

CHAPTER 8

FINANCIAL GLOBALIZATION IN INDIA

opportunity and volatility

RENU KOHLI*

Financial globalization is an important development in the world economy in the past three decades.¹ The phenomenon—broadly described to mean the extent to which countries are linked through cross-border financial holdings (IMF 2007)—is in itself not new, having earlier been observed in the nineteenth century wave of globalization. A novel feature of the current round of financial globalization, however, is the change in the operational environment: technological progress and financial liberalization policies across countries have completely altered the landscape in which financial markets operate, making it infinitely riskier (Rajan 2005). The outcome of financial globalization is mixed; the verdict has never been unequivocal. Financial crises and volatility have been on the ascendancy, while the gains remain nebulous. With outbreak of the global financial crisis in 2008 the debate has reached a flashpoint, prompting academics

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¹ The terms financial globalization, international financial integration, financial openness, free capital mobility, and capital account liberalization are used interchangeably to mean free trade in assets.



and policymakers to question the wisdom of unfettered financial globalization. The need to balance risks and benefits has imparted fresh importance to the pursuit of right financial sector policies.

In theory, countries gain from financial globalization in several dimensions. Growth benefits arise from both direct and indirect channels (Prasad et al. 2003 provide a comprehensive survey). Summarily, foreign capital directly impacts growth through technology spillovers, competition, and learning effects to raise the efficiency and productivity of capital; by augmenting domestic savings, foreign capital eases financing constraints and lowers the cost of funds, increasing investment levels and output growth; finally, it enables international risk-sharing and consumption smoothing by helping tide over temporary economic fluctuations through foreign borrowings. Recent work focuses on the indirect or 'collateral' benefits of financial globalization. These include promoting development of the domestic financial sector, improving institutional quality by providing incentives for better corporate governance, and disciplining macroeconomic policies in recipient countries (Kose et al. 2008, 2009).

The posited advantages are countered by empirical evidence to a considerable extent. The literature is vast but the broad finding is that aggregate linkages between financial globalization and growth are nebulous and inconclusive² (Kose et al. 2006; Rodrik and Subramanian 2008 are useful surveys). For developing countries, Prasad et al. (2003) assess empirical evidence to conclude that financial globalization benefits once countries cross a certain threshold; once countries reach the threshold, bulk gains from financial globalization can be realized (Kose et al. 2009). Recent research studies are more counter-intuitive: non-industrial countries that rely on lesser foreign capital have clocked higher growth rates on average in the long-run (Prasad et al. 2007); countries financing more of their investments domestically have, on average, grown much faster (Aizenman et al. 2007); and capital seems to flow more to countries that invest and grow less or the 'allocation puzzle' where countries with faster productivity growth appear to attract less foreign capital (Gourinchas and Jeanne 2007).

International risk-sharing gains are found non-existent or insignificantly low (Gourinchas and Jeanne 2003; Lewis 1996) and restricted

² Empirical research on this is beset by a number of problematic issues regarding measures, reverse causation, substantially different institutional settings across countries, different patterns of financial liberalization followed by countries, and so on (Prasad et al. 2007).

to industrial countries (Kose et al. 2007) although increasing over time (Sørensen et al. 2007). Emerging market economies appear to have not realized higher risk-sharing outcomes despite higher levels of financial integration (Kose and Terrones 2009). Similarly, there is little systematic evidence that financial globalization disciplines macroeconomic policies although a cross-country aggregate study finds an association with low inflation (Tytell and Wei 2004). Institutional quality and governance are observed to improve as countries undertake reforms in response to financial liberalization (Kaminsky and Schmukler 2003); and financial market development is observed after basic legal and institutional structures develop (Chinn and Ito 2006).

Empirical proof on different types of foreign capital is more insightful. Foreign direct investment (FDI) or stable, long-term flows are more positively associated with growth through micro-linkages (Javorcik 2004) and under certain conditions (Aizenman et al. 2011). The effects of portfolio capital are differentiated. Equity market liberalization is found positively linked to higher investments and growth (Alfaro and Hammel 2007; Bekaert et al. 2005; Henry 2000, among others) but other influences cloud such causality. Debt flows, especially short-term, are decisively found to yield no obvious benefits to the recipient (Berg et al. 2004) and are systematically linked to an increased likelihood of financial crises (Eichengreen et al. 2006).

How does financial globalization relate to volatility? Most studies indicate a striking rise in GDP and consumption correlations with increased financial integration, that is, the more integrated a country, the more synchronized is its business cycle with the global one. Kose et al. (2003a, 2003b) find significant effects on both output correlations and the ratio of total consumption to income volatility, while Bekaert et al. (2006) find significant effects on consumption volatility; both findings are non-robust. The association with macroeconomic volatility also depends on a country's financial development and the quality of its institutions (Dell' Ariccia, 2008) and higher output volatility is linked to higher financial risk, that is, the ability of a country to pay its official, commercial, and trade debts (Meller 2011).

Financial globalization has also coincided remarkably with a higher frequency in the occurrence of financial crises, especially in emerging and developing countries; for example, the Latin American debt crisis in the 1980s, the prolonged Japanese recession and banking sector problems since the late 1980s, the Nordic banking crisis in early 1990s, the European exchange rate mechanism crisis in 1992–3, the Mexican crisis in 1994–5,

the East Asian crisis in 1997, the Russian crisis of 1998 and the long-term capital management fund collapse in the US, the Argentinean and Turkish crises in 2001, and the global financial crisis of 2008–9. These crises underlined the changing nature of global capital flows, which are highly pro-cyclical and prone to sudden stops or reversals, herding behaviour, and speculative attacks (Calvo and Reinhart 1999).

The merits of financial globalization have always attracted criticism, notably from Bhagwati (1998), Rodrik (1998), Rodrik and Subramanian (2008), and recently Jeanne et al. (2012), who question unfettered movements of global capital, discarding the analogy with free trade in goods. With the global financial crisis of 2008 testing the trade-offs in costs and benefits, opinion has converged to a more qualified view of financial globalization as the crisis engulfed even advanced countries that had hitherto remained relatively immune. Although contrarian views on the causes of the global crisis exist,³ academics and policymakers nonetheless acknowledge that excessive, unbridled financial flows need restraint.⁴ There's evidence that financial globalization played a role in amplifying credit and asset price booms—caused by ultra-loose monetary policy in the United States—across different countries during the 2008 crisis with devastating consequences (BIS Annual Report 2012). In an up-to-date assessment of such links, Lane (2012) establishes that financial globalization amplified the costs of policy and regulatory failures in preventing the crisis and its management thereafter.

What does this imply for liberalizing emerging and developing countries? Having burnt their fingers previously, these countries have undoubtedly fared better than their advanced country peers in this round, having developed and bolstered their financial systems, banks, and financial markets to better manage capital flows in response to earlier crises; these policies helped protect and enabled them to cope with the current crisis (Lane 2012). While the global financial crisis has only reinforced this caution, that international opinion is now more favorably inclined towards the management of capital flows, including endorsement of capital controls as an additional tool, is helpful (IMF 2011). The role of

³ Briefly, one view holds the global imbalances through steady accumulation of current account surpluses as the root cause of the crisis. A contrasting view upholds excessive financialization, lax regulation, and supervision combining with easy global liquidity from the US Federal Reserve's ultra-loose monetary policy responsible. See UN (2009) and IMF (2009) in this regard.

⁴ See for instance, Turner Review (2009). Or consider the Dodd-Frank Act's proposals currently under discussion in the US.

financial sector policies has gained further importance (BIS 2012). The way forward for financial globalization lies in designing global, regional, and national policy frameworks to cope with high levels of international financial integration, suggests Lane (2012).

All these issues have a bearing for India, which has been a gradual but steady liberalizer of its financial markets for over two decades now. It belongs to the set of countries whose financial opening coincided with the trend towards increasing financial globalization. Prolonged surges in capital inflows have challenged its markets and institutions too, testing its macroeconomic responses on occasions. This chapter addresses such issues. The next section describes India's pattern of liberalization while the section that follows examines its experience with financial globalization. The section after that discusses how the challenges have been managed so far, while the last section concludes with an appraisal, raising questions for the future.

FINANCIAL GLOBALIZATION OF INDIA AN OVERVIEW



Before 1991, India had a closed capital account. Barring trade, all external transactions between private residents and non-residents were prohibited; capital movements were mostly official transactions leaving the government as the only effective borrower abroad (Reddy 2000). A balance of payments crisis in 1991 prompted the restructuring of economic policies that also led to opening the economy to private foreign capital in 1992-3.⁵ Then, the principal objectives were to prevent the future recurrence of another crisis, encourage foreign capital inflow into the country, reduce dependence on foreign currency deposits by Indian non-residents, and shift towards risk-sharing foreign capital like direct and portfolio equity investments.

Its approach towards capital account liberalization has been as follows. Inflows of foreign capital have been liberalized before outflows; non-resident capital flows have taken precedence over residents; amongst residents, the preference hierarchy is corporates, non-bank financial

⁵ See relevant Economic Surveys 1991-2 onwards for details (Government of India).

intermediaries, banks, and individuals; and equity figures ahead of debt (Kohli 2005; Reddy 2000). Several factors contributed to this choice:

- Unlike most developing countries, India had a reasonably well-developed equity market when liberalization began in the 1990s, due to historical developments and a series of measures taken in the 1980s that established a sound institutional base for intermediating foreign capital with relative ease (RBI 2007).
- The 1991 balance of payments crisis reinforced the urgency to reduce foreign currency debt and re-orient the country's external financing pattern from expensive debt-financing towards cheaper equity-financing, along with risk-sharing. These factors effectively shifted the weight of liberalization towards foreign portfolio equity capital, as even FDI at the time depended critically on other economic reforms, including the sustainability and certainty of economic policies to inspire the confidence of long-term commitment of foreign investors.

The objective of avoiding another macroeconomic crisis has been guiding India's strategy with regard to its capital account opening policy since the early 1990s. First articulated in Tarapore Committee I (1997) and restated in Tarapore Committee II (2005), the aim is to strike a balance between fulfilling the country's foreign capital needs while ensuring balance of payments sustainability. The two reports clearly linked the dismantling of key capital account transactions with the achievement of macroeconomic objectives, like reducing inflation, fiscal consolidation, and monetary-fiscal separation. Since such critically-interdependent reforms are slow to come about, in contrast to relatively easier-to-implement financial sector reforms, capital account liberalization has been a slow, evolving process (Kohli and Belaisch 2012). Therefore, the cautious opening to foreign investors of the domestic debt markets echoes the country's slow pace of fiscal consolidation and strong dependence on the domestic banking system for financing at a reasonable cost. In the early stages of liberalization, India's large fiscal deficit, traditionally financed by the vast public sector banking system through 'financial repression', ruled out the opening of the domestic debt market to foreigners before reforms like interest rate deregulation and a reduction in fiscal dominance was achieved (Kletzer and Kohli 2001). But foreign participation in the debt market has been increased incrementally to support public debt issuance needs, while implementing a fiscal responsibility framework.

The sequencing of capital account liberalization must be understood in this historical context, reflecting the management of macroeconomic and external vulnerabilities (Reddy 2000).

- In view of the external financing gap, restrictions on capital inflows have been removed before those on capital outflows—in times of surpluses, outflows have been liberalized fairly fast.
- Non-debt creating inflows have been preferred to debt-creating inflows to minimize liquidity and interest rate risks for firms.
- Long-term borrowings have been favoured over short-term ones to enhance the productive capacity of the economy and lessen liquidity and rollover risks from a sudden reversal.
- Fear of capital flight and the non-readiness to make the currency convertible can explain why non-residents' flows have been liberalized more than those of residents. Resident transactions are relatively easier to monitor and can be readily restricted should the need arise, without affecting credibility in international markets. On the contrary, non-resident transactions can be discouraged by sudden policy reversals, damaging sovereign credibility, and creating regulatory uncertainty. Residents thus remain the most restricted investor category to date. Within this class, the removal of restrictions for firms has preceded that for individuals.

Restrictions on the capital account still remain.⁶ These reflect the order and sequencing of capital account liberalization that India followed. After successive reviews of the liberalization process in India, the capital account has remained not fully open and debt flows are tightly managed. Mohan (2008) gives a clear account of the logic behind this approach: the government considers that capital inflows in excess of the domestic absorptive capacity can lead to overheating in the economy and create asset price bubbles. Abrupt reversals of short-term debt inflows, in particular, can be detrimental to the real economy. Regulation discriminates against debt flows in two ways:

- Foreign investors' participation in the domestic government bond market is capped.

⁶ For a comprehensive listing of these, see Kohli and Belaisch (2012).

- Indian corporates can borrow abroad above a minimum maturity and below a maximum interest cost. These limits vary per economic sector, depending on perceived needs.

The pace of capital account opening—slow and gradual—has often been commented upon by observers. This is not specific to capital account liberalization alone; much of India's reform process is characterized by gradualism (Ahluwalia 2002). When compared with major OECD countries, however, the pace of liberalization in India has not been that slow. From adopting the OECD code on capital movements in the early 1960s to the complete dismantling of controls in the 1980s, Japan, the United States, the United Kingdom, and Germany took, on average, 20–25 years to fully liberalize their capital accounts (Griffith-Jones et al. 2000).

Historical experience does not obviously make the case that India's choices are different from others. However, it is hard to argue with the evidence that financial openness remains limited in India today, particularly when compared with many other emerging market economies. Measuring financial globalization is inherently difficult and there are many measures, *de jure* and *de facto* (Prasad 2009); the former often shows conflicting results for India, for example, an oft-quoted index, the Chinn-Ito index of financial openness which measures a country's degree of financial openness,⁷ accorded India a score of –1.13—the lowest, or the least capital openness—in 2007, compared to 0.99 for Brazil, 1.18 to Indonesia, –0.09 to Malaysia, 0.14 to the Philippines, and –1.13 to Thailand. Mohan and Kapur (2009) question the validity of this index though as it remains unchanged for India since 1970 save for a minor blip in 2000 despite a large change in India's external openness.⁸ In contrast, Prasad (2009) compares India's openness vis-à-vis different measures to find that it lies mostly at the low end of the distribution in 1995, moving up significantly in a decade, according to some other measures.

⁷ The index measures a country's degree of financial development. It is based on binary dummy variables that codify the tabulation of restrictions on cross-border financial transactions reported in the IMF's Annual Report on Exchange Arrangements and Exchange Restrictions (AREAER). It takes into account the following four categories of restrictions: (i) presence of multiple exchange rates; (ii) restrictions on current account transactions; (iii) restrictions on capital account transactions; and (iv) requirement of the surrender of export proceeds.

⁸ They note that likewise, indices for Thailand, Korea, and the Philippines also suffer inertia for extended periods. They attribute it to the fact that such studies and the IMF's AREAER view capital account openness as a binary event: either open or closed, when in fact it should be seen as a process.

THE EXPERIENCE: OPPORTUNITY AND VOLATILITY

How has India benefitted from its rising level of financial globalization? What opportunities has it created? There are a few existing studies that attempt a wholesome, in-depth appraisal although several studies examine one or another aspect, for example, efficiency gains from stock market integration (Joshi 2008) and greater vulnerability in times of distress from increased market integration levels (Mukhopadhyay 2009) among others. An early account of macroeconomic effects of financial opening is Kohli (2003); Prasad (2009) offers a comprehensive and recent macroeconomic perspective while Kohli and Belaisch (2012) specifically examine the real and financial effects of capital inflows and the role of capital controls in that context. Comparative India–China experiences can be found in Rogoff (2003) and Lane and Schmukler (2006).

This section attempts to fill this gap, but in a simple, broad brush assessment against the backdrop of the first section and without any claim to causality where applicable. Descriptive statistics are used for the purpose. The measure of financial globalization is gross capital flows, which is a good measure of the gross underlying exposure of an economy to cross-border financial flows as it accurately captures the stress that emerging economies can face in surges and a drought of liquidity.

Figure 8.1 depicts India's rising financial integration over time in gross terms; net capital flows bring out the capital flows' cycles more clearly. Foreign capital levels are observed to steadily rise after 2001. This is followed by a surge in the build-up to the global financial crisis in 2008; a sharp reversal thereafter; the return of the tide in 2010 and then again, a drought. As share of GDP, gross capital flows more than doubled between 2005 and 2007 to US\$ 770 billion, a 10-fold increase over 2000 levels. The net capital account more than doubled from 4 per cent of GDP in 2004–5 to 9.3 per cent of GDP in 2007–8, reflecting the fast pace of integration with global financial markets.

This boom turned into bust when foreign capital reversed following the 2008 crisis; net capital flows collapsed to 0.6 per cent of GDP. Post-crisis, India's gross exposure is about 50 per cent of GDP with the net capital account averaging 3.5 per cent of GDP. Figure 8.2 dissects the quality of foreign capital entering India. Portfolio and loans, relatively more volatile categories, dominate with more than two-fifth shares in overall net capital

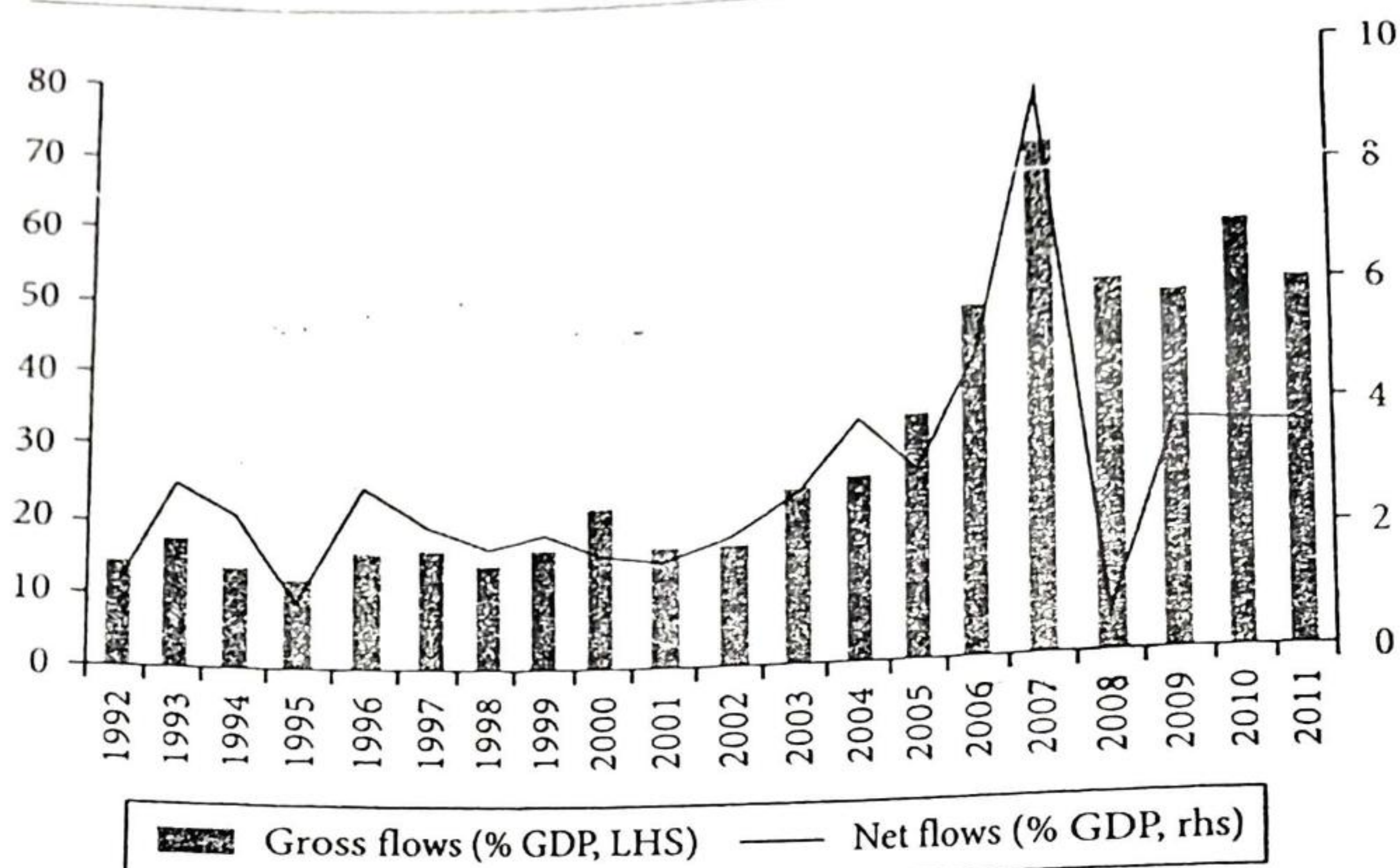


FIGURE 8.1 India: Capital Flows (percentage of GDP)

Source: RBI & author's calculations.

flow on average. Stable and long-term flows like foreign direct investment have lagged with an average 30 per cent share in net capital flows since 2005–6.

How has this benefitted India? There is little doubt that high growth rates and low, stable inflation and interest rates accompanied this financial globalization (Figure 8.3 and Table 8.1). During 2000–2 and 2010–11, financial openness almost trebled to about 50 per cent of GDP while average GDP growth rates nearly doubled from 4.5 to 8.9 per cent. But this does not necessarily imply an association as the period is characterized by significant structural changes in many spheres of India's economic policy. Global GDP grew at a brisk 5 per cent on average from 2004 to 2007 and global inflation remained below 4 per cent, a phase commonly described as the Great Moderation.⁹

Nonetheless, growth-inducing channels of financial globalization that work through an expanded pool of resources and lower cost of capital to

⁹ A phrase, originally attributable to James Stock and Mark Watson who used it to describe the reduction in economic volatility from the mid-1980s ('Has the Business Cycle Changed and Why?', *NBER Macroeconomics Annual*), but then popularized to suggest improved monetary policy by advanced countries' central banks, particularly of the US Federal Reserve (Bernanke, 'Ben The Great Moderation', remarks before the Eastern Economic Association, Washington, DC, 20 February 2004).

