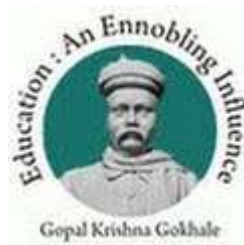


**External Commercial Borrowings of India (Foreign Currency): Macro  
and Micro Dimensions**

SUBMITTED IN FULFILLMENT  
OF THE REQUIREMENTS FOR THE DEGREE  
OF  
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IN  
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AT



**GOKHALE INSTITUTE OF POLITICS AND ECONOMICS**

By

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## DECLARATION BY THE CANDIDATE

I *N. Prasanna Venkatesan*, hereby declare that this thesis on the topic entitled, "*External Commercial Borrowings of India (Foreign Currency): Macro and Micro Dimensions*" is submitted for the award of Degree of Doctor of Philosophy in Economics to the Gokhale Institute of Politics and Economics, Pune 411004, India. It is an original contribution and has been completed during my tenure as a research scholar at Gokhale Institute of Politics and Economics, Pune, India.

This thesis has not been submitted by me elsewhere for the award of any degree or diploma-part or full. The information gathered by me elsewhere for the thesis is original, true and factual. Such material as has been obtained from other source has been duly acknowledged in the thesis. I hereby request, to consider the thesis for the award of the degree of 'Doctor of Philosophy'.

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CERTIFIED that the work incorporated in this thesis entitled "*External Commercial Borrowings of India (Foreign Currency): Macro and Micro Dimensions*" submitted by *N.Prasanna Venkatesan* was carried out by the candidate under my supervision. It is an original contribution and has not been submitted elsewhere for the award of any other degree. Such material as has been obtained from other source has been duly acknowledged in this thesis. I recommend that the thesis should be considered for the award of the degree of 'Doctor of Philosophy'.

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I would be proud if at some point, my work is useful to the policy makers.

I dedicate this work to my family, to GIPE and to my nation.

N. Prasanna Venkatesan.





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## Acronyms

Adj. R-sqr.	Adjusted R-squared
AE	Advanced Economies
BIS	Bank of International Settlement
BoP	Balance of Payments
BRICS	Brazil, Russia, India, China and South Africa
BSST	Brazil, South Africa, South Korea and Turkey
CAC	Capital Account Convertibility
CAD	Current Account Deficit
CBOE	Chicago Board of Exchange
CMIE	Center for Monitoring Indian Economy
CY	Calendar Year
DEA	Department of Economic Affairs
EBDITA	Earnings Before Depreciation, Interest, Tax and Amortization
ECB	External Commercial Borrowings
EM	Emerging Markets
EMDE	Emerging and Developing Economies
EUR	Euro
FCB firms	Foreign Currency Borrower firms
FCCB	Foreign Currency Convertible Bond
FDI	Foreign Direct Investment
FEMA	Foreign Exchange Management Act, 1999
FERA	Foreign Exchange Regulation Act, 1976
FY	Fiscal Year (April 1 to March 31 for India)
GBP	Pound Sterling
GDP	Gross Domestic Product
GIPE	Gokhale Institute of Politics and Economics
HIC	High Income Countries
IBRD	International Bank for Reconstruction and Development
ICICI	Industrial Credit and Investment Corporation of India

IDA	International Development Association
IDBI	Industrial Development Bank of India
IFCI	Industrial Finance Corporation of India
IMD	India Millennium Bonds
IMF	International Monetary Fund
JPY	Japanese Yen
LIBOR	London Interbank Offer Rate
LIC	Low Income Countries
LMIC	Low & Middle Income Countries
MIBOR	Mumbai Interbank Offer Rate
NEP	New Economic Policy
Non-FCB firms	Non-foreign Currency Borrower firms
NRI	Non-Residential Indian
ODA	Official Development Assistance
OLS	Ordinary Least Squares
QE	Quantitative Easing
RBI	Reserve Bank of India
RIB	Resurgent India Bonds
R-sqr.	R-squared
TED	TED Spread
UMIC	Upper Middle Income Countries
USD	US Dollar
VIