

## **Foreign Currency Borrowing of Corporations as Carry Trades: Evidence from India**

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### **1. Introduction**

Over the last decade, the low interest rate environment in advanced economies (AEs) has coincided with increased capital flows into emerging market economies (EMEs). Non-financial corporate debt has been a conduit for much of this inflow. According to the IMF, the stock of EME non-financial corporate debt quadrupled between 2004 and 2014. Much of this increase has been debt denominated in foreign currency, mainly US dollars. Recently, concern has risen that the magnitude of this foreign currency debt not only leaves the borrowing firms vulnerable to adverse exchange rate movements but given their size, it might have implications for the stability of the local financial sector as well as domestic growth.<sup>2</sup>

Like their counterparts in other emerging economies, Indian companies have also been increasingly tapping foreign currency debt markets to fund their balance sheets. The share of foreign currency commercial debt in India's total external debt has climbed rapidly in the last decade. Growing from 19.7% in 2005 to 37.4% of a total external debt of \$456.1 billion at the end of 2016, foreign currency commercial borrowings are now the largest component of the country's external debt. What is this cause of this surge in foreign currency debt? How do companies use the funds obtained through this increasingly important source? What risks does this phenomenon pose? In this study, we use detailed borrowing, accounting and market data on Indian companies to answer these questions.

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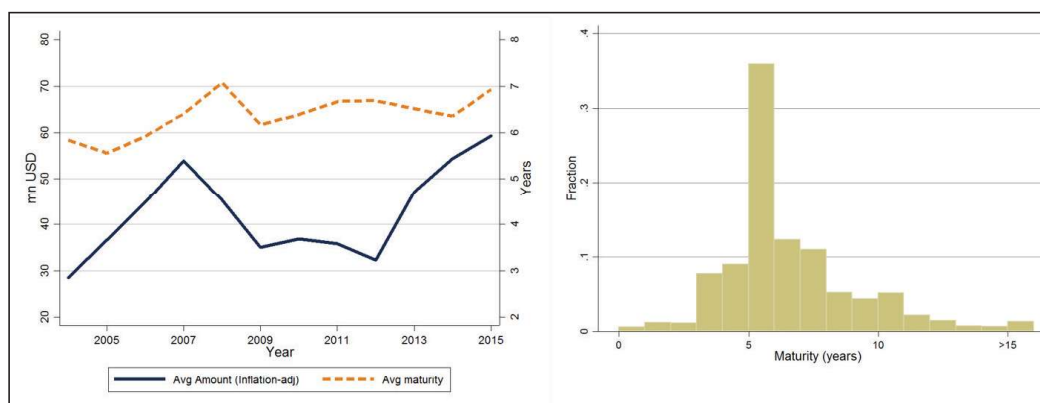
<sup>2</sup> Please refer to our associated working paper for relevant citations throughout.

## 2. External Commercial Borrowings: The Indian context

There are two modes by which non-financial corporations might take out debt denominated in foreign currency. The first is trade credit which tends to be of shorter maturity and where the lender is the firm's supplier while the second, the focus of this study, is External Commercial Borrowings (ECB) which might be either bond or bank debt and is of longer maturity. ECB issuance is regulated by the Reserve Bank of India (RBI). All issue sizes above \$750 million need RBI approval. The central bank also determines eligible lenders and maintains restrictions on the maturity, cost and use of funds. Debt maturities have a floor of three years and the permissible overall cost of borrowing (or 'all-in cost') is capped at 450 basis points above 6-month LIBOR. One of the features of the Indian market is the relative scarcity of convertible bond issuance as compared to bank debt. Around 90% of the funds are raised through banks, the bulk from Asian and American banks.

Though large public firms do indeed represent the bulk of the issuance volume, over 4000 companies issued ECBs between 2004 and 2015. Figure 1 plots some of the characteristics of the issuances.

*Figure 1: Characteristics of ECB*



The average amount raised rose from less than \$30 million to over \$50 million in a four-year span just before the 2008 crisis. Issue sizes decreased during the crisis and right after but have started rising since 2012 and now are at their highest level in the sample period. Though many of the assets being funded through these borrowings are long-lived and take a while to generate cash flows, long maturity issues remain relatively rare. This is partly due to most of the debt being bank loans rather than bonds. Term loans of five-year duration are, by far, the most popular kind of claim issued.

