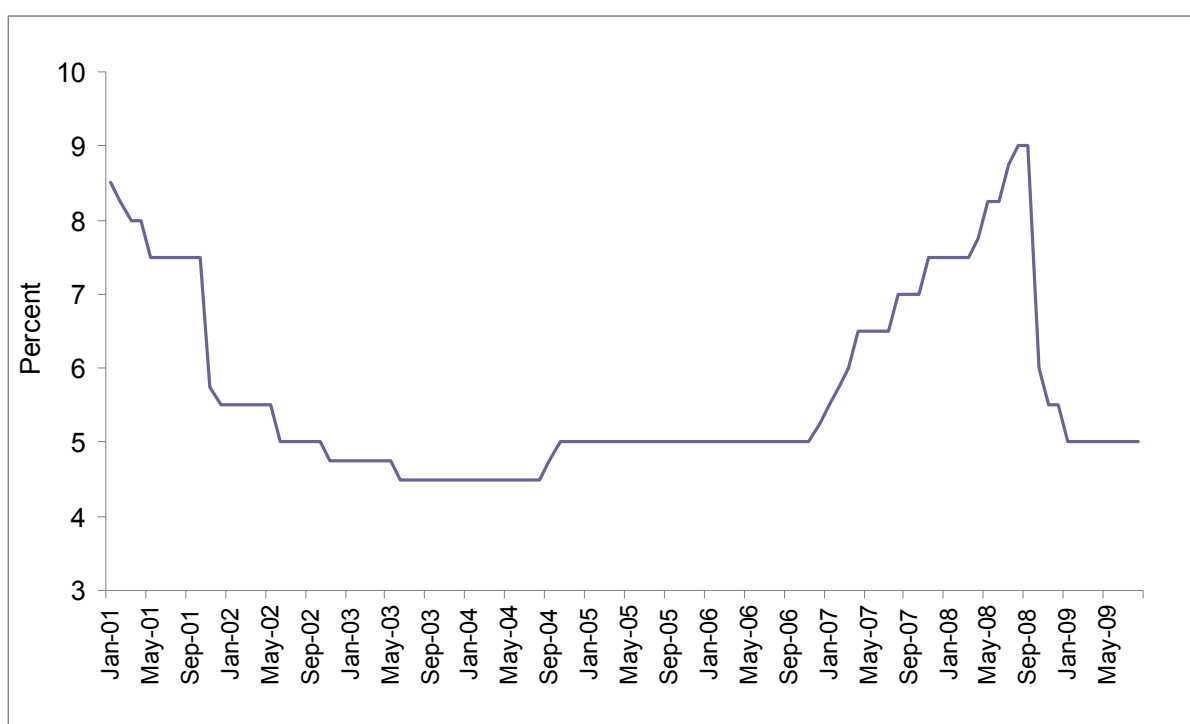
As argued previously, the case for hasty and full capital account liberalization is weak. There is instead a hierarchy in terms of capital flows that can be liberalized and those that need to be regulated. Even then, capital flows to EMEs can be fairly large and highly volatile. Moreover, even those flows that are sought to be regulated often find ways around the stipulated regulations. The key issue facing policymakers is, therefore, the management of large volatility in capital flows—long periods of large persistent capital inflows followed by quick reversals. Authorities in the EMEs have, therefore, been managing capital flows, to varying degrees, in order to ensure domestic macroeconomic and financial stability.

Most EMEs, including Asian EMEs, have used a judicious menu of options in trying to modulate the volume of net capital inflows, manage the volatility in currency, intervene in the market, and sterilize the interventions while simultaneously going ahead with structural reforms. Increasing flexibility of the exchange rate and using this as the *only* tool to manage capital inflows is likely to be ineffective, even though that is desirable in itself. Because a catch-all solution to the problems posed by capital inflows does not exist, authorities need to use all the instruments available with them (Kim and Yang 2008). Major Asian EMEs have

continued with gradual and calibrated liberalization of capital outflows while continuing to retain restrictions on some categories of inflows, along with greater exchange rate flexibility.

In December 2006, Thailand imposed unremunerated reserve requirements—the only country in the Asian region to do so—on fixed income flows; these requirements were withdrawn in March 2008 as foreign capital flows moderated. Unremunerated reserve requirements on portfolio equity flows were also imposed in December 2006, but were immediately withdrawn as a consequence of immediate and extremely adverse market reaction. In India, access norms to external commercial borrowings were tightened in August 2007 in the wake of heavy inflows, but were relaxed in 2008 following the global financial crisis. Interest rate ceilings on nonresident deposits with the banking system were reduced during 2006–2007 to moderate the inflows and were raised again in 2008, when inflows had reversed in the wake of the global financial crisis. In April 2007, foreign banks in Korea were advised not to respond to strong arbitrage incentives to swap dollars for Korean won. Limits on lending in foreign currency to Korean firms were reimposed. The nontaxable amount that foreign bank branches can borrow from their parent companies was reduced from six times capital to three (“thin capitalization rule”), starting January 2008. The use of foreign exchange loans by banks was limited to real demand (financing imports and real investment), beginning August 2007. McCauley (2008) finds that these restrictions on capital flows were effective in the case of Korea, the PRC, and Thailand. (The effectiveness of restrictions in the Indian context was not examined in this paper.)

India and the PRC raised cash reserve requirement (CRR) ratios to moderate the expansionary impact of large capital inflows on domestic monetary and credit aggregates and prevent overheating from 2004 to mid-2008 (Mohan 2008a). The increases in these ratios were rolled back in late 2008 and early 2009 as capital flows reversed (Figure 3). The domestic banking system was thus largely insulated from both the large influx and the subsequent reversal of capital flows. Reserve requirements provided these central banks with a liquidity “cushion” that could be released when the banks faced greater funding difficulties in October and November 2008. Banks could be given back their own liquidity, and there was no need for any dilution of collateral accepted by the Reserve Bank for injection of liquidity into the system. In Indonesia, Malaysia, and the Philippines, reserve requirements were cut in the aftermath of the global financial crisis and capital flow reversals to provide the banking system with adequate liquidity.

Figure 3: Cash Reserve Ratio in India

Source: Reserve Bank of India ([http://www.rbi.org.in/scripts/AnnualPublications.aspx?head=Handbook of Statistics on Indian Economy](http://www.rbi.org.in/scripts/AnnualPublications.aspx?head=Handbook%20of%20Statistics%20on%20Indian%20Economy)).

Central banks of the PRC and Korea have also issued their own bills to sterilize capital inflows, while India introduced (in 2004) an innovation in the form of Market Stabilisation Scheme (MSS) for sterilization. Under the MSS, the Reserve Bank of India issues/redeems/buys back government treasury bills/bonds to neutralize the impact of capital inflows. The fiscal impact is transparently borne by the Government. In the aftermath of the crisis, like the CRR, liquidity was injected into the banking system by normal redemptions as well as active buybacks of government treasury bills/bonds issued under the MSS. In the context of MSS operations, during times of excess foreign exchange inflows there is a simultaneous increase in the holdings of the Reserve Bank's foreign currency assets and the stock of MSS. The former leads to higher earnings for the Reserve Bank, and they are mirrored in higher surplus profit transfers to the central Government from the Reserve Bank. Thus, the interest expenses incurred by the Government on account of issuances under the MSS are offset by higher transfers from the Reserve Bank (Table 9). Moreover, because in a fast-growing economy there is need for expansion of the monetary base, only part of the increase in the central bank's balance sheet through accretion of foreign assets needs to be sterilized. The cost of sterilization is therefore muted and lower than what has often been feared, and it has to be traded off against the benefits of financial stability that are gained.

