THE BRICS AND ASIA, CURRENCY INTERNATIONALIZATION AND INTERNATIONAL MONETARY REFORM

PAPER NO. 5 — JULY 2013

Currency Internationalization and Reforms in the Architecture of the International Monetary System: Managing the Impossible Trinity

Rakesh Mohan, Michael Debabrata Patra and Muneesh Kapur

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ABOUT THE PROJECT AND PAPER SERIES

The BRICS and Asia, Currency Internationalization and International Monetary Reform

The disjuncture between global markets and an international monetary system (IMS) based on national currencies generates instability for global trade and finance. As the BRICS (Brazil, the Russian Federation, India, the People's Republic of China [PRC], South Africa) and Asian countries have become more integrated into the world economy, their governments have become increasingly aware of fundamental problems or challenges in the current IMS.

In December 2012, the Asian Development Bank (ADB), The Centre for International Governance Innovation (CIGI) and the Hong Kong Institute for Monetary Research (HKIMR) co-hosted a conference in Hong Kong, China. The conference examined: a range of views on the fundamental systemic problems that are a catalyst for international monetary reforms; views from the BRICS and Asian countries, as well as regional considerations regarding the measures that key countries are already taking to respond to the challenges of the IMS, including currency internationalization; and options and preferences for orderly adjustment of the IMS.

The 10 papers in this series, authored by esteemed academic and policy experts, were presented at the conference in Hong Kong, China and were subsequently revised. These working papers are being published simultaneously by all three partners.

ABOUT THE AUTHORS

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Michael Debabrata Patra is a career central banker with close to 30 years of experience in various positions in the Reserve Bank of India, India's central bank, which he joined in 1985. He is currently adviser-in-charge of the Monetary Policy Department of the Reserve Bank at its central office located in Mumbai, India, a position he also held from 2005 to 2008. He has a Ph.D. in economics from the Indian Institute of Technology, Mumbai, in the area of international finance.

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ACRONYMS

ADB	Asian Development Bank
AEs	advanced economies
BOPS	Balance of Payments Statistics
BIS	Bank for International Settlements
CGFS	Committee on the Global Financial System
CIGI	The Centre for International Governance Innovation
EDE	emerging and developing economy
EMEs	emerging market economies
FDI	foreign direct investment
FSAP	Financial Sector Assessment Program
FSB	Financial Stability Board
FSSA	Financial Sector Stability Assessment
GFSR	Global Financial Stability Report
HKIMR	Hong Kong Institute for Monetary Research
IEO	Independent Evaluation Office
IFS	International Financial Statistics
IMF	International Monetary Fund
IMS	international monetary system
ISD	Integrated Surveillance Decision
NAFC	North Atlantic financial crisis
NFAs	net foreign assets
QE	quantitative easing
PRC	People's Republic of China
RBI	Reserve Bank of India
SDRs	special drawing rights
WEO	World Economic Outlook

EXECUTIVE SUMMARY

The global financial crisis of 2008–2009, the follow-on Great Recession and the euro area sovereign debt crisis have spurred renewed interest in reforming the international monetary system (IMS). On account of its sheer complexity, pervasiveness and persistence, the North Atlantic financial crisis (NAFC) of 2008 and its global after-effects have brought these issues to a head.

This paper attempts to evaluate the proposals on various facets of the IMS that are on the table, and to set out some responses that reflect an Indian and emerging and developing economy (EDE) standpoint in the debate.

Almost every feature of the IMS has been malfunctioning. First, the system of floating exchange rates has seen greater volatility since the collapse of the Bretton Woods system, and exchange rates can seldom be seen to reflect fundamentals. Second, the free flow of cross border capital flows has not brought the expected benefits to the global economy, while often destabilizing exchange rates and endangering domestic financial stability in recipient economies through excess flows and sudden stops. Third, the interconnection of financial markets, along with freer cross border financial transactions and interdependence of economies, has magnified the effects of specific financial crises, resulting in massive contagion affecting the world economy and leading to global financial instability. Finally, the role of the US dollar as the global economy's reserve currency is increasingly being tested, with few alternatives in sight. The liquidity needs of the fast growing EDEs will rapidly overwhelm the world's supply of safe reserve assets and the functioning of the US dollar as the reserve currency.

The nature of challenges has been changing and will change further in the future. Crisis propagation is taking diverse forms and conduits and no longer originates in the periphery. Now it is the systemically important countries that threaten the stability of the IMS. The demographic transition will continue to put fiscal and financial pressures on these countries, even after the current NAFC ends.

The paper concludes by outlining the key ingredients of a stable IMS, whatever its institutional form.

First, domestic macroeconomic and financial stability is a necessary condition for a stable IMS. In this context, central banks have a significant role to play in ensuring domestic macroeconomic and financial stability. The mandate of central banks needs to be broadened: they should also be entrusted with financial sector regulation and supervision, with appropriate instruments at their command.

Second, turning to the IMS, large and volatile capital flows have been a key contributor and propagator of volatility in exchange rates, sometimes excessive reserve accumulation by the EDEs, credit and asset price booms and, ultimately, the recurrent financial crises. The EDEs will, therefore, need to continue with their cautious approach to capital account liberalization and practise active capital account management in response to destabilizing capital flows to maintain macroeconomic and financial stability.

Third, while a reduction in the volatility of capital flows could potentially reduce the need for precautionary reserve accumulation by the EDEs, the monetary and credit requirements of fast-growing EDEs, in the presence of prudent domestic fiscal policies, might still require the central banks in the EDEs to acquire foreign assets to expand their balance sheets in a non-inflationary way. Evidence presented in this paper suggests limited scope for the EDE currencies to emerge as international reserve currencies for many years.

Thus, the tensions between the EDEs' demand for safe assets and the supply of these assets by the major advanced economies (AEs) can be expected to continue. However, the proposals for domestic macroeconomic and financial stability and continued capital account management by the EDEs on the one hand, and the central banks in the major AEs internalizing the implications of their monetary policies for the rest of the global economy on the other hand, can minimize pressures on the IMS and reduce the incidence and the virulence of the financial crises that we have witnessed over the past four decades.

INTRODUCTION

The global financial crisis of 2008–2009, the follow-on Great Recession and the euro area sovereign debt crisis have spurred renewed interest in reforming the IMS. The deficiencies of the IMS are well known — they have been repeatedly exposed by systemic malfunctions in the form of repeated occurrences of financial crises with systemic spillovers, characterized by global imbalances, exchange rate misalignments and volatility, high mobility and sudden stops in capital flows. Yet in a fundamental sense, on account of its sheer complexity, pervasiveness and persistence, the NAFC of 2008 and its global after-effects have brought these issues to a head. Increasing financial market integration and the interdependence of economies have provided a whole new dimension to the IMS, motivating the case for truly ambitious reform. Moreover, the drive for transformation has acquired a global political context, as reflected in the G20 deliberations.

Reformers will, however, encounter inertia of governments and international organizations alike to embrace radical changes in the IMS, partly due to ideological concerns and vested interests, and partly due to network externalities associated with existing arrangements (Eichengreen and Sussman, 2000). It has also been argued that the NAFC of 2008–2009, despite all its costs, has not really jeopardized international monetary stability, and the IMS is not on the verge of collapse (IMF, 2009c). What the crisis has shown, however, is that the imperfections of the IMS feed and facilitate developments and policies that are ultimately unsustainable and expose the system to risks and severe shocks, which are difficult to address.

This paper attempts to evaluate the proposals on various facets of the IMS that are on the table, and to set out some responses that reflect an EDE standpoint in the debate. Clearly, at this stage, there is little consensus on these issues, as they sit uncomfortably on the trade-off between global governance and national sovereignty.

The remainder of this paper is organized into six sections. The next section addresses what exactly is meant by "international monetary system," its ambit and scope, the legal framework underlying it and the problems at its core. The third section deals with the surveillance function of the IMF. The fourth section evaluates new initiatives towards a multilateral approach for the management of capital flows. The fifth section explores the recent, rapid reserve accumulation in response to perceived imperfections in the IMS, and examines the remedies being discussed, particularly the internationalization of emerging economy currencies so as to develop a risk-diversifying multipolar world. The role of central banks in fostering financial stability going forward is discussed in the sixth section. The concluding section brings all of these strands together.

IMS

"International monetary system" is often used interchangeably with terms such as "international monetary and financial system" and "international financial architecture." Since the nomenclature involves de jure/de facto jurisdiction, obligations and oversight concerning sovereign nations and multilateral bodies, it is important to be precise and specific.

The objective of the IMS is to contribute to stable and high global growth, while fostering price stability and financial stability. The IMS comprises the set of official arrangements that regulate key dimensions of the balance of payments (IMF, 2009c; 2010a). It consists of four elements: exchange arrangements and exchange rates; international payments and transfers relating to current international transactions; international capital movements; and international reserves. The essential purpose of the IMS is to facilitate the exchange of goods, services and capital among countries.

As outlined in the Articles of Agreement that established it, the IMF is required to exercise oversight of the IMS. The obligations of member countries are to direct economic and financial policies and foster underlying economic and financial conditions for orderly economic growth with reasonable price stability ("domestic stability"), avoid manipulating exchange rates and follow compatible exchange rate policies. In 2007, the IMF sought to broaden the scope of surveillance from the narrow focus on exchange rates to the concept of "external stability" — "a balance of payments position that does not, and is not likely to, give rise to disruptive exchange rate movements" (IMF, 2007) — but the focus on exchange rates as the main objective was retained. Thus, the IMF, as a multilateral institution, has a very specific mandate to ensure the stability and effective operation of the IMS. This is important in view of the areas in which the IMF has been seeking to amorphously expand its outreach and ambit — poverty, climate change, inequality and financial supervision, to name a few. This mission creep is most evident in the new proposals to reform the IMF's surveillance mandate, which warrant caution and vigilance, as they collide with the principles of national sovereignty and specialization.

Moreover, the IMS is not synonymous with the international financial system. Indeed, its founding fathers may have not intended it to be so. The IMF has no powers of oversight over the IMS beyond the broad appraisal of domestic policies and conditions that may encompass the financial sector. Since 2009,

however, the IMF has sought to make its Financial Sector Stability Assessment (FSSA) — a component of its technical assistance, that is, the Financial Sector Assessment Program (FSAP) that is jointly owned with the World Bank — mandatory for 25 countries. Finally, as demonstrated most starkly by the NAFC of 2008–2009, policies and conditions in systemically important countries can have huge negative externalities for the IMS at large, whether they are transmitted through the balance of payments, or through other channels, such as the confidence channel. The external effects of the policies and conditions of systemically important economies can erode the stability of IMS. How will oversight be exercised with countries that may consult with and confide in the IMF, but not contain and cut back?

IMS Performance

The IMS has evolved continuously over the last century, reflecting ongoing changes in global economic realities and in economic thought in search of an anchor (Benassy-Quere and Pisani-Ferry, 2011). In the process, the binding rules that marked its passage through the gold standard and Bretton Woods have fallen by the wayside. The gold standard provided the anchor in the pre-World War I period: a period characterized by free capital flows and fixed exchange rates and, hence, no independent monetary policy. The interwar period was marked by confusion, which yielded to the Bretton Woods system of semi-fixed exchange rates and controlled capital flows that provided scope for an independent monetary policy. The collapse of the Bretton Woods system in the early 1970s led to the introduction of the prevailing system of floating exchange rates, free capital flows and independent monetary policy in the major advanced economies. Within this post-Bretton Woods framework, the monetary policy framework also transitioned from a monetary targeting regime in the 1970s and the 1980s to inflation targeting frameworks. Given the preference for open capital accounts, and the belief in efficient financial markets, financial sector regulation moved from an intrusive framework to a light-touch framework.

However, given the recurrence and increased frequency of financial crises, the IMS appears to be caught in a bind analogous to the impossible trinity (Fleming, 1962; Mundell, 1963) — domestic stability versus external stability versus global stability. The pursuit of sustained growth with price stability may not guarantee a balance of payments position that does not have disruptive effects on exchange rates; domestic and external stability cannot preclude threats to global stability. Neither can global stability assure domestic/external stability at the individual country level.

The performance of the IMS in the post-Bretton Woods era has been mixed when evaluated against relevant metrics. Average global growth has tended to slow and has also become volatile, mainly due to recent developments in AEs. On the other hand, growth in the EDEs provided stability to global growth. Inflation and its variability moderated globally in both the AEs and the EDEs (Table 1). The period of the Great Moderation is generally believed to have begun with the taming of inflation in the early 1980s and extends up to 2007, when the global crisis struck. This is not discernible in terms of decadal comparisons. While the variability of growth did come down in the 1990s relative to the preceding decade, it was still higher than in the 1970s. Analogously, the lowest variability in inflation seems to have been in the 1970s for the AEs and in the 2000s for the EDEs. Table 1 provides no information on causality; therefore, it is difficult to infer whether the post-Bretton Woods IMS is responsible for heightened instability, or whether it exists in a period of heightened volatility (Bush, Farrant and Wright, 2011).

Table 1: IMS — Key Metrics

	Average (percent)					Variability (percent)				
	1970–1979	1980–1989	1990–1999	2000–2007	2008–2011	1970–1979	1980–1989	1990–1999	2000–2007	2008–2011
Real GDP Growth										
World	4.2	3.1	3.5	4.0	2.1	36.5	40.4	19.8	28.2	121.1
AEs	3.6	3.1	2.8	2.6	0.2	53.5	50.0	27.4	33.2	1750.1
EDEs	5.7	3.4	5.0	6.4	5.2	23.5	37.3	35.6	28.1	46.4
CPI Inflation										
World	10.3	15.8	15.3	3.8	3.9	35.6	11.7	58.5	9.6	39.8
AEs	8.6	6.5	2.9	2.1	1.9	34.9	53.2	43.8	13.9	75.8
EDEs	15.1	41.7	47.3	6.7	6.9	40.0	21.2	70.5	15.8	26.5

Note: Variability is measured by coefficient of variation.

Source: International Financial Statistics (IFS). IMF. Available at: http://elibrary-data.imf.org/.