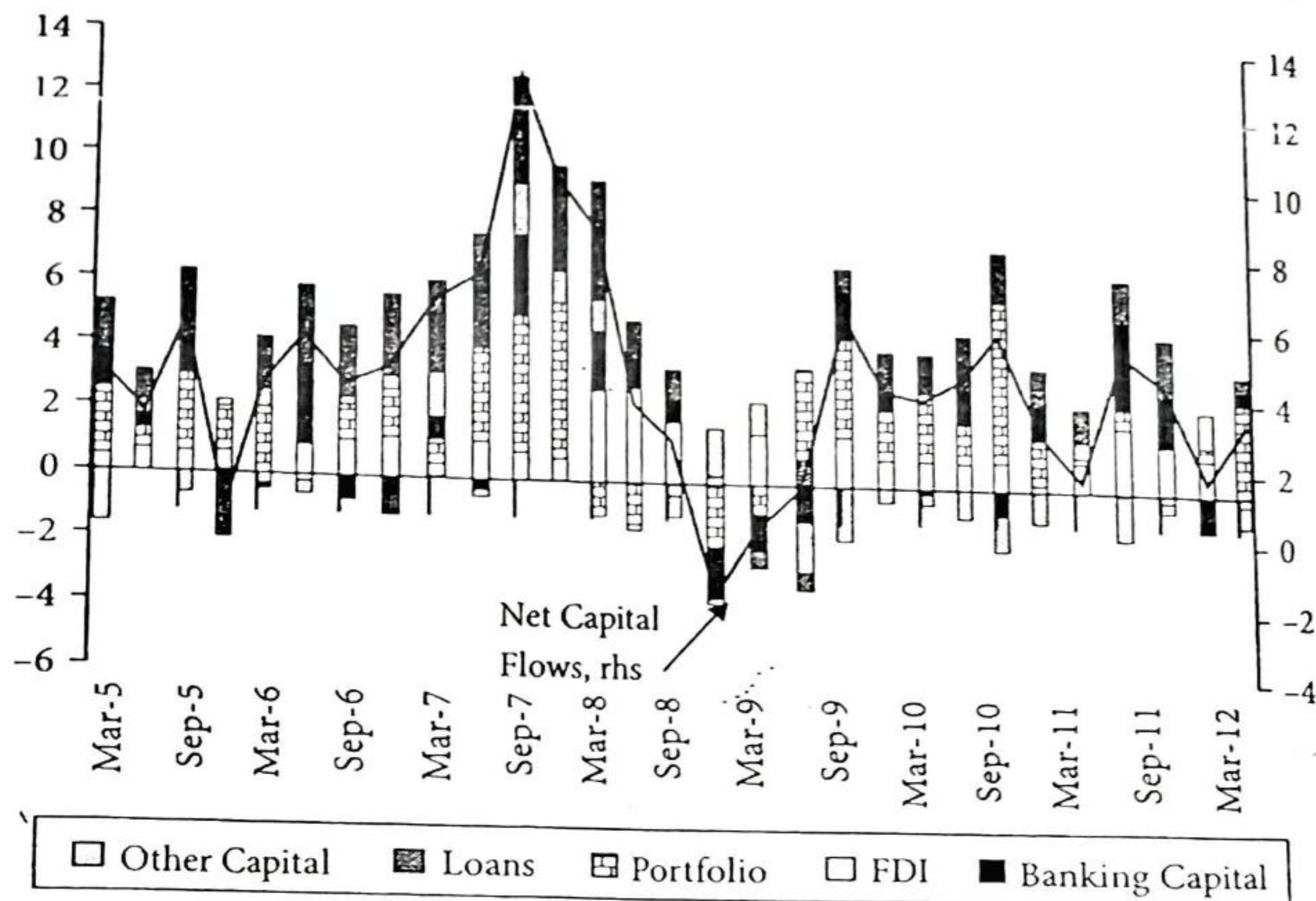


FIGURE 8.2 India: New Capital Account and Components (percentage of GDP)
Source: RBI, CEIC database and author's calculations.

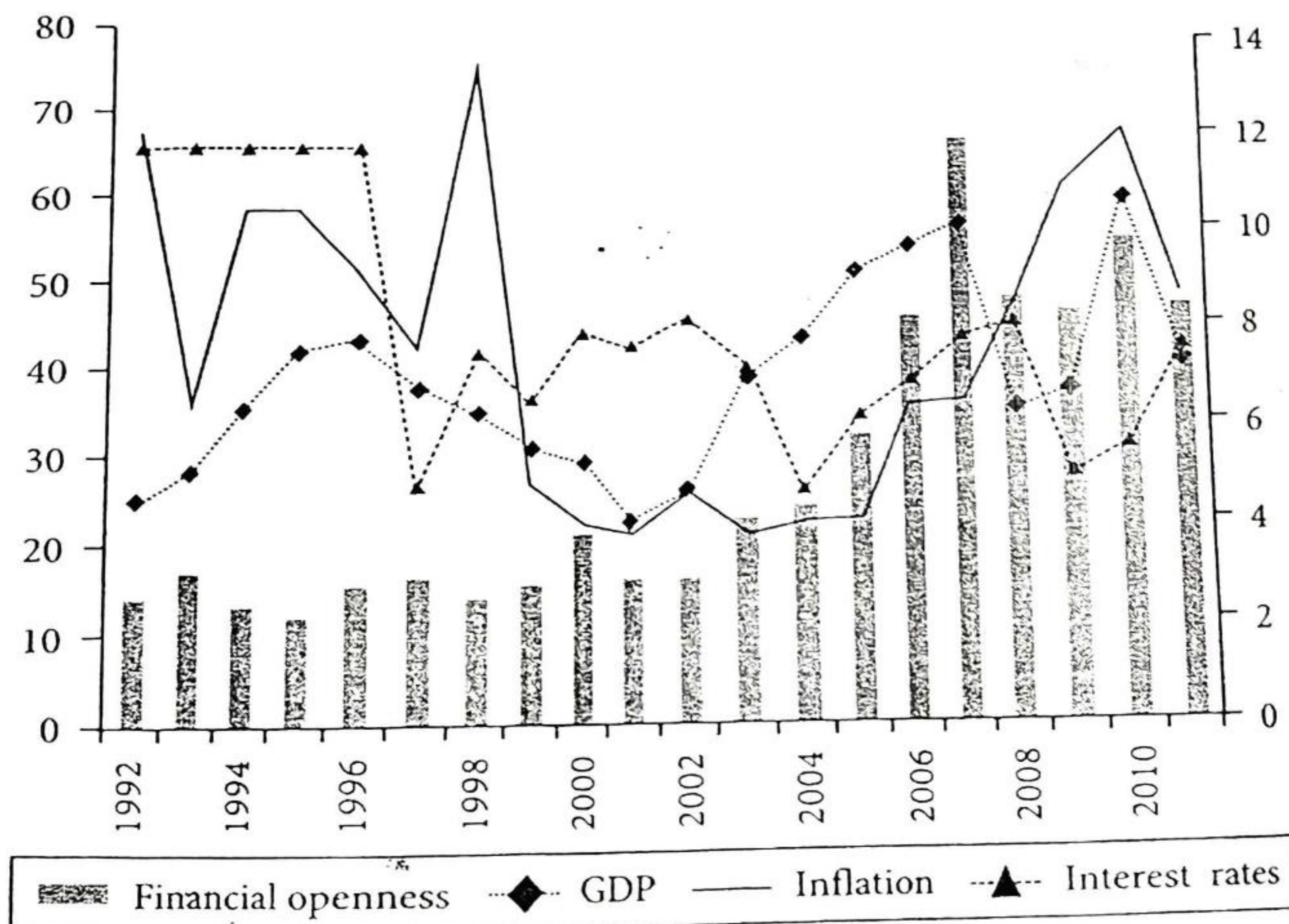


FIGURE 8.3 India: Financial Globalization, Growth and Inflation (percentage)
Source: IMF and author's calculations.

Table 8.1 India: Financial Openness, Growth and Macroeconomic Discipline

	Financial openness	GDP (in per cent)	investment rate	inflation 1/	interest rates 2/	Fiscal deficit 3, 4/	Current account 3/
2000–2	17.9	4.7	24	4.7	7.7	9.7	0.4
2003–7	38.6	8.9	34	5.5	6.4	6.3	–0.3
2008–9	47.8	7.4	37	6.0	6.5	9.0	–2.6
2010–11	51.8	7.5	32	9.3	6.6	7.83/	–3.4

1/ Wholesale prices

2/ Repo rate average for the period

3/ As a percentage of GDP

4/ Combined fiscal deficit; assumed at 8.3% of GDP for 2011–12 as final data not available

Source: IMF, RBI and author's calculations.

raise investment-GDP shares and output can be observed in the Indian case. Illustratively, investment rates rose from 24 per cent at the start of the 2000s to a peak of 38 per cent of GDP by end-2010. Alongside, corporate financing patterns changed to absorb higher shares of external funding—this is now almost one-thirds of their overall financing. Effective borrowing costs have fallen significantly since 2000 relative to bank lending rates (Jangili and Kumar 2010). Easing of financing constraints undoubtedly facilitated growth. For example, the level of external commercial borrowings, selectively permitted with caps on quantity, interest rates, maturity, and so on, rose from a monthly average of US\$ 880 million in 2004 to US\$ 2.5 billion by 2007 at the peak of India's economic growth cycle; these average US\$ 2–2.5 billion post-crisis too. Foreign direct investments have risen 7-fold and are in line with patterns observed in countries like China which also saw large increases in inward FDI following liberalization. Simultaneously, outward direct investments by Indian firms have risen 5-fold in this period.

Has financial globalization fostered macroeconomic discipline? Table 8.1 presents key macroeconomic indicators of inflation, fiscal and current account balances. Inflation rates tumbled down into a range of 4 per cent until the mid-2000s but have resurged to high levels thereafter. As Figure 8.4 shows, low domestic inflation was closely linked to the global phase of low inflation, but as the commodity cycle turned up, domestic inflation surged. This was additionally fuelled by domestic supply constraints



in relation to overall demand. Likewise, fiscal balances that shrank to 6.3 per cent of GDP on average in 2003–7, have rebounded to unsustainably high levels since the crisis. The current account gap, which widens with higher growth rates, has expanded unsustainably in the last decade with rising dependency on short-term financing from abroad. *Prima facie* therefore, there is little evidence of the disciplining effect of financial globalization in India.

