



The Policy Puzzles of Foreign Currency Borrowing by Indian Firms

Ila Patnaik

Ministry of Finance, Government of India

Ajay Shah

NIPFP

Nirvikar Singh

University of California, Santa Cruz

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Ila Patnaik* Ajay Shah Nirvikar Singh

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Abstract

India has a complex multidimensional system of capital controls for foreign currency borrowing by firms. In this paper, we summarise existing regulations, review the outcomes and discuss areas of concern and recent policy changes. Unhedged foreign currency exposure for firms, the complexity and uncertainty in the policy framework as it has evolved, and questions about regulation making processes are highlighted. In an emerging economy with a managed exchange rate and incomplete markets, foreign currency borrowing poses systemic risks when left unhedged by large firms that constitute a significant part of GDP. We identify policy directions to help address these concerns.

JEL Classification: F3,G1, D6

Keywords: Capital controls, External debt, Market failure

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1 Introduction

The origin of the framework for India's policy on foreign debt is based on the assumption that a large foreign debt can make the country vulnerable, can make exchange rate management difficult, that long term debt is better than short term, that it is more dangerous for the economy for smaller companies to borrow, that some sectors need cheaper finance more than others, and that there may be times when India wishes to increase or reduce capital inflows, for which easing and tightening restrictions on debt flows can be used as a tool.

Consequently, the Indian strategy for capital controls on foreign currency borrowing presently involves many kinds of restrictions: rules restrict who can borrow, who can lend, how much can be borrowed, at what price, what end-use the borrowed resources can be applied for, who can offer a credit guarantee, when borrowed proceeds must be brought into India, when loans can be prepaid, when loans can be refinanced, procedural rules for all these activities, and rules for banks to force all borrowers to hedge currency exposure. Further, loans above a certain amount require approval of the regulator. While there is no limit on the stock of foreign currency borrowing, on a flow basis there is a soft unstated cap at USD 30 billion per year.

Over the past decade the policy has evolved as it has been changed to meet the needs of the economy. Today it is highly complex, uncertain and, as has been suggested by the Sahoo committee that was set up by the government to review the framework, it fails to address some of the concerns of policy makers. For example, policy makers are concerned about the level of unhedged foreign currency exposure in the economy, creating a framework where there can be little discretion and where transparency prevails with higher policy certainty. Further, the recent focus on modern regulation making processes and rule of law has raised questions about the appropriateness of the policy framework.

In particular, today there is a grater understanding of the risks arising from foreign borrowing. The defining problem of the field is currency mismatch which could hurt the balance sheets of unhedged borrowers. If currency mismatch is present on a sufficiently large scale, large currency depreciations could induce systemic crises. It not enough to think of foreign debt or the maturity of debt as such, but also of which currency the debt is denominated in, who holds the foreign currency risk, whether that risk is hedged, whether those who hold the risk have the capacity to bear it and whether such risk poses a much larger or systemic risk to the economy. In recent times some

changes have been introduced in the foreign borrowing framework to address these concerns. These include an increase in the caps on FII investment in corporate bonds i.e. rupee denominated foreign debt (the cap has increased slowly to USD 51 billion in 2015), monitoring of the hedge ratio for ECB by requiring firms to report these, prudential requirements for banks when lending to companies with unhedged foreign currency exposure and allowing firms to undertake rupee denominated ECBs. However, many challenges remain as the present framework still appears inadequate to address concerns about unhedged exposure. While some borrowers may have natural hedges, it is still to be taken into account in the measuring the hedge ratio, markets for derivatives are illiquid and costly making it unattractive to hedge.

Further, the restrictions on ECBs also raise concerns about engaging in ill-defined or poorly justified industrial policy, about the scale of economic knowledge required to write down the detailed prescriptive regulations, the impact upon the cost of business and about rule of law. Changes in the regulation making process currently being undertaken for framing of all regulations should also improve the ECB regulatory framework.

In summary, a non-discretionary and transparent policy framework that reduces unhedged currency exposure is yet to be put in place. In this paper we discuss the framework, the outcomes, the concerns, the recent changes and the remaining challenges.

2 Existing regulatory framework

We now describe the present arrangements for capital controls against foreign borrowing by Indian firms. The present rules governing foreign borrowing by firms involve two parts:

1. **Foreign currency borrowing:** Firms borrow in foreign currency denominated debt through external commercial borrowing (ECB) and trade credit.
2. **Rupee denominated borrowing:** This route allows foreign investors to buy bonds issued locally, denominated in rupees. Neither total borrowing shown in figure 2 nor financial borrowing shows these figures. Recently ECB in rupees has also been allowed.

Table 1 Regulatory sub-categories for external commercial borrowing (ECB) and trade credits

Sub-Category	ECB*	Trade Credits Automatic route
Eligibility criteria to borrow	Eligible borrowers	
Controls on eligible lenders	Recognized lenders	
Quantitative caps and maturity restrictions	Amount and maturity	Amount and maturity
Price ceiling	All-in-cost ceiling	All-in-cost ceiling
Permitted activities with foreign exchange	End-use	End-use
Activities not permitted with foreign exchange	End-uses not permitted	
Guarantees by financial institutions	Guarantees	Guarantees
Remittance of borrowed funds into India	Parking of ECB proceeds	
Early repayment of ECB	Prepayment	
Additional ECB for repayment of ECB	Refinancing of an existing ECB	
Legal process	Procedure	Reporting arrangements

*Loans up to a certain ceiling are on automatic route. Beyond that, they have to seek approval.

2.1 Foreign currency borrowing

Firms can access foreign borrowing primarily through two routes: Trade Credit and External Commercial Borrowing. Trade Credit includes suppliers credit or buyers credit.

ECB is foreign borrowing that is not trade credit, with a maturity greater than three years. There are two routes for doing ECB. Some classes of firms are permitted to borrow under certain conditions through an “automatic” route. When the loan size is above USD 750 million, firms have to apply for “approval”.

Table 1 summarises the following key elements of control on foreign borrowing.¹

1. *Eligible borrowers*: The regulatory framework specifies the entities that are allowed to access ECB. As an example companies, NBFCs, NGOs, and Micro-Finance Institutions are allowed to borrow. There is a list of entities that are allowed to borrow under the approval route. As an example certain categories of banks and financial institutions, Housing Finance Companies, NBFCs are permitted. Within the services sector, only companies in the hotel, hospital and software industries are allowed to borrow under the automatic route.