Consistent with the Great Moderation hypothesis, real GDP growth over the Great Moderation period (1984–2007) (3.0 percent) in the AEs was almost the same as in the preceding 14-year period (3.1 percent during 1970–1983), while the coefficient of variation halved to 32 percent from 63 percent over the period. Inflation declined from 8.9 percent in 1970–1983 to 3.0 percent in the Great Moderation phase, although the coefficient of variation was also higher — it increased from 34 percent to 44 percent. However, the Great Moderation period was immediately followed by the NAFC, with large output losses and volatility. Arguably, the macroeconomic and financial policies that were followed during the Great Moderation period contributed to the subsequent crisis. Accordingly, the Great Moderation and the post-crisis periods must be considered together (so, 1984 to 2011) to assess macroeconomic outcomes. In this case, real GDP growth in the AEs falls to 2.6 percent during 1984–2011 from 3.6 percent during 1970–1983, while the coefficient of variation was broadly unchanged (62 percent during 1984–2011 vis-à-vis 63 percent during 1970–1983). Thus, growth has been lower and equally volatile in the post-1984 period.

Symptoms of Malfunction

The increase in the incidence of crises of various types in comparison to past eras of the IMS — a notable feature of the post-Bretton Woods period — provides causal evidence. In particular, the frequency of banking and currency crises has increased dramatically, with the period 1973–1989 being particularly prone to crises, including defaults. Even in the subsequent period, that is, 1990–2010, the incidence of all types of crises has remained high by historical standards, with the exception of external defaults (Table 2). Financial crises have not only a short-term but also a persistent and long-lasting adverse impact on output levels, and on levels of public indebtedness (IMF, 2009b).

Table 2: IMS — Incidence of Crises (no. per year)

Period	Banking Crisis	Currency Crisis	External Default
Gold Standard (1870–1913)	1.3	0.6	0.9
Interwar Period (1925–1939)	2.1	1.7	1.5
Bretton Woods (1948–1972)	0.1	1.7	0.7
a) 1948–1958	0.0	1.4	0.3
b) 1959–1972	0.1	1.9	1.1
Post-Bretton Woods (1973–2010)	2.6	3.7	1.3
a) 1973–1989	2.2	5.4	1.8
b) 1990–2010	3.0	2.4	0.8

Source: Bush, Farrant and Wright (2011: Table A, p. 7).

The latest financial crisis and the concomitant recession have led to historically high and rising levels of public indebtedness across the AEs. Empirical evidence indicates that episodes of such large public debt overhang are associated with lower growth than during other periods and the cumulative shortfall in output from debt overhang is potentially massive (Reinhart, Reinhart and Rogoff, 2012). These authors find that public debt/GDP levels above 90 percent are associated with an average annual growth rate that is 1.2 percentage points lower (2.3 percent versus 3.5 percent) than in periods with debt below 90 percent debt. According to Cecchetti, Kohler and Upper (2009), financial crises are more frequent than most people think, and they lead to losses that are much larger than one would expect. In a sample of 40 financial crises, the authors found that one-fourth resulted in cumulative output losses of more than 25 percent of pre-crisis GDP and one-third of the crisis-related contractions lasted for three years or more. It is clear that the past four decades have seen a significant increase in financial crises and are associated with large and persistent output and employment costs. The post-Bretton Woods system of flexible/floating exchange rates, freer capital flows and the practice of independent monetary policy has not brought financial stability to the global economy.

EXCHANGE RATE FLEXIBILITY

Perhaps the most intensely debated aspect of the IMS is the evolution of the exchange rates of major international currencies, which, in turn, is its most visible fault line. From an early stage, the linkage between the exchange rate, balance of payments and full employment has been reinforced by the foundations laid for simultaneous analysis of internal and external balance in an open economy (Meade, 1951), and the integration of asset markets and capital mobility into open economy macroeconomics (Mundell, 1961, 1962 and 1963; Fleming, 1962). There were several runs on the US dollar in the 1960s. The "Triffin dilemma" (Triffin, 1960) called into question the credibility of the US dollar as the key reserve currency and ignited strident calls for a post-Bretton Woods system, which led to the creation of the Special Drawing Rights (SDRs) (Rangarajan and Patra, 2012).

With the advent of free floating, the role of the exchange rate was widely perceived to be central to the process of external adjustment, which was expected to provide stability to the balance of payments, as well as to overall economic stability. The actual experience has belied that expectation. Wide gyrations and persistent misalignments characterized

the 1970s and 1980s, and the Plaza Accord of 1985 turned out to be an ineffective response. The volatility of major currencies, measured in terms of 10-yearly coefficients of variations, appears to have been the highest in these two decades (Figure 1 and Table 3). The 1990s was the decade of currency crises — the UK pound sterling (1992); the Mexican peso (1994); the Asian crisis (1997–1998); the collapse of the Russian ruble and long-term capital management (1998); and, to a lesser degree, the Turkish lira (2000–2001), the Brazilian real (2002) and Argentina's peso (2001) crises.

The introduction of the euro in 1999 was expected to impart stability to the IMS, in contrast to the roller-coaster ride driven by the US dollar through the first decade of the 2000s. Since early 2010, when the modern Greek tragedy started to unfold, financial markets have battered the assumptions on which the euro came into existence (IMF, 2012c). As a consequence, questions have begun to emerge on the future of the euro as an international reserve currency. While the US dollar has maintained its dominance in spite of the NAFC, developments since then continue to challenge its pre-eminence. Any disruption of confidence in the sustainability of the US economy would make it difficult for the dollar to play its role as international reserve currency. The Triffin dilemma from the 1970s is back to haunt us again (Rangarajan and Patra, 2012). In fact, the dramatic swings in major currencies and consequent high volatility observed in the 1970s and 1980s appear to have returned in the period since 2000, except for the yen-US dollar rate; these heightened fluctuations seem to be accentuated if data for the years 2010–2012 (up to March) are also taken into account (Figure 1 and Table 3). Contrary to expectations, exchange rate volatility over the past half-century appears to have imparted instability to the balance of payments of nations and to the global economy at large.

Figure 1: Coefficients of Variation (10-year Moving Average of Major Currencies)

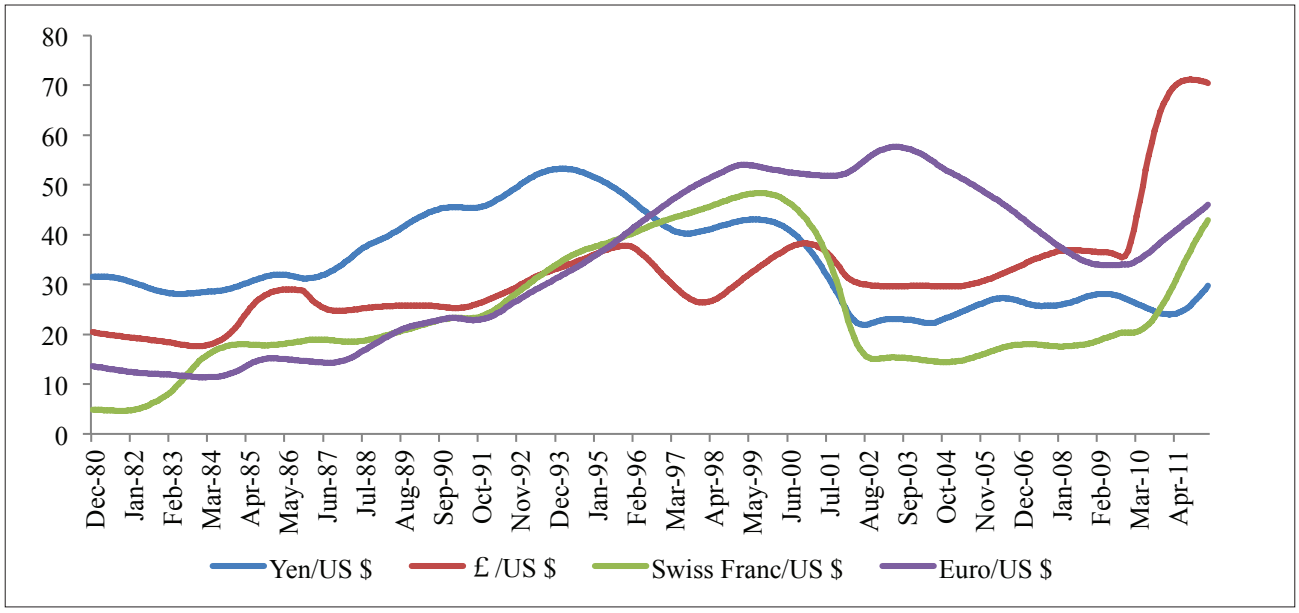


Table 3: Variability in Major Exchange Rates (Coefficient of Variation in Percent)

Period	Yen/US Dollar	Pound Sterling/ US Dollar	Swiss Franc/ US Dollar	Euro/US Dollar
1970–1979	16.5	13.9	30.6	21.9
1980–1989	26.0	13.5	18.9	21.7
1990–1999	13.5	6.9	8.5	15.1
2000–2009	8.6	14.7	17.9	18.3
2000–2012	13.0	24.5	27.9	18.2

Note: Data for euro/US dollar prior to 1999 pertain to deutsche mark/US dollar.

Source: IFS. IMF.

EXCHANGE AND PAYMENT ARRANGEMENTS

Exchange rates and exchange arrangements provide yet another metric for assessing the IMS. Between 1999 and 2010, the proportion of "floaters" among the IMF's membership declined to 36 percent — managed floats having risen from 15 percent to 20 percent while freely floating regimes came down from 27 percent to 16 percent. Over the same period, the proportion of hard pegs (no separate legal tender and currency boards) declined from 25 percent to 13 percent while the proportion of soft pegs (conventional pegs, stabilized arrangements, crawling pegs and other crawl-like arrangements, pegged rates with horizontal bands, and other managed arrangements) went up, from 34 percent to 51 percent.

As globalization took hold, the EDEs progressively dismantled controls/restrictions on international payments and transfers to participate in the global economy. Between 1970 and 2009, the total number of countries accepting the obligations under Article VIII of the IMF's Articles of Agreement — agreeing not to impose restrictions on payments and transfers for current international transactions or

to engage in discriminatory currency arrangements — steadily increased, while those with transitional arrangements declined quite substantially. An interesting feature of developments in exchange and payments arrangements is that almost all countries impose controls on capital transactions (Table 4). This includes all major AEs: Belgium, Canada, Denmark, France, Germany, the United Kingdom and the United States.

Table 4: IMS — Summary Features of Exchange Arrangements for Current and Capital Transactions

	1970	1980	1990	2000	2010
	No. of Countries				
1. Article VIII status (no restrictions on payments and transfers for current international transactions)	37	54	72	152	171
2. Article XIV status (Transitional restrictions)	80	86	83	34	19
3. Bilateral payments agreements	60	42	47	60	67
4. Controls on payments for invisible transactions and current transfers	80	73	87	98	95
5. Repatriation/surrender requirements for exports and/or invisibles	100	114	124	107	89
6. Controls on capital transactions	99	110	123	182	186
Memo: Total number of countries covered	119	141	155	186	190

Source: IMF (2010d) and previous volumes.

HIGH FLUX IN CAPITAL FLOWS

A predominant feature of the post-Bretton Woods IMS, and perhaps its major malfunction, is the massive movement of capital flows across borders, marked by high volatility, surges, sudden stops, reversals, and attendant macroeconomic and financial instability, with their concomitant impact on exchange rates.

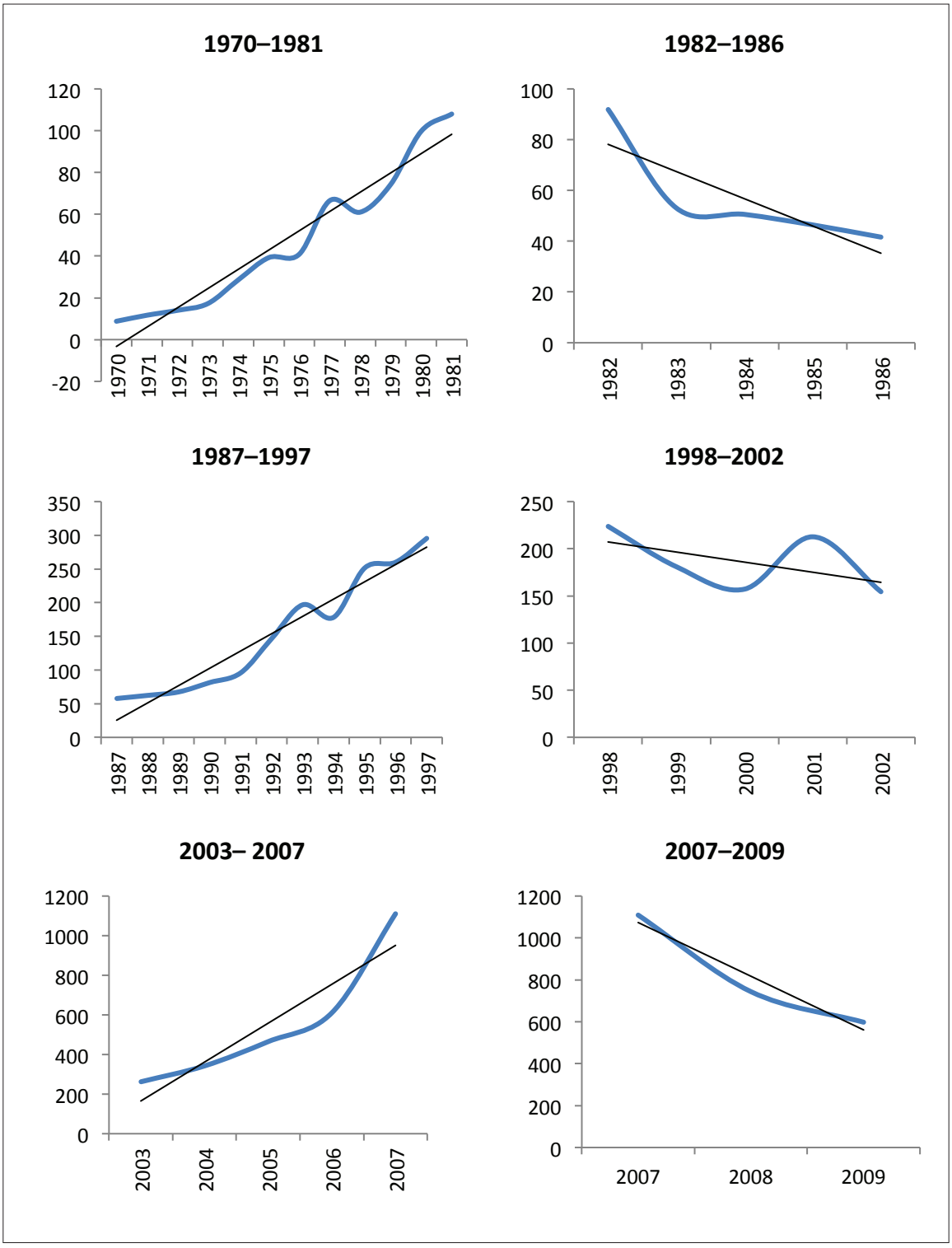
In the post-World War II period up to the 1970s, international capital flows were primarily among industrial economies (Mohan, 2004; Committee on the Global Financial System [CGFS], 2009). The United States removed restrictions on capital outflows in 1974–1975, while Germany continued to retain controls over inflows until the late 1970s. The United Kingdom also maintained controls until 1979 and Japan completed liberalization of the capital account in 1980. Developing countries persevered with controls, although some Latin American countries did embark on flawed liberalization as part of exchange rate-based stabilization programs in the mid-1970s.