**Table 9: Fiscal Impact of the Market Stabilisation Scheme (MSS) in India
(Re/Rs billion)**

Item	2004– 2005	2005– 2006	2006– 2007	2007–2008
1. Balances under MSS (outstanding, end–March)	642	291	630	1,684
2. Interest paid by the Government on issuances under the MSS during the year (April–March)	21	34	26	84
3. Foreign currency assets of the Reserve Bank (outstanding, end–March)	5,931	6,473	8,366	11,960
4. Net disposable income of the Reserve Bank during the year (July–June)	54	84	114	150
5. Surplus transfer from the Reserve Bank to the central Government during the year (July–June)	54	84	114 ^a	150

Note: ^a Excluding profits on sale of shares of State Bank of India.

Source: Reserve Bank of India annual reports (various issues).

For mopping up enduring surplus liquidity, a policy choice exists between the central bank issuing its own securities and the government issuing additional securities purely for sterilization purposes. A large number of countries, such as Chile; PRC; Colombia; Indonesia; Korea; Malaysia; Peru; Philippines; Russia; Sri Lanka; Taipei, China; and Thailand have issued central bank securities. However, central banks in some of these countries have faced deterioration in their balance sheets. As such, there is merit in issuing sterilization bonds on a government account. Moreover, in case of an already well-established government debt market, the issuance of new central bank bills or bonds of overlapping maturity could cause considerable confusion and possible market segmentation. Such confusion could obfuscate the yield curve, reduce liquidity of the instruments, and make monetary operations that much more difficult.

In India, the MSS has considerably strengthened the Reserve Bank's capability to conduct capital account and monetary management operations. It has allowed absorption of surplus liquidity by instruments of short-term (91-day, 182-day, and 364-day T-bills) and medium-term (dated Government securities) maturity. Generally, the preference has been for short-term instruments. This has given the monetary authority a greater degree of freedom in liquidity management during transitions in liquidity conditions. In response to the tightening of domestic liquidity brought about by the global financial crisis, the MSS is being unwound through normal redemptions as well as through buyback of MSS-dated securities. These operations have provided another avenue for injecting liquidity of a more durable nature into the system and highlight the flexibility provided by the MSS (Mohan, 2008a; Mohan 2008b). In principle, sterilization is more effective when the excess capital flows are judged to be temporary and not "permanent." However, *ex ante*, it is difficult, if not impossible, to foresee the durability of the observed excess flows. The use of MSS instruments of varying maturities enables judgment of the durability of flows on an *ex post* basis.

Credit booms and asset price booms are often associated with large capital inflows and constitute an important concern for future financial fragility. In this context, apart from using monetary policy instruments such as policy rates and CRR, during 2005–2007 India also tightened prudential norms—risk weights and provisioning norms—in regard to certain sectors such as real estate and stock markets, in which relatively high credit growth was being witnessed. The prudential norms were rolled back in late 2008 in the aftermath of the global financial crisis. Thus, provisioning requirements for standard assets that were increased from a uniform level of 0.25% in March 2005 to 1.0–2.0% in the case of some sensitive sectors by January 2007 were rolled back to 0.4% in November 2008 (Table 10). Whereas these measures were taken in a judgmental ad hoc manner in India, a more systematic approach to dynamic provisioning is now being internationally accepted and

recommended. Similarly, risk weights for capital adequacy purposes were raised for sectors such as commercial real estate, residential housing loans, consumer credit, and capital market exposures during 2005–2007 (the period of strong credit growth) and then scaled down in November 2008 as credit growth slowed down.

Such an approach to financial regulation helps to throw sand in the wheels in sectors witnessing high growth, possibly fueled by the availability of abundant liquidity arising from excess capital flows, and helps to foster financial stability. Such an integrated approach combining monetary and prudential instruments in India was facilitated by the fact that both monetary policy and financial regulation responsibilities have been entrusted to a single agency: the Reserve Bank of India (Mohan 2009a; Mohan 2009c). It is also important to strengthen financial regulation to avoid regulatory arbitrage. Thus, in India, the regulatory regime with regard to nonbanking finance companies has been gradually tightened since 2004 so that weaknesses do not emerge in sectors that are weakly regulated. This use of prudential measures suggests that the management of capital inflows can also be done through such an approach, in addition to or supplementary to the more conventional use of sterilization instruments. In the case of India in 2007–2008, almost all possible instruments were used in the face of exceptional excess capital inflows amounting to almost 10% of GDP, which can now be seen as an outlier in the world.

Table 10: Standard Asset Provisioning Requirements for Commercial Banks in India (%)

Sr. No.	Category of Standard Asset	March 2005	November 2005	May 2006	January 2007	November 2008
1.	Direct advances to the agricultural and small or medium enterprise (SME) sectors	0.25	0.25	0.25	0.25	0.25
2.	Residential housing loans beyond Re/Rs2 million	0.25	0.40	1.00	1.00	0.40
3.	Personal loans (including credit card receivables), loans, and advances qualifying as capital market exposures and commercial real estate loans	0.25	0.40	1.00	2.00	0.40
4.	Loans and advances to nondeposit-taking, systemically important nonbanking finance companies	0.25	0.40	0.40	2.00	0.40
5.	All other loans and advances not included above	0.25	0.40	0.40	0.40	0.40

Source: Reserve Bank of India annual reports (various issues).

3.1.3 Capital Account Management in Asia: An Assessment

Despite large foreign exchange interventions, Asian EMEs have been able to maintain monetary and price stability. Overnight market rates have generally remained within the corridor set by the policy rates (Ho and McCauley 2008). Asian EMEs could also insulate the growth in their monetary aggregates from large purchases of foreign exchange (Grenville 2008). With the possible exception of India, he does not find any close link between additions to net foreign assets and base money.

Regarding India, the odd result shows that the Reserve Bank has actively used cash reserve ratio (CRR) as one of the instruments of sterilization: CRR has been raised during periods of heavy capital inflows and lowered during periods of capital outflows. (CRR was increased from 4.5% in September 2004 to 9.0% in August 2008; it was then reduced to 5.0% by January 2009, as shown in Figure 3). Banks' balances under CRR are a part of reserve

money. Thus, increases in CRR, even as they impound excess liquidity from the banking system, end up showing as higher expansion in reserve money.