Has financial globalization led to higher volatility? The increasing co-movements of output, price, and interest rate (Figure 8.4) indisputably reflect the synchronization of the Indian business cycle with the global one. Specifically, Ang (2011) finds consumption volatility to rise after financial liberalization, consistent with other findings. A quick statistical preview on the behaviour of these aggregates over 1997–2002 and 2003–11 (quarterly data) shows that GDP volatility—measured by the coefficient of variation—more than doubled from 0.12 to 0.31, while private consumption was nearly three times as volatile (0.11 and 0.30 respectively). Inflation

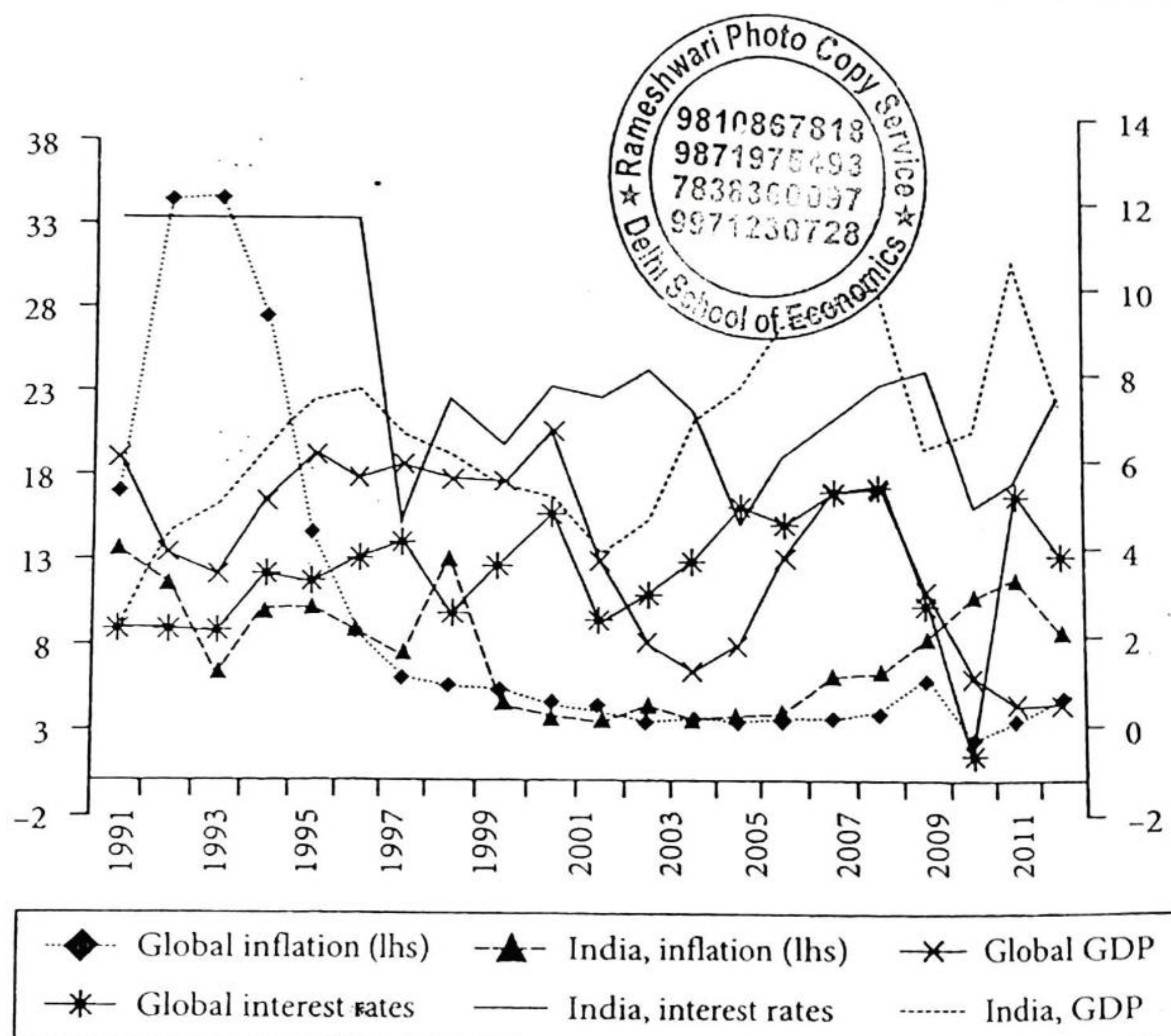


FIGURE 8.4 India: Global Macrolinkages

Source: IMF, RBI and author's calculations.

volatility was range-bound (0.38–0.44) throughout. Real exchange rate variability increased significantly; measured by the standard deviation of the monthly percentage change, nominal exchange rate volatility was double (3.0) in 2011 relative to 2002.

Development of financial markets has accompanied financial globalization for sure, although it is hard to attribute this to openness as major policy efforts also took place simultaneously (Mohan 2008). The stock market, first to be opened to foreign investors, grew in size; market capitalization (in US dollar terms) rose three-fold between 1991 and 2000, and seven times thereafter to US\$ 1 trillion in 2011. The base is wider as the number of listed firms more than doubled in two decades to 2011; it has acquired depth and liquidity, comparing favourably with advanced and emerging country markets (*ibid*). But India's bond market—mostly closed to foreign investors who hold under 5 per cent of the public debt stock—is neither very deep nor liquid, remaining under-developed (Gopinath 2010). While the government bond market is well developed—at about 30 per cent of GDP, comparing well with countries like the US and Singapore (42 and 28 per cent of GDP)—and has a liquid yield curve, high turnover volumes, and market liquidity, the corporate bond market remains small—at about 3 per cent of GDP it is 30 per cent the size of China's market.

Financial volatility and hence, macro-financial stability risks have risen due to increased transmission of external financial shocks from abroad. It is not just the aggregate exposure of the economy that is relevant here; the composition of flows matters too. Figure 8.5 presents the volatility characteristics of non-FDI and FDI flows into India using monthly data divided into three time periods that roughly correspond to tranquil, turbulent, and crisis times. By all measures and at all times, FDI is far more stable than non-FDI flows, consistent with existing evidence. Within non-FDI flows, it is portfolio capital that is the most volatile, with non-resident deposits and foreign loans relatively more stable. Volatility has increased over time too, going up significantly during a crisis.

The Indian stock market is highly correlated with, and impacted by global events, especially in the US and Europe (Figure 8.6). The significant influence exerted by foreign portfolio capital (Batra 2003; Chakrabarti 2001; Raj and Dhal 2008) points towards the rising contagion and spillover risks that inevitably accompany financial globalization. The stock market is increasingly a conduit for the transmission of external shocks, find Kohli and Belaisch (2012), who find a standard liquidity channel at play via the stock market, the most open segment of the financial system. In turn, capital flows and stock market volatility also explain a larger part of