During the 1970s, private capital flows to developing countries rose strongly as commercial banks furiously recycled oil surpluses, until the debt crisis of 1982 burst the bubble. By the end of the 1980s, direct investment inflows to developing countries were only one-eighth of flows to developed countries, and portfolio flows to developing countries were virtually non-existent (Figure 2). In the 1980s and 1990s, several developing countries in Asia undertook capital account liberalization as part of unilateral financial deregulation and wider market-oriented reforms. Investor confidence returned to the developing world in the early 1990s in the aftermath of the Brady Plan, and net capital flows surged to pre-1914 levels by 1996. The jump in capital flows to the EDEs occurred in an environment when monetary policy was being eased in the United States — the

US federal funds rate fell from 10 percent in April 1989 to three percent by January 1993. Foreign direct investment (FDI) accounted for the bulk of private capital flows to EDEs, going through a six-fold jump between 1990 and 1997. The share of FDI in net capital flows increased from a fourth in 1990 to over a half by 1997. International bank lending to developing countries also increased sharply during this period, and was most pronounced in Asia, followed by Eastern Europe and Latin America (World Bank, 2011).

In the late 1990s, capital flows to developing countries suffered several shocks (Figure 2). The fall was particularly sharp in the form of bank lending and bonds, reflecting uncertainty and risk aversion. Capital flows revived beginning in 2002 and reached record highs in 2007, reflecting aggressive monetary easing by the US Federal Reserve on the one hand and improved macroeconomic fundamentals in the EDEs on the other. The volatile pattern of capital flows again became evident during the most recent financial crisis. Net capital flows to developing countries increased from US$154 billion in 2002 to a peak of US$1.1 trillion in 2007, but fell to US$744 billion in 2008 and further to US$598 billion in 2009 (World Bank, 2011).

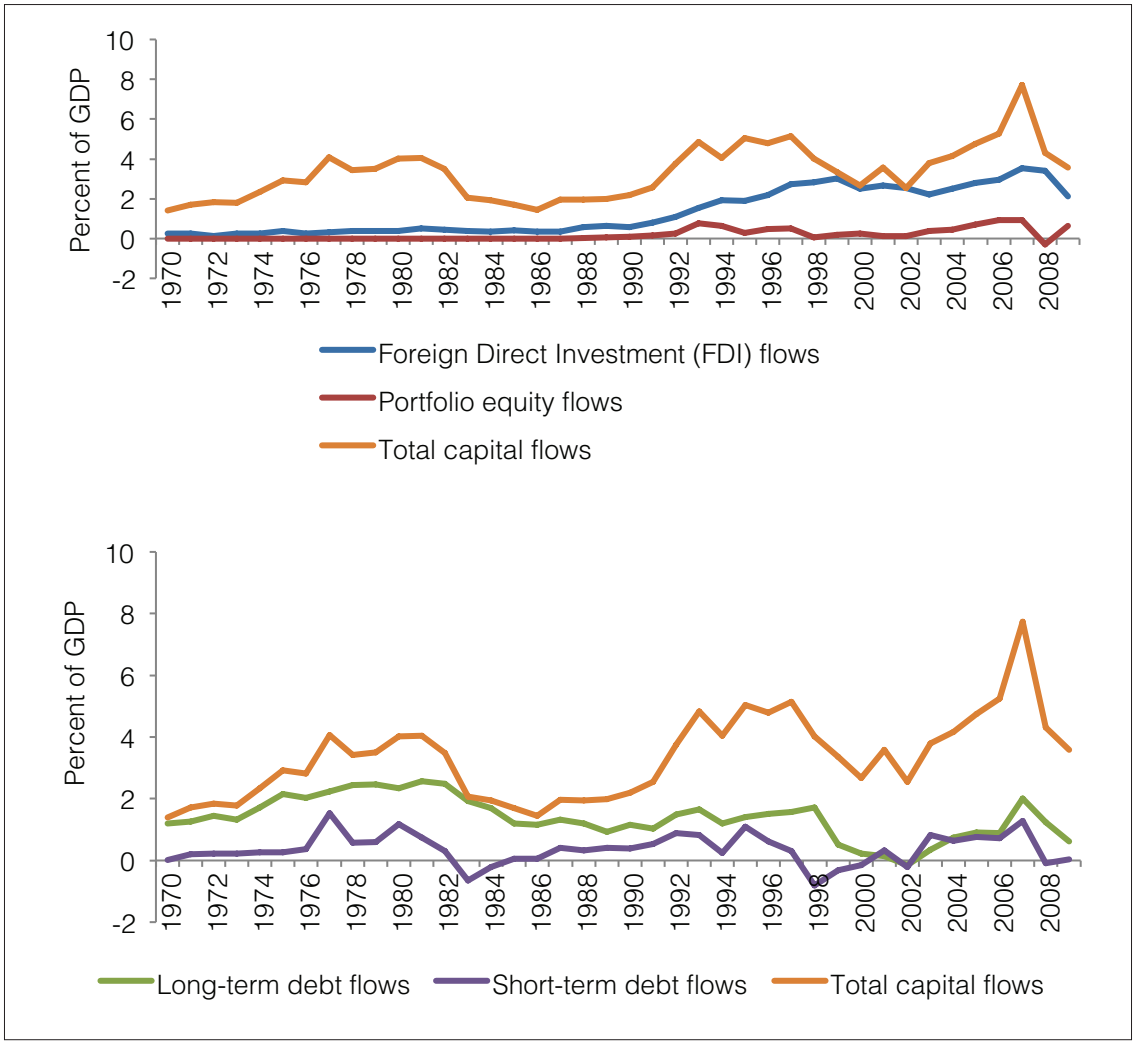
Figure 2: Capital Flows to Developing Countries (US$ billion)



Source: World Bank (2011).

An analysis of capital flows to developing economies (as percent of their GDP) and for major categories of flows reveals the boom–bust pattern, as well as the vulnerability of countries receiving large debt flows. Net capital flows to developing countries increased steadily from 1.4 percent of GDP in 1970 to 4.1 percent of GDP in 1977, reflecting the recycling of oil revenues on the one hand and accommodative monetary policy in the United States on the other (Barsky and Kilian, 2001). Capital flows then collapsed to 1.5 percent by 1986, a consequence of the Latin American debt crisis. As the debt crisis eased, capital flows boomed to 5.1 percent of GDP in 1997, but again fell quickly to 2.7 percent in 2000 as the Asian financial crisis took its toll on investor confidence. The upswing resumed in 2002, coinciding with an excessively loose monetary policy in the United States (CGFS, 2009; Taylor, 2009 and 2013), and capital flows more than trebled from their trough to reach an all-time peak of 7.7 percent of GDP in 2007, but more than halved to 3.6 percent of GDP in 2009 (Figure 3). Such a large change in the volume of capital flows to EDEs in a short period leads to excessive volatility in their exchange rates, domestic liquidity and monetary conditions, and in asset prices, and hence to complexity in overall macroeconomic management aimed at fostering growth while attempting to maintain financial stability.

Figure 3: Capital Flows to Developing Countries (percent of GDP)



Source: World Bank (2011).

An assessment of capital flows in terms of their major components shows a relatively high degree of stability in net FDI flows. Major EDEs are now both recipients of inward FDI and sources of outward FDI. Interestingly, debt flows received by the developing countries (percent of GDP) are now lower than the peak reached in the 1970s: net debt flows fell from an average of 2.3 percent of GDP in the 1970s to 1.8 percent in the 1990s and 1.1 percent in the 2000s. It appears that developing countries — having learned from the 1982 debt crisis and the series of financial crises in the second half of the 1990s, including the Asian crisis — have been pursuing a prudent approach to debt flows, despite the IMF's advocacy of more open debt markets within EDEs. This approach seems to have been successful, as EDEs have largely been able to avoid the crisis during the 2000s. One region that recorded a significant increase in debt flows during the 2000s was the developing Europe and Central Asia region; this region fared badly in the 2008 crisis. This region's net debt flows jumped from an annual average of US$14 billion in the 1980s to US$74 billion in 2000–2007; in contrast, net debt flows to the East Asia and Pacific region were roughly

unchanged at around US$23 billion per annum, while those to the Latin American region fell from US$17 billion to US$8 billion (Table 5). The South Asian region recorded a modest increase in debt flows during the 2000s. This recent evidence on large debt flows leading to a potential crisis is consistent with the empirical evidence presented in the fourth section.

Table 5: Total Net Capital and Debt Flows to Developing Economies by Region (Annual Averages in US$ billion)

	1970s	1980s	1990s	2000s
	Net Debt Flows			
East Asia and Pacific	4	11	24	25
Europe and Central Asia	3	6	14	71
Latin America and Caribbean	16	17	33	17
Middle East and North Africa	4	6	2	-1
South Asia	2	7	4	15
Sub-Saharan Africa	4	8	4	5
All developing countries	32	55	82	131
	Total Capital Flows (net)			
East Asia and Pacific	4	15	67	139
Europe and Central Asia	3	6	21	138
Latin America and Caribbean	18	23	80	103
Middle East and North Africa	5	7	4	15
South Asia	2	7	8	42
Sub-Saharan Africa	5	10	11	28
All developing countries	36	68	191	466

Source: World Bank (2011).

The most recent financial crises show that even the AEs are not able to cope with such high volatility. While the NAFC is attributed to a variety of factors, such as global imbalances, loose monetary policy and lax regulation and supervision, it exposed the inability of the AEs with advanced and sophisticated financial markets, to deal with volatile capital flows. Indeed, capital inflows to and from the AEs are a multiple of the respective EDE inflows and outflows. For example, in 2006, the pre-crisis year, capital inflows to the AEs were almost eight times those of the EDEs (Table 6 and Figure 4). The volatility in these flows in the AEs is even more striking relative to the EDEs. For example, net capital inflows (from non-residents) to the AEs fell dramatically from US$9,384 billion in 2007 to US$4 billion in 2008, reflecting the complete lack of confidence in the financial system of these economies following the crisis; net outflows by residents from the AEs turned negative, reflecting repatriation by residents of their overseas assets.

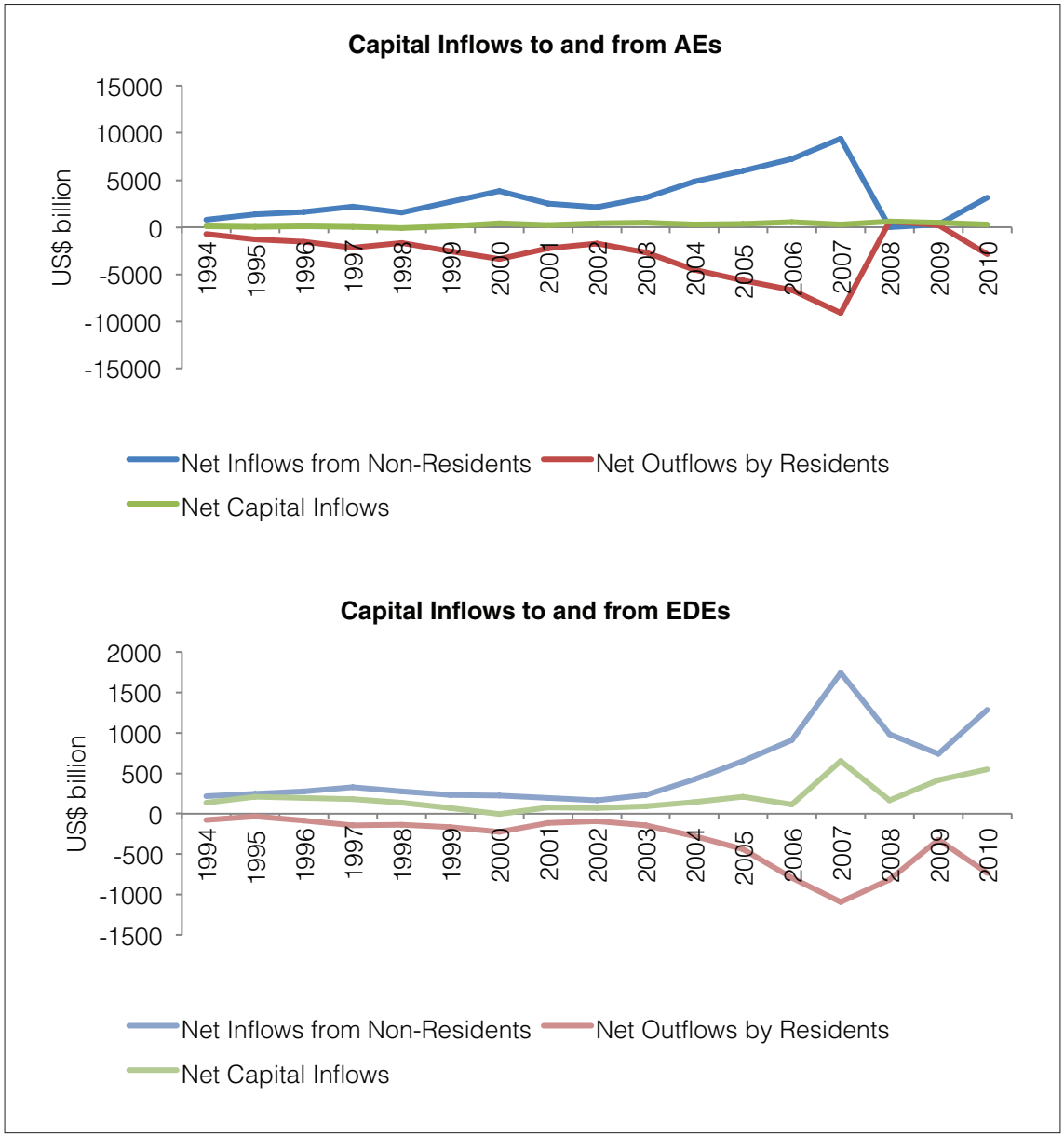
Table 6: Capital Inflows and Outflows: Advanced, Emerging and Developing Economies (US$ billion)

		2003	2004	2005	2006	2007	2008	2009	2010
1	**Total assets (net outflows by residents) (2 to 4)**	**2,881**	**4,838**	**6,137**	**7,461**	**10,293**	**279**	**213**	**3,723**
2	International organizations	62	31	61	-2	97	85	88	145
3	AEs	2,676	4,528	5,634	6,667	9,104	–623	–196	2841
4	EDEs	142	279	442	796	1093	817	321	737
	Of which: Developing Asia	24	20	137	234	250	173	125	294
5	**Total liabilities (net inflows from non-residents) (6 to 8)**	**3458**	**5299**	**6703**	**8160**	**11231**	**1061**	**1102**	**4555**
6	International organizations	55	29	60	29	103	74	84	134
7	AEs	3168	4847	5992	7222	9384	4	277	3132
8	EDEs	235	423	651	909	1744	984	741	1289
	Of which: Developing Asia	86	159	265	324	471	256	344	640
9	**Net capital inflows (10 to 12)**	**577**	**462**	**566**	**699**	**938**	**782**	**889**	**832**
10	International organizations	–7	–1	–1	31	6	–11	–4	–11
11	AEs	492	319	358	555	280	627	473	292
12	EDEs	93	144	208	113	651	167	420	551
	Of which: Developing Asia	62	138	128	90	221	84	219	346

Note: Both inflows and outflows are exclusive of movements in foreign exchange reserves.