¹See Reserve Bank of India, 2015, for details.

2. *Eligible lenders:* The regulatory framework places restrictions on who can lend to Indian firms. Under these, there are several internationally recognised lenders. Overseas organisations, and individuals with a certificate of due diligence from overseas banks adhering to host country regulations, are allowed to lend. Foreign equity holders are also recognised lenders, under certain specified conditions.
3. *Cap on maximum amount that can be borrowed:* The framework specifies the maximum borrowed amount that can be borrowed under the automatic route. In addition there are separate caps based on the category of eligible borrowers. This cap has increased from USD 500 million in 2006 to USD 750 million at present. If the loan is above this amount it has to go through the approval route.
4. *All-in-cost-ceilings:* An additional dimension of control is the all-in-cost-ceiling. The regulator specifies the maximum ceiling on interest cost. The borrowers who are able to borrow within this ceiling are allowed, others are not allowed. At present, the all-in-cost ceiling is 350 basis points over the six-month London Interbank Offered Rate (LIBOR) for ECB with tenor of three to five years. The cost ceiling is 500 basis points over six-month LIBOR for tenor of more than five years.
5. *End use requirements:* Borrowing is permitted for specified purposes, usually for investment in capital goods. Borrowing is not allowed for on-lending or investment in capital market, real estate, working capital, general corporate purpose and repayment of existing rupee loans.

There are some exceptions for end-use restrictions. While ECB for working capital requirement is not allowed, firms in the civil aviation sector are allowed to access ECB for working capital requirements. A ‘special dispensation’ for ECB by firms in the infrastructure sector was introduced on 23rd September 2011. Companies which are in the infrastructure sector, are permitted to utilise 25% of the fresh ECB raised by them towards refinancing of the Rupee loans availed by them from the domestic banking system. On April 20, 2012 the limit was further enhanced for companies in the power sector. These companies were permitted to utilise up to 40% of the fresh ECB raised by them towards refinancing of the Rupee loans availed by them from the domestic banking system.

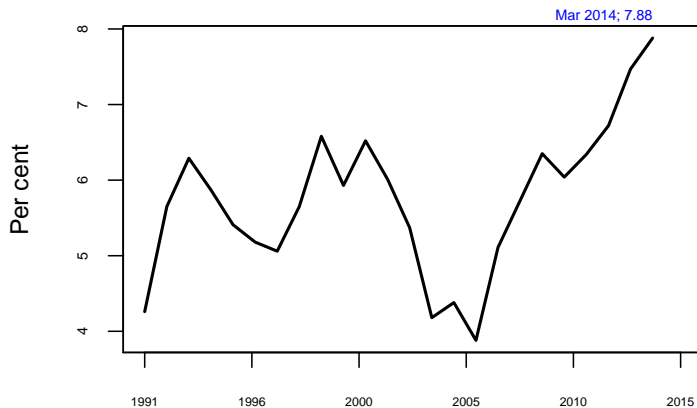
6. *Issuance of guarantee:* Under the automatic route, issuance of guarantee; standby letter of credit; letter of undertaking; or letter of comfort by banks, financial institutions and Non Banking Financial Companies from India relating to ECB is not permitted. For some sectors, issuance of guarantees are considered subject to prudential norms.

7. *Parking of borrowed proceeds abroad*: If funds are borrowed for rupee expenditure, they are required to be repatriated immediately. In the case of foreign currency expenditure, ECB proceeds may be retained abroad pending utilisation. When retained abroad, the funds may be invested in prescribed assets.
8. *Prepayment*: Under the automatic route, prepayment of ECB up to USD 500 million may be allowed by Authorised Dealer banks without prior approval, subject to compliance with the stipulated minimum average maturity period as applicable to the loan. Under the approval route, prepayment for amounts exceeding USD 500 million is considered.
9. *Refinancing of existing ECB*: Borrowers are allowed to refinance their existing ECB by raising a fresh ECB, subject to the condition that the fresh ECB is raised at a lower all-in-cost ceiling, and the outstanding maturity of the original ECB is maintained. In addition, the amount of fresh ECB is beyond the eligible limit under the automatic route. Such refinancing is not permitted by raising fresh ECB from overseas branches or subsidiaries of Indian banks.
10. *Procedural complexities*: Borrowing firms are required to report details of loan agreements to the Authorised Dealer for any amount of ECB. The Authorised Dealer has to certify that the borrowing company complies with the ECB regulations, and that the Authorised Dealer recommends the application for allotment of a Loan Registration Number. The borrower can draw-down the loan only after obtaining the Loan Registration Number. In addition, borrowers are required to submit ECB-2 return certified by the designated Authorised Dealer bank on a monthly basis.
11. *Hedging requirements implemented through banking regulation*. On 15 January 2014, India issued a ‘regulation’ titled *Capital and provisioning requirements for exposures to entities with unhedged foreign currency exposure*. In this, banks are asked to provision more, and hold more capital, when faced with a borrower who has unhedged currency exposure. This ‘regulation’ features a certain approach on defining and measuring unhedged currency exposure.

3 Broad facts about firm foreign borrowing

In this section, we show broad empirical facts about foreign borrowing by Indian firms, and descriptive statistics about foreign borrowing that are obtained from firm data.

Figure 1 ECB as per cent of GDP



3.1 Time series aggregates

Figure 1 shows the ratio of outstanding external commercial borrowing (ECB) to GDP.² ECB as a ratio of GDP stood at 7.9% of GDP at the end of 2013-14.

3.2 Firm-level borrowing

We now describe foreign currency borrowing using firm level data, drawing upon the CMIE database. We focus on non-financial firms only, in order to avoid non-comparability of accounting information between financial firms and non-financial firms. External commercial borrowing (ECB) is not directly visible in the data. We observe foreign currency borrowing (FCB), which measures debt taken by a company denominated in a currency other than the Indian rupee, from any source.³ This definition includes trade credit. In other words, we observe FCB which is the sum of ECB and trade credit. We are not able to disentangle ECB from trade credit. We examine the period from 2004 to 2015, in which we see a dataset of 155,459 firm-years.

²ECB data has been sourced from *India's External Debt: A Status Report* which is released by the Ministry of Finance.

