

India
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Keywords

Glossary

BSE Bombay Stock Exchange, the second largest financial exchange.

CMIE Centre for Monitoring Indian Economy

FII 'Foreign institutional investor'.

FII framework The system of capital controls that was setup for foreign capital flows in the early 1990s, where only foreign financial firms who registered with SEBI as 'FIIs' could bring capital into India.

NSE National Stock Exchange, the largest financial exchange.

RBI Reserve Bank of India, the central bank.

SEBI Securities and Exchanges Board of India, the regulator of securities markets.

Abstract

India embarked on reintegration with the world economy in the early 1990s. At first, a certain limited opening took place emphasising equity flows by certain kinds of foreign investors. This opening has had myriad interesting implications in terms of both microeconomics and macroeconomics. A dynamic process of change in the economy and in economic policy then came about, with a co-evolution between the system of capital controls, macroeconomic policy, and the internationalisation of firms including the emergence of Indian multinationals. Through this process, *de facto* openness has risen sharply. *De facto* openness has implied a loss of monetary policy autonomy when exchange rate pegging was attempted. The exchange rate regime has evolved towards greater flexibility.

1 From autarky to reintegration

In 1940, when India was under colonial rule, restrictions on international trade and capital mobility were imposed throughout the Sterling Area as wartime measures. India gained independence in 1947, and continued with autarkic policies, with a marked closing of the economy in the 1960s and 1970s. By 1991, with experience and international comparisons for 44 years in hand, the intellectual and policy consensus had shifted against autarky.

India then embarked on reintegration into the world economy through trade and capital account liberalisation. Early initiatives in capital account decontrol were based on three ideas:

- It was believed that debt inflows and all outflows were dangerous; hence strong restrictions against debt inflows and all outflows were kept in place.
- It was believed that inflows into the equity market were beneficial, but only if they originated from certain kinds of investors. Thus investment vehicles such as pension funds and university endowment funds were considered good, while hedge funds and individuals were considered bad. Hence, a limited opening was undertaken, where certain kinds of ‘foreign institutional investors’ (FIIs) were able to register in India with the securities regulator, and then given substantial flexibility including the lack of quantitative restrictions.
- While the official rhetoric was in favour of FDI, the removal of capital controls against FDI was limited in many sectors. Deeper liberalisation of capital controls against FDI took place later.

This opening of the economy was a key element of India’s growth acceleration. The combination of these reforms of the capital account, and trade liberalisation, unleashed a complex dynamic of change in the economy and in economic policy.

In this setting, the analysis of India’s reintegration into the world economy is usefully organised around the following key questions. What were the microeconomic and macroeconomic consequences of this partial opening? How did capital account and current account opening interact with each other? What dynamic of change was unleashed in the political economy through the map of interests of gainers and losers associated with this mechanism of opening the economy? How did *de facto* openness evolve in the following two decades? While the bulk of these questions remain unanswered research

puzzles, there is clarity on some sub-components of this larger picture, which is sketched in the following sections.

2 Empirical facts about reintegration

Direct reductions in customs duties which were spread over the period from 1991 till 2003 led to a rapid and sharp rise in trade. Trade also grew in response to reductions in transactions costs of transportation, and to the emergence of tradeable services based on computer and telecommunications technologies. Combining these, gross flows on the current account, expressed as per cent of GDP, grew dramatically from 8 per cent in 1990, to 31 per cent in 2000 and 71 per cent in 2008.

In terms of *de jure* capital account restrictions, the Chinn-Ito measure showed no change at -1.13 through the entire period, while many steps in liberalisation did take place. This reflects the fact that the Chinn-Ito methodology, which is based on the IMF AREAER data, tends to portray India as closed, given the bureaucratic procedures which encumber all aspects of the Indian capital account. The Chinn-Ito result – of an unchanged score of -1.13 through the period – is correct in a cross-sectional sense, in that India’s capital account restrictions are more onerous than those used in most emerging markets. At the same time, in a time-series sense, India is significantly more open on a *de jure* basis in 2010 when compared with 1990, which is not shown by the Chinn-Ito measure.

The *de facto* capital account integration measured by the Lane and Milesi-Ferretti database showed little change from 1990 to 2000, with a gross investment position (excluding official reserves) growing from 30 per cent of GDP in 1990 to only 42 per cent of GDP in 2000. However, significant change was visible after that, with a value of 85 per cent in 2007. This marked acceleration of capital account integration after roughly 2000 recurs repeatedly in the discussion ahead.