The major purposes for which ECBs are undertaken include the import of capital goods,

modernization, rupee expenditures on local capital goods, overseas acquisitions, new projects and refinancing of existing ECBs. The refinancing of rupee loans is also permitted but requires approval from the RBI. On-lending or investment of proceeds in capital markets in India is generally not permitted. Guarantees from local banks are discouraged.

### **3. Causes of increase in ECB**

Multiple reasons could be behind companies increasing their foreign currency debt issuance: first, for Indian multinationals increasingly selling in foreign markets, their sales provide a natural foreign currency hedge for their dollar borrowing since they generate revenue and pay interest in the same foreign currency, usually US dollars; second, companies wanting to invest in long-lived foreign assets (e.g. oil and gas companies) would like to finance those assets in the same currency as the cash flows generated; third, companies borrow abroad to finance positive NPV local projects, and ensure they are adequately hedged through financial markets; and fourth, non-financial corporates may try to take advantage of favourable funding conditions by indulging in a “carry trade” i.e. borrowing cheaply and parking the proceeds in higher yielding deposits at home.

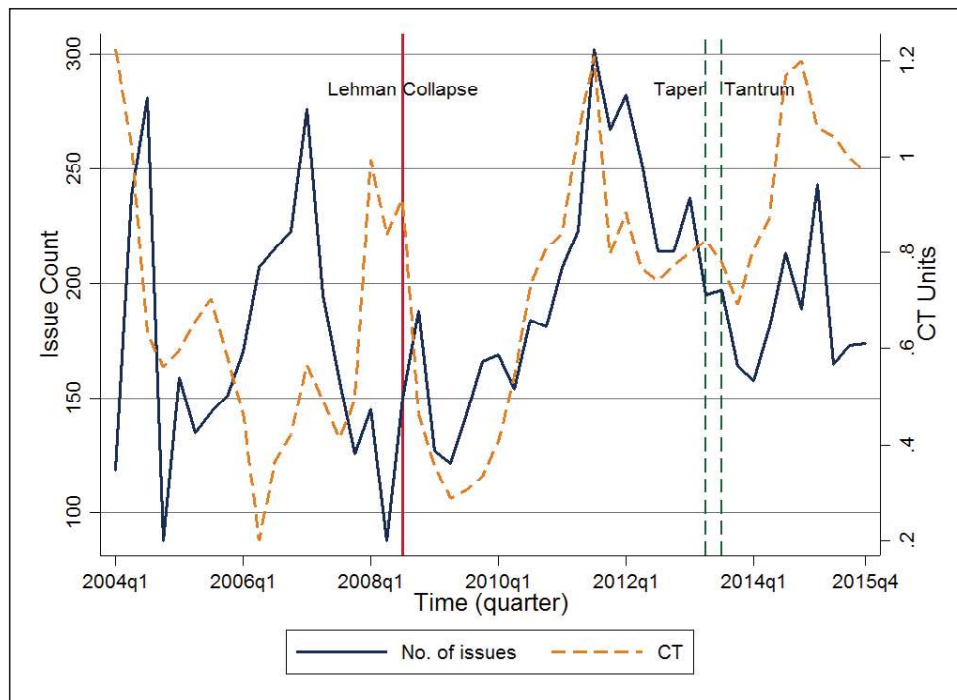
Which of these causes was responsible for the sharp rise in ECBs? To answer this question, we conduct regression analysis at the company level using detailed issuance and financial statement data. We find robust evidence that the “Carry Trade” motive explains the rise in ECBs particularly in the period following the global financial crisis. The larger the difference in short-term interest rates between India and the US, our proxy for the profitability of the “Carry Trade”, the more the ECB issuance activity. Figure 2 plots this relationship over time.<sup>3</sup>

Prior to the crisis, the relationship between aggregate number of ECB issues and the CT index was negative but it becomes strongly positive following the onset of the crisis. We confirm this aggregate result at the company level as well i.e. the same company is more likely to issue ECBs higher the value of the CT index.

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<sup>3</sup> CT is an index measuring the profitability of the “Carry Trade” defined as the difference between Indian and US 3-month interest rates scaled by the implied volatility of 3-month FX options. Scaling by implied volatility allows us to adjust for risk.