The reverse happens when the CRR is cut. Thus, a casual look at the data Grenville (2008) might show that periods of higher accretions to net foreign assets are associated with higher growth in reserve money, suggesting incomplete or ineffective sterilization. Such an interpretation is misleading and incorrect. It is, therefore, important to analyze variations in reserve money adjusted for the impact of policy-induced changes in CRR. Such an analysis shows that growth in reserve money has been relatively stable even as net foreign assets have shown large increases/decreases (Table 11). Second, valuation changes in foreign exchange reserve holdings can also weaken the relationship between increase in net foreign assets and increase in base money. It is not the variation in the stock of net foreign assets, but instead the market purchases of foreign exchange by the central bank that have implications for reserve money. At times, net foreign assets and market purchases can move in opposite directions; for example, during 2008–2009, net foreign assets of the Reserve Bank increased by Re/Rs440 billion, while the Reserve Bank actually sold foreign exchange worth Re/Rs1,786 billion during the year. Third, in rapidly growing economies such as India, high real GDP growth needs concomitant growth in monetary aggregates, which also needs expansion of base money. To this extent, the accretion of unsterilized foreign exchange reserves to the central bank's balance sheet is helpful for expanding base money at the required rate.

Table 11: Variation in Net Foreign Assets, Reserve Money, and CRR for India

Item	2003– 2004	2004– 2005	2005– 2006	2006– 2007	2007– 2008	2008– 2009
1. Cash reserve ratio (CRR) (end–period)	4.5	5.0	5.0	6.0	9.0	5.0
2. Net foreign assets of Reserve Bank						
Variation (Re/Rs billion)	1262	1284	602	1932	3700	440
Variation (%)	35.2	26.5	9.8	28.7	42.7	3.6
3. Reserve money						
Variation (Re/Rs billion)	675	526	839	1359	2194	595
Variation (%)	18.3	12.1	17.2	23.7	30.9	6.4
4. Reserve money (adjusted for CRR)						
Variation (%)	19.2	10.0	17.2	18.9	25.3	19.0
<i>Memo:</i>						
Net market purchases(+)/sales(-) of foreign exchange by the Reserve Bank (Re/Rs billion)	1408	911	329	1190	3121	-1786

Source: Reserve Bank of India annual reports (various issues).

The success of the central banks of the Asian EMEs in keeping short-term interest rates within the respective policy corridors and containing monetary aggregates to desired trajectories is also reflected in meeting the key final objectives. Ho and McCauley (2008) found that these economies succeeded in containing inflation, in contrast with the common fear that large reserve accumulation may be inflationary (Table 12). In fact, they found an inverse relationship between reserve accumulation and inflation in Asian EMEs. Countries with higher reserve accumulation had lower inflation and vice versa. Inflation rose in many Asian EMEs, as elsewhere, in 2007 and 2008 on the back of higher food and fuel prices.

Table 12: Inflation Rates in Asian EMEs (%)

Country	1990– 1996	1997– 2002	2003– 2006	2007	2008
China, People's Rep. of	11.0	0.2	2.1	4.8	5.9
India	10.1	6.2	4.5	6.4	8.3
Indonesia	8.5	18.7	9.1	6.0	9.8
Korea	6.4	3.6	3.0	2.5	4.7
Malaysia	3.7	2.6	2.3	2.0	5.4
Philippines	10.7	6.0	5.8	2.8	9.3
Taipei, China	3.7	0.6	1.1	1.8	3.5
Thailand	2.9	3.0	3.4	2.2	5.5
<i>Memo:</i> Emerging and developing countries	24.6	4.9	3.7	4.0	6.0

Source: IMF (2009b).

In the context of the ongoing financial crisis, it is interesting that none of the major EMEs has resorted to imposing controls on capital outflows or tightening of existing measures. What has been done is to relax some of the restrictions on inflows. However, countries that have had higher dollarization of their liabilities, such as Korea, came under more pressure.

3.1.4 Global Financial Crisis and Impact on Asian EMEs

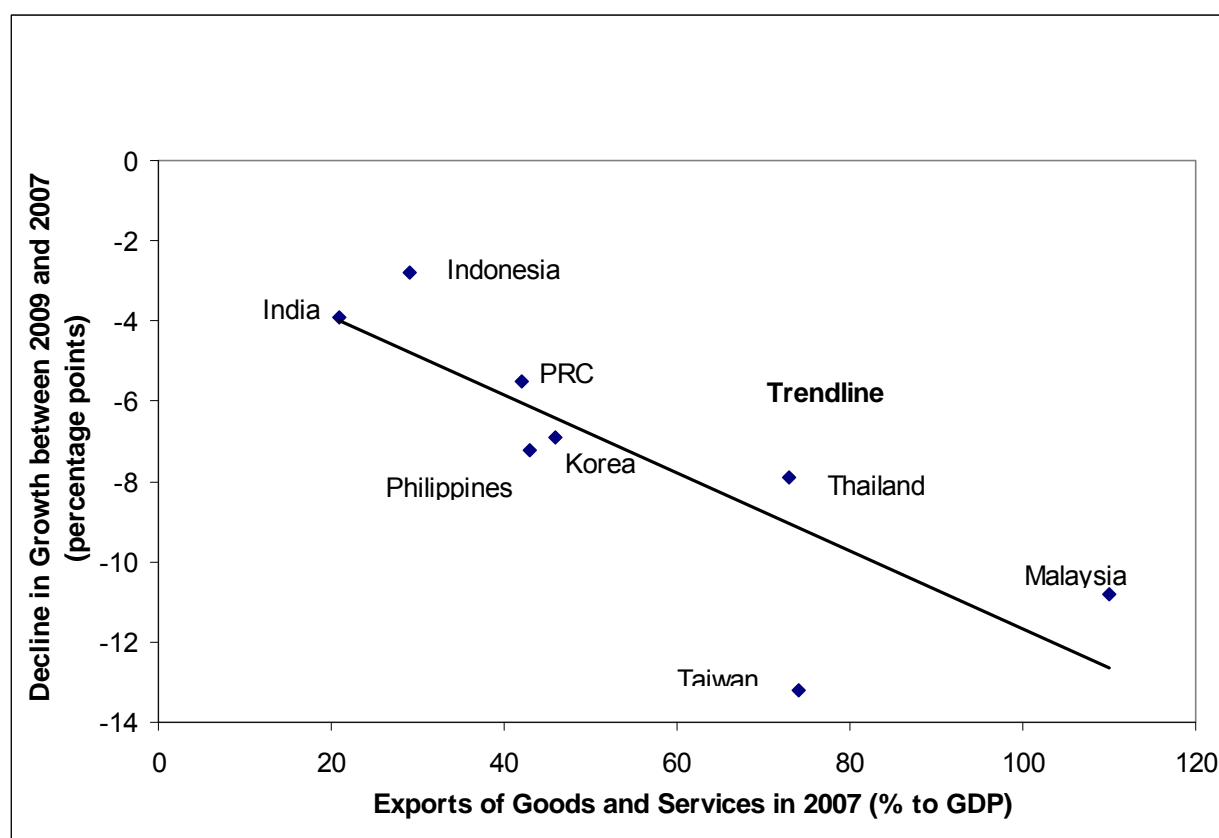
All the economies in the region witnessed a significant slowdown in late 2008 and 2009 on the back of the global financial crisis. In Asia, this slowdown can largely be seen as the outcome of weak external demand and sudden disruption in external flows, especially trade-related capital flows, due to global deleveraging. According to World Trade Organisation (WTO 2009) estimates, world merchandise exports (US\$ terms) declined by 21% in the quarter ending in December 2008 and by another 22% in the quarter ending in March 2009—a cumulative decline of 38% between the quarters ending in June 2008 and March 2009. Given this massive order of decline in external demand as well as the high degree of external openness, the relatively more export-oriented Asian EMEs, such as Korea, Malaysia, Taipei, China, and Thailand (Table 13), were more adversely affected than the PRC, India, and Indonesia. According to the IMF's projections of July/August 2009, while the PRC, India, and Indonesia were projected to record positive growth in 2009, Korea, Malaysia, Taipei, China, and Thailand were projected to contract by 2.0–7.0% (Table 4). The magnitude of growth slowdown between 2007 and 2009 appears to be closely related to the degree of openness (Figure 4). Unprecedented fiscal and monetary stimuli have been able to offset only a part of the dramatic decline in external demand and sudden drying of trade financing.