³The definition of FCB in the CMIE database is: *Any loan taken by the company in a currency other than in Indian rupees is a foreign currency loan. Examples of such loans are loans taken from foreign banks, foreign currency loans taken from foreign branches of Indian banks, foreign currency loans taken from Indian banks, loans taken from EXIM banks, loans taken from multinational lending institutions such as World Bank, IBRD, and Asian Development Bank, external commercial borrowings, suppliers/buyers credit, global depository receipts and American depository receipts.*

Figure 2 Aggregate firm level FCB versus total FCB

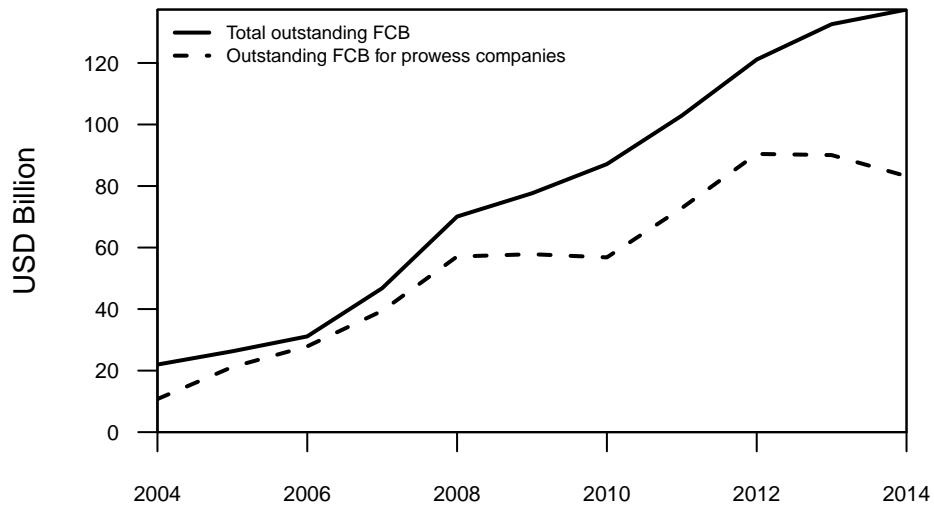


Figure 2, juxtaposes the FCB of the firms in our dataset against the total ECB of the country. Borrowing by the firms in our dataset is overstated to the extent that it also contains trade credit. This graph suggests that our data set captures the bulk of the country's foreign borrowing.

Table 2 Descriptive statistics for 2011-12

Variable	Category	Mean	SD	Min	25th	Median	75th	Max	Observed
Size	FCB firms	32790.49	153958.44	7.80	1672.40	5518.50	17105.05	2757054.80	907
	Non-FCB firms	3300.65	23200.35	0.10	30.10	218.00	1181.30	1322338.00	9962
FII holding	FCB firms	7.95	8.75	0.00	0.86	4.87	12.63	52.99	368
	Non-FCB firms	6.21	8.30	0.00	0.27	2.69	9.18	58.45	843
Exports to sales	FCB firms	22.39	33.59	0.00	0.03	6.86	35.10	453.97	877
	Non-FCB firms	10.89	72.61	0.00	0.00	0.00	3.06	5000.00	7598
Imports to sales	FCB firms	37.38	511.42	0.00	1.17	7.93	23.35	15007.69	877
	Non-FCB firms	69.47	3399.70	0.00	0.00	0.00	1.96	273240.00	7598
Debt equity	FCB firms	6.25	69.30	-616.84	0.99	1.81	3.08	1714.47	907
	Non-FCB firms	30.56	930.24	-14915.00	0.05	0.83	2.67	65291.00	9857
Interest cover	FCB firms	29.16	382.16	-173.00	2.03	3.83	8.86	10851.06	874
	Non-FCB firms	72.65	691.24	-4024.00	1.31	2.87	8.88	22238.00	5928
Total trade to sales	FCB firms	59.77	511.74	0.00	6.91	26.11	60.27	15007.69	877
	Non-FCB firms	80.36	3408.47	0.00	0.00	0.00	14.55	273240.00	7598

Table 2 shows summary statistics about one point in time – financial year 2011-12 – for which 10,869 firms are observed.

Larger firms tend to borrow abroad. The median size of firms with foreign borrowing is measured as Rs.5518.50 million, while the median size of firms without foreign borrowing is measured as Rs.218.00 million; the firms that borrow abroad are, on average, more than 25 times bigger than the firms that do not. The home bias literature suggests that foreign investors are likely to favour large, internationally active and low credit risk firms. This is likely to be exacerbated by Indian capital controls, where all in cost ceilings impose interest rate caps and limit foreign borrowing to firms with low credit risk. These two issues may be coming together to give FCB in the hands of much bigger firms.

Firms that borrow abroad are much more internationalised, by all three measures. We examine three internationalisation measures, namely exporting; importing; and foreign institutional investment. Half of the non-FCB firms have zero exports, while the median value of exports for FCB firms is 6.86% of sales. The median value for imports as a percentage of sales is 7.93% for FCB firms, and negligible for non-FCB firms. In terms of foreign institutional investment, the median value for FCB firms is 4.87%, while the median value for non-FCB firms is 2.69%.

Turning to leverage, the median debt equity ratio⁴ of FCB firms is 1.81 while for non-FCB firms it is 0.83. FCB firms are much more leveraged. At the same time, in 2011-12, according to the standard corporate finance rule-of-thumb measure, the FCB firms were relatively comfortable in managing this borrowing: the median interest cover ratio of FCB firms is 3.83, while for non-FCB firms it is 2.87. At this point, in light of our subsequent discussion, it is important to note that the standard interest cover ratio does not account for the additional risk posed for FCB firms by potential currency fluctuations.

To summarise, evidence suggests that FCB firms are much larger than non-FCB firms;⁵ have more debt financing; are more internationalised and were more comfortable servicing their debt in 2011-12 subject to the caveat noted in the previous paragraph.

Table 3 helps us see the changing characteristics of FCB and non-FCB firms

⁴Debt equity ratio has been defined as total assets minus networth, divided by networth

⁵The concentration of FCB among larger firms can also be illustrated by the following two additional facts. First, almost all FCB is concentrated among the top size quartile of firms in our sample. Second, the top thirty firms by FCB amounts account for about two-thirds of total FCB in the sample.

Table 3 Trend in FCB firms versus non-FCB firms

The table reports the median values for each variable in 2004, 2008, and 2012. The numbers in the brackets is the Inter-Quartile range.