The Lane and Milesi-Ferretti data understates capital account integration to the extent that economic agents engage in illegal capital account transactions, which appears to be a significant issue in India. There is some evidence of Indian residents holding significant assets outside the country, and evidence of a significant scale of misinvoicing on the trade account. While the literature has focused on evasion of customs duties as the rationale for misinvoicing, the Indian evidence shows no significant change in misinvoicing across a sharp

reduction in customs duties. This suggests a role for misinvoicing in the evasion of capital controls.

In terms of the distinction between portfolio flows and FDI, in India's case, capital account integration with the world economy was dominated by portfolio flows. FDI inflows remained small in the early period while portfolio flows took off. Much later, when FDI flows showed a sharp rise, two-thirds or more of these flows were accounted for by foreign private equity funds, who are financial investors, with decision making that is clearly linked to the stock market in terms of valuations and prospects of exit. Hence, the majority of what is reported as 'FDI inflows' into India actually reflects financial globalisation. India is thus unusual among emerging markets in having capital account integration dominated by the process of domestic firms accessing foreign capital through both portfolio investment into listed equity and investments into unlisted firms by private equity funds.

With both trade and capital account liberalisation, the opening of the economy has taken place gradually. As emphasised above, measures of trade and capital account integration showed substantial change from roughly 2000 onwards. This reflected a combination of policy gradualism, and the numerous areas in which institutional change was required as a concomitant of opening the economy.

There is sharp evidence of internationalisation at the firm level. Five dimensions of internationalisation can be examined:

1. A firm could import, thus buying raw materials and/or capital goods from foreign providers;
2. A firm could export;
3. A firm could obtain equity capital from external sources;
4. A firm could obtain debt capital from external sources (whether local-currency denominated or foreign-currency denominated);
5. A firm could expand overseas, thus placing foreign assets on its balance sheet.

In order to describe the extent of internationalisation of Indian firms, we define four categories:

None 0 percent

Low Between 0 percent and 10 percent

Medium Between 10 percent and 50 percent

High Above 50 percent

Using information from the CMIE database, we classify all large Indian firms into one of these four categories in all the four dimensions.¹

[Table 1 about here.]

Table 1 approaches internationalisation of Indian firms by reporting the fraction of aggregate firm size in each category. For our purposes, size is defined as the average of firm sales and total assets.

In 2001-02, 64 percent of total firms size involved corporations importing in the Medium or High categories. By 2008-09, this had risen to 66 per cent, a rise of 2 per cent. With exports, in 2001-02, 15 per cent of this mass was in either Medium or High. By 2008-09, the total firm size with export intensity in the Medium-High categories had risen to 20 per cent, a rise of 5 per cent. With both these trade-based measures, the change in international economic integration over this period was small. While the macroeconomic data on trade integration shows a sharp rise over this period, this data for large firms does not show a sharp change.

Large changes are, however, visible across this period with measures of financial internationalisation. In 2001-02, 40 per cent of the mass of Indian firms had either Medium or High equity investment. By 2008-09, this stood at 62 per cent: a sharp rise of 22 percentage points.

With foreign borrowing, in 2001-02, firms accounting for 39 per cent of the mass were in either Medium or High categories. In 2008-09, this had risen to 54 per cent – despite the stated policy of the government in aiming to deter debt inflows. Finally, with overseas assets, less than 1 per cent of Indian firms had either Medium or High overseas assets in 2001-02. By 2008-09, the number of Indian firms with Medium or High overseas assets had risen sharply to 6 per cent. Over half the mass of firms had non-zero outbound FDI.

A natural area of exploration lies in the interplay of internationalisation and financing constraints. An early literature found that the domestic financial system, and particularly the equity market, was sensitive to exporting status. Exporting firms faced reduced financing constraints. However, this evidence is based on the early 1990s, while the large changes in internationalisation of firm financing took place after 2000. These questions, hence, lie largely unexplored.

¹In 2001-02, there were 6,575 listed firms in India and in 2007-08 there were 6,268 listed firms.

3 Foreign portfolio investment in the equity market

In the early 1990s, India opened investment into listed equities through the 'FII framework'. This involved the following key elements. Some, but not all, foreign investors were eligible to register with the Indian securities regulator (SEBI). Once registered, FIIs could buy shares in India without quantitative restrictions, or constraints on repatriation. No one FII was permitted to own more than 5 per cent of a firm, and there were weak restrictions on the ownership by all FIIs taken together.

As the home bias literature has emphasised, there are many sources of home bias, and capital controls is only one element of these. In the event, when India embarked on a limited easing of capital controls against equity inflows, the home bias of foreign investors did not strongly change in response. Many other sources of home bias remained in place, including asymmetric information, capability of the domestic financial system, a limited number of listed firms of adequate size from the viewpoint of international investors, etc.