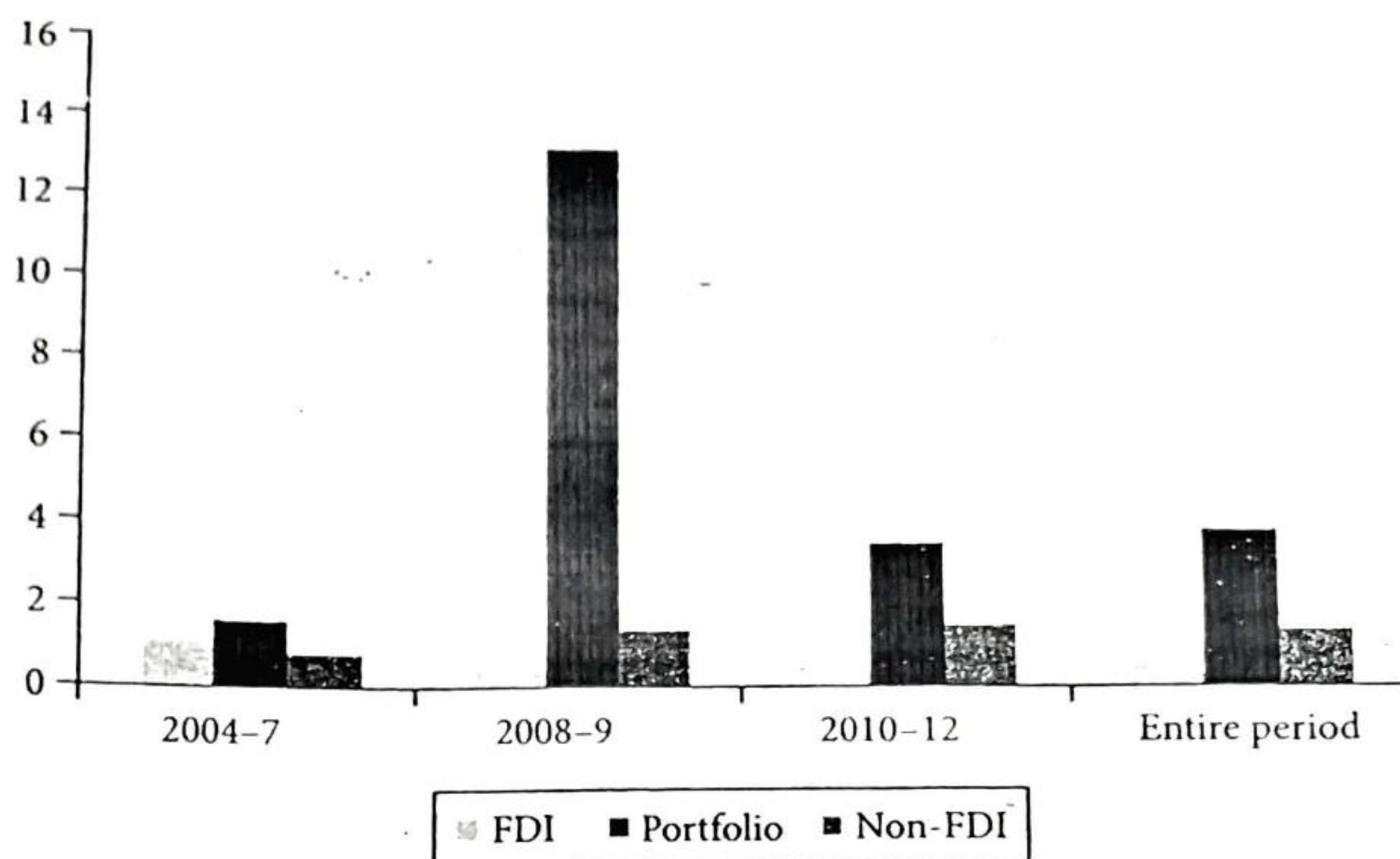


FIGURE 8.5 India: Volatility of Types of Capital Flows (Coefficient of Variation)
Source: Author's calculations with data from RBI.

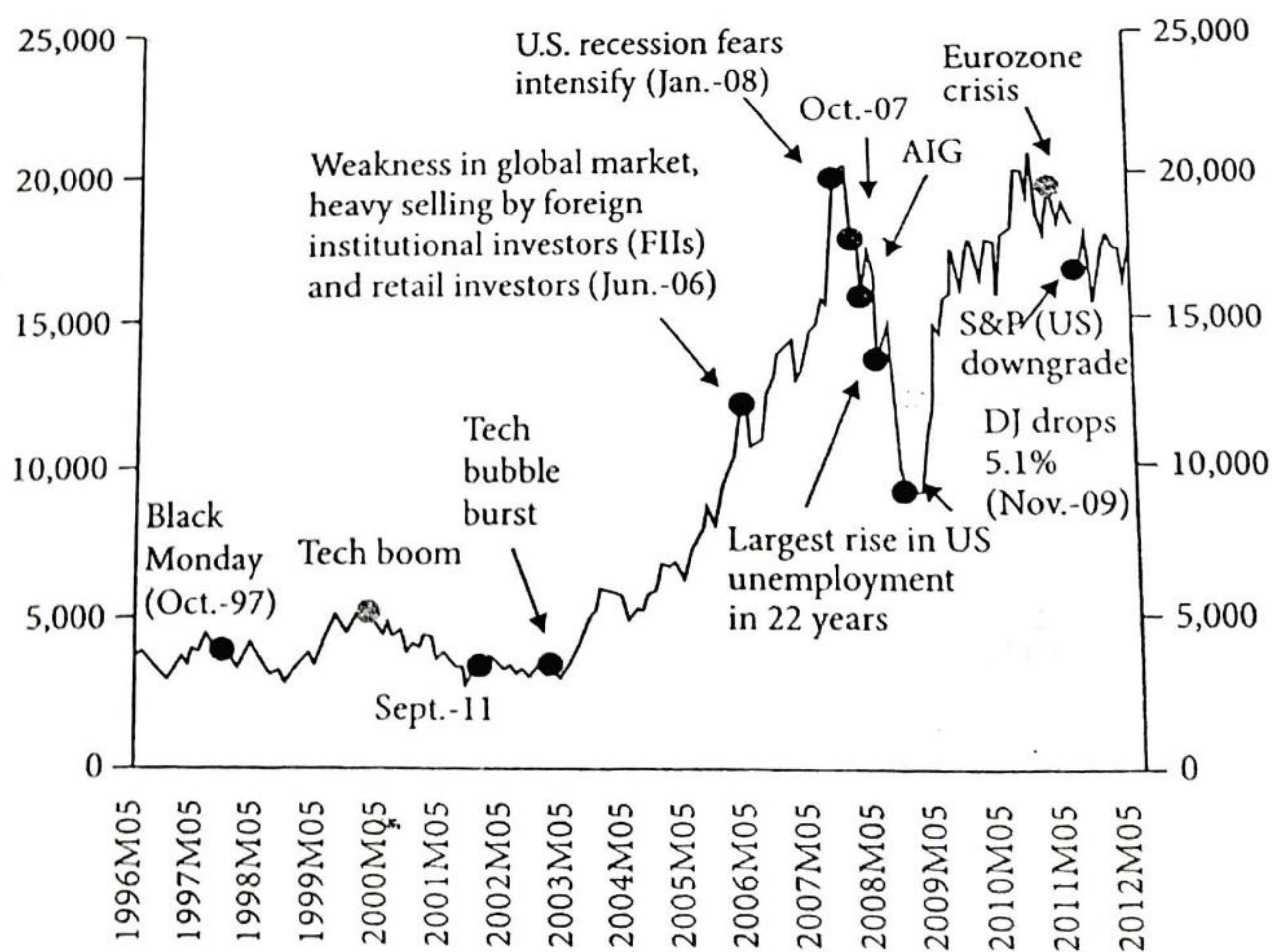


FIGURE 8.6 Foreign Pressures on Indian Stock Market (Sensex index)

bond yield volatility in recent times, although real activity still remains relatively insulated, a finding that matches RBI's (2010), which examines the impact of the global financial crisis on India.

Rising risks to financial stability that have accompanied financial globalization also pose questions of how to manage these. The next section discusses these issues.

MANAGING THE CHALLENGE

India's macroeconomic conditions have shaped the pattern of its financial globalization. This provides a framework for managing it too. Both design and fortune allow India a structure that supports an intermediate exchange rate regime. A partially-closed capital account and a reasonable absorptive capacity, that is, current account deficit, enable resolution of the trilemma, or the inability to simultaneously realize the three goals of free capital mobility, a fixed exchange rate, and a monetary policy devoted to domestic objectives.