	Units	Non-FCB firms			FCB firms		
		2004	2008	2012	2004	2008	2012
Size	Rs. Million	128 (475.1)	117.6 (563.55)	218 (1151.02)	696.9 (2617.2)	2292.4 (7203.4)	5518.5 (15432.65)
FII holding	Per cent	0.49 (4.3)	3.07 (9.54)	2.69 (8.91)	1.86 (8.69)	6.66 (11.25)	4.87 (11.73)
Exports to sales	Per cent	0 (6.81)	0 (3.92)	0 (3.05)	2.71 (27.65)	7.62 (38.49)	6.86 (35.07)
Imports to sales	Per cent	0 (4.04)	0 (3.25)	0 (1.96)	3.52 (15.69)	7.73 (20.79)	7.93 (22.18)
Debt equity	Times	0.88 (2.43)	0.88 (2.59)	0.83 (2.62)	1.63 (2.36)	1.9 (2.13)	1.81 (2.08)
Interest cover	Times	3.48 (8.04)	3.8 (8.53)	2.87 (7.57)	4.09 (6.33)	4.47 (6.84)	3.83 (6.82)
Total trade to sales	Per cent	0.32 (20.91)	0 (17.77)	0 (14.55)	15.73 (46.74)	25.95 (55.69)	26.11 (53.36)
Number of Obs.	Number	10115	12331	9962	535	1027	907

by juxtaposing 2004, 2008 and 2012. The median size of firms with FCB increased from Rs. 697 million in 2004, to Rs. 5518.5 million in 2012. At all times, they were larger than the median non-FCB firm. The international trade by FCB firms went up from 15.7% to 26% over this period.

4 Areas of concern

In this section, we describe the areas of concern associated with foreign currency borrowing by firms in India.

4.1 Currency mismatch

During the East Asian Crisis, many countries experienced a breakdown in pegged exchange rate regimes, with large depreciations leading to greater exchange rate flexibility. Prior to the crisis, financial and non-financial firms in many of these countries had established large stocks of unhedged FCB. These firms experienced credit distress resulting from depreciation. Similar

problems were also seen in the Tequila Crisis. In the 2008 Global Financial Crisis, many East European firms and households were adversely affected through currency mismatch.

From the late 1990s onwards, the literature has emphasised the problems of currency mismatch deriving from the ‘original sin’ of borrowing in foreign currency (Krugman, 1999, Razin and Sadka, 2001, Aghion, Bacchetta, and Banerjee, 2001, Céspedes, Chang, and Velasco, 2002, Jeanne, 2002). Isolated mistakes in commercial judgement made by a few firms are not a cause for concern. However, if a large fraction of a country’s corporate balance sheet is denominated in foreign currency and, if a significant fraction of firms face credit distress when a large depreciation takes place, there is an adverse impact upon the country as a whole. Firms facing credit distress may go bankrupt, which induces bankruptcy costs. Even if they do not, distressed firms may have reduced ability to finance investment and, if there are enough distressed firms, there are adverse affects on macroeconomic conditions.

There is a market failure in the form of externalities imposed upon innocent bystanders, when a large fraction of a country’s corporate balance sheet has a substantial currency mismatch.

In the early decades of the international finance literature, a simplistic approach gained prominence, where it was argued that debt flows are dangerous while equity flows are safe. In recent decades, understanding of the topic has been clarified, and a more nuanced position has gained ground. The understanding today emphasises the dangers that arise out of a combination of the following three elements:

1. *A managed exchange rate.* This can potentially yield a large and sudden depreciation.
2. *A class of firms who have large unhedged foreign borrowing and low ability to absorb shocks.* Vulnerable firms are those with two characteristics: a) they must have substantial foreign currency borrowing; and b) they must have small amounts of equity capital which can absorb these shocks.
3. *This class of firms must be large when compared with GDP.* If this condition is not satisfied, then foreign currency exposure is just an ordinary business risk that some firms bear.

For example, if 20% of firms (by balance sheet size) stand to lose 20% of their equity capital in the event of a large and sudden 20% depreciation, there is little cause for concern. If, however, 50% of the firms (by balance sheet

size) stand to lose 50% of their equity capital in the event of a sudden 20% depreciation, there is cause for concern. Similarly, large sudden depreciations are less frequent if the exchange rate is more flexible.

Consequently, concerns arise when faced with the combination of a pegged exchange rate, and large scale unhedged foreign currency borrowing by firms in the presence of small equity buffers.

We now turn to the question of why a large number of firms carry unhedged currency exposure.

4.1.1 Mismatch owing to moral hazard

The first ‘moral hazard’ hypothesis (Eichengreen, Hausmann, and Panizza, 2007) argues that firms fail to hedge currency exposure, as they believe that the government will manage the exchange rate. When the government makes explicit or implicit promises about currency policy, it encourages firms to free ride on these promises.

If the exchange rate regime were to feature a market determined exchange rate for small changes in the exchange rate, while preventing large changes from coming about, firm optimisation would lead them to hedge against small changes but not against large changes.

For example, a firm may use a currency futures contract as a linear hedge, but simultaneously derive revenues from selling options with strikes at $\pm 5\%$, to express the view that the government will not permit the exchange rate to change by more than 5%. This would reduce the cost of the hedge, and permit the firm to free ride on the promises (implicit or explicit) made by the government.

The moral hazard hypothesis relies on rational and sophisticated firms that understand the *de facto* exchange rate regime (which may differ from the *de jure* exchange rate regime) to make decisions about taking on or laying off exposure. These conditions are likely to be met in large, financially complex and internationally active firms.

Under the moral hazard hypothesis, currency policy is the root cause of currency mismatch; the solution would therefore lie in removing the explicit or implicit promises to protect firms from exchange rate fluctuations.

A feedback loop can potentially arise, where currency policy gives rise to currency mismatch (owing to moral hazard) and, once a large mass of un-

hedged firms come about, they mobilise themselves politically to perpetuate currency policy. This can generate a ‘fear of floating’ trap where a country finds it hard to reform the exchange rate regime in favour of a market determined exchange rate.

4.1.2 Mismatch owing to incomplete markets

An alternative hypothesis emphasises the difficulties faced by firms when trying to hedge. The ‘incomplete markets’ hypothesis asserts that it is in the self-interest of firms to not hold currency exposure, but that attempts by firms to hedge are hampered by the inadequacies of the currency derivatives market. In particular, long dated borrowing would call for long-dated derivatives contracts. These contracts are often not traded on the market, and have to be constructed either through rolling over (for linear exposure) or through a dynamic trading strategy (for non-linear exposure). In an illiquid market, the transaction costs incurred may be prohibitive.