The desire of policy makers to encourage foreign investors in the Indian equity market, in the early 1990s, helped in reopening long-standing policy questions about the equity market. Foreign investors faced many difficulties in accomplishing transactions in the Indian equity market. As an example, in August and September 1993, the settlement system (which was based on physical paper share certificates) found it difficult to handle the settlement volume of foreign investors. Similarly, foreign investors who sent orders to the open outcry trading floor of the Bombay Stock Exchange found an array of problems including high transactions costs and low probability of order execution.

A first response of many Indian firms was to issue in New York or London through GDRs and ADRs, thus using the institutional capability of these financial systems, and bypassing the infirmities of the domestic financial system. In the early 1990s, there was a sharp increase in this issuance.

When faced with similar conditions, many other developing countries have experienced a hollowing out of domestic financial intermediation. When a weak domestic financial system is difficult to reform for political reasons, domestic firms tend to interact with foreign investors in international financial centres like New York or London, leading to a shift in financial intermediation to offshore venues.

In the Indian case, from 1993 to 2001, the Ministry of Finance and SEBI led a strong reforms effort aiming at a fundamental transformation of the equity market. The changes on the equity market from December 1993 to June 2001 were quite dramatic:

- Floor trading was replaced by electronic order books.
- Exchanges were demutualised, with an emphasis on sound structures of ownership and governance through a ‘three-way separation’ between shareholders, managers and trading members.
- Counterparty credit risk was eliminated through netting by novation at the clearing corporation.
- Exchange membership for foreign securities firms was enabled, thus making it possible for foreign investors to transact through their familiar securities firms.
- Physical share certificates were eliminated through dematerialised settlement at multiple competing depositories.
- Exchange-traded derivatives trading commenced on individual stocks and indexes. The NSE-50 (Nifty) index became the underlying for one of the world’s biggest index derivatives contracts, with onshore trading at NSE, offshore trading at SGX in Singapore and CME in Chicago, and an entirely offshore OTC market.
- A diverse order flow was accessed from all across India and abroad, through hundreds of thousands of trading screens. This gave heterogeneous views, and a large mass of investable capital.
- Asymmetric information was diminished through improvements in accounting standards and disclosure.
- The eligibility rules for FIIs were enlarged through time, so that thousands of FIIs were operating on the market, bringing both foreign capital and heterogeneous views.

The reforms of the equity market were spread over a decade, but they were not incremental parametric reforms. They were fundamental reforms where an old paradigm was dismantled and a new one put in its place. As a consequence of these changes, NSE and BSE achieved ranks 3 and 5 amongst global exchanges in terms of the number of transactions per year. These reforms led to a shift in the focus of foreign investors away from Indian securities traded in London or New York, and the primary markets for India-related equities trading became the NSE and BSE in Bombay.

These changes addressed one important source of home bias – the deficiencies of financial development in emerging markets – and are associated with a decline in home bias. In 1991, the weight of Indian equities in the portfolio of international investors was zero. In the first decade of India’s opening, this share rose to only 0.04 per cent, reflecting a largely unchanged extent of home bias against India. By 2007, there was a six-fold rise in this weight to 0.24 per cent, suggesting an easing (though not elimination) of home bias.

While India obtained significant financial development and capital account decontrol on the equity market, neither of these changes took place with the bond market and banks. In the same period, firms undertook strong deleveraging through emphasis on equity financing: the debt-equity ratio of large non-financial firms dropped sharply from 1.7 in 1991 to 0.7 in 2007. There may be a causal relationship here: when firms faced greater financing constraints on bond- or bank-financing alongside reduced financing constraints for equity financing, they may have shifted in favour of greater equity financing.

4 Concerns about financial globalisation

One area of concern is the extent to which foreign investors dominate the domestic financial system and price formation. A small literature has examined the interlinkages between foreign investors and the domestic financial system. In many countries, two-way Granger causality has been found, with foreign investors chasing local equity market returns, and the local equity index being influenced by foreign capital. In the Indian case, the turnover by foreigners has averaged just 12 per cent of total turnover, which suggests a relatively limited role for foreigners in price discovery. One-way granger causality *from* local returns *to* foreign investment has been observed in some time periods. This may reflect the extent to which domestic financial development succeeded in obtaining a liquid equity market, which was then able to absorb shocks to order flow from foreign investors to a greater extent.