**Table 13: External Trade Openness in Asian EMEs
(exports of goods and services as % of GDP)**

Country	1990–1996	1997–2002	2003–2006	2007
China, People's Rep. of	22	22	35	42
India	9	12	19	21
Indonesia	26	38	32	29
Republic of Korea	27	39	42	46
Malaysia	83	111	114	110
Philippines	33	51	49	43
Taipei, China	—	50	64	74
Thailand	38	60	71	73

Sources: World Bank, World Development Indicators Online (<http://web.worldbank.org/WBSITE/EXTERNAL/DATASTATISTICS/0,,contentMDK:20398986~menuPK:64133163~pagePK:64133150~piPK:64133175~theSitePK:239419,00.html>); Central Bank of Taipei, China (<http://www.cbc.gov.tw/mp2.html>).

Figure 4: Openness and Real GDP Growth Slowdown in Asian EMEs



Sources: Tables 3 and 13.

The downturn in growth that occurred in the wake of the global financial crisis can largely be attributed to external causes instead of domestic ones. This is in contrast with the Asian financial crisis, when internal weaknesses—large current account deficits, exchange rate misalignments, external sector vulnerability, and weaknesses in corporate and financial sector balance sheets—led to the currency and banking crisis, culminating in severe output losses and an overall crisis of confidence. In response to the lessons of the Asian crisis, the external and financial sectors of the major Asian EMEs have seen significant strengthening in the decade since the crisis. Policies encompassing enhanced exchange rate flexibility, current account surpluses, a cautious approach to full capital account opening accompanied by accumulation of foreign exchange reserves, have characterized the overall macro and monetary management of these economies in the period prior to the current crisis. Large

foreign exchange reserves have acted as effective buffers in the face of reversals in capital flows.

This time, the domestic financial sectors in the Asian EMEs, unlike the advanced economies, did not exacerbate the crisis in these economies. In general, banking sectors in the Asian economies have been strengthened considerably—capital adequacy ratios are above the international norms, and nonperforming loans have witnessed a significant decline from their post-Asian crisis levels (Table 14). Direct exposures of the Asian EMEs to subprime assets were negligible. Corporate balance sheets are also reported to have been robust. These features provided a certain degree of resilience to these economies. Nonetheless, as the governments in major advanced economies and elsewhere proceeded to enhance coverage for deposit insurance and guarantees for other bank liabilities in the face of public confidence in the banking systems, many governments in the region, barring India and the PRC, were also forced to extend similar sorts of guarantees and insurance. While the ongoing slowdown in external demand could see some deterioration in the banking sector in 2009, high levels of capital adequacy ratios should provide comfort to absorb the likely rise in nonperforming assets.

Another factor that should minimize the adverse impact of the global financial turmoil on the Asian EMEs is that banks in the region rely more on domestic funding sources to finance their domestic loans. The ratio of loans to domestic deposits is typically less than one in most of Asia (Table 15). A ratio of less than one indicates that domestic deposits are sufficient to fund the banking system's loans and problems in global financial markets should not have any direct impact on domestic lending. On the other hand, a ratio above unity suggests reliance of the banking system on foreign sources for funding. In such cases, the global credit crunch can cause liquidity problems for banks in such countries. The only major Asian country in which the loan-to-deposit ratio is high enough to cause some concern is Korea, which has indeed experienced some financial instability, especially evident in the foreign exchange markets. A further factor for Korea is its exceptionally open capital account (Asian Development Bank 2009).

Table 14: Banking Sector Indicators in Asian EMEs (%)

Country	1998	2000	2005	2006	2007	2008
Capital to Risk-Weighted Assets Ratio						
China, People's Rep. of	12.8 ^a	13.5	2.5	4.9	8.4	8.2
India	11.6	11.1	12.8	12.3	12.3	13.0
Indonesia	-13.0	21.6	19.3	21.3	19.3	16.8
Korea	8.2	10.5	13.0	12.8	12.3	10.9
Malaysia	11.8	12.5	13.7	13.5	13.2	12.6
Philippines	17.7	16.2	17.6	18.1	15.7	15.5
Taipei,China	—	10.6 ^c	11.2	10.9	10.8	10.9
Thailand	10.9	11.9	13.2	13.8	14.8	15.3
Nonperforming Loans to Total Loans						
China, People's Rep. of	—	29.8 ^b	9.8	7.5	6.7	2.5
India	14.4	12.7	5.2	3.3	2.5	2.3
Indonesia	48.6	18.8	7.6	6.1	4.1	3.5
Korea	7.4	6.6	1.2	0.8	0.7	1.1
Malaysia	18.6	15.4	9.6	8.5	6.5	5.1
Philippines	19.5	19.5	10.3	7.5	5.8	5.2
Taipei,China	—	8.9 ^c	2.2	2.2	1.8	1.6
Thailand	42.9	17.7	9.1	8.4	7.9	6.5
Return on Assets						
China, People's Rep. of	0.1 ^a	0.1	0.6	0.7	1.0	—
India	0.8	0.7	0.9	0.7	0.9	1.0
Indonesia	-19.9	0.3	2.5	2.6	2.8	2.6
Korea	-3.2	-0.6	1.3	1.1	1.1	—
Malaysia	0.7 ^a	1.5	1.4	1.3	1.5	1.6
Philippines	0.8	0.4	1.1	1.3	1.3	1.1
Taipei,China	—	-0.5 ^c	0.3	-0.1	0.3	0.4
Thailand	-5.6	-1.7	1.4	0.8	0.1	—

Notes:

^a Data pertain to 1999.

^b Data pertain to 2001.

^c Data pertain to 2002.

Sources: IMF (2009c). Central Bank of Republic of Taipei,China (<http://www.cbc.gov.tw/mp2.html>).

Table 15: Liquidity Ratios in Banks in Asian EMEs (end–2008)
(%)

Country	Loans to Domestic Deposits	Loans to Total Liabilities	Foreign Liabilities to Domestic Deposits
China, People's Rep. of	0.69	0.68	0.01
Hong Kong, China	0.50	0.28	0.78
India	0.82	0.79	0.07
Indonesia	0.80	0.75	0.07
Korea	1.36	1.05	0.30
Malaysia	0.96	0.86	0.11
Philippines	0.78	0.69	0.14
Singapore	0.85	0.51	0.66
Taipei, China	0.77	0.71	0.08
Thailand	0.98	0.94	0.04
Vietnam	0.98	0.91	0.07

Sources: ADB (2009); Reserve Bank of India.