Under the incomplete markets hypothesis, firms are victims to exchange rate fluctuations that they are unable to hedge against. This suggests a policy response grounded in exchange rate policy (in order to protect firms) and market development (in order to obtain a more liquid currency derivatives market).

4.1.3 Evidence from India

Patnaik and Shah, 2010 use a natural experiment in changes of the exchange rate regime, to explore the moral hazard versus the incomplete markets hypothesis on the currency exposure of firms. India’s exchange rate regime went through structural change, with low flexibility (1993-04-01 to 1995-02-17); followed by high flexibility (1995-02-17 to 1998-08-21); followed by low flexibility (1998-08-21 to 2004-03-19); followed by high flexibility (2004-03-19 to 2008-03-31). This offers an opportunity to examine changes in the currency exposure of firms. The paper finds that the currency exposure of large firms was high, low, high and then low through these four periods.

This is consistent with the moral hazard hypothesis: firms changed their exposure when the *de facto* exchange rate regime changed. This is also inconsistent with the incomplete markets hypothesis: firms *were* able to execute the changes in exposure in response to changes in the exchange rate regime.

Table 4 The four periods of varying exchange rate flexibility

	Dates	INR/USD weekly vol.	β_2
1	1993-04-01 to 1995-02-17	0.16	5.899
2	1995-02-17 to 1998-08-21	0.93	0.540
3	1998-08-21 to 2004-03-19	0.29	3.753
4	2004-03-19 to 2008-03-31	0.64	2.066

4.2 Policy uncertainty

The Indian authorities have, on many occasions, used tightening and easing of capital controls on foreign borrowing. Pandey et al., 2015 examine the causes and consequences of these actions. This paper analyses 76 capital flow measures (CFMs) that were observed from 2003 to 2013. Of a total of 76 events, 68 are easing and 8 are tightening.

In terms of the causes of these CFMs, the main finding concerns exchange rate movements. It appears that capital controls against ECB are eased after significant exchange rate depreciation. This suggests that the authorities may be using capital controls against foreign borrowing as a tool for currency policy.

In order to obtain causal identification of the consequences of CFMs, the paper identifies pairs of periods with similar conditions (through propensity score matching), where in one case the CFM was employed but in another case the CFM was not. This permits a matched event study methodology which would measure the causal impact of the CFM. The main finding of the paper is that there is little causal impact upon various outcomes, including the level of the exchange rate.

4.3 Sound practices in governance and the rule of law

Section 2 describes the existing policy framework and describes the processes through which this policy framework is implemented. This raises the following concerns:

Industrial policy When the law favours certain industries over others, without a clear and explicit economic rationale, it constitutes ill-defined industrial policy. As an example foreign borrowing is allowed for working capital requirements for civil aviation sector but not for other sectors.

Economic knowledge required to write down detail When the law gives detailed and bright line regulations, it raises concern about the foundations of economic knowledge that are required. For example, the law permits firms to borrow when their all-in cost is below LIBOR + 350 basis points, but blocks firms when their all-in cost is above LIBOR + 350 basis points. Such detailed regulations would need to be backed by sophisticated economic reasoning that demonstrates the presence of a market failure, and that the intervention addresses this market failure.

The cost of doing business The complex policy framework induces delays, uncertainty and costs of compliance, including legal fees.

Rule of law Under the rule of law, six features should hold: 1) the law should be comprehensible and known to all citizens; 2) identically placed persons should be treated equally; 3) outcomes of prospective transactions should be predictable to practitioners; 4) there should be no arbitrary discretion in the hands of officials; 5) reasoned orders should be given out for all actions; and 6) the orders should be subject to efficacious appeal. There is currently work underway to improve financial sector regulation on all these areas through the implementation of FSLRC non-legislative handbook, as discussed in Section 5.2.5.

5 Policy direction

This section offers a description of the policy direction that will allow India to more safely engage with the international financial system.

5.1 The Sahoo Committee report on ECB framework

The Sahoo Committee was set up in 2013, to develop a framework for access to domestic and overseas capital markets. The third report of the Committee focussed on rationalising the framework for foreign currency borrowing in India. The Committee recommended that regulatory interventions must be guided by an analysis of potential market failures, and must seek to target and correct those failures. The most critical market failure associated with ECB is externalities arising from systemic risk, on account of currency exposure.⁶

When a firm undertakes foreign currency borrowing, its balance sheet is exposed to exchange rate fluctuations. If there are numerous firms that

⁶See, Ministry of Finance, 2015.

undertake foreign currency borrowing, but do not hedge their currency exposure, there is a possibility of correlated failure of these firms if there is a large exchange rate movement. The negative impact of this movement on their balance sheets could then hamper investment, and the country's Gross Domestic Product. This imposes negative externalities which constitute a market failure.

The Committee observed that, at present, there is an array of other interventions aimed at addressing the process of foreign currency borrowing. Most of these interventions were brought in to meet the specific needs of the hour, and have outlived their utility. None address any identified market failure today. The Committee therefore recommends removing these interventions. The Committee noted that the possibility of market failure can be ameliorated, by requiring firms that borrow in foreign currency to hedge their exchange risk exposure. There can be two kinds of hedges: 1) natural hedges; or 2) hedging using financial derivatives. Natural hedges arise when firms sell more tradeables than they consume. This generates the net economic exposure of an exporter. The firms may use financial derivatives (such as currency futures, currency options, etc.) to hedge their currency exposure. The main recommendation of the Committee is that Indian firms should be able to borrow abroad through foreign currency debt, while requiring them to substantially hedge their foreign currency exposure, whether through financial derivatives or natural hedges.

The key recommendations of the Committee can be summarised as follows:

1. The present complex array of controls on foreign currency borrowing should be done away with.
2. Irrespective of the nature and purpose of foreign borrowing, every borrower must at a minimum hedge a specified percentage of its currency exposure. Such percentage must be uniform across sectors or borrowers.⁷
3. Every firm wishing to borrow abroad must demonstrate hedging of currency exposure either through natural hedge or commitment to hedge through derivatives transactions. This means that a borrower may meet the hedge requirement through natural hedge and/or through currency derivatives.
4. It is necessary to develop the on-shore currency derivatives market. Government, RBI and SEBI must make a concerted plan to make the currency

⁷Nothing in this recommendation obviates policy reforms that might improve corporate governance and best practice in the sphere of risk management. The point of a specific requirement on foreign currency borrowing is that there are specific externalities and systemic risks associated with this source of debt exposure.

derivatives market deep and liquid. This would reduce the cost of hedging and make hedging facilities available to firms.