Source: Balance of Payments Statistics (BOPS), World and Regional Aggregates, IMF. Available at: http://elibrary-data.imf.org/.

Figure 4: Capital Inflows and Outflows — AEs and EDEs



Note: Both inflows and outflows are exclusive of movements in foreign exchange reserves.

Source: BOPS, World and Regional Aggregates. IMF. Available at: http://elibrary-data.imf.org/.

Reflecting large cumulative two-way capital flows, total international assets for the group of the AEs increased from 144 percent of their own GDP in 2003 to 231 percent in 2010; the ratio for the EDEs increased, relatively moderately, from 52 percent of their own GDP in 2003 to 66 percent in 2010 (Table 7). Large capital flows and the concomitant buildup of huge external assets and liabilities have significantly increased the interconnectedness among financial sectors across borders, which created channels for a stronger impact of the recent crisis on the AEs with large financial sectors. Accordingly, risks to domestic

financial stability can arise even when resident financial institutions act merely as intermediaries of capital flows, rather than the ultimate users. Large two-way gross capital flows can transfer risk within the IMS, even if the associated net flows are small (Speller, Thwaites and Wright, 2011).

Table 7: International Assets and Liabilities — Advanced, Emerging and Developing Economies (US$ billions)

		2003	2004	2005	2006	2008	2009	2010
1	**Total assets (1+2)**	**46,897** (125)	**56,632** (134)	**63,171** (138)	**80,391** (163)	**99,041** (162)	**102,461** (177)	**110,043** (174)
2	AEs	42,918 (144)	51,736 (156)	57,198 (165)	72,503 (199)	87,781 (208)	89,930 (226)	95,810 (231)
3	EDEs in total	3,979 (52)	4,896 (547)	5,973 (55)	7,887 (61)	11,260 (59)	12,531 (69)	14,233 (66)
	Of which: Developing Asia	1,210	1,512	1,873	2,511	4,049	4,743	5614
4	**Total liabilities (5+6)**	**48,898** (130**)**	**58,729** (139)	**64,627** (142)	**81,672** (165)	**99,556** (163)	**102,381** (177)	**109,242** (173)
5	AEs	43,669 (146)	52,769 (160)	57,863 (167)	73,363 (201)	89,082 (212)	89,869 (226)	94,854 (229)
6	EDEs in total	5,229 (68)	5,960 (65)	6,764 (62)	8309 (64)	10,474 (55)	12,512 (69)	14,388 (66)
	Of which: Developing Asia	1,500	1,546	1,767	2,181	2,906	3,666	4501

Note: Figures in parentheses are percentages to respective regional GDP (rows 1 and 4 are with respect to world GDP; rows 2 and 5 are with respect to GDP of AEs; rows 3 and 6 are with respect to GDP of EDEs).

Source: BOPS, World and Regional Aggregates. IMF. Available at: http://elibrary-data.imf.org/; GDP data are from the World Economic Outlook (WEO) Database (October 2012).

Interconnectedness and the Shadow Banking System

The massive two-way movement in capital flows and the large stocks of external assets and liabilities documented above has increased interconnectedness across financial institutions and countries. This magnifies and propagates risks and shocks across the globe, which occurred during the NAFC. Light touch financial regulation and the sharp growth in the shadow banking system have increased the vulnerabilities arising from the growing interconnectedness across the financial system. The global shadow banking system grew rapidly before the crisis, rising from US$26 trillion in 2002 to US$62 trillion in 2007; it declined slightly in 2008, but increased subsequently to reach US$67 trillion in 2011 (equivalent to 111 percent of the aggregated GDP of all jurisdictions). The shadow banking system's share of total financial intermediation is around 25 percent, marginally lower than the pre-crisis peak of 27 percent in 2007. The aggregate size of the shadow banking system is around half the size of banking system assets (Financial Stability Board [FSB], 2012).

While the shadow banking system — credit intermediation involving entities and activities outside the regular banking system — can have advantages, it can also become a source of systemic risk if it is structured to perform bank-like functions (for example, maturity transformation and leverage) and if it has strong interconnectedness with the regular banking system. Risk from interconnectedness tends to be higher for shadow banking entities than for banks, as shadow banking entities seem to be more dependent on bank funding and are more heavily invested in bank assets than banks (ibid., 2012).

In the context of the ongoing NAFC, it is relevant to note that IMF support to crisis countries has been huge and unprecedented. For example, the stock of existing and prospective Fund credit to Greece is expected to peak at 2,304 percent of its quota in 2014, and to Ireland at 1,548 percent in 2013; the corresponding ratio for Iceland peaked at 1,190 percent in 2011. While the existing IMS was able to manage the needs of small economies, the issue remains: can it handle the much greater needs of large economies such as Spain? The significant increase in two-way capital inflows and outflows, the massive increase in the shadow banking system and the general tendency towards light touch financial regulation have increased overall global connectedness, especially in AEs, with adverse consequences for domestic stability in the EDEs.

The ability of EDEs to absorb large exogenous shocks is limited, given the still-low income levels in many of these economies. Accordingly, most of these economies manage the exogenous shocks through active management of capital flows and reserve accumulation. While EDEs have been acting prudently, it is also necessary to minimize such exogenous shocks from the AEs in the first place. This requires continuation of banking sector reforms through tighter regulation and supervision, better measurement of risks that accompany financial innovations, and building a forward-looking national risk accounting system (Gorton, 2012).

RESERVE ACCUMULATION

In the aftermath of the Asian financial crisis, the EDEs accelerated the accumulation of international reserves as a first line of defence against the occurrence of future shocks. This was also in reaction to the stigma associated with the IMF lending and the associated conditionality. Between the end of March 2000 and the end of June 2012, the global level of reserves recorded a six-fold increase, with reserve levels in the EDEs going up 10 times compared with the three-fold increase in the AEs (Table 8). From the somewhat incomplete data available, the currency composition of allocated reserves — the reserves for

which currency composition has been identified — has remained concentrated in US dollars.

Table 8: International Reserves — Key Facts

	Total Reserves (US$ billion)	Allocated Reserve (US$ billion)	Currency Composition of Allocated Reserves (Percent)					
			US Dollar	Pound	Yen	Swiss Franc	Euro	Other
	June 2012							
1. World	10,523	5,845 (55.5)	61.9	3.8	3.8	0.1	25.1	5.3
2. AEs	3,542	3,152 (89.0)	64.1	2.5	4.5	0.1	24.5	4.3
3. EDEs	6,982	2,694 (38.6)	59.3	5.4	3.0	0.1	25.8	6.4
	March 2000							
4. World	1,809	1,401 (77.4)	71.5	2.9	6.3	0.3	17.5	1.5
5. AEs	1,132	1,019 (90.0)	70.7	2.9	7.2	0.3	17.2	1.7
6. EDEs	677	382 (56.5)	73.5	2.9	3.9	0.3	18.3	1.2

Note: Allocated reserves refer to foreign exchange reserves, whose currency composition has been identified. Figures in parenthesis are ratios (in percent) of allocated reserves to total reserves.

Source: Currency Composition of Official Foreign Exchange Reserves, IMF. Available at: www.imf.org/external/np/sta/cofer/eng/index.htm.

All EDE regions have been a part of the surge in reserve accumulation since the 1980s. By 2011, Asia's share in global reserves was a dominant 38 percent, accounting for more than half of the reserves of all emerging economies taken together. In the 1990s, emerging Europe's reserves shot up five-fold, faster than all other emerging regions. In the 2000s, it was the oil-exporting Middle Eastern and North African countries that experienced a fast pace of reserve accumulation, with levels rising nine-fold (Table 9).

Table 9: IMS — International Reserves* (US$ billion)

End of	1970	1980	1990	2000	2011
World	98	461	990	2,070	10,705
AEs	73	274	629	1,326	3,745
EDEs	21	162	202	739	6,955
Sub-Saharan Africa	3	15	13	36	178
Developing Asia	4	28	68	325	4,058
Emerging Europe	1	5	19	104	871
Middle East and North Africa	5	74	52	118	1,108
Western Hemisphere	6	40	49	157	740
Memo:					
World reserves with gold at market prices	100	1,089	1,374	2,314	12,186

* Comprising foreign exchange, reserve position in the IMF, SDR holdings and gold valued at SDR 35 per ounce.

Source: IFS, IMF. Available at: http://elibrary-data.imf.org/.

IMF SURVEILLANCE: WHAT GIVES WITH THE ANCHOR?

The IMF, with its near-universal membership of 188 countries, is mandated to oversee the IMS and monitor the economic and financial policies of member countries. In the aftermath of the crisis of 2008–2009, there was considerable introspection within the IMF on the shortcomings of its surveillance in the run-up to the crisis. It was recognized that the warnings were too scattered and unspecific to attract domestic — let alone collective — policy reaction. The IMF's surveillance was adjudged to have significantly underestimated the combined risk across sectors, and the importance of financial sector feedback and spillovers. The result was optimistic bottom-line messages, especially on "core" economies such as the United States and United Kingdom. While the IMF warned about global imbalances, it missed the key connection to the looming dangers in the shadow banking system (IMF, 2009a and 2011a).

Surveillance in the Post-crisis Period

The stark lesson of the crisis was that systemic vulnerabilities emanated from AEs; previously it was assumed that financial sectors and markets in the AEs were developed enough that they would not lead to financial instability in the global economy. Despite flexible and market-determined exchange rates and interest rates, the shocks did not get absorbed; in fact, the increasing interconnectedness of countries allowed shocks to spread faster. Accordingly, the IMF began to step up work on enhancing the quality and effectiveness of its surveillance. Overall, improvements were sought through increasing the synergies among various products produced by the IMF, enhancing the integration of multilateral macro-financial analysis in the WEO and the Global Financial Stability Report (GFSR), supplemented by the introduction of an Early Warning Exercise, the Fiscal Monitor, the Spillover Report, the Pilot External Sector Report and the G20 Mutual Assessment Process. Improvements in bilateral surveillance were undertaken, including providing Article IV reports with multi-country/cross-country cluster analyses,

and improvements in timeliness. The FSSA was made mandatory through an executive board decision for 25 countries with systemically important financial sectors. Closer and more effective cooperation with standard-setting bodies was also given high priority, including the FSB. It is critical to note that all these initiatives were undertaken within the ambit of the existing legal framework of surveillance.

Integrated Surveillance Decision

Since 2010, the legal framework for surveillance has been extensively discussed both within the IMF and outside it (Palais Royal Initiative, 2011; Truman, 2010). The main basis for seeking integration of all surveillance work seems to be the growing interconnectedness of the global economy. Accordingly, in July 2012, the IMF adopted a new Decision on Bilateral and Multilateral Surveillance (the Integrated Surveillance Decision [ISD]) (IMF, 2012b).

While oversight of members' exchange rate policies remains at the core of Fund surveillance under the articles, the ISD enhances the legal framework for surveillance in a number of important ways: First, it lays out a conceptual link between bilateral and multilateral surveillance and clarifies the importance of multilateral surveillance focussing on issues relevant to global economic and financial stability. It makes Article IV consultations a vehicle not only for bilateral surveillance, but also for multilateral surveillance, allowing the Fund to discuss with a member country the full range of spillovers from its economic and financial policies onto global stability. Second, in the area of bilateral surveillance, the ISD builds on the existing principles for the guidance of members' exchange rate policies by adding guidance on the conduct of members' domestic policies that are relevant to domestic stability. Finally, it clarifies the scope of multilateral surveillance and, in that context, encourages members to be mindful of the impact of their policies on global stability. It also clarifies the modalities for conducting multilateral surveillance, including laying out a framework for possible multilateral consultations (ibid.).

Our Views

In our view, the modernization of surveillance can be achieved within the provisions of the Articles of Agreement, as shown by the development of new products and the enhanced focus on spillovers, interconnectedness, macrofinancial linkages and financial sector risks in the recent period. Effective implementation is the main issue. The fact that the IMF seeks changes in its legal mandate through decisions involving simple majority in its board, rather than the optimal approach of comprehensive amendment of its articles, proves this point.

While the recent crisis and its aftermath has brought forward the urgency of strengthening multilateral surveillance, bilateral surveillance is at the core of the IMF's mandate. Our concern is that the overlay of multilateral considerations sought to be brought into Article IV Consultations under the guise of integration of bilateral and multilateral surveillance in the new ISD should not compromise the pursuit of robust and even-handed bilateral surveillance, and better peer review with symmetric treatment of all countries. While there is merit in integrating top-down multilateral analyses with country-level surveillance, it is important to further improve the incisiveness and traction of bottom-up approaches, as they deliver granularity to monitoring and policy advice.