3.1.5 Global Financial Crisis: Asian and Emerging European EMEs

It is interesting to compare the impact of the crisis on Asian and European EMEs. In the years leading to the crisis, emerging European economies witnessed a fast pace of external and financial liberalization. Market shares of foreign banks increased, more than doubling from one-third to more than two-thirds in Bulgaria, Romania, and the Czech Republic. Foreign capital inflows rose sharply, as noted earlier (Tables 1–2), primarily driven by foreign borrowing by banks, which boosted domestic credit at lower interest rates. Many of the loans were granted in foreign currencies, primarily for housing and consumer credit. In 2007, foreign currency–denominated loans were as much as 80% of outstanding credit to households and business enterprises in Latvia and Estonia (Christensen 2009).

Bank-related capital inflows in emerging European economies reached almost 9.7% of GDP in 2007, significantly higher than that of 1.4% in non-European EMEs (except the PRC). The outcomes of external and financial liberalization included large foreign borrowing by domestic subsidiaries of foreign banks, a credit boom, higher growth, and higher inflation. Households, traditionally relatively debt free, have become dependent on bank credit for their consumption. This exacerbated demand in the upswing; now the reverse dynamics are playing out in the ongoing phase of capital retrenchment and credit slowdown. In the face of the credit boom, host country supervisors in emerging Europe were reluctant to impose tougher prudential rules on provisioning and higher capital buffers—fear of retaliation by parent banks, and the perceived high quality of home country supervision of these institutions may have led to this behavior (IMF 2009d). Strong domestic demand was mirrored in high and rising current account deficits. Current account deficits in CEE economies jumped from an average of US\$18 billion (1.7% of GDP) during 1997–2002, to US\$54 billion (5.1% of GDP) during 2003–2006, to US\$142 billion in 2008 (7.6% of GDP). Indeed, even as each of the other major EME regions (Asia, Africa, CIS, and the Western Hemisphere) recorded growing surpluses, the CEE was the only region to record persistent and rising deficits, financed by short-term foreign debt. Thus, the EMEs in the CEE were characterized by high and rising current accounts deficits on the one hand and large reliance on bank borrowings and short-term debt on the other hand. These characteristics broadly resembled the Asian EMEs in 1997.

A sudden reversal of capital flows, therefore, has had a more severe impact on these economies than on the Asian EMEs in the current episode. Although many economies in the

CEE region have had to take IMF assistance, none of the Asian EMEs had to turn to the IMF for any assistance in the current crisis. The CEE countries also face additional challenges of maintaining the involvement of foreign banks, which are under funding and solvency pressures. The increasing nonperforming assets that have emerged from the currency mismatches of the foreign banks' lending activities in these countries have resulted in significant capital erosion in the balance sheets of these banks. The home countries of these banks are therefore suffering from the spillover of these problems in CEE countries. Countries such as the Czech Republic—with lower inflation, smaller current account deficits, and lower dependence on bank-related capital inflows—have fared better so far.

According to IMF estimates (IMF 2009e), overall output is expected to contract by 5.0% in the CEE countries as compared with declines of 2.6% in the Western Hemisphere and 0.3% in the Association of Southeast Asian Nations-5 (ASEAN-5), which includes Indonesia, Malaysia, Philippines, Thailand, and Viet Nam. Other EME regions will record deceleration, but growth is expected to be positive in developing Asia including ASEAN-5 (5.5%), Africa (1.8%), and the Middle East (2.0%).

In brief, sound macroeconomic and financial policies, accompanied by prudent capital account management practiced by the Asian EMEs over the past decade, ensured that their financial and external sectors have acted as buffers in the current global financial crisis.

3.1.6 Capital Controls and Efficacy

Despite the widespread and relatively successful practice of active capital account management by many EMES, particularly those in Asia, some economists continue to question the efficacy of such capital account management. It is argued that capital controls are ineffective except over a short time horizon; and that capital controls are often leaky with potential capital flows, even showing up as current account flows or as permissible capital flows. For instance, a recent IMF working paper (Cardarelli, Elekdag, and Kose 2009) observed that episodes of large capital inflows are often associated with real exchange rate appreciation, deteriorating current account balances, and a significant drop in subsequent growth. It concluded that resisting nominal exchange rate appreciation through sterilization is likely to be ineffective when the influx of capital flows is persistent, and tightening capital controls has not in general been associated with better outcomes. Instead, the paper suggests that keeping expenditure growth steady is helpful for limiting currency appreciation and fostering better growth.

Findings and conclusions in the IMF paper and related papers are subject to a number of comments. First, it is not clear what is meant by “persistent” flows. It is not apparent in real time to determine with certainty whether capital inflows are permanent or temporary. Illustratively, with hindsight, the unprecedented surge in capital inflows to the EMEs during 2003–2007, especially in 2007, was not permanent, although during these years it was considered by many commentators to be permanent. Many policymakers, on the other hand, appeared to have treated the capital flows boom as temporary and uncertain, subject to reversal, and hence intervened in the markets.

Second, the case for fiscal restraint is based on the assumption that it will contain aggregate demand and hence reduce interest rates. Therefore, fiscal restraint may be useful if capital inflows are entirely in the nature of debt flows looking for interest rate arbitrage. Even then, fiscal prudence may turn out to be ineffective if private demand replaces government demand in the economy so that aggregate demand is unchanged. If the surge in capital inflows reflects the push factors—low interest rates and yields in the advanced economies—it is not clear whether fiscal restraint would be of much help. Fiscal policy decision-making is subject to long decision lags, while capital flows are highly volatile. By the time fiscal contraction is implemented, capital inflow surges may have given way to outflows, and the policy response may be destabilizing (Kim and Yang 2008).

Third, the IMF paper discussed the hazards of preventing nominal appreciation, but in practice major EMEs have permitted growing flexibility in the nominal exchange rate. Moreover, in many Asian countries, current and capital account surpluses have also been accompanied by fiscal surpluses. The relevance of the IMF paper's observations is, therefore, questionable in the present circumstances in Asian countries.

Finally, on the finding of inefficacy of capital controls on inflows, most of the studies are handicapped by the use of binary or similar kinds of indices to capture capital controls. Furthermore, information on such measures is available on an annual basis, whereas policy actions are taken more continuously while also undergoing intrayear fluctuations. Existing measures of cross-country differences are crude and misleading in many cases, often leading to incorrect conclusions (Kose, Prasad, Rogoff, and Wei 2009). Available measures of capital controls on inflows, therefore, may not successfully capture the nuances of the policy measures and their efficacy or otherwise.