5. The hedge ratio may be decided by the authorities (MOF-RBI Committee) keeping in view the financing needs of the firms and of the economy, the development of onshore currency derivatives markets and any other systemic concern such as volatility in global risk tolerance. The ratio may be modified by the authorities periodically depending on the exigencies.
6. The board of every borrowing company must be obliged to certify at least once a year that the company fulfils the hedging requirement. In addition, RBI, directly or through authorised dealers, may undertake inspection of books of a sample of borrowers to confirm adherence to hedging norms.
7. The Indian domestic rupee debt market is a viable alternative to foreign borrowing for financing Indian firms and does not entail any market failure. The policy should aim at removal of all impediments to the development of the domestic rupee debt market.

5.2 Recent policy changes

The five recent policy changes in relation to foreign borrowing in India are discussed below.

5.2.1 Increasing access to rupee denominated borrowing

Foreign participation in rupee denominated corporate bonds is being gradually liberalised. At present foreign investors are allowed to invest in rupee denominated corporate bonds upto USD 51 billion. Till April 1, 2013, there were sub-limits within the overall cap of USD 51 billion, these have now been merged. On April 1, 2013, the Government announced a major rationalisation of foreign investment in corporate bonds. The ceiling of USD 1 billion for qualified foreign investors (QFIs), USD 25 billion for foreign portfolio investors (FPIs) and USD 25 billion for FPIs in long-term infrastructure bonds, were merged within the overall cap for corporate bonds at USD 51 billion.⁸

More importantly, the process of allocation of limits has been liberalised. The auction mechanism for allocating debt limits has been replaced by the ‘on-tap system’. The auction mechanism would be initiated when the investment limit reaches 90% for allocation of the remaining limits. These measures aim

⁸See RBI, [2013](#).

at simplifying the norms for foreign investment and are likely to encourage development of the debt market in India.

Increasing access to foreign participation in rupee denominated bonds is a safer option. When foreign investors buy rupee denominated bonds, they are exposed to fluctuations of interest rates and thereby of fluctuations of inflation in India. Steps to develop the corporate bond market will help increase liquidity and foreign participation.

5.2.2 Steps to monitor unhedged currency exposure

The Reserve Bank has initiated steps to improve the reporting framework by requiring companies to disclose information on hedging. The format of ECB-2 Return (the form for monthly reporting by ECB firms) has been modified. A new part has been added which requires firms to disclose details of financial hedging contracted if any. The reporting firms are also required to provide details of average annual foreign exchange earnings and expenditure for the last three financial years.⁹

5.2.3 Guidelines on capital and provisioning requirements

In order to discourage banks from providing credit facilities to companies that refrain from adequate hedging against currency risk, the RBI has prescribed guidelines on capital and provisioning requirements for exposures to entities with Unhedged Foreign Currency Exposure (UFCE). Reserve Bank has also prescribed the manner in which losses incurred on Unhedged Foreign Currency Exposure should be calculated.¹⁰

5.2.4 Initiatives to liberalise issuance of rupee denominated bonds

The Reserve Bank in its First Bi-Monthly Monetary Policy Statement announced on April 7, 2015 proposed to allow Indian corporates eligible to raise external commercial borrowing (ECB) to issue rupee bonds in overseas centers with an appropriate regulatory framework.

⁹See https://rbidocs.rbi.org.in/rdocs/content/pdfs/105AP170214_A.pdf for ECB-2 form

¹⁰See RBI, 2014a and RBI, 2014b

Following this announcement, The Reserve Bank announced a ‘Draft Framework on Issuance of Rupee linked Bonds Overseas’ on June 9, 2015.¹¹ The salient features of the framework for Indian corporates are:

1. Indian corporates eligible to raise ECB are permitted to issue Rupee linked bonds overseas. The corporates which, at present, are permitted to access ECB under the approval route will require prior permission of the Reserve Bank to issue such bonds and those coming under the automatic route can do so without prior permission of the Reserve Bank.
2. The bonds may be floated in any jurisdiction that is Financial Action Task Force (FATF) compliant.
3. The subscription, coupon payments and redemption may be settled in foreign currency. The proceeds of the bonds can be parked as per the extant provisions on parking of ECB proceeds.
4. Amount and average maturity period of such bonds should be as per the extant ECB guidelines. The call and put option, if any, shall not be exercisable prior to completion of applicable minimum average maturity period.
5. The coupon on the bonds should not be more than 500 basis points above the sovereign yield of the Government of India security of corresponding maturity as per the FIMMDA yield curve prevailing on the date of issue.
6. End use restrictions will be as applicable under the extant ECB guidelines.
7. For USD-INR conversion, the Reserve Bank’s reference rate on date of issue will be applicable.

These initiatives would open up another avenue for fund raising by firms without taking on the currency exposure associated with foreign currency borrowing.

5.2.5 Addressing the foundations of sound governance

As argued in Section 4.3, the present arrangements have many problems, including concerns about industrial policy; the economic knowledge required to write down detail; the cost of doing business; and the rule of law. The Financial Sector Legislative Reforms Commission (FSLRC) has drafted a concrete framework for the rule of law in finance in the draft ‘Indian Financial Code’, a unified modern law covering all aspects of Indian finance. The Ministry of Finance has drafted an ‘FSLRC Handbook’ of elements of this framework that are being implemented at all financial agencies, even before the Indian Financial Code is enacted by Parliament.

¹¹RBI, 2015.