Another concern has been of an *en masse* exit by a herd of foreign investors in a crisis. However, with thousands of foreign investors in India, there has been heterogeneous views, and in each crisis, some foreigners have been buying while others have been selling. The evidence accumulated across a diverse array of events does not show large exit by foreign investors.²

²This includes: The terrorist attack on Parliament in 2001, the riots in Gujarat in 2002, the election results of 2004 which brought the UPA government to power, the terrorist

In the literature on financial globalisation and emerging markets, there have been concerns about the limited knowledge with foreign investors, which (in turn) leads to behaviour such as herding, sudden capital flow reversals, etc. In the Indian experience on the equity market, the behaviour of foreign investors has been benign.

The exploration of the factors underlying this difference is important. India's path in capital account liberalisation – with no quantitative restrictions, access to the Indian market for a large *number* of heterogeneous foreign investors, and with the ability of foreign securities firms to operate in Indian financial markets – has also been conducive to long-term investments by foreign financial firms in building teams which understand India. For a contrast, India's rules on foreign investment into rupee-denominated bonds are inimical to the construction of teams and knowledge among foreign investors.

The presence of thousands of heterogeneous foreign investors of many kinds – ranging from pension funds to hedge funds – has helped shield the economy from the liquidity motivated orders emanating from any one group of investors in distress or facing correlated regulatory compulsions. The early opening of the capital account, where it was believed that only certain kinds of foreign investors should be permitted, induced homogeneity of foreign investors. However, incremental reform of capital controls has steadily increased the heterogeneity of the investor base.

The size and prominence of India in the world economy may have helped in giving foreign investors adequate incentives to obtain information and understanding about India. In these respects, India has a natural advantage in engaging with globalisation when compared with smaller countries.

5 The rise of Indian multinationals

In the late 1990s, capital controls against outbound FDI by non-financial firms were eased. This was unusual when compared with the backdrop of India's capital controls, where outward flows of capital by individuals or financial firms were prohibited.

With a lag of a few years, outbound FDI took place to a surprisingly large extent. By 2010, most of the largest 500 firms had converted themselves to multinationals to a varying extent.

attacks in Bombay in 2008, the Lehman crisis in 2008 and the Satyam crisis in 2009.

This phenomenon raises many interesting questions. Why were India's capital controls eased in this direction? Why did firms from India choose to embark on outbound FDI on a relatively large scale, early in India's development process? What explains the cross-sectional variation in outbound FDI? What are the linkages with other forms of internationalisation of Indian firms? What were the macroeconomic and microeconomic consequences of firms becoming multinationals?

The standard prediction of HMY-style models involves more productive firms embarking on outbound FDI. These models see outbound FDI as a way for exporters to avoid the costs of transportation of goods. However, production in India involves paying much lower wages, and the cost of transportation of most goods is likely to be outweighed by the wage difference. In addition, the industry where outbound FDI first took root – the software industry – is one where costs of transportation are near zero. Modified HMY-style modelling of outbound FDI by software companies yields a reversal of the HMY prediction: the *least* productive firms are predicted to do outbound FDI. The Indian evidence appears to support this prediction.

The rise of multinationals with significant intra-firm invoicing relationships has implications for tax compliance and the effectiveness of capital controls. The Indian corporate income tax, which has ranged from 30 to 35 per cent, is significantly higher than that prevalent in the median OECD country and much higher than that prevalent in tax havens. Hence, Indian multinationals have an incentive to shift profits to offshore locations.

In addition, Indian multinationals have an incentive to shift income to offshore locations in an attempt to avoid India's capital controls. Some of the activities which were forbidden for a parent could be undertaken by an offshore subsidiary. One example of these effects was visible after the Lehman default in September 2008. At the time, the system of capital controls prohibited Indian firms from obtaining offshore money market financing. Hence, Indian firms should have been relatively unaffected by the collapse of the global money market. However, in the event, the Indian money market was thrown into turmoil. The empirical analysis shows that these events strongly affected Indian multinationals.

6 The role of FDI

When compared with other emerging markets, India has attracted relatively little FDI. The first phase of financial globalisation primarily involved Indian firms obtaining equity and debt capital from abroad, thus achieving a reduction in the cost of capital. This bolstered the competitive position of Indian firms competing against foreign companies producing in India through FDI and competing in global markets by exporting.

When FDI into India did rise significantly from 2002 onwards, as much as two-thirds of this FDI took the form of foreign private equity funds buying large stakes in Indian unlisted companies. This phenomenon can also be interpreted as foreign capital bolstering the competitive position of Indian firms competing against foreign companies producing in India through FDI.