The success of the surveillance is, ultimately, contingent upon the underlying analytical framework. If the factors flagged by the Independent Evaluation Office (IEO) (IMF, 2011a) — a high degree of groupthink, intellectual capture, ideology (for example, the infallibility of financial markets), a

general mindset that a major financial crisis in large AEs was unlikely, inadequate analytical approaches, weak internal governance, lack of incentives to work across units and raise contrarian views and a review process that did not "connect the dots" or ensure follow-up — are not adequately addressed, the ISD is not going to facilitate more effective surveillance.

Finally, it is important to recognize that traction, the final objective of surveillance — the translation of succinct and sharp policy advice into concrete policy actions — depends on trust and the perception of even-handedness without any sacrifice of candour. This is inextricably woven into the IMF's governance structure. Modernizing surveillance must flow from and cannot precede reforms in governance. As governance reforms progressively reflect the changing global economic realities, so too will the IMF's surveillance gain legitimacy, incisiveness and traction.

CAPITAL FLOWS: DO WE NEED A MULTILATERAL FRAMEWORK?

The continued volatility in capital flows in the aftermath of the global crisis of 2008–2009 has renewed the debate on whether or not there should be some widely accepted "rules of the game" — a multilateral framework for regulating policies for the management of capital flows, akin to the World Trade Organization framework for international trade in goods and services. Or, alternatively, given large deviations of monetary policies from rule-like policies (such as the Taylor rule) in the United States and other AEs, which then forces other economies to either impose capital controls and resort to currency interventions on the one hand or to set interest rates in consonance with those in the United States and other major AEs to avoid volatile capital flows (that is, deviations in the major AEs then force the other AEs and the EDEs to deviate from rule-like policies), the earlier view that there is no need for international coordination of monetary policies needs to be revisited (Taylor, 2013).

With the widely held perception that capital flows are important conduits for the transmission of global shocks, and given the divergent approaches adopted by capital receiving countries, the IMF has sought a central role in the ongoing debate. It has asked its membership to endorse an institutional view and a consistent framework for managing capital flows as an integral element of IMS reform (IMF, 2012d). Five perceived challenges associated with cross-border capital flows — volatility; interconnectedness or shock transmission; size; global drivers (aging populations in advanced or capital-sending economies, growth/potential differences between advanced and emerging economies, global liquidity driven by low interest rates and monetary policy accommodation in financial centres, asset–liability management practices of systemically important financial institutions, market microstructure reflected in, for example, herd behaviour or even regulatory arbitrage and declining home bias); and information gaps — have been cited in the case for collective action, on the assumption that none of these challenges can be handled exclusively at the recipient country level (IMF, 2010c).

Capital Account Liberalization: Empirical Evidence

The conventional wisdom has been that capital flows can benefit both source and recipient countries by improving resource allocation. The more efficient global allocation of savings can facilitate investment in capital-scarce countries. In addition, liberalization of capital flows can, in principle, promote risk diversification, reduce financing costs, generate competitive gains from entry of foreign investors and accelerate the development of domestic financial systems. The empirical evidence on the beneficial

effects of capital account liberalization, however, is rather weak (CGFS, 2009; IMF, 2012a).

In fact, a reduced reliance on foreign capital is found to be associated with higher growth (Prasad, Rajan and Subramanian, 2007). Developing economies are more likely to be constrained by investment opportunities than by the availability of savings (Rodrik and Subramanian, 2009); in such circumstances, foreign finance can often aggravate existing investment constraints by appreciating the real exchange rate and reducing profitability and investment opportunities in the traded goods sector, which have adverse long-run growth consequences.

The benefits of financial globalization may be indirect — for example, better financial sector development, institutions, governance and macroeconomic stability — and are dependent on certain "threshold" levels of financial and institutional development (Kose et al., 2009; Kose, Prasad and Taylor, 2009). But this raises the issue of causality: is it the opening up of the capital account that leads to indirect benefits or is it the gradual development of the domestic financial markets that allows the benefits of subsequent opening up of the capital account to be reaped (CGFS, 2009)? Free movement of debt flows is not found to be associated with any positive impact on growth, but there are benefits from opening the equity markets to foreign investors (Henry, 2007). Yet the significant positive impact of equity market liberalization on growth could mask the impact of other supportive reforms, since equity market liberalization typically takes place only when governments are sure that supportive conditions are in place.

Emerging market economies (EMEs) with greater restrictions on capital inflows (especially on debt liabilities) fared better during the recent global crisis, and those with higher economy-wide capital inflow restrictions in pre-crisis years experienced smaller growth declines when the crises occurred. Even financial FDI is associated with greater vulnerability, as such FDI may reflect lending from a parent bank to a branch or local affiliate, which may be more in the nature of debt flows than greenfield FDI (Ostry et al., 2010 and 2011).

Overall, there is strikingly little convincing documentation of a direct positive impact of financial opening on the economic welfare levels or growth rates of developing countries (Obstfeld, 2009). Available evidence is strongly in favour of a calibrated and well-sequenced approach to the 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 (CGFS, 2009; Obstfeld, 2009). A new strand of the literature on the welfare theory of capital controls argues that under certain circumstances, full capital mobility may not be desirable (Korinek, 2011), the principal cost being the vulnerability to financial crises (Reinhart and Reinhart, 2008; Furceri, Guichard and Rusticelli, 2011).

In principle, capital flows benefit countries if they are running current account deficits; in such cases, capital flows add to domestic savings and enhance domestic investment. In practice, however, a number of emerging economies are now running current account surpluses. In such circumstances, capital account liberalization will not enable absorption of external savings and, hence, not lead to any benefits.

New Proposals and Pitfalls

Drawing on select country experiences, the IMF has proposed a framework for its advice on the spectrum of policy measures available to manage and liberalize inflows and manage outflows (IMF, 2011b, 2011d, 2012a and 2012d). The IMF recognizes the benefits as well as the risks associated with capital flows, and sees some role for capital controls, but stresses these

should be temporary and a secondary recourse. The "institutional view" framework approach proposed by the Fund is premature, as it presupposes a consensus in the literature, but we are years away from such a consensus. Such an approach runs the risk of the Fund staff using the "view" as a checklist and applying it rigidly and mechanically in Article IV surveillance.

In the absence of an in-depth understanding and articulation of the drivers of capital flows to emerging economies, formalizing bilateral surveillance principles on capital account policies runs the danger of a one-size-fits-all approach. The emphasis needs to be on managing capital flows for domestic and systemic stability with appropriate tools, differentiated by country-specific circumstances, and the right policy mix rather than the ad hoc pursuit of liberalization. Policy makers must have flexibility and discretion to adopt policies that they consider appropriate to mitigate risks through macroeconomic, prudential and capital account management policies. The stigma attached to capital controls by the IMF is not justified in view of their usefulness during several past episodes of capital flows. Measures for managing capital flows may well be the first line of defence, giving authorities time to fashion more durable responses in terms of adjustments to macroeconomic and prudential policies. Furthermore, there should be the flexibility to reimpose or persevere with them, if warranted. Some controls may have to be retained after all the pre-conditions/concomitants are in place for prudential reasons. Capital account management does not mean less openness. Moreover, capital controls constitute a subset of instruments that can be used for capital account management, such as prudential regulations on external liabilities of banks, other financial institutions and corporations.

It also needs to be recognized that the fastest-growing EDEs have significantly higher growth rates than those in the AEs; at the same time, inflation rates in the EDEs are somewhat higher than those in the AEs. Given these growth and inflation differentials, interest rates in the EDEs remain above those prevailing in the AEs. Moreover, the demographic profile and the relatively low income levels suggest that the growth, inflation and interest rate differentials between the EDEs and the AEs can be expected to persist for many years to come. In the absence of any controls on debt flows, these interest rate differentials run the risk of the EDEs attracting large debt flows, which can be disruptive and result in a severe crisis down the line. The interest rate differentials thus reflect structural factors; of course, cyclical factors can widen or narrow the gap over the cycle, but the structural gap is likely to remain. Accordingly, capital account management measures, especially on debt flows, may have to be long lasting, at least while the growth, inflation and interest rate differentials remain. Therefore, the notion that capital account management measures should be temporary, or a last recourse, is fundamentally flawed.

Every effort needs to be made to ensure even-handedness, and to dispel the asymmetry of treatment between countries that originate capital flows and those that receive them. It is necessary to recognize that monetary policy in AEs can potentially generate destabilizing capital flows to EMEs. The overarching issue is that monetary policy has a strong domestic orientation, irrespective of the country in which it is conducted. It is inconceivable that the mandate of the US Federal Reserve can be rewritten to require it "to promote effectively the goals of maximum employment, stable prices, and moderate long-term interest rates" (Board of Governors of the Federal Reserve System) for the global economy. Multilateral considerations are least

likely to be factored into monetary policy decisions. This certainly makes a strong case for active, or more appropriately, reactive capital flows management by countries that have to contend with flux in these flows.

SELF INSURANCE AND INTERNATIONALIZATION: PEERING INTO THE FUTURE

As outlined in the second section on the IMS, the past two decades have witnessed massive reserve accumulation, primarily by the EDEs. The stocks of reserves have also increased relative to a variety of metrics such as GDP, imports, gross capital formation and short-term debt (Table 10). Global reserves, however, remain small relative to global banking assets, and the size of reserves falls to insignificance if compared to the sum of global bonds, equities and bank assets. The growth of official reserves, therefore, does not seem outsized in relation to the growth of other financial instruments and markets. Accordingly, the focus on reserve accumulation as a risk for the IMS is not helpful, as such an approach stresses the symptom of problems rather than the underlying causes (IMF, 2012e). Close to 60 percent of global reserve holdings are in US dollars. This reflects the currency's continued preponderance as an international unit of account and medium of exchange for cross-border trade and financial transactions with extremely desirable characteristics in terms of liquidity, safety and yield (IMF, 2010b; Eichengreen, 2009).

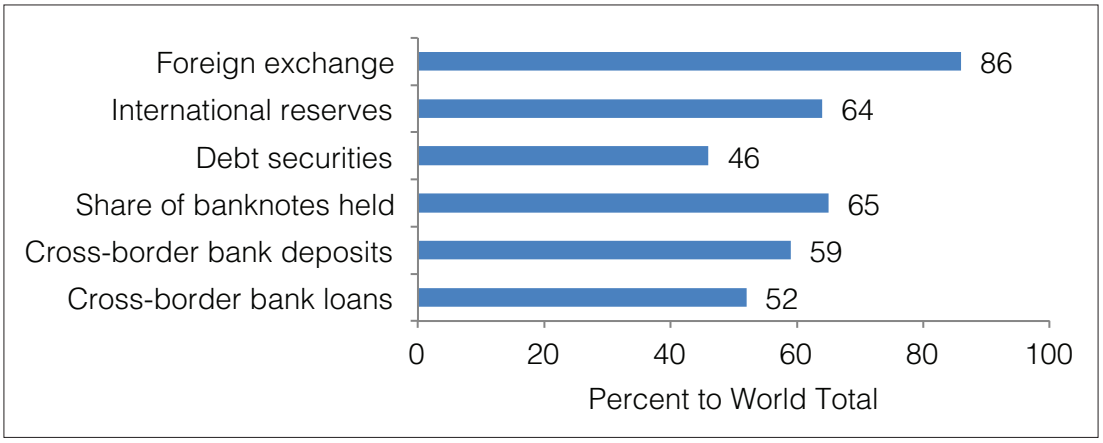
Table 10: Reserves in Relation to Selected Metrics

	1990	2000	2010	2011
	Global			
Months of imports	4.4	5.2	13.5	13.2
Percent of GDP	5.2 @	6.9	17.1	17.0
Percent of gross capital formation	23.4 @	30.9	75.2	n.a.
Percent of international liabilities	n.a.	7.1 #	9.9	n.a.
Percent of short-term debt	n.a.	n.a.	n.a.	n.a.
	EDEs			
Months of imports	5.6	6.2	16.3	15.7
Percent of GDP	6.6 @	11.3	28.7	26.9
Percent of gross capital formation	25.7 @	47.1	89.1	82.0
Percent of international liabilities	n.a.	23.1 #	40.1	n.a.
Percent of short-term debt	107.5 @	229.5	556.5	n.a.
	AEs			
Months of imports	4.2	4.8	10.2	10.6
Percent of GDP	5.0 @	5.9	11.6	12.0
Percent of gross capital formation	22.9 @	26.9	62.8	n.a.
Percent of international liabilities	n.a.	5.2 #	5.3	n.a.
Percent of short-term debt	n.a.	n.a.	n.a.	n.a.

Note: @ = data pertaining to 1992; # = data pertaining to 2003; n.a. = not available. Total reserves comprise holdings of monetary gold, SDRs, reserves of IMF members held by the IMF and holdings of foreign exchange under the control of monetary authorities. The gold component is valued at year-end (December 31) London prices.

Source: World Development Indicators Online, World Bank. Available at: http://databank.worldbank.org/ddp/home.do; BOPS, World and Regional Aggregates, IMF for data on international liabilities. Available at: http://elibrary-data.imf.org/.

Figure 5: US Dollar in International Finance



Source: IMF (2010b).

Underlying Risks

The significant concentration of global reserves in US dollars poses two possible threats to IMS stability. First, significant global demand for US government debt lowers its yields below the pure market equilibrium levels. This can affect risk-return calculations on marginal public projects, creating incentives for higher deficits and debt. Sustained US government deficits may eventually bring public debt sustainability into question, undermining the store of value characteristic of reserve assets and creating conditions akin to the Triffin dilemma — a turn in confidence can induce a rapid switch out of US dollars, with large and disruptive exchange rate and wealth effects, disruption to the smooth functioning of international payments and, possibly, implications for global financial stability. Second, lower benchmark yields may also lead financial intermediaries to underprice all risk. Excessive credit creation may ensue, resulting in misallocated capital and poor investment decisions. To the extent that arbitrage conditions apply, this phenomenon would apply globally. Furthermore, there may be a link between the availability of cheap credit and volatility of capital flows, notably through encouraging carry trade investments funding speculative positions. Thus, reserve concentration in US government debt introduces idiosyncratic risks to the IMS stemming from conditions and policies in the United States. Monetary policy and financial regulation, supervision and practice in the United States, as well as policy errors, thus become the chief determinants of how international financial flows are intermediated and thereby affect the safety of the IMS.