Reforms that shift the economic foundations as described above, and emphasise the rule of law by adopting the procedures of the FSLRC *Handbook*, are required in the field of FCB. This would involve the following changes in the regulatory framework of foreign borrowing in India:

1. All draft subordinate legislation governing foreign borrowing would be published with a statement of objectives, the problem it seeks to solve, and a cost-benefit analysis (using best practices).
2. The draft subordinate legislation would be accompanied by a statement of the problem or market failure that the regulator seeks to address through the proposed regulations, which will be used to test the effectiveness with which the regulations address the stated problem.
3. Any proposed change in regulations would be preceded by inviting comments from the public. All comments would be published on the website of the Regulator. The process of soliciting public comments would enhance the legitimacy of regulatory intervention by engaging with stakeholders. It would enable the regulator to seek external views and advice in a cost-effective manner.
4. The Board would approve the final regulations after considering comments from the public, and modifications of the regulation consequent to the comments.
5. All the approved regulations would be published on the website within 24 hours of their coming into force. If all the relevant information were to be published, it would become easier for firms to understand what they are, and are not, allowed to do. As a result, they will be able to operate with clarity and confidence.
6. A key reform would be requiring the regulator and government to develop a detailed legal process governing approvals. This would imply that all applications for borrowing under the approval route would be accepted or rejected within a specified time. In the event of rejection of application, reasons for rejection would be provided. This would substantially reduce the discretion that regulator possesses in the current arrangement. If administrative orders were freely and publicly available, a rich jurisprudence could develop around the process of approvals, bringing legal clarity and predictability to the system.

6 Remaining challenges

This section presents the remaining challenges relating to foreign borrowing in the current regulatory landscape.

6.1 Shifting the allocation closer to the normative ideal

In the early decades of international finance, there was a simplistic notion that debt capital flows are problematic. As shown in Section 4.1, this has been replaced by a more sophisticated statement of the three conditions which can lead to market failure:

1. *A managed exchange rate* This can potentially yield a large and sudden depreciation. In contrast, floating exchange rates do not face such difficulties.
2. *A class of firms who have large unhedged foreign borrowing and low ability to absorb shocks.* Vulnerable firms are those with two characteristics: a) they must have substantial foreign currency borrowing; and b) they must have small amounts of equity capital which can absorb these shocks.
3. *This class of firms must be large when compared with GDP.* If this condition is not satisfied, then foreign currency exposure is just an ordinary business risk that some firms bear.

It is useful to ask the question: If a dictator were to choose which firms borrow, and the dictator sought to avoid market failure, what firms would he choose? What is the normative ideal for resource allocation on the question of foreign currency borrowing? In order to think about this, the conditions for market failure are inverted. At the level of firms, this suggests:

1. The firms who should borrow should have natural hedges; i.e. they should be net exporters (either through direct export or through import parity pricing).
2. The firms who borrow should have low leverage, so as to be able to absorb shocks in the event of a large change in the exchange rate.

If these two conditions are met, then systemic risk is absent.

For such firms, unhedged foreign currency borrowing would improve competitiveness by giving a reduced cost of capital. For example, most large Indian

firms are able to borrow at 200 to 400 bps above LIBOR. If such borrowing was not hedged, it would sharply improve profitability.

By this reasoning, the normative objective is not a state where all firms that borrow use currency derivatives in removing their risk. On the contrary, the normative objective is a state where tradeable firms undertake borrowing in foreign currency, leave it unhedged, and yet have no currency exposure as there is a natural hedge.

Table 5 examines the present allocation from this point of view. All industries are classified into two groups: tradeables and non-tradeables. In each industry, firms are broken into three groups with low, medium or high leverage. The value shown in each cell is the average share of FCB in the total borrowing of all firms.

The normative allocation suggested above implies that large values for FCB should ideally be seen in the ‘Low’ and ‘Medium’ columns for tradeables and nowhere else assuming, of course, that there is no other characteristic of firms that is positively correlated with being non-tradeable or having high leverage and that also makes such firms more attractive borrowers (e.g., superior management). Large values for FCB, relative to industry averages, are found in many cells for non-tradeable firms. A policy framework that addresses unhedged exposure would need to take natural hedges into account.

The evidence presented suggests that ECB is not dominated by firms who are exporters, or those with the currency exposure of exporters.¹² Going closer to the normative ideal requires reforms of capital controls, whereby: 1) the exposure of the firm is computed correctly, after taking into account import parity pricing, and 2) firms which do not have natural hedges are required to buy currency derivatives for a substantial scale of hedging. These reforms will pave the way for ECB as a low cost financing method for the large class of Indian firms with natural hedges.

6.1.1 Import parity pricing

In traditional literature, currency mismatch is seen as the source of mismatches between the stream of net exports, and the stream of payments

¹²A minor caveat is that inferring the normative direction of improvement in the distribution of FCB from the current situation where large FCB firms do not have natural hedges assumes that these firms are not otherwise hedged, and that they do not have other characteristics that make them systematically ‘better’ borrowers. Both these assumptions seem reasonable from our knowledge of the overall situation of the FCB firms.

Table 5 Mean FCB to total borrowing by debt-equity ratio

This table shows the average FCB to total borrowing for tradeable and non-tradeable sectors. The firms in each sector are divided into ‘Low’, ‘Medium’ and ‘High’ on the basis of their debt-equity ratio. The average FCB to total borrowing is calculated as the sum of FCB of all firms in a sector divided by the sum of total borrowings of all firms in that sector. The debt to equity is calculated as the total assets minus net worth divided by the total assets

Tradeable sectors

	Low	Medium	High
Chemicals	0.17	0.36	0.25
Consumer goods	0.31	0.11	0.01
IT services	0.12	0.26	0.22
Machinery	0.15	0.06	0.04
Metal products	0.00	0.17	0.15
Minerals	0.59	0.01	0.15
Textiles	0.05	0.05	0.07
Transport equipment	0.14	0.16	0.09
Median	0.15	0.13	0.12

Non-tradeable sectors

	Low	Medium	High
Communication services	0.00	0.32	0.11
Construction materials	0.47	0.12	0.01
Electricity distribution	0.00	0.18	0.06
Electricity generation	0.30	0.10	0.01
Food and agriculture	0.26	0.09	0.05
Hotel tourism	0.00	0.12	0.17
Infrastructure construction	0.00	0.14	0.05
Real estate	0.00	0.03	0.00
Transport services	0.19	0.21	0.14
Wholesale-retail trading	0.10	0.12	0.01
Median	0.05	0.12	0.05

required owing to debt servicing. An important refinement in this thinking is rooted in the concept of import parity pricing.

When trade barriers decline, and when the infrastructure of transportation improves, more types of goods and services become tradeable. In the limit, when the value of the goods is large compared with the total transactions costs (including tariffs), arbitrage becomes efficient and the domestic price closely tracks the global price.