This experience can be located in the debates about ‘FDI as bad cholesterol’ literature, where foreign *portfolio* investment is seen as a bigger accomplishment by an emerging market. FDI requires little institutional capability, while foreign portfolio investment requires high quality firms, domestic financial development, and capabilities in the legal and regulatory system.

7 Foreign borrowing

In the international literature and in policy thinking amongst emerging markets, the notion of ‘original sin’ has come to prominence. When the exchange rate regime gives out expectations of low currency risk, firms and governments are encouraged to borrow in foreign currency. Once currency mismatches are present, when large depreciations take place, this generates considerable distress.

Indian capital controls have been biased against foreign borrowing and particularly against short-dated foreign borrowing. This policy framework does not reflect an appreciation of issues of ‘original sin’. Strong restrictions are in place against FII investment in rupee-denominated bonds, while a much larger scale of offshore borrowing in foreign currency takes place. This policy framework has encouraged original sin by firms, particularly in periods when the exchange rate regime involved greater pegging.

These issues came to prominence in 2008, when exchange rate volatility rose, a sharp depreciation took place, and the global credit market experienced turbulence. This had an adverse impact on the balance sheets of many

Indian firms, particularly those which had borrowed abroad. The experiences of this period emphasised the weaknesses of India's policy positions on the three issues of original sin, the lack of development of the domestic bond market and the lack of development of a domestic banking system.

8 Effectiveness of capital controls and the exchange rate regime

The critical question in this field is: Are India's capital controls sufficiently onerous and sufficiently effective to give monetary policy autonomy alongside exchange rate pegging? Or does the pursuit of pegging set off distortions of monetary policy, which could then force a shift away from pegging?

Across time, three factors are giving greater *de facto* openness: the gradual pace of *de jure* capital account liberalisation, the increasing sophistication of firms including their conversion into multinationals, and the increasing capability of the domestic financial system through which financial engineering can be undertaken to bypass capital controls. As an example, positions on equities and options can be combined to achieve synthetic corporate bonds, thus frustrating capital controls against debt positions.

Some evidence using firm data suggests that the effectiveness of the capital controls is relatively limited. The first dimension of this evidence lies in the exchange rate exposure of firms. Firms have been able to achieve high currency exposure in periods when the exchange rate was inflexible, and vice versa.

The second dimension of this is the episode where Lehman failed in September 2008. Under a null hypothesis that India's *de jure* capital controls were fully effective, India should have been quite disconnected from the global crisis, given that firms were prohibited from engaging in short-term foreign borrowing. However, in the event, the Indian money market was thrown into turmoil, and the operating procedures of monetary policy broke down, despite a modest 1% of GDP of an exit by foreign portfolio investors in the immediate aftermath of the Lehman default.

The third dimension of this lies in the analysis of the onshore premium on currency forwards compared with that seen abroad on the NDF market. Over the years, mispricings between these have been arbitrated away more effectively, suggesting increasing *de facto* openness.

To the extent that capital controls are not effective, when monetary policy pursues a pegged exchange rate, significant distortions of monetary policy should build up. Hence, we examine structural change of the Indian exchange rate regime.

In order to measure the *de facto* exchange rate regime in operation, we use a linear regression model based on cross-currency exchange rates (with respect to a suitable numeraire). While this has been proposed earlier, the use of this model was popularised by Frankel and Wei. An independent currency, such as the Swiss Franc (CHF), is chosen as an arbitrary ‘numeraire’. If estimation involving the Indian rupee (INR) is desired, the model estimated is:

$$d \log \left(\frac{\text{INR}}{\text{CHF}} \right) = \beta_1 + \beta_2 d \log \left(\frac{\text{USD}}{\text{CHF}} \right) + \beta_3 d \log \left(\frac{\text{GBP}}{\text{CHF}} \right) + \beta_4 d \log \left(\frac{\text{JPY}}{\text{CHF}} \right) + \beta_5 d \log \left(\frac{\text{EUR}}{\text{CHF}} \right) + \epsilon$$

This regression picks up the extent to which the INR/CHF rate fluctuates in response to fluctuations in the USD/CHF rate. If there is pegging to the USD, then fluctuations in the GBP, JPY and EUR will be irrelevant, and we will observe $\beta_3 = \beta_4 = \beta_5 = 0$ while $\beta_2 = 1$. The R^2 of this regression is also of interest; values near 1 suggest reduced exchange rate flexibility. The choice of currencies in the regression analysis reflects the core international currencies in the global financial system.

[Table 2 about here.]

Table 2 shows the fine structure of the Indian exchange rate regime. In each period, estimates are shown for the Frankel-Wei regression.