Central Banks, Monetary Policy and Reserves

The IMF projects that even if global reserves growth falls steadily to 8.5 percent per year by 2035 from an average of 15.4 percent in 1999–2008, their level will reach 690 percent of US GDP. Shorter-term extrapolations suggest reserve levels approaching 120 and 200 percent of US GDP in 2015 and 2020, respectively (IMF, 2010b). The traditional approach to reserve accumulation has been to distinguish between precautionary and non-precautionary motivations among EDEs and to derive metrics that define the demand for reserves for precautionary purposes for these sets of countries. Recognizing the generalized uncertainty surrounding global economic prospects and the need to cushion against unforeseen high-intensity shocks, the distinction between precautionary and other motivations driving reserve accumulation is somewhat blurred, as the experience with the global crisis of 2008–2009 demonstrated. Accordingly, for the purpose of this paper, we adopt an eclectic approach.

The dynamics of growth in an EDE context entails the need for expansion of central bank balance sheets to match the demand for money consistent with seven percent-plus real GDP annual growth (nominal growth of 12 percent plus) over a sustained period. Base money needs to grow at some similar rate, as do central bank assets. If the EDE is practising prudent fiscal policy, the supply of domestic securities may not be adequate for expanding the central bank balance sheet, hence the demand for foreign securities and foreign exchange reserves. When this happens with a large economy like the People's Republic of China (PRC), the whole world feels the consequences. As large EDEs such as India and Indonesia, among others, join the PRC in this type of growth mode over the next couple of decades, the demand for such assets can only expand further and faster.

What is the likely demand for foreign exchange reserves by EDEs, viewed from this perspective? Selecting the seven major EDE reserve holders in the world in 2011, we estimate their likely demand for

foreign assets to back the expansion of base money and money supply consistent with their growth trajectories. Juxtaposing the IMF projections (WEO, April 2012) for real GDP growth and inflation for the period 2012–2017 with trends in implicit income elasticity of demand for money observed during the 2000s, we project nominal money demand/supply (assuming an equilibrium approach, that is, money demand equals money supply). Application of the implicit money multiplier to projections of money supply provides projections of reserve money (monetary base) stock. As noted above, domestic securities may not be enough for the central banks in the selected countries to use as assets to back this reserve money expansion, given the fiscal constraint; moreover, it may also not be prudent for the central bank of an EDE to rely solely on domestic securities to meet the demand for primary liquidity. Furthermore, in the face of surges of capital flows, to which EDEs are particularly prone, monetary management may also necessitate central bank intervention to ensure stability in the domestic foreign exchange market. Accordingly, we generate three scenarios under which central banks in EDEs inject primary liquidity through a mix of domestic and foreign assets: The first scenario (scenario A) assumes the ratio of net foreign assets (NFAs) to reserve money during the projection period (2012–2017) remains at the same level as it was at the end of 2011, that is, around 1.1 for Brazil, the PRC and India, 1.8 for the Russian Federation, 2.0 for the PRC, 4.4 for the Republic of Korea and 9.4 for Saudi Arabia (Table 11). The next two scenarios (scenarios B and C) assume that the contribution of NFAs to the expansion of reserve money falls in the coming years: we assume that NFAs contribute 50 percent and 25 percent to the expansion of reserve money, respectively, during 2012–2017.

Table 11: NFAs of Major EDEs (Ratio to Reserve Money)

Country	2001	2005	2008	2009	2010	2011
Brazil	0.3	0.7	2.3	1.8	0.9	1.1
Hong Kong, China	3.6	3.1	2.5	1.9	2.0	2.0
PRC	0.5	1.0	1.3	1.3	1.2	1.1
India	0.7	1.2	1.3	1.3	1.0	1.1
Korea, Republic of	4.3	5.3	3.9	4.7	4.5	4.4
Russia Federation	1.0	1.8	2.2	2.0	1.8	1.8
Saudi Arabia	2.8	6.2	11.3	9.3	9.4	9.4

Source: IFS, IMF.

Assuming the exchange rates that prevailed at end 2011, the calculations show that outstanding NFAs of the major EDE central banks need to increase from US$6 trillion at end 2011 to US$14.9 trillion (Scenario A) by end 2017, and to US$9.5 trillion (Scenario B) and US$7.8 trillion (Scenario C) — an increase of US$1.8–8.9 trillion (Table 12). These projections, it may be stressed, focus on the seven major EDEs holding foreign exchange reserves — some of the key EDEs, such as oil exporters, are not included in this exercise and, hence, the potential demand for foreign assets would be higher.

Table 12: NFAs — Requirements of Major EDEs (US$ billions)

	2011	2017		
Country	Actual	Scenario A	Scenario B	Scenario C
Brazil	349	883	591	470
Hong Kong, China	280	479	329	305
PRC	3,776	9,510	6,483	5,129
India	286	665	460	373
Korea, Republic of	309	500	330	319
Russian Federation	491	1,456	755	623
Saudi Arabia	547	1,393	592	569
Total	6,036	14,886	9,540	7,788

Source: Authors' calculations (see text for methodology) based on IFS, IMF data.

Next, we turn to the supply side. The foreign currency reserves likely to be demanded by the EDEs can be supplied by the central banks of the reserve-issuing currencies, that is, 60 percent in terms of the US dollar, 27 percent in terms of the euro and a little over four percent each in terms of the pound sterling, the yen and other currencies, respectively. In the case of the United States, assuming a unitary income elasticity of money demand, and a money multiplier of 3.6 (the level at end-2011), the US monetary base would only increase from US$2.7 trillion at end-2011 to US$3.5 trillion by end-2017, an increase of US$0.8 trillion compared to an increase of at least US$1.8 trillion to US$8.9 trillion emerging from the demand side. The supply side estimate is, however, subject to the caveat that quantitative easing (QE) policies followed by the US Federal Reserve since 2008 will continue over the projection period. The US monetary base more than trebled, from US$0.8 trillion in end-2007 to US$2.7 trillion by end-2011 and, consequently, the money multiplier collapsed from around 9 to 3.6 over the same period. If the US Fed were to reverse its QE policies going forward, the US monetary base may not expand at all over the projected period and this would further widen the gap between the EDE requirements and availability of reserve assets.

Currency Internationalization: The Phenomenon

In the context of the widening gap between the demand and supply of reserve assets over the medium term, the phenomenon of currency internationalization of EMEs has generated widespread attention on the ongoing IMS reform debate. As these economies become increasingly integrated into the global economy and their contribution to global growth, trade and financial flows grows rapidly, their access to international capital markets expands as they sustain credit-worthiness. Consequently, the depth and activity of their own financial markets increase, and there is a growing expectation that the role of their currencies in the IMS is set to change (Table 13). This new interest in EME currencies appears to be driven as much by strong fundamentals as by a desire for greater diversification of risk and assets, and there are growing signs of their usage in international transactions (IMF, 2011e). Furthermore, local currency-denominated assets in these countries' bonds and mutual funds are a slowly, but steadily, expanding dimension in the evolution of global finance. An international currency system that is properly tiered among multipolar segments can benefit global economic stability (Zhongxia, 2013).

Table 13: Selected Macro and Financial Indicators of Select Currencies with Internationalization Potential 1/

Indicator	Brazil	PRC	Hong Kong, China	India	Indonesia	Republic of Korea	Mexico	Russian Federation	Singapore	South Africa	Turkey
Macroeconomic indicators											
GDP size 2/	3.6	10.9	0.4	2.8	1.3	3.2	1.7	1.7	0.4	0.6	1.2
Economic growth 3/	4.2	9.5	4.4	8.1	6.7	4.2	3.6	4.3	4.4	4.2	4.2
Inflation 4/	4.9	2.6	3.4	5.2	4.8	3.3	3.1	7.2	2.5	5.0	5.2
Sovereign ratings 5/	BBB-	AA-	AAA	BBB-	BB+	A	BBB	BBB	AAA	BBB+	BBB-
Capital account openness 6/	0.4	–1.1	2.5	–1.1	1.1	0.4	1.1	0.2	2.5	–1.1	0.1
Total trade 7/	1.3	11.0	2.7	2.3	0.9	3.1	1.8	2.3	2.6	0.5	1.0
Exchange rate flexibility 8/	**Floating**	**Crawl-like arrangement**	**Currency board**	**Floating**	**Floating**	**Floating**	**Floating**	**Other managed**	**Other managed**	**Floating**	**Floating**
Financial indicators											
Financial depth 9/	1.6	7.2	1.6	1.1	0.3	1.2	0.5	0.8	0.5	0.5	0.4
Intl. debt securities 10/	0.1	0.1	0.2	0.0	0.0	…	0.1	0.1	0.1	0.1	0.1
FX market turnover 11/	0.3	0.4	1.2	0.5	…	0.8	0.6	0.5	0.7	0.4	0.4
FX bid-ask spreads 12/	8.6	1.7	1.2	6.7	…	11.6	7.2	7.9	6.7	31.2	23.6

1/ Selection based on shares of global and regional GDP, and trade.

2/ Share in nominal global GDP, projected 2011–2016 average, WEO.

3/ Real GDP growth, projected 2011–2016 average, WEO.

4/ CPI inflation, projected 2011–2016 average, WEO.

5/ Standard & Poor's sovereign ratings, August 2011.

6/ Index number in 2009, Chinn and Ito (2009).

7/ Share in total world exports and imports of goods and services, projected 2011–2016 average, WEO.

8/ De facto exchange rate arrangement.

9/ Share in global financial depth in 2009, based on the share in a composite index of financial depth capturing both domestic and external financial claims (IMF, 2011f).

10/ Share in total international bonds and notes issues (December 2010).

11/ Share in global FX turnover (April 2010).

12/ 2006–2010 average of bid-ask spread in basis points.

Source: IMF (2011e).

PREREQUISITES FOR INTERNATIONALIZATION

Currency use for international purposes or as an international reserve asset is reinforced by economies of scale or "network externalities" (Kiyotaki and Wright, 1989). Once a currency is widely used, it retains incumbency advantages that make it hard to displace. The supply of international currencies is influenced by the actions of governments to allow international use. This is closely linked to the provision of institutional and policy underpinnings that encourage the development of financial markets and produce macroeconomic stability (Tavlas, 1991). Without the existence of markets in various financial instruments and a reasonable amount of investor confidence in accessing them, the currency's usefulness in the international realm is limited. If those underpinnings exist, the supply of international currencies can be considered to be close to perfectly elastic: demand can be satisfied through facilities offered by banks and by issuance of domestic and foreign securities denominated in the currency. Conversely, attempts to stimulate international use of a particular currency will be unsuccessful in the absence of demand.

Drawing from history and practical usage in financial markets, the key characteristics of a reserve currency can be summarized as follows (Rangarajan and Patra, 2012):

- The reserve currency country should have deep and liquid financial and foreign exchange markets, which would facilitate the conduct of foreign exchange policies, manage currency risks effectively and support financial asset transactions denominated in the reserve currency.
- Prerequisites: currency convertibility and a credible commitment to an open capital account to facilitate financial flows with minimal transactions costs (Galbis, 1996); liquidity (narrow bid offer spreads in normal and stress times); a full yield curve (to be able to manage duration and curve positioning); and depth — offering a range of products across different credit qualities (to achieve the desired level of credit risk).
- Wide use in private sector transactions: a currency with a large share in world GDP, trade and finance attracts more users and establishes network externalities. By being a large exporter and importer, the country issuing the reserve currency could have bargaining power to impose use of its currency; the more trading partners such a country has, the more familiar its currency becomes (Iwami, 1994). Also, such an economy typically enhances the breadth and depth of domestic financial markets.
- Macroeconomic and political stability: Policy-making institutions with credibility and a track record of maintaining price stability are a critical ingredient to sustaining confidence in the currency's long-term purchasing power.

The Stylized Evidence

We review the potential of the EDE currencies to emerge as a reserve currency against the backdrop of key characteristics summarized in the previous sub-section. First, the actual evolution of international currencies over the past century suggests that economic size is an important determinant of currency internationalization, although trade network, depth and liquidity of financial markets and openness of the capital account also contribute. Illustratively, economic size may have worked towards limiting the international usage of the pound sterling and the Swiss franc, but the existence of major financial centres in these economies played

a positive role. Nevertheless, history shows that the largest and leading global economic and political powers typically provide global currencies, as in the case of the United Kingdom in the nineteenth century and the United States in the twentieth century. It is also observed that large economic size is supportive of developed financial markets (Eichengreen and Flandreu, 2010). While the EDEs collectively account for 50 percent of global GDP (at purchasing power parity exchange rates) in 2012 (38 percent of global GDP at market exchange rates), and this share is expected to be more than 54 percent in 2017 (43 percent at market exchange rates), only a few EDE currencies such as the Brazilian real, the Chinese renminbi, the Indian rupee, the Russian ruble and the South African rand appear to be supported by economic weight and regional importance (Table 14). High rates of growth in these countries notwithstanding, catch-up with the United States is not envisioned until 2035–2050.

Table 14: Share in World GDP based on Purchasing Power Parity (Percent)

Country	1980	1990	2000	2005	2010	2012 P	2017 P
Brazil	3.9	3.3	2.9	2.8	2.9	2.9	2.9
PRC	2.2	3.9	7.1	9.4	13.6	15.0	18.3
Hong Kong, China	0.3	0.4	0.4	0.4	0.4	0.4	0.4
India	2.5	3.2	3.7	4.3	5.5	5.8	6.8
Indonesia	1.0	1.2	1.2	1.2	1.4	1.5	1.6
Korea, Republic of	0.8	1.4	1.8	1.9	2.0	2.0	1.9
Mexico	3.0	2.6	2.5	2.3	2.1	2.1	2.0
Russian Federation	n/a	n/a	2.7	3.0	3.0	3.0	3.0
Singapore	0.2	0.2	0.3	0.3	0.4	0.4	0.4
South Africa	1.0	0.9	0.7	0.7	0.7	0.7	0.7
Turkey	1.0	1.2	1.2	1.3	1.3	1.3	1.3
All EDEs	**31.0**	**30.8**	**37.2**	**41.4**	**47.9**	**49.9**	**54.3**
	(23.5)	**(20.1)**	**(20.3)**	**(23.9)**	**(34.3)**	**(37.7)**	**(42.5)**

Note: Figures in parentheses are shares in world GDP based on market exchange rates. P = projections

Source: WEO Database (April 2012), IMF.