*Figure 2: Carry Trade and ECB Issuance*



Additionally, we do not find evidence consistent with the other explanations. Investment opportunities do not explain increased issuance nor does a rising share of exports in a company's total sales. The "carry trade" explanation also requires that the companies invest the raised proceeds in short-term rupee deposits. This is exactly what we find: Post-ECB issuance, the proceeds held as cash or bank deposits is higher vis-à-vis an equivalent amount of funding raised through other sources such as domestic borrowing or retained earnings.

#### **4. Consequences of increase in ECB**

Borrowing in foreign currency exposes companies to exchange rate risk. If unhedged, company balance sheets might be impaired by significant exchange rate depreciations. This might not only hamper investment, but any losses that non-financial corporates suffer on their foreign liabilities would reduce their creditworthiness and push the more highly levered non-financial corporates towards defaulting even on their domestic obligations.

Are corporates hedging the exchange rate risk that comes from their increased ECBs? Borrowers might be able to hedge this risk either naturally, in the case of exporters, or through financial contracts.

However, our analysis suggests that the currency risk is not adequately hedged. We construct a stock market-based measure of foreign exchange risk for publicly traded companies, and find that following a new ECB issuance, on average, the foreign exchange exposure of borrowers, as proxied by our measure, increases. We validate our measure as well as test potential consequences of ECB on borrowing firms through a case study of a period of market stress known as the ‘taper tantrum’.

#### **4.1 Taper tantrum case study**

Between May and September 2013, the US Federal Reserve made a series of statements about the probability of the tapering of their quantitative easing (QE) program. These statements led to a surge of foreign capital outflows from emerging markets, creating turmoil and a sharp decline in asset prices, a phenomenon that became known as the ‘taper tantrum’. In India, the Rupee declined almost 14% against the US Dollar while the NIFTY market index fell about 2.35%.<sup>4</sup>

The ‘taper tantrum’ episode provides an ideal natural experiment to test market reactions to shocks to foreign exchange volatility. It also served as a potential preview to tighter international funding conditions. In an event study framework, we look at equity market returns of ECB issuing companies around three key dates on which the Federal Reserve made statements about tapering QE.<sup>5</sup>

Our results show that companies more likely to borrow when the CT index is higher i.e. those borrowing to take advantage of the “carry trade” are hit hardest during the stress period. Their stock returns are lower even after controlling for market and foreign exchange returns. Our results also show that our market-based measure does a better job of identifying corporates that see lower returns than measures based purely on balance sheet metrics like the ratio of foreign currency debt to total debt. Among firms with highest foreign exchange risk, it is exactly those firms that borrowed when the CT index was higher that are the hardest hit. All in all, this natural experiment suggests that companies are not adequately hedging the exchange rate risk that comes from ECBs and this leaves them vulnerable during times of stress.

#### **4.2 Effects on domestic financial sector**

The rise in ECB issuance also has important implications for the domestic financial sector. Losses suffered on foreign currency liabilities by highly levered large corporates might lead them to default

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<sup>4</sup> In August 2013 the RBI responded by imposing capital controls on outflows by residents

<sup>5</sup> The dates were May 22, 2013, June 19, 2013 and September 18, 2013.

on their domestic obligations. Additionally, the “carry trade” motive implies that companies are putting the proceeds from ECB in domestic wholesale deposits. A sudden shock to company balance sheets might force them to withdraw deposits, potentially causing a funding squeeze for banks that have come to rely on these wholesale deposits for their funding needs.

Using data on the domestic banking relationships of ECB borrowers, we find that domestic banks with links to these companies are themselves more exposed to foreign exchange risk than other banks. This confirms that there is a risk of spillover from ECB borrowers to domestic banks they have relationships with.

## **5. Policy implications**

With interest rates in AEs starting to rise, foreign currency borrowers might face heightened stress. It is possible that rolling over debt or paying it off will be harder. Policymakers need to be cognizant of the risks that this poses for the domestic economy and financial sector. Our analysis suggests steps that could be taken. Market-based measures should be used to measure the foreign exchange exposure of companies rather than balance sheet-based measures. While this is only possible for publicly traded firms, the overall message is that foreign currency hedging is not being adequately done. Additionally, risks to the banking system need to be considered with special attention paid to banks linked to ECB borrowers. Perhaps the risk weights on Rupee loans made to such borrowers can be increased. Overall, regulators can also be more stringent about approvals given to ECBs since our analysis suggests that companies are borrowing just to take advantage of favourable funding conditions rather than to fund productive investment.