In Period 1, which started in January 1991, the only significant coefficient in Period 1 was that of the USD, and there was high inflexibility with an R^2 of 0.84. After an IMF program, India embarked on a reform of the exchange rate regime, supposedly to a ‘market determined exchange rate’. This proved to be a case where a central bank did not do as it said. In Period 2, the R^2 actually went to 1.0, showing a shift to a fixed rate. The implementation of the exchange rate regime in Period 2, which involved unsterilised intervention, was associated with significant monetary policy distortions and helped kick off an upsurge in inflation.

The first experience with flexibility came in Period 3, in the Asian crisis, where the R^2 dropped to 0.71. In this period, there was a small Yen coefficient

but the focus remained the US dollar. In January 1998, an interest rate defence of the exchange rate was mounted, with a 200 bps rise in the short rate despite weak business cycle conditions.

Once the Asian crisis subsided, pegging to the dollar recommenced with an R^2 of 0.97 in Period 4. This was a period of sterilised intervention, where large purchases of dollars were accompanied by sale of government bonds. In December 2003, the stock of domestic government bonds was exhausted, and this period soon came to an end.

Slightly greater flexibility came about in Period 5, with an R^2 of 0.86. In this period, an unprecedented scale of currency intervention was accompanied by only partial sterilisation. This kicked off the largest ever credit boom in Indian history.

Finally, Period 6 shows the largest ever flexibility in the history of India's exchange rate regime, with an R^2 of 0.62. This reflects a combination of unusual turbulence in 2008, and a reduced scale of intervention by the central bank.

If Indian capital controls were effective and India was largely closed on the capital account, this complex interplay between the exchange rate regime and monetary policy autonomy would not have arisen. India would have been able to pursue exchange rate pegging without attendant distortions of monetary policy. However, as this evidence shows, the pursuit of pegging has repeatedly induced substantial monetary policy distortions. Two periods of near-fixed rates stand out: Period 2 and Period 4. After the end of Period 4 in 2004, there has been significant movement towards greater exchange rate flexibility. This is consistent with an environment of relatively ineffective capital controls, and significant *de facto* openness.

The 'Bretton-Woods II' hypothesis predicts that countries like India should pursue exchange rate mercantalism with central banks building up foreign exchange reserves so as to undervalue the exchange rate. In the 19 years of experience summarised in Table 2, there are two periods where India's behaviour fit these predictions: Period 2 (1 year) and Period 4 (5.5 years). These add up to a third of India's experience. The Indian case, hence, does not support the Bretton Woods II proposition, that exchange rate undervaluation through currency intervention is a stable and sustainable solution for developing countries.

9 Domestic finance and international finance

Some emerging markets have experienced a significant shift of financial market activity to international financial centres. By and large, this has not taken place in India.

In the equity market, for a handful of ADRs, liquidity in the US exceeds that found in India. In certain kinds of OTC interest rate derivatives, the offshore market is bigger than the onshore market. Looking across the financial system, the domestic financial system is the dominant venue, apart from two exceptions (some kinds of OTC interest rate derivatives and a few ADRs).

Bombay is also starting to become an international financial centre in some respects. Some elements of financial services production by global firms is being done in India (mostly in Bombay) through offshoring. A first 'Indian Depository Receipt' listing has taken place.

Improvements in domestic financial development, and in the capabilities of domestic financial regulation, are likely to induce a stronger position for domestic financial intermediation and for Bombay as an international financial centre. In addition, three key factors will shape this evolution: increased *de facto* openness, domestic home bias and the tax treatment of international finance.

Domestic financial intermediation has held its ground owing to successful financial development in some areas. However, one factor which has assisted this is the system of capital controls. As an example, onshore customers of index futures are forced to use the onshore Nifty futures, and are unable to send orders abroad (to either the SGX-traded or the CME-traded futures on Nifty). Increased *de facto* openness will reduce the extent to which the domestic financial system enjoys this protectionist advantage. If changes in *de facto* openness are large, and progress on domestic financial development are weak, then a hollowing out of domestic financial intermediation could arise, as has taken place with many other countries.

A second key element of this lies in tax treatment of international finance. The Indian tax regime on these questions involves two key elements. First, there is a source-based tax treatment including a securities transactions tax. Second, once foreign investors route their investments into India through Mauritius, they get a residence-based treatment (i.e. exemption of taxation of non-residents) except for the securities transaction tax.

Source-based taxation is inimical to onshore financial intermediation. When

India imposes taxes on non-resident financial activity in India, non-residents have an incentive to send orders on India-related contracts to venues such as Singapore, London and New York, all of which have residence-based taxation. Hence, until India gets to a framework of residence-based taxation, and particularly if India removes or modifies the Mauritius tax treaty, there is a risk of a hollowing out of domestic financial intermediation.