In the intuition of arbitrage with financial derivatives, a ‘no-arbitrage band’ is seen around the world price expressed in rupees. If the domestic price rises, and goes outside the no-arbitrage band, rational arbitrageurs will make a profit by importing and selling into the domestic market. If the domestic price drops, and goes outside the no-arbitrage band, rational arbitrageurs will make a profit by exporting. Rapid actions by multiple arbitrageurs will ensure that the domestic price stays within the no-arbitrage band, i.e. the zone where international trade is not profitable, net of transactions costs. This yields a condition which is termed ‘import parity pricing’.

Under import parity pricing, the domestic price is equal to the world price, expressed in rupees. The presence of raw materials or outputs which are priced by import parity pricing has important implications for currency exposure.

For example, a firm which switches from importing steel to buying imported steel from a domestic dealer does not change anything about its exposure to the world price of steel, expressed in rupees.¹³ An Indian firm may buy or sell steel against a domestic counterparty, but it experiences currency exposure exactly as if it were importing or exporting steel.

When import parity pricing holds, product prices fluctuate with the exchange rate. These transactions are influenced by the exchange rate, even if the buyer and seller are both domestic firms. The ordinary business activities of such firms involve currency exposure, even if there is no direct export or import.

In order to fix intuition, the representative Indian non-financial firm in 2013-14 is considered. The key facts from its income and expenditure statement are presented in Table 6.¹⁴

¹³Indeed, the same argument applies if the firm switches to buying domestic steel, if the price of domestic steel is fully subject to import parity conditions. Just as exchange rate management distorts corporate risk and risk management relative to external shocks, so does domestic administered pricing or price controls for tradeables.

¹⁴Simplifying assumptions have been used in constructing Table 6:

Table 6 The income and expenditure statement of the typical large Indian non-financial firm (2013-14)

Total income	100
Raw materials purchased	57.87
Other operating expenses	27.98
Operating profit	14.15

Some firms make tradeables; some firms consume tradeables; some firms buy and sell tradeables. As an extreme case, a typical engineering firm, which may buy steel and sell ball bearings, is considered. In this case, the raw materials and the finished goods are priced by import parity pricing.

By the logic of import parity pricing, for all practical purposes, this firm imports Rs.57.87 and exports 100. Goods arbitrage for ball bearings is feasible; ball bearings are tradeable. Hence, the Indian price of ball bearings is the same as the world price of ball bearings. There is therefore no difference between selling Rs.100 of ball bearings on the domestic market, and exporting Rs.100 of ball bearings.

Activities of firms that process tradeables into tradeables (even if their activities are purely domestic) are tantamount to importing raw materials, adding value, and re-exporting the output.

Such a firm has currency exposure owing to its net exports, i.e. the exposure of someone who exports Rs.42.13. If the INR/USD depreciates by 10%, the total income of the firm increases to 110 and the raw materials purchased increases to Rs.63.66. Other operating expenses are non-tradeable and do not change, in partial equilibrium. Hence, the operating profit is Rs.18.36. This is an increase of Rs.4.21, i.e. 10% of the net exposure of Rs.42.10. For all practical purposes, the firm is an exporter with exports of Rs.42.10.

This perspective has three implications in relation to currency mismatch:

1. For firms where all raw materials are tradeable and all finished goods are tradeable, the currency exposure is that of an exporter, who stands to gain from depreciation. A large class of engineering firms have the currency exposure of an exporter, even if they do not directly export.

2. In practice, most firms buy a mix of tradeable raw materials (e.g. steel) and

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1. The purchase of finished goods is merged into the ‘raw materials purchased’;
 2. All energy expenses are merged into ‘other operating expenses’ even though some of this is tradeable.

non-tradeable raw materials (e.g. cement). Similarly most firms sell some mix of tradeable and non-tradeable goods and services. Careful analysis is required to uncover the true currency exposure; a simple analysis of imports and exports is inadequate.

3. Exposures computed using stock prices (e.g. as in (Patnaik and Shah, 2010)) would be a valuable tool for inferring currency exposure without full knowledge from within the firm of tradeable inputs and outputs.

6.2 Addressing moral hazard

The Indian exchange rate regime has evolved substantially, away from an administered rate towards a market determined rate. The Monetary Policy Framework Agreement of 20 February 2015 has enshrined price stability as RBI's objective. This would be consistent with a greater movement towards exchange rate flexibility. To the extent that the rupee is a floating exchange rate, there would be reduced moral hazard; firms would hedge out of their own self-interest.

6.3 Addressing incomplete markets

At present, the currency derivatives market is relatively illiquid and only gives choices to firms for short-term hedging. A substantial part of this market trades at overseas locations, and capital controls prevent Indian firms from accessing this market.

Financial development, in the form of building the Bond-Currency-Derivatives Nexus, would help create sophisticated markets onshore, through which access to hedging would improve. In addition, reforms of capital controls are required in order to give Indian firms the choice of using rupee derivatives which trade at overseas locations.

7 Conclusion

In the early years of international financial integration, the simple idea dominating the discourse was that of a 'hierarchy of capital flows'. It was felt that equity flows are good while debt flows are not good.

From the late 1990s onwards, this idea has been replaced by a more nuanced one that is grounded in an understanding of the anatomy of market failure. The market failure (i.e. externalities) associated with foreign borrowing requires a combination of three things: (a) a pegged exchange rate; (b) currency exposure in the hands of firms who do not have commensurate equity capital to absorb shocks; and (c) a large fraction of the overall corporate sector is made up of these firms.

In order to navigate the policy issues of this field, it is useful to have a normative objective. A sound resource allocation is one where foreign currency borrowing is done by firms with the currency exposure of exporters (even if they do not engage in direct exports), and are able to leave such borrowing unhedged, as it counterbalances their natural hedges. In this allocation, foreign currency borrowing becomes a remarkable low cost source of funds.

At present in India, the resource allocation does not match up to this normative ideal. A substantial fraction of ECB is taking place in companies who do not have natural hedges. Shifting the resource allocation towards the normative ideal will require significant reforms of the capital controls with a focus on reducing unhedged currency exposure.

With present capital controls, there are concerns on questions of rule of law and sound public administration. These need to be addressed by, bringing them up to the processes defined by FSLRC.

There is fresh interest in the international discourse in capital controls. This paper thoroughly documents the restrictions, and their outcomes, for one asset class (foreign currency debt) in one country (India). There is a large gap between the complexities and the problems of capital controls, in the real world, when compared with an abstract concept of capital controls.

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