Second, the share of EMEs in global exports and particularly global capital flows is quite small (Table 15). Among candidate currencies, barring the PRC, their shares in exports of goods and services and financial flows are small in relation to the dominant reserve currency economies. Accordingly, their importance, even in the regional economic context, remains subdued, again barring, perhaps, the PRC, Brazil and the Russian Federation.

Table 15: Exports of Goods, Services and Financial Flows — Share of Top 20 Countries (Percent)

Country	Exports of goods and services		Exports of goods and services and financial flows	
	2001–2005	2006–2010	2001–2005	2006–2010
Euro area*	24.1	23.6	25.3	24.6
United States	18.5	16.8	22.4	19.1
PRC**	8.8	12.0	7.5	10.4
United Kingdom	9.1	7.7	12.7	11.7
Japan	8.3	6.9	7.2	6.0
Canada	4.7	3.7	3.8	3.3
Korea, Republic of	3.2	3.4	2.5	2.7
Singapore	2.9	3.2	2.3	2.6
Russian Federation	2.3	3.2	1.9	2.8
Switzerland	2.8	2.7	2.4	2.8
Mexico	2.5	2.0	2.0	1.7
India	1.3	2.0	1.1	1.8
Sweden	2.0	2.0	1.7	1.9
Saudi Arabia	1.5	1.9	1.1	1.5
Australia	1.4	1.7	1.6	1.9
Malaysia	1.6	1.5	1.2	1.2
United Arab Emirates	1.0	1.5	n.a.	n.a.
Norway	1.4	1.5	1.3	1.5
Brazil	1.2	1.4	1.1	1.5
Thailand	1.3	1.4	1.0	1.1
Total	100.0	100.0	100.0	100.0
Memo: Total exports (SDR billion)	5,588	9,204	7,940	13,102

Note: *Data for the euro area adjusted to exclude intra euro area trade. **Data for the PRC include Mainland PRC and Hong Kong, China. For exports of goods and services, excludes intra-trade of goods. Source: IMF (2011c).

Third, secondary potential financial indicators such as financial depth, capital account framework and foreign exchange market turnover in spot as well as derivative markets also weaken the case for EMEs acquiring the status of international currencies. In order to be a reserve asset, a currency has to be widely traded — it should be readily available for sale or purchase, at minimal transaction cost and without the transaction causing prices to move significantly. The US dollar's share in global foreign exchange turnover, including the derivatives segment, is still dominant; the US dollar and the euro together

constitute 60 percent of global foreign exchange turnover. Individually, EME currencies constitute less than 1 percent of the global turnover, although in levels, there has been a sharp increase in the first decade of the 2000s, with PRC, Hungary, India and Turkey recording the biggest jumps. In this context, in addition to the general factors driving international usage, national policies appear to be playing a role, as demonstrated in the case of the PRC's promotion of the use of renminbi in cross-border trade (Table 16). The process of renminbi internationalization will be determined by the size, openness and competitiveness of the Chinese economy (Zhongxia, 2013).

Table 16: Global Foreign Exchange Market Turnover (Share in Global Daily Average Turnover in Percent)

Currency	Total Turnover @				Turnover in Derivatives Market #
	2001	2004	2007	2010	2010
US dollar	44.9	44.0	44.9	42.4	44.0
Euro	19.0	18.7	19.0	19.5	17.3
Japanese yen	11.8	10.4	11.8	9.5	9.1
Pound sterling	6.5	8.2	6.5	6.4	6.0
Other AEs &	11.6	12.4	11.6	14.9	15.8
BRICS	1.0	1.0	1.0	2.1	2.2
Others	5.2	5.3	5.2	5.2	5.6
Memo: Total daily average global turnover (all currencies) US$ billion	1,239	1,934	3,324	3,981	2,488

@: includes turnover in the spot, forwards, swaps, options and other products. #: includes turnover in the forwards, swaps, options and other products. &: Other AEs include Australian dollar, Swiss franc, Canadian dollar, Hong Kong dollar, Swedish krona, New Zealand dollar, Korean won, Singapore dollar and Norwegian krone.

Source: IMF (2011c) (based on 2010 Triennial Central Bank Survey, Bank for International Settlements [BIS]).

Finally, currency denomination of international debt securities provides an indicator of currency use in financial transactions that is a broader reflection of currency choice compared to official reserves, and covers both the private and the public sector. The BIS international debt instruments statistics indicate the continued dominant role of the US dollar and the euro with a combined share of 83-84 percent over the 2000s. The share of the major EME currencies has increased only marginally (IMF, 2011e).

Costs and Benefits of Currency Internationalization

At the country level, benefits from internationalization include potentially lower transaction costs and reduced exchange rate risk, and the ability to issue international debt at more competitive terms (ibid.). There are, however, attendant costs which warrant careful consideration. Currency internationalization may complicate monetary management and strain the domestic financial system's ability to absorb capital flows due to the potential for increased volatility and large shifts in portfolio flows. Reserve currency status might reduce international competitiveness

for individual countries, as higher currency demand appreciates their currencies (Chinn, 2012). Given the growth and inflation differentials, interest rates in the EMEs are expected to remain higher than those in the AEs, encouraging large capital flows on a sustained basis. In such a scenario, an almost fully open capital account — a prerequisite for the currency to be accorded the status of international currency — can play havoc with their exchange rates and destroy their export sectors, and endanger external sector and financial sector stability.

There is, thus, the issue of incentive compatibility. Arguably, at the IMS level, internationalization may allow better reflection of global economic realities, enable currency risk diversification and prevent malfunctions in the dominant currency economies from turning systemic. But does it confer net benefits to the EMEs that internationalize their currencies? History tells us that the story of internationalization is also a story of failures, because other forces work in the form of preventive and positive checks. Policy actions for EMEs wanting to internationalize may perhaps be necessary conditions, but they are by no means sufficient. There are broader forces that define the flow of history and determine the rise and fall of nations and their currencies. Even these so-called necessary conditions are on the distant horizon and will require substantial ground to be covered by the interested EMEs. Moreover, currencies can be totally convertible with high credit ratings, as is the case with some AEs, but these may not be considered as liquid to be held as reserves. It is therefore necessary to caution against policy-driven internationalization or "managed internationalization" with governments acting alone to promote international use of their currencies. Internationalization is better earned by winning confidence in transactions, in invoicing and settlement, and in holding value. The approach should be to maintain a high bar for ensuring the stability of the IMS. Including not-so-usable currencies in the basket just to facilitate a greater role for their economies in the IMS has pitfalls: it could increase complexity and transaction/hedging/risk management costs; central banks may not be willing to hold them as reserve assets; and, most importantly, even one failure to honour convertibility, for instance, could lead a multipolar IMS to collapse. In the final analysis, internationalization of a currency comes with costs — a willingness to sacrifice domestic monetary and financial stability and run deficits and the return of the Triffin dilemma.

FINANCIAL STABILITY, IMS AND ROLE OF CENTRAL BANKS

In this milieu of large and volatile capital flows, recurrent financial crises and the large costs of financial crises on output and employment, maintaining financial stability at the national and global levels is critical. While the previous sections have focussed on the role of the IMS in fostering global financial stability, we now turn to the issue of financial stability at the national level. In this context, central banks have a key role to play in ensuring macroeconomic and financial stability, while contributing to growth. It is interesting that central banks were initially set up with the explicit objective of fostering financial stability. Thus, many central banks were entrusted with multiple responsibilities — price stability, currency management, financial regulation and supervision, payment and settlements system regulation, and public debt management — to facilitate them in having a holistic approach towards the overall objective of having high and stable growth along with financial stability.

The past two decades have, however, witnessed a significant dilution in the responsibilities assigned to central banks towards a narrower defined mandate of price stability. This truncation of the central banks' role and responsibilities in the financial system and the real economy has been an important

contributory factor underlying the recurrent financial crises in the global economy. Beginning in the late 1980s, central banks, starting with the Reserve Bank of New Zealand, veered towards narrower mandates — that of price stability — reflected in inflation- targeting frameworks. The underlying premises were: first, price stability would ensure financial stability; second, a conflict of interest was seen between financial regulation and public debt management on the one hand and monetary policy on the other hand; and third, efficiency gains were seen by having regulation of the entire financial sector — banks, insurance companies, pension and provident funds, mutual funds, and securities markets — with a single financial regulator outside the central bank. Thus, central banks shed many of their traditional responsibilities to other agencies and began concentrating on monetary policy and price stability. Financial sector regulation also moved towards light touch. Public debt management moved from central banks to debt management offices outside the central bank.

The NAFC has shown that price stability is a necessary but not a sufficient condition for financial stability. Even as price stability was achieved along with growth — the Great Moderation — asset price imbalances and financial sector excesses were building up. As noted in the previous sections, volatility in capital flows and exchange rates contributed, as well as adding to the financial excesses, culminating in the financial crisis, which remains with us five years later. The Great Moderation has now yielded to the Great Recession.

A key lesson from the crisis, therefore, is that central banks ought to move back from the simplistic inflation targeting frameworks towards the multiple responsibilities framework to ensure both price and financial stability along with growth (Eichengreen et al., 2011). Financial regulation and supervision ought to move back to the central bank — the United Kingdom's decision to return financial regulation and supervision responsibilities to the Bank of England is a step in the right direction, as is the move to entrust the European Central Bank with financial regulation and supervision. The notion that markets are always efficient also stands discredited in the aftermath of the crisis. Financial markets and sectors are as prone to excesses in AEs with well-developed and sophisticated markets as are those in EMEs with relatively underdeveloped and missing financial markets.

Recent research shows that bigger financial systems indeed have a negative impact on growth; credit/GDP ratios above 100 percent are found to have a negative effect on consumption and investment volatility (Arcand, Berkes and Panizza, 2012; IMF, 2012c; Cecchetti and Kharroubi, 2012). When the financial sector represents more than 3.5 percent of total employment, further increases in its size tend to be detrimental to growth as it competes with the rest of the economy for scarce resources, especially highly skilled workers, who could have been more productively employed, for example, as scientists. Accordingly, the evidence, together with recent experience during the financial crisis, shows a pressing need to reassess the relationship of finance and real growth in modern economic systems: "More finance is definitely not always better" (Cecchetti and Kharroubi, 2012: 14).

Similarly, the time is apposite to revisit the separation of debt management from the central bank, especially given the high debt and deficit levels (Goodhart, 2010). Overall, there is a broader recognition that the narrowly defined central banking paradigm that was seen as the gold standard during the 2000s, prior to the financial crisis, needs significant reforms (Mohan, 2009, 2011; Eichengreen et al., 2011).

Central Banking: The Indian Experience

The Indian experience, as well as that of many other EMEs, which persisted with the traditional central banking concept of multiple responsibilities and multiple instruments during the 2000s, despite strong advice and pressure to move to narrow and simplistic frameworks, is interesting. In India, the Reserve Bank of India (RBI) is responsible for price stability, regulation and supervision of banks and non-bank financial companies, development and regulation of key financial markets (the money market, the government securities market and the foreign exchange market) and public debt management. In the years preceding the 2007 financial crisis, the RBI had questioned the single-minded inflation targeting approach to monetary policy that had become the widely accepted best practice internationally; it consciously adopted a multiple indicator approach, looking as much at various monetary and credit aggregates as at conventional price-related indicators. As much of the world tended to increasingly insulate the central bank from financial sector and banking regulation, regulation was consciously viewed as an integral tool of monetary policy making, broadly interpreted, which also focussed on financial stability. The barrage of financial innovations were viewed with caution and introduced on a gradual basis. On the external side, the opening of the capital account had been pursued with great circumspection, though much of the professional economic advice was to the contrary. Exchange rate management focused on containing volatility in the foreign exchange market, with growing flexibility in exchange rate movements over time (Mohan, 2009 and 2011). The consequence of this overall policy stance was that India escaped the worst consequences of this international crisis, as it did during the Asian crisis.

CONCLUDING OBSERVATIONS AND WAY FORWARD

This paper reviewed the evolution of the IMS over the past six decades. This process has been characterized by the quest for an anchor that can provide monetary and financial stability to the world's monetary system along with a pursuit of high and stable economic growth. The period between the mid-1980s and 2007, hitherto characterized as the Great Moderation, in fact featured repeated financial, banking and external crises in developing, emerging market and advanced economies alike, culminating in the NAFC. The IMS is clearly broken and is in need of urgent reform.

Critical to this reform is a careful scrutiny and evaluation of the existing IMS governance in an interdependent world, which is also witnessing a rebalancing of global economic power that will continue for the next few decades. The current system, predicated on the post World War II balance of global economic power, has to undergo corresponding changes to cope with the new emerging realities.

As this paper has documented, almost every feature of the IMS has been malfunctioning. First, the system of floating exchange rates has seen greater volatility since the collapse of the Bretton Woods system, and exchange rates can seldom be seen to reflect fundamentals. Second, the free flow of cross border capital flows has not brought the expected benefits to the global economy, while often destabilizing exchange rates and endangering domestic financial stability in recipient economies through excess flows and sudden stops. Third, the interconnection of financial markets, along with freer cross border financial transactions and interdependence of economies, has magnified the effects of specific financial crises, resulting in massive contagion affecting the world economy and leading to global financial instability. Finally, the role of the US dollar as the global economy's reserve currency

is increasingly being tested, with few alternatives in sight. The liquidity needs of the fast growing EDEs will rapidly overwhelm the world's supply of safe reserve assets and the functioning of the US dollar as the reserve currency.

More fundamental and long-lasting forces are also at work. Over the next half century, the population, especially in the AEs, will age faster than during the past half-century, as fertility rates decline and life expectancy rises. These evolving demographics across both the AEs and the EDEs will be associated with a progressive decline in savings and growth, accompanied by fiscal pressures in the AEs, as is clearly evident in Europe and Japan. These processes will bring about fundamental alteration in savings and investment balances, which would be reflected in the magnitude and direction of future capital flows with implications for the conduct of future monetary policy as well (Mohan, 2004).