The third key element lies in domestic home bias. The portfolios of Indian residents and Indian portfolio managers are strongly tilted in favour of India. This reflects a combination of information asymmetries and capital controls. Banks, pension funds and insurance companies have no international diversification. To the extent that this home bias is alleviated, the large flow of Indian savings could attract international issuers. This could bolster onshore financial intermediation through issuance of shares and bonds in India.

In summary, so far, domestic financial intermediation has held up well, except for a handful of ADRs and some kinds of OTC interest rate derivatives, where an offshore market has greater liquidity than the onshore market. Bombay is in the early stages of becoming an international financial centre, through the traditional route (e.g. equity issuance by global companies in Bombay) and through a new and non-traditional route (some parts of global financial services production taking place in Bombay). But these relationships between domestic finance and international finance could fluctuate based on the four factors:

1. The extent to which domestic financial regulation improves, which would attract onshore activity,
2. Offshore finance will be able to better compete with onshore finance owing to deepening *de facto* openness. Hence, onshore finance will lose ground unless domestic financial regulation improves.
3. The extent to which India is able to shift to a residence-based framework for taxation, which is essential for ensuring that foreign order flow comes to India, and
4. The extent to which the home bias of Indian portfolios is diminished, which would help to attract international securities issuance in India.

10 Policy questions about capital controls and monetary policy

India has evolved a complex system of capital controls. If a single capital controls manual were released by the government, it would run to thousands of pages of detailed rules. As in other areas of public policy, complex and detailed systems of rules have many problems.

The first concern lies in the extent to which the rule makers are omniscient. As an example, India's positions on foreign borrowing are out of touch with contemporary economic thinking in terms of blocking the onshore rupee-denominated bond market in favour of offshore foreign-currency borrowing. Many other microeconomic distortions are visible, where a sophisticated private sector maximises given the ruleset, giving unintended consequences in the form of microeconomic distortions.

The second issue is the transactions costs associated with capital controls. Bureaucrats, lawyers and accountants lead to an increased time and cost of undertaking transactions when compared with that seen in a simpler system. Reforms which remove these deadweight costs would give benefits. In addition, in the optimisation of the private sector, these fixed costs are justified for large transactions but not for small transactions. Hence, the Indian system of capital controls is biased in favour of giving large firms greater access to the international financial system.

Third, there is more *de facto* openness than meets the eye. While India appears largely closed at first, the ingenuity of financial engineering coupled with legal engineering implies that for a sufficiently large expenditure of time and fees, many transactions are feasible. If India were largely closed, then the pursuit of exchange rate pegging would not have induced large monetary policy distortions. If India were largely closed, the failure of Lehman would not have triggered off a breakdown of the operating procedures of Indian monetary policy, despite a lack of exit by foreign investors.

These three issues will shape the policy analysis of the Indian system of capital controls. The second important group of policy questions concerns monetary policy. As India's capital account openness has deepened, the pursuit of exchange rate pegging would imply an increased loss of control of monetary policy. In response to this, exchange rate flexibility has risen, with the R^2 of the Frankel-Wei regression going down from 1.0 in Period 2 to 0.62 in Period 6.

However, all the changes of the exchange rate regime shown in Table 2 other than Period 2 were made without announcement by the central bank. This raises questions about the goals and operational procedures of monetary policy. What public statements would be made about the exchange rate regime? Since a floating exchange rate is not a monetary policy regime, what is the best use of the lever of monetary policy, once autonomy has been regained through shifting away from exchange rate pegging? What framework for accountability and transparency should be employed for the central bank, once the central bank is not held accountable for achieving an exchange rate target? If monetary policy clearly moves away from the pursuit of exchange rate pegging, then would this clear the decks for simplification of the system of capital account restrictions, and *de jure* openness?