The macro-monetary framework is characterized by significant capital controls, notably, on debt flows, which help maintain the domestic-foreign interest rate wedge. Controls also provide a policy tool for calibrating short-term capital flows. The second structural feature that supports simultaneous balancing of the exchange rate and price stability goals is a deficit on the current account. This helps moderate real exchange rate appreciation pressures; conversely, exchange rate flexibility assists adjustment of the deficit. These structural settings play a key role in policymakers' ability to dynamically iterate between the three objectives of capital mobility, exchange rate flexibility, and price stability. The parameters are varied according to macroeconomic conditions, with the restricted debt market playing a key role. The chief elements in managing capital flows are summarized in Gopinath (2011) as:

- An explicitly stated active capital account management framework, based on encouraging non-debt creating and long-term capital inflows, discouraging debt flows;
- Retaining the policy space to use multiple instruments—quantitative limits, price based measures as well as administrative measures;
- Allowing short-term debt only for trade transactions;

- Avoiding the 'original sin'—excessive foreign currency borrowings by domestic entities, especially the sovereign;¹⁰
- Prudential regulations to prevent excessive dollarization of balance sheets of financial sector intermediaries, particularly banks;
- Caution towards liability dollarization by domestic entities; and
- Significant liberalization of permitted outward investments by residents.

Under this approach, Indian policymakers have so far managed capital flows through a combination of policy responses—reserve accumulation-cum-sterilization, part feedback into money supply, exchange rate flexibility, liberalization of outflows, and occasional use of capital controls in extreme situations, but only for domestic residents so as to not impact foreign investments (Kohli 2011).

Accumulation of reserves, along with partial feedback into money supply, has been an important first-round response. Table 8.2 shows the substantial increase in foreign exchange reserves (US\$ 57 billion) by 2006–7 over previous levels, reflecting accumulation of capital account surpluses in excess of absorptive capacity. The monetary impact of foreign currency purchases, that is, forex intervention, is countered through sterilization. For example, between March 2007 and December 2007 when capital inflows surged, almost 43 per cent of net foreign exchange purchases were sterilized by the central bank on average, with partial feedback into money supply. There is a cost associated with this response—the interest rate differential between the foreign and domestic currencies—that devolves on the government balance sheet; illustratively, sterilization costs were 0.42 per cent of GDP (US\$ 4.9 billion) in March 2008 from a small 0.02 per cent of GDP in January 2006. Exchange rate flexibility or adjustments through a change in the value of the currency has been another tool. India's exchange rate regime is progressively flexible with a shift to a more flexible exchange rate regime in 1997–8. This has assisted managing the increasing financial integration of the economy (Figure 8.7). An index measure of exchange rate flexibility¹¹ derived from the relationship between the

¹⁰ Originally proposed by Barry Eichengreen and Ricardo Hausmann in 1999 to refer to the inability of countries to borrow abroad in their domestic currencies.

¹¹ Index calculated as the standard deviation of change in the nominal exchange rate (monthly average of daily difference vis-à-vis the US dollar) with respect to its sum with monthly change in foreign exchange reserves as ratio to change in monetary base (one-month lag). It takes values from zero to one, with lower values signifying relative inflexibility.

Table 8.2 India: A Decomposition of Reserve Buildup
(in billions of US\$)

	1998-2000	2001-5	2006-7	2008-9	2009-11	Changes			
						2001-5 -1998-2000	2006-7 -2001-5	2008-9 -2006-7	2009-11 -2008-9
Increase in foreign reserves	4.4	21.7	79.1	-57.7	14.1	17.3	57.3	-136.8	71.9
Current account balance	-3.8	2.3	-12.7	-27.9	-54.1	6.1	-14.9	-15.3	-26.2
Current account balance	9.2	17.9	75.9	7.4	60.5	8.7	58.0	-68.5	53.1
FDI, net	2.6	3.4	11.8	22.4	16.5	0.8	8.4	10.6	-5.9
Errors and omissions, net	0.1	0.1	1.1	0.4	-1.8	0.0	1.1	-0.7	-2.3
Non-FDI capital account balance (incl. errors & omissions)	6.7	14.6	65.2	-14.5	42.2	7.8	50.7	-79.8	56.7

Sources: RBI and authors' calculations.

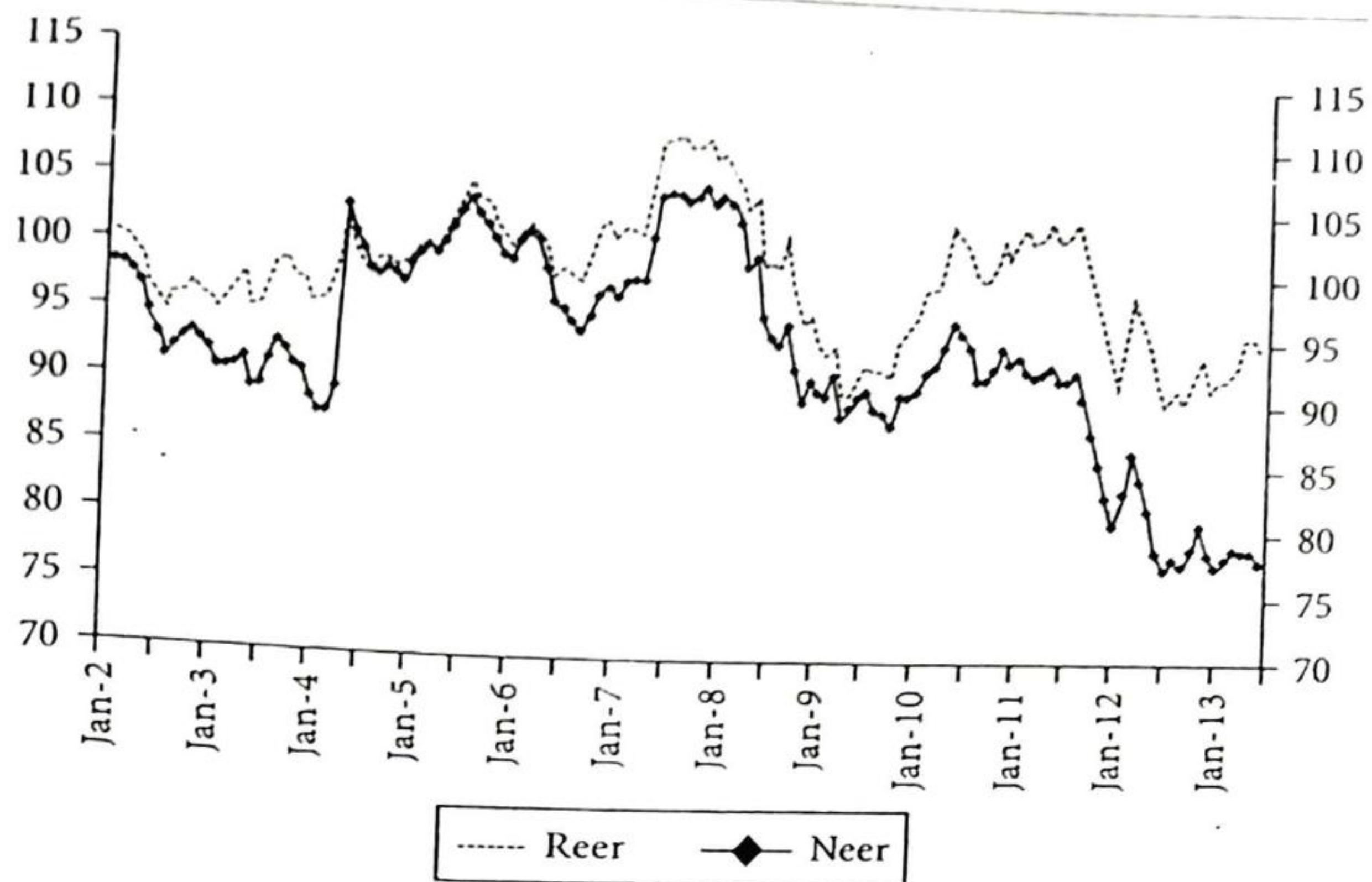


FIGURE 8.7 India: Exchange Rate Flexibility

Source: RBI.

nominal exchange rate and foreign exchange reserves shows that the index increased from 0.85 in April 2006 to 0.91 May 2007 onwards, reflecting a rise in flexibility relative to historical values, and in relation to advanced and emerging economies (Kohli 2011).

Monetary management and exchange rate flexibility are supplemented by macro-prudential measures and occasionally, capital controls. Macro-prudential tools range from varying risk weights and provisioning requirements for bank credit to the property sector; sector exposure limits for bank credit to sensitive sectors, for example, the capital market; loan-to-value ratios applying to real estate; and margin requirements and the build up of foreign currency liabilities in segments vulnerable to sharp price fluctuations (RBI 2012). These were especially used ahead of the 2008 crisis to restrain asset price inflation and a credit boom and were effective in preventing build-up of financial vulnerabilities. When the crisis struck, banks in India emerged unscathed with healthy balance sheets; households and firms were neither over-leveraged nor overtly hit by the fall in the stock prices that followed.