As regards firm-based micro studies reaching the conclusion that capital controls hurt, it should be true by definition: Such controls, if effective, would indeed raise the cost of financing for the affected firms. The key issue, however, is not the micro impact; it is the macro impact. Capital controls tend to moderate the influx of foreign capital so that domestic macroeconomic and financial stability can be maintained. Thus, while individual firms may be hurt by controls, the economy may reap benefits at the aggregate level, which are rather harder to capture. As Rodrik and Subramanian (2009: 126–127) point out, studies based on individual firms “cannot address the counterfactual question of what would have happened to aggregate investment in the absence of the controls, especially once the induced real exchange rate changes are factored in. It is entirely possible for aggregate investment to be higher in the equilibrium with restricted capital mobility (and therefore a more competitive real exchange rate) than in the equilibrium with full capital mobility, even though some firms are in effect facing higher costs of finance in the latter equilibrium.”

It is also often argued that financial market development can enable firms to minimize the adverse impact of volatility in exchange rates through hedging. Whereas this may indeed benefit individual firms, the macro economy can still suffer because hedging transfers the risk to other domestic players only if it is mostly done in domestic financial markets (Grenville 2008).

The quasi-fiscal and other costs of sterilization are more likely to be outweighed by the benefits that may emanate from the maintenance of domestic macroeconomic and financial stability. With hindsight, the large buildup of forex reserves by the major EMEs since 1998 (especially since 2003) appears to have been a useful first line of defense in the current episode of reversal of capital flows.

A prolonged period of large-scale intervention, as the sole policy response to manage a large and growing volume of capital inflows, can create expectations of future exchange rate appreciation and runs the risk of creating distortions in the local financial system. There are, however, good grounds for believing that such dangers can be reduced when forex intervention is combined with a policy orientation that allows currency flexibility over a medium-term perspective in conjunction with continuous development and strengthening of the domestic financial sector.

Sterilization may also be limited by the availability of the stock of government securities with the central bank. In the case of the Reserve Bank of India, for example, in the face of large capital flows beginning in the early 2000s, continuous open market operations led to a diminishing stock of Government securities for further sterilization by late 2003. Moreover, the Reserve Bank of India Act prohibited the issuance of central bank bills for this purpose. Accordingly, as noted earlier, a new mechanism of MSS was instituted in 2004 to issue government treasury bills/bonds to neutralize the impact of capital inflows, with the fiscal impact (servicing of interest payments on the bonds) borne by the Government. In view of the large volume of capital flows, the burden of sterilization is borne not only by the

government but also by the banking system (due to cash reserve requirements, which since 2007 are not remunerated) and the Reserve Bank of India (in the form of interest payments paid on excess liquidity absorbed through reverse repos in the daily liquidity adjustment facility). In view of the differences between the return on domestic securities and that on foreign securities, there is an issue of quasi-fiscal cost. Such costs may be outweighed by the likely benefits from confidence and financial stability provided by the existence of substantial reserves, however. As mentioned earlier, even the pecuniary costs of sterilization can often be exaggerated by analysts.

To sum up, modulation in the volume of capital inflows, through active capital account management, can at least reduce the amplitudes in the various economic variables in both the upswing and the downswing of the capital flows cycle and contribute to domestic stability. Authorities need to respond symmetrically and keep their options open when managing the volatility in capital flows and their subsequent consequences on the domestic economy. If capital flows are indeed found to be persistent and unidirectional over a long time period, policies will indeed have to respond to such a development. If such persistent flow is not deemed to be disruptive, there would be little need for intervention. In principle, the objective of capital account management is to manage the departures from fundamentals that such flows may entail. The flows would be “persistent” or “permanent” only if they are responding to economic fundamentals, in which case there would be little need for intervention. The fact that capital account management can be leaky has to be recognized. When excess flows take place, they respond to perceived potential gains to be reaped from such flows. It is then axiomatic that they will attempt to circumvent any attempts to curb the flow, including through current account transactions.

As Rodrik and Subramanian (2009: 136) note, “The appropriate role of policy will be as often to stem the tide of capital inflows as to encourage them. Policymakers who view their challenges exclusively from the latter perspective will get it badly wrong.” Although it is true that countries facing a surge in capital flows have to live with “an appreciating (and) fluctuating currency, and strengthening the financial system” (Kawai and Takagi 2008), their latter observation that “there is no effective and sustainable policy measure either to reduce the size of inflows or to prevent the adverse consequences of such inflows” appears to be much more agnostic than what the policymakers believe.

4. CONCLUDING OBSERVATIONS

A good deal of discussion on management of capital accounts and foreign exchange intervention has been influenced by the existence of the open economy trilemma. No country can simultaneously enjoy free capital mobility, operate a fixed exchange rate, and practice independent monetary policy directed at managing domestic objectives. In fact, most Asian countries have actually managed this open economy trilemma successfully since the 1990s crisis. Although they have operated managed exchange rates, they have allowed increased flexibility: Their exchange rates no longer exhibit rigidity. Similarly, although they have actively managed their capital accounts, they have been neither totally open nor totally closed at any time. This middle ground of managed but flexible exchange rates and managed but mostly open capital accounts have enabled Asian EMEs to operate independent monetary policies despite high volatility in external capital flows during the post-Asian crisis period. By and large, Asian countries have been able to set their own policy interest rates even in the presence of persistent interest rate differentials with advanced countries. The practice of adequate sterilization has been successful in preventing the unwarranted growth of base money and other monetary aggregates in the face of rising foreign exchange reserves. Hence, by and large, they have also been successful in containing inflation.

Capital account management can be made more effective by the appropriate use of prudential regulation, given that it is financial sector weaknesses that ultimately cause financial crises. Some countries have, therefore, used prudential regulatory measures to limit the intermediation of foreign inflows through domestic banks and financial institutions (Reddy 2009). Restrictions on the use of capital flows in speculative activities such as real estate can also be helpful. Thus, capital account management and prudent regulation of financial sector go hand in hand, and countries following such an approach can minimize the adverse impact of exogenous shocks. Those who did not use such measures have indeed experienced difficulty, as did some emerging European countries.

The flow of capital between nations, in principle, brings benefits to both capital-importing and capital-exporting countries. But the historical evidence, reinforced by the current global financial crisis, shows that it can also create new exposures and bring new risks. The failure to analyze and understand such risks, excessive haste in liberalizing the capital account, and inadequate prudential buffers to cope with the greater volatility in more market-based forms of capital allocation have at one time or another compromised financial or monetary stability in many emerging market economies. On the other hand, rigidities in capital account management can also lead to difficulties in macroeconomic and monetary management. Although theory has much to say on the conditions desirable for an end state equilibrium, it has little guidance to offer on the sequencing of capital account liberalization.

Overall, as the CGFS (2009) concludes, it is a combination of sound macroeconomic policies, prudent debt management, exchange rate flexibility, effective management of the capital account, accumulation of appropriate levels of reserves as self-insurance, purposive use of prudential regulation, and development of resilient domestic financial markets that provide the optimal response to the large and volatile capital flows to the EMEs. Individual countries have used different combinations of measures from time to time. If the pressure of excess flows is very high, as it was in India in 2007, it becomes necessary to use almost all the possible measures available. Thus, how these elements can be best combined will depend on the country and on the period: There is no “one size fits all.”

Such a discretionary approach does put great premium on the skill of policymakers in finance ministries and central banks. It also runs the risk of markets perceiving central bank actions to become uncomfortably unpredictable. If the actions of the authorities result in the virtuous circle of high growth, low inflation, and financial stability (as many Asian countries have demonstrated in recent years), however, such an approach has much to commend it.