References

- ECHEVERRI-GENT, J. (2007): “Politics of market microstructure,” in *India’s Economic Transition: The Politics of Reform*, ed. by R. Mukherji, chap. 11. Oxford University Press, New Delhi.
- LAHIRI, A. K. (2009): “Indian financial reforms: National priorities amidst an international crisis,” Purushotamdas Thakurdas Memorial Lecture, ADB.
- LANE, P. R., AND S. L. SCHMUKLER (2007): “The international financial integration of China and India,” Discussion Paper 4132, World Bank.
- MISTRY, P. (2007): “Making Mumbai an International Financial Centre,” Committee report, Sage Publishing and Ministry of Finance, Government of India.
- OURA, H. (2008): “Financial development and growth in India: A growing tiger in a cage?,” Discussion Paper 08/79, IMF.
- PATNAIK, I. (2005): “India’s experience with a pegged exchange rate,” in *The India Policy Forum 2004*, ed. by S. Bery, B. Bosworth, and A. Panagariya, pp. 189–226. Brookings Institution Press and NCAER.
- (2007): “India’s currency regime and its consequences,” *Economic and Political Weekly*.
- PATNAIK, I., AND A. SHAH (2009 (forthcoming)): “Why India choked when Lehman broke,” *India Policy Forum*, 6.
- PRADHAN, J. (2004): “The determinants of outward foreign direct investment: a firm-level analysis of Indian manufacturing,” *Oxford Development Studies*, 32(4), 619–639.
- PRASAD, E. S. (2009): “Some new perspectives on India’s approach to capital account liberalisation,” Discussion Paper 14658, NBER.
- RAJAN, R. (2008): “Committee for Financial Sector Reforms,” Committee report, Planning Commission, Government of India.
- SHAH, A., AND I. PATNAIK (2007): “India’s experience with capital flows: The elusive quest for a sustainable current account deficit,” in *Capital controls and capital flows in emerging economies: Policies, practices and consequences*, ed. by S. Edwards, chap. 13, pp. 609–643. The University of Chicago Press.

- SHAH, A., S. THOMAS, AND M. GORHAM (2008): *India's Financial Markets: An Insider's Guide to How the Markets Work*. Elsevier.
- SINHA, U. K. (2010): "Working Group on Foreign Investment," Committee report, Department of Economic Affairs, Ministry of Finance.
- THOMAS, S. (2006): "How the financial sector in India was reformed," in *Documenting reforms: Case studies from India*, ed. by S. Narayan, pp. 171–210. Macmillan India, New Delhi.

Readings on the web

Ajay Shah's Blog: <http://ajayshahblog.blogspot.com>

NIPFP-DEA Research Program: <http://www.nipfp.org.in/nipfp-dea-program/index.html>

National Stock Exchange: <http://www.nse-india.com>

Reserve Bank of India: <http://www.rbi.org.in>

Securities and Exchanges Board of India: <http://www.sebi.gov.in>

Tables

Table 1: Internationalisation of India's listed firms

	Percentage of total mass of all listed companies							
	2001-02				2008-09			
	None	Low	Med.	High	None	Low	Med.	High
Imports	5.31	30.70	48.26	15.71	5.99	27.53	51.45	15.01
Exports	56.63	28.33	11.39	3.63	53.84	26.12	11.83	8.21
Foreign equity	22.27	37.33	36.72	3.66	3.70	33.99	56.56	5.74
Foreign borrowing	46.39	14.63	23.66	15.31	25.63	20.14	33.47	20.74
Overseas assets	60.29	39.04	0.45	0.21	43.49	50.00	5.17	1.32

Source: CMIE Prowess database.

	Start	End	R^2	USD	EUR	GBP	JPY	Variance
1	11 Jan '91	28 Jan '94	0.84	0.94 (19.52)	0.01 (0.12)	-0.01 (-0.11)	-0.05 (-1.03)	0.45
2	4 Feb '94	24 Feb '95	1.00	1.01 (77.35)	-0.08 (-3.14)	-0.02 (-1.11)	0.02 (1.79)	0.01
3	3 Mar '95	21 Aug '98	0.71	0.85 (13.22)	0.08 (0.68)	-0.00 (-0.04)	0.08 (2.08)	0.52
4	28 Aug '98	19 Mar '04	0.97	0.98 (67.30)	0.09 (3.52)	-0.01 (-0.59)	0.01 (1.32)	0.06
5	26 Mar '04	16 Mar '07	0.86	0.75 (18.85)	0.23 (2.04)	0.09 (1.73)	0.23 (5.46)	0.24
6	23 Mar '07	25 Dec '09	0.62	0.73 (9.72)	0.34 (3.06)	0.04 (0.66)	-0.12 (-2.31)	0.87

Table 2: Evolution of the Indian exchange rate regime

Brief biographies

Ajay Shah (<http://www.mayin.org/ajayshah>) studied at IIT, Bombay and USC, Los Angeles. He has held positions at the Centre for Monitoring Indian Economy, Indira Gandhi Institute for Development Research and the Ministry of Finance, and now works at NIPFP where he co-leads the NIPFP-DEA Research Program. His research interests include policy issues on Indian economic growth, open economy macroeconomics, public finance, financial economics and pensions.

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