Much of the thinking and policy approach regarding capital flows is predicated on the assumption of capital flowing from the hitherto capital abundant AEs to the capital scarce EDEs. As the NAFC has already illustrated, this pattern is much more complex now, with the global savings glut being regarded as a key factor in the emergence of global imbalances. The pattern of East Asia and the PRC being important suppliers of global savings may continue until around 2025; however, rapid population aging in these countries is likely to result in an eventual decline in their savings, leading to tightening of global liquidity in the decades to come. The demand for financial resources from rapidly growing and urbanizing EDEs like India, Indonesia and others, will result in increasing competition for resources and rising real interest rates, with corresponding implications for the IMS.

The nature of challenges has, therefore, been changing and will change further in the future. Crisis propagation is taking diverse forms and conduits and no longer originates in the periphery. Now it is the systemically important countries that threaten the stability of the IMS. The demographic transition will continue to put fiscal and financial pressures on these countries, even after the current NAFC ends. In addition, the ascendancy of large EDEs such as the BRICS is irreversible over the next half-century. The emergence of new institutions such as the FSB, the G20, the European Union and regional arrangements (such as the Chiang Mai Initiative) point to the contours of a new IMS, in which responsibilities for the IMS are collectively shared by a range of institutions and arrangements. Will a collective IMS be able to create processes that can prevent the repetitive occurrence of crises that has characterized the post-Bretton Woods period, or at least make the IMS resilient enough to mitigate the fallout of crises if they reoccur? Or, will there remain a need for an IMF that acts as a worthy overseer of a sound, effectively functioning and viable IMS? What governance reforms in the IMF, which reflect changing global realities, will make it more effective, credible and legitimate?

We conclude by outlining the key ingredients of a stable IMS, whatever its institutional form. First, domestic macroeconomic and financial stability is a necessary condition for a stable IMS. In this context, central banks have a significant role to play in ensuring domestic macroeconomic and financial stability. The pre-crisis tendency for central banks to focus on narrow price stability-oriented monetary policy frameworks was a major contributing factor to financial sector excesses, and credit and asset price booms, culminating in the NAFC. Post crisis, we are seeing a welcome reversal of the trend of hiving off the responsibilities: central banks are again getting involved with financial regulation and supervision. Moreover, given the sharp increase in fiscal deficits and public debt ratios in many economies and

their likely persistence in the medium term, close coordination between central banks and governments is essential to ensure adequate liquidity and stability in financial markets, even as governments undertake credible medium-term measures to rein in deficits and debt levels and anchor expectations. Overall, the mandate of central banks needs to be broadened: they should also be entrusted with financial sector regulation and supervision. They will need to have macroprudential instruments at their command, in addition to conventional and non-conventional monetary instruments, to ensure both price and financial stability, while contributing to high and stable growth.

Second, turning back to the IMS, large and volatile capital flows have been a key contributor and propagator of volatility in exchange rates, sometimes excessive reserve accumulation by the EDEs, credit and asset price booms and, ultimately, the recurrent financial crises. Ideally, source countries should better internalize the implication of their monetary policy actions on the broader global economy and the IMS. In this context, the recommendation of international monetary coordination by Eichengreen et al. (2011) and Taylor (2013) seems appropriate, although its feasibility might be daunting. Accordingly, the burden of adjustment will fall on the recipient countries. The EDEs will, therefore, need to continue with their cautious approach to capital account liberalization and practise active capital account management in response to destabilizing capital flows to maintain macroeconomic and financial stability. Indeed, in the aftermath of the NAFC, even the AEs, especially the smaller, open ones, may need to revisit their approach to capital account liberalization.

Third, a reduction in the volatility of capital flows could potentially reduce the need for precautionary reserve accumulation by the EDEs and, hence, address some of the concerns for excess demand for safe assets. However, the monetary and credit requirements of fast growing EDEs, in the presence of prudent domestic fiscal policies, might still require the central banks in the EDEs to acquire foreign assets to expand their balance sheets in a non-inflationary way. Evidence presented in this paper suggests limited scope for the EDE currencies to emerge as international reserve currencies for many years. Regional currency arrangements such as the Chiang Mai Initiative can be helpful in meeting sudden demand for foreign currency in times of crises; however, such currency swap arrangements cannot meet requirements of central banks in the EDEs to expand their balance sheets on a sustained basis to satisfy their normal credit and monetary needs. Thus, the tensions between the EDEs' demand for safe assets and the supply of these assets by the major AEs can be expected to continue. However, the proposals for domestic macroeconomic and financial stability and continued capital account management by the EDEs on the one hand, and the central banks in the major AEs internalizing the implications of their monetary policies for the rest of the global economy on the other hand, can minimize pressures on the IMS and reduce the incidence and the virulence of the financial crises that we have witnessed over the past four decades.

WORKS CITED

Arcand, Jean-Louis, Enrico Berkes and Ugo Panizza (2012). "Too Much Finance?", IMF Working Paper WP/12/161. IMF.

Benassy-Quere, Agnès and Jean Pisani-Ferry (2011). "What International Monetary System for a Fast-Changing World Economy?" In *Reform of the International Monetary System: The Palais Royal Initiative*, edited by Jack T. Boorman and André Icard. Pages 255–298. Emerging Markets Forum.

Barsky, R. B. and L. Kilian (2001). "Do We Really Know that Oil Caused the Great Stagflation? A Monetarist Alternative." In *NBER Macroeconomics Annual 2001*, edited by B. S. Bernanke and K. Rogoff. Vol. 16. Cambridge, MA: MIT Press.

Board of Governors of the Federal Reserve System. Federal Reserve Act. Section 2A. Available at: http://www.federalreserve.gov/aboutthefed/section2a.htm.

Bush, Oliver, Katie Farrant and Michelle Wright (2011). "Reform of the International Monetary and Financial System." Financial Stability Paper No. 13. Bank of England.

Cecchetti, Stephen, Marion Kohler and Christian Upper (2009). "Financial Crisis and Economic Activity." Working Paper 15379. National Bureau of Economic Research.

Cecchetti, Stephen and Enisse Kharroubi (2012). "Reassessing the Impact of Finance on Growth." Working Paper 381. BIS.

Chinn, Menzie D. (2012). "A Note on Reserve Currencies with Special Reference to the G-20 Countries." May. Available at www.ssc.wisc.edu/~mchinn/research.html.

Chinn, Menzie and Hiro Ito (2009). "A New Measure of Financial Openness." *Journal of Comparative Policy Analysis*, 10 (3) September, 309–322 (with data updated to 2009).

CGFS (2009). *Capital Flows and Emerging Market Economies*. CGFS Publication No. 33. January. Basel: BIS.

Eichengreen, Barry and Marc Flandreu (2010). "The Rise and Fall of the Dollar, or When Did the Dollar Replace Sterling as the Leading International Currency?" NBER Working Paper 14154. NBER.

Eichengreen, B. and N. Sussman (2000). "The International Monetary System in the (Very) Long Run." IMF Working Paper WP/00/43. IMF.

Eichengreen, B. (2009). "The Dollar Dilemma." *Foreign Affairs* 88, no. 5.

Eichengreen, B. et al. (2011). "Rethinking Central Banking." Report of the Committee on International Economic Policy and Reform. Available at http://www.brookings.edu/research/reports/2011/09/cieprcentral-banking.

Fleming, J. M. (1962). "Domestic Financial Policies Under Fixed and Floating Exchange Rates." *IMF Staff Papers* 9, no. 3: 369–379.

FSB (2012). "Global Shadow Banking Monitoring Report 2012." November. FSB.

Furceri, D., S. Guichard and E. Rusticelli (2011). "Episodes of Large Capital Inflows and the Likelihood of Banking and Currency Crises and Sudden Stops." OECD Economics Department Working Papers, No. 865. OECD Publishing.

Galbis, V. (1996). "Currency Convertibility and the Fund – Review and Prognosis." IMF Working Paper WP/96/39. IMF.

Goodhart, C. A. E. (2010). "The Changing Role of Central Banks." Working Papers 326. BIS.

Gorton, Gary (2012). "Banking Must Not be Left in the Shadows." *Financial Times*, November 21.

Henry, P. B. (2007). "Capital Account Liberalization: Theory, Evidence, and Speculation." *Journal of Economic Literature* 45, 887–935.

IMF (2007). "IMF Executive Board Adopts New Decision on Bilateral Surveillance Over Members' Policies." Public Information Notice No. 07/69, June.

——— (2009a). "Initial Lessons of the Crisis." February.

——— (2009b). "What's the Damage? Medium-term Output Dynamics after Financial Crises.=" In *World Economic Outlook*. Washington, DC: IMF.

——— (2009c). "The Debate on the International Monetary System." Staff Position Note, SPN/09/26, November.

——— (2010a). "The Fund's Mandate—The Legal Framework." February.

——— (2010b). "Reserve Accumulation and International Monetary Stability." April.

——— (2010c). "The Fund's Role Regarding Cross-Border Capital Flows." November.

——— (2010d). "Annual Report on Exchange Arrangements and Exchange Restrictions 2010."

——— (2011a). "IMF Performance in the Run-Up to the Financial and Economic Crisis." January. IEO.

——— (2011b). "Recent Experiences in Managing Capital Inflows — Cross-Cutting Themes and Possible Guidelines." February. IMF.

——— (2011c). "Criteria for Broadening the SDR Currency Basket." September. IMF.'

——— (2011d). "The Multilateral Aspects of Policies Affecting Capital Flows." October. IMF

——— (2011e). "Internationalization of Emerging Market Currencies: A Balance between Risks and Rewards." Staff Discussion Note, SDN/11/17. October. IMF.

——— (2011f). "Financial Deepening and International Monetary Stability." Staff Discussion Note, SDN/11/16. October. IMF.

——— (2012a). "Liberalizing Capital Flows and Managing Outflows." March. IMF.

——— (2012b). "Modernizing the Legal Framework for Surveillance — An Integrated Surveillance Decision." June. IMF.

——— (2012c). *Global Financial Stability Report*. October. IMF.

——— (2012d). "The Liberalization and Management of Capital Flows: An Institutional View." November. IMF.

——— (2012e). "International Reserves: IMF Concerns and Country Perspectives." December. IEO.

———. BOPS. IMF.

———. COFER database, www.imf.org/external/np/sta/cofer/eng/index.htm

———. IFS. IMF.

——— WEO database. IMF.

Iwami, T. (1994). "The Internationalization of Yen and Key Currency Questions." IMF Working Paper WP/94/41. April. IMF.

Kiyotaki, Nobuhiro and Randall Wright (1989). "On Money as a Medium of Exchange." *Journal of Political Economy* 97, no. 4: 927–954.

Korinek, A. (2011). "The New Economics of Prudential Capital Controls." *IMF Economic Review* 59, no. 3: 523–561.

Kose, M. Ayhan et al. (2009a). "Financial Globalization: A Reappraisal." *IMF Staff Papers* 56, no. 1: 8–62.

Kose, M. Ayhan, Eswar S. Prasad and Ashley D. Taylor (2009). "Thresholds in the Process of International Financial Integration." Working Paper 14916. NBER.

Meade, J. E. (1951). *The Balance of Payments*. London: Oxford University Press. 1951.

Mohan, Rakesh (2004). "Challenges to Monetary Policy in a Globalising Context." Reserve Bank of India Bulletin. January.

——— (2009). Monetary Policy in a Globalized Economy: A Practitioner's View. Oxford University Press, New Delhi.

——— (2011). *Growth with Financial Stability: Central Banking in an Emerging Market*. New Delhi: Oxford University Press.

Mundell, R (1961). "A Theory of Optimum Currency Areas." American Economic Review 51: 657–665.

——— (1962). "The Appropriate Use of Monetary and Fiscal Policy for Internal and External Stability." IMF Staff Papers 9: 70–79.

——— (1963). "Capital Mobility and Stabilization Policy Under Fixed and Flexible Exchange Rates." *Canadian Journal of Economic and Political Science* 29, no. 4: 475–485.

Obstfeld, Maurice (2009). "International Finance and Growth in Developing Countries: What Have We Learned?" IMF Staff Papers 56, no. 1: 63–111.

Ostry, J. D. et al. (2010). "Capital Inflows: The Role of Controls." Staff Position Note 10/04. February. IMF.

Ostry, J. D. et al. (2011). "Managing Capital Inflows: What Tools to Use?" Staff Discussion Note 11/06. April. IMF.

Palais Royal Initiative (2011). "Reform of the International Monetary System: A Cooperative Approach for the Twenty First Century."

Prasad, Eswar S., Raghuram G. Rajan and Arvind Subramanian (2007). "Foreign Capital and Economic Growth." *Brookings Papers on Economic Activity* 1:153–230.

Rangarajan, C. and Michael Debabrata Patra (2012). "Can the SDR Become a Global Reserve Currency?" *Economic and Political Weekly* 47, no. 11: 41–51.

Reinhart, Carmen and Vincent Reinhart (2008). "Capital Flow Bonanzas: An Encompassing View of the Past and Present." NBER Working Paper 14321. NBER.

Reinhart, Carmen, Vincent Reinhart and Kenneth Rogoff (2012). "Public Debt Overhangs: Advanced-Economy Episodes since 1800." *Journal of Economic Perspectives* 26, no. 3: 69–86.

Rodrik, Dani and Arvind Subramanian (2009), "Why Did Financial Globalization Disappoint?" *IMF Staff Papers* 56, no. 1: 112–138.

Speller, William, Gregory Thwaites and Michelle Wright (2011). "The Future of International Capital Flows." Bank of England Financial Stability Paper 12.

Tavlas, George, S. (1991). "On the International Use of Currencies: The Case of the Deutsche Mark." Princeton Essays in International Finance 181, International Economics Section, Department of Economics, Princeton University, Princeton, NJ.

Taylor, John B. (2009). "Economic Policy and the Financial Crisis: An Empirical Analysis of What Went Wrong." *Critical Review* 21, no. 2-3: 341–364.

——— (2013). "International Monetary Coordination and the Great Deviation." NBER Working Paper 18716. NBER.

Triffin, Robert (1960). *Gold and the Dollar Crisis*. New Haven: Yale University Press.

Truman, E. (2010). "The International Monetary System and Global Imbalances." January. Available at: www.piie.com/publications/papers/truman0110.pdf.

World Bank (2011). Global Development Finance 2011 (CD-ROM).

Zhongxia, Jin (2013). "The Future of the International Monetary Framework." *OMFIF Commentary* 4, no. 6.4. Available at www.omfif.org/downloads/The%20OMFIF%20Commentary%207-2-13.pdf.

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