APPENDIX 1: CURRENT ACCOUNT BALANCES AND CAPITAL FLOWS TO SELECT ASIAN EMES (US\$ BILLION)

Item	1990–1996	1997–2002	2003–2006	2007	2008
PRC					
Current account	5	27	132	372	
<i>Current account (% of GDP)</i>	1.2	2.3	5.8	11.0	
Financial account, net	21	15	56	70	
Inflows	25	48	121	241	
Outflows	-4	-34	-64	-171	
Direct investment, net	20	40	56	121	
Inward	22	43	65	138	
Abroad	-2	-3	-9	-17	
Portfolio investment, net	1	-7	-10	19	
Liabilities	2	3	21	21	
Assets	0	-10	-32	-2	
Other investment, net	0	-18	10	-70	
Liabilities	1	2	35	82	
Assets	-1	-21	-24	-151	
Overall balance of payments (BOP) surplus	16	31	194	462	
India					
Current account	-4	-1	-2	-17	-30
<i>Current account (% of GDP)</i>	-1.4	-0.4	-0.2	-1.5	-2.6
Financial account, net	7	10	25	108	9
Inflows	7	11	36	117	29
Outflows	0	-1	-8	-10	-20
Direct investment, net	1	3	4	15	18
Inward	1	4	10	34	35
Abroad	0	-1	-6	-19	-17
Portfolio investment, net	2	2	10	29	-14
Liabilities	2	2	10	29	-14
Assets	0	0	0	0	0
Other investment, net	4	5	15	63	6
Liabilities	4	5	16	56	8
Assets	0	0	-2	7	-2
Overall BOP surplus	2	8	22	92	-20

Item	1990–1996	1997–2002	2003–2006	2007	2008
Indonesia					
Current account	-4	5	5	10	1
<i>Current account % of GDP</i>	-2.4	3.2	1.8	2.4	
Financial account, net	7	-5	0	3	-2
Inflows	7	-5	5	17	15
Outflows	0	0	-6	-14	-17
Direct investment, net	2	-1	1	2	2
Inward	3	-1	4	7	8
Abroad	0	0	-3	-5	-6
Portfolio investment, net	2	-1	4	6	2
Liabilities	2	-1	4	10	3
Assets	0	0	-1	-4	-1
Other investment, net	2	-3	-6	-5	-6
Liabilities	2	-3	-3	0	4
Assets	0	0	-2	-4	-10
Overall BOP surplus	2	0	4	13	-2
Republic of Korea					
Current account	-7	14	15	6	-9
<i>Current account (% of GDP)</i>	-1.5	3.3	2.0	0.6	
Financial account, net	10	3	13	9	-51
Inflows	21	9	35	85	-103
Outflows	-10	-6	-22	-76	52
Direct investment, net	-1	2	1	-14	-11
Inward	1	5	6	2	2
Abroad	-2	-4	-5	-15	-13
Portfolio investment, net	7	7	2	-25	-15
Liabilities	9	9	16	30	-38
Assets	-2	-2	-14	-55	23
Other investment, net	4	-5	12	41	-10
Liabilities	11	-5	18	60	3
Assets	-7	-1	-6	-18	-13
Financial Derivatives, net	0	0	-1	5	-14
Liabilities	-1	-1	-4	-7	-69
Assets	-	1	3	12	55
Overall BOP surplus	2	14	27	15	-56

Item	1990–1996	1997–2002	2003–2006	2007	2008
Malaysia					
Current account	-4	7	19	29	
<i>Current account (% of GDP)</i>	-5.7	8.0	13.9	15.4	
Financial account, net	6	-3	-5	-11	
Inflows	5	3	6	21	
Outflows	1	-6	-11	-32	
Direct investment, net	4	2	1	-3	
Inward	4	3	4	8	
Abroad	0	-1	-3	-11	
Portfolio investment, net	-1	-1	2	5	
Liabilities	-1	-1	3	9	
Assets	0	0	-1	-4	
Other investment, net	3	-5	-9	-14	
Liabilities	2	1	-1	4	
Assets	1	-5	-7	-17	
Overall BOP surplus	3	2	11	13	
Philippines					
Current account	-2	-2	2	7	4
<i>Current account (% of GDP)</i>	-3.9	-2.1	2.2	4.9	
Financial account, net	5	3	0	3	-5
Inflows	6	3	4	11	-10
Outflows	-1	0	-3	-7	5
Direct investment, net	1	1	1	-1	1
Inward	1	1	1	3	1
Abroad	0	0	0	-3	0
Portfolio investment, net	1	1	2	5	-3
Liabilities	1	1	3	4	-4
Assets	0	0	-1	1	1
Other investment, net	3	1	-3	-1	-3
Liabilities	3	0	-1	4	-7
Assets	0	1	-2	-5	4
Overall BOP surplus	2	0	2	9	-3

Item	1990–1996	1997–2002	2003–2006	2007	2008
Taipei,China					
Current account	7	12	24	33	25
<i>Current account (% of GDP)</i>	—	4.1	7.0	8.6	6.3
Financial account, net	-6	1	-1	-39	-2
Inflows	8	13	38	19	-13
Outflows	-14	-12	-39	-58	11
Direct investment, net	-2	-2	-4	-3	-5
Inward	1	3	3	8	5
Abroad	-3	-5	-7	-11	-10
Portfolio investment, net	0	-2	-8	-40	-12
Liabilities	3	7	25	5	-16
Assets	-2	-9	-33	-45	3
Other investment, net	-4	5	12	5	14
Liabilities	4	4	13	11	4
Assets	-9	1	-14	-6	10
Overall BOP surplus	1	13	22	-4	26
Thailand					
Current account	-9	7	1	14	0
<i>Current account (% of GDP)</i>	-6.8	6.1	0.4	5.7	
Financial account, net	13	-8	4	-3	13
Inflows	15	-7	9	14	7
Outflows	-1	-2	-5	-17	7
Direct investment, net	2	5	6	7	7
Inward	2	5	7	9	10
Abroad	0	0	-1	-2	-3
Portfolio investment, net	2	0	3	-7	-6
Liabilities	2	1	4	3	-3
Assets	0	0	-1	-10	-2
Other investment, net	10	-13	-5	-3	11
Liabilities	10	-12	-2	1	0
Assets	-1	-1	-3	-5	12
Overall BOP surplus	4	-2	6	17	25

Notes:

Overall BOP surplus is inclusive of errors and omissions.

For Taipei,China, data that pertain to the period 1993–96 are not available.

Sources: IMF. International Financial Statistics; Reserve Bank of India

([http://www.rbi.org.in/scripts/AnnualPublications.aspx?head=Handbook of Statistics on Indian Economy](http://www.rbi.org.in/scripts/AnnualPublications.aspx?head=Handbook%20of%20Statistics%20on%20Indian%20Economy)); Bank of Thailand

(<http://www.bot.or.th/English/Statistics/EconomicAndFinancial/ExternalSector/Pages/StatBalanceofPayments.aspx>);

Central Bank of Taipei,China (<http://www.cbc.gov.tw/mp2.html>).