Capital controls have also been used after other options have been exhausted or overused. *Inter alia*, these include curbs on residents' access to overseas borrowings and/or capping conversion to domestic currency; restricting participatory notes (PNs), an offshore derivative products

allowing overseas retail investors exposure to and so on (Gopinath (2011) and Kohli (2011). These are effective in varying degree, for example like easing restrictions on financial investments little or no impact due to the pro-cyclicality of cyclical macro-prudential restrictions on banks' balance sheets from the financial shock that follows overseas loans by residents led to some moderation in borrowings.

Balancing the two objectives of exchange rate and price stability has not been without its share of problems, notably of retaining capital mobility. Some have argued that India's *de facto* openness under capital controls, for example, Patnaik and Shah (2009) argue that capital controls have not worked as a tool of macroeconomic policy. The correct approach is to maintain capital mobility, however, is subjective. The correct approach is to maintain capital mobility is successful in bridging the domestic-foreign market integration that it is designed to achieve; as long as the interest rate differential is maintained, capital controls are binding. There is evidence that domestic-foreign interest differentials are significant and persist (Hutchison et al. 2010; Ma and McCauley 2007); convergence of interest rates, increasing, is as yet incomplete (Kohli 2009); and incomplete integration due to a restricted presence of foreign investors in the domestic market provides a degree of short-term monetary autonomy to the central bank (Kohli and Belaisch 2012). IMF (2010) mentions India as one of the countries where capital controls are effective, not the least because of the implementation capacity, that is, institutional and administrative structures, for their enforcement.

In a post-crisis review of lessons from international finance for emerging countries, Obstfeld (2009) cites India and China as examples of how imperfect mobility of capital can resolve the trilemma. Besides the conflict between monetary and exchange rate objectives, capital controls have implications for trade policy. For example, export earnings' repatriation, quantitative caps, end-use restrictions on residents' foreign borrowings and investments, and foreign investments in asset and some goods markets do influence real economic activity, although below a threshold level of financial development the trade-off might well be of lesser risk. Last, market participants are tempted to take on more risk in the presence of capital controls, like exploitation of temporary opportunities for cross-border arbitrage through non-deliverable forward markets for rupee-dollar trades that have arisen in Singapore and Dubai, disguised

re-entry of foreign loans raised by domestic firms as portfolio equity inflows, non-resident Indian deposits and build-up of unhedged positions driven by expectations of exchange rate fluctuations.

CONCLUSION AND APPRAISAL

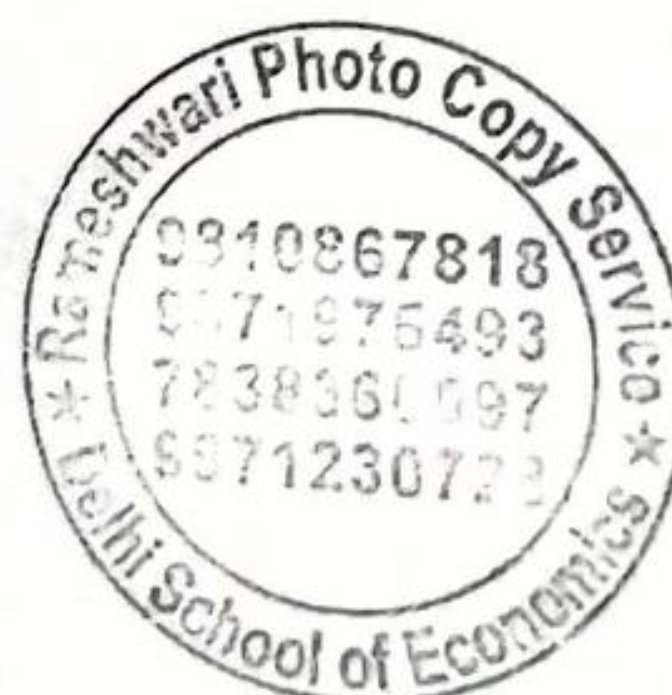
Concluding with an appraisal of India's experience with financial globalization, especially in the light of the financial crisis of 2008 that exposed its several undesirable dimensions, is useful. Many assumptions underlying the functioning of financial markets have become questionable post-crisis, while regulation and supervision of financial markets and participants has come under severe scrutiny (Turner Review 2009).¹² A number of perspectives therefore illuminate India's experience in this regard.

One standpoint of assessment is the reversal in the approach of international organizations towards handling of global financial flows. This has now reversed to incorporate capital controls and emphasize macro-prudential measures in a revised framework (IMF 2011) that closely mirrors India's capital account management framework; this is a testimony of the resilience and success of India's structure. Another perspective is of 'limited financial globalization'. Rodrik¹³ observes that countries that were least globalized financially were the least hit by the crisis. McCauley and Ma (2009) document that throwing 'sand in the wheels of finance' helped Asian countries like China, India, South Korea, and Thailand insulate them from the crisis. Among the tools they identify are limited roles of foreign banks in the domestic banking system and restriction of cross-border arbitrage in foreign currency, money, and bond and equity markets.

Yet another measure of appraisal is the counter-factual: How has India fared when deviating from its intervention-reserve accumulation-limited exchange rate appreciation strategy? Table 8.2 illustrates such a departure from 2009. Despite a recovery in capital flows in 2009–11 after the crisis, India's reserves' increase was US\$ 72 billion over a negative change of US\$ 139 billion, that is, the US\$ 58 billion erosion in reserves in 2008–9

¹² See Turner Review (2009) for a full discussion on these issues (The Turner Review: A regulatory response to the global banking crisis, March 2009, Financial Services Authority, UK).

¹³ http://rodrik.typepad.com/dani_rodriks_weblog/2008/11/can-you-resist-financial-globalization.html, 7 November 2008.



was never fully recouped as the central bank followed a hands-off exchange rate policy from 2009, reversing a policy of managed float. The currency adjusted fully to heavy capital inflow; illustratively, the non-FDI capital account balance swelled by US\$ 57 billion over 2008–9 levels with higher purchases of debt and equity securities stocks by foreign investors as the two main contributors. Exchange rate appreciation—significant in both real and nominal terms (Figure 8.7)—led to a steadily expanding current account deficit that doubled in 2009–11 over 2008–9 levels (Table 8.2). This was fed excessively by short-term capital, which reversed suddenly as the risk sentiment deteriorated over feeble US and euro zone recoveries in mid-2011. The currency value had plunged more than 20 per cent with adverse macroeconomic consequences, notably of financing a current account deficit of proportions as large as 4–4.5 per cent of GDP by March 2012.

Looking ahead at future challenges that financial globalization poses for India, this experience is illustrative. Above all, it exposes the severe external financing risks that India courts in following a hands-off exchange rate policy at a stage of development when it is unable to finance its import needs through sufficient export earnings and its fiscal position precludes long-term, stable financing of its internal and external deficits. It also highlights the severity of risks arising from short-term, speculative capital flows that are destabilizing, excessively volatile, and disruptive to real economic activity. And it underlines the importance of reserves' accumulation as an essential tool in the armoury to tackle foreign capital purely driven by risk sentiments that can switch suddenly.

It would be fair to say then that a cautious, gradual attitude towards financial globalization that balances the financial and real development of the economy is the best course for India. This of course, is the pre-crisis approach that helped protect the country from too-adverse a hit. This now needs supplementing with enough policy space to combat the increased risks to financial instability from global financial flows. The policy range includes fiscal and monetary responses for which both fiscal deficit and inflation need to be kept at prudent, manageable levels. Alongside, building of reserves needs to return, while some capital controls—notably on debt flows—need to be retained until such time when India's macroeconomic foundations are sustainably strong, the development of financial markets reaches sophistication levels observed in advanced countries and is supplemented with better regulation and supervision. Finally, international regulations to restrict short-term, speculative capital movements will be a useful area for coordination by the country.