REFERENCES

- Aghion, P., P. Bacchetta, R. Ranciere, and K. Rogoff. 2009. Exchange Rate Volatility and Productivity Growth: The Role of Financial Development. *Journal of Monetary Economics* 56: 494–513.
- Asian Development Bank (ADB). 2008. Key Indicators for Asia and the Pacific 2008. Manila: ADB.
- . 2009. Asian Development Outlook 2009: Rebalancing Asia's Growth. Manila: ADB.
- Bernanke, B. 2009. Financial Reform to Address Systemic Risk. Speech at the Council on Foreign Relations, Washington, DC, 10 March. <http://www.federalreserve.gov/newsevents/speech/bernanke20090310a.htm> (accessed 1 July 2009).
- Bhagwati, J. 1998. The Capital Myth: The Difference between Trade in Widgets and Dollars. *Foreign Affairs* 77(May/June): 7–12.
- Cardarelli, R., S. Elekdag, and M. A. Kose. 2009. Capital Inflows: Macroeconomic Implications and Policy Responses. IMF Working Paper WP/09/40. Washington, DC: IMF.
- Christensen, J. E. 2009. The Financial Crisis and Eastern Europe. *Monetary Review* 2009, 2. Quarter. Copenhagen: Danmarks Nationalbank.
- Committee on the Global Financial System (CGFS). 2009. Capital Flows and Emerging Market Economies. CGFS Papers No. 33. Basel, Switzerland: Bank for International Settlements.
- Cooper, R. N. 1999. Should Capital Controls Be Banished? *Brookings Papers on Economic Activity* 1: 89–141.
- Foong, K. K. 2008. Managing Capital Flows: The Case of Malaysia. ADBI Discussion Paper 93. Tokyo: ADBI.
- Grenville, S. 2008. Central Banks and Capital Flows. ADBI Discussion Paper 87. Tokyo: ADBI.
- Henry, P. B. 2007. Capital Account Liberalization: Theory, Evidence, and Speculation. *Journal of Economic Literature* XLV(December): 887–935.
- Ho, C., and R. McCauley. 2008. Resisting Appreciation and Accumulating Reserves in Asia: Examining the Domestic Financial Consequences. Hong Kong Institute for Monetary Research Public Seminar Series. Basel, Switzerland: Bank for International Settlements.
- International Monetary Fund (IMF). 2009a. Initial Lessons of the Crisis. Washington, DC: IMF.
- . 2009b. World Economic Outlook Database. Washington, DC: IMF.
- . 2009c. Global Financial Stability Report. Washington, DC: IMF.
- . 2009d. Regional Economic Outlook: Europe—Addressing the Crisis. Washington, DC: IMF.
- . 2009e. World Economic Outlook Update. Washington, DC: IMF.
- Kawai, M., and M. B. Lamberte. 2008. Managing Capital Flows in Asia: Policy Issues and Challenges. ADBI Research Policy Brief 26. Tokyo: ADBI.
- Kawai, M., and S. Takagi. 2008. A Survey of the Literature on Managing Capital Inflows. ADBI Discussion Paper 100. Tokyo: ADBI.

- Kim, S., and D. Y. Yang. 2008. Managing Capital Flows: The Case of the Republic of Korea. ADBI Discussion Paper 88. Tokyo: ADBI.
- Kose, M. A., E. S. Prasad, and A. D. Taylor. 2009. Thresholds in the Process of International Financial Integration. National Bureau of Economic Research Working Paper 14916. Cambridge, MA: National Bureau of Economic Research.
- Kose, M. A., E. S. Prasad, and M. E. Terrones. 2009. Does Openness to International Financial Flows Raise Productivity Growth? *Journal of International Money and Finance* 28(4): 554–580.
- Kose, M. A., E. S. Prasad, K. Rogoff, and S-J. Wei, 2009. Financial Globalization: A Reappraisal. *International Monetary Fund Staff Papers* 56(1): 8–62.
- McCauley, R. N. 2008. Managing Recent Hot Money Inflows in Asia. ADBI Discussion Paper 99. Tokyo: ADBI.
- Milesi-Ferretti, G. M. 2009. Notes on the Financial Crisis and Global Financial Architecture. Paper presented at the G-20 Workshop on Global Economy, Mumbai, India, 24–26 May.
- Mohan, R. 2004. Challenges to Monetary Policy in a Globalising Context. *Reserve Bank of India Bulletin* January: 81–102. In *Monetary Policy in a Globalised World: A Practitioner's View*, by R. Mohan. New Delhi: Oxford University Press.
- . 2007a. Capital Account Liberalisation and Conduct of Monetary Policy: The Indian Experience. *Reserve Bank of India Bulletin* July: 1129–1154.
- . 2007b. India's Financial Sector Reforms: Fostering Growth While Containing Risk. *Reserve Bank of India Bulletin* December: 2199–2226.
- . 2008a. Capital Flows to India. *Reserve Bank of India Bulletin* December: 2047–2079.
- . 2008b. The Role of Fiscal and Monetary Policies in Sustaining Growth with Stability in India. *Asian Economic Policy Review* 3: 209–236.
- . 2009a. *Monetary Policy in a Globalised World: A Practitioner's View*. New Delhi: Oxford University Press.
- . 2009b. Global Financial Crisis: Causes, Impact, Policy Responses and Lessons. *Reserve Bank of India Bulletin* May: 879–904.
- . 2009c. Emerging Contours of Financial Regulation: Challenges and Dynamics. *Reserve Bank of India Bulletin* June: 949–65.
- Obstfeld, M. 2009. International Finance and Growth in Developing Countries: What Have We Learned? *International Monetary Fund Staff Papers* 56(1): 63–111.
- Prasad, E. S., R. G. Rajan, and A. Subramanian. 2007. Foreign Capital and Economic Growth. *Brookings Papers on Economic Activity* 1: 153–230.
- Reddy, Y. V. 2009. *India and the Global Financial Crisis: Managing Money and Finance*. New Delhi: Orient BlackSwan.
- Reinhart, C. M., and K. S. Rogoff. 2008. This Time is Different: A Panoramic View of Eight Centuries of Financial Crises. National Bureau of Economic Research Working Paper 13882. Cambridge, MA: National Bureau of Economic Research.
- Rodrik, D. 1998. Who Needs Capital-Account Convertibility? In *Should the IMF Pursue Capital Account Convertibility?*, edited by D. Rodrik et al. Princeton Essays in International Finance 207. Princeton, NJ: Princeton University.
- Rodrik, D., and A. Subramanian. 2009. Why Did Financial Globalization Disappoint? *International Monetary Fund Staff Papers* 56(1): 112–138.

- Schadler, S. 2008. Managing Large Capital Inflows: Taking Stock of International Experiences. ADBI Discussion Paper 97. Tokyo: ADBI.
- Stiglitz, J. E. 2003. *Globalization and Its Discontents*. New York, NY: Norton.
- World Trade Organization (WTO). 2009. Short-Term Trade Statistics. http://www.wto.org/english/res_e/statis_e/statis_e.htm (accessed 1 July 2009).
- Yu, Y. 2008. Managing Capital Flows: The Case of the People's Republic of China. ADBI Discussion Paper 96. Tokyo: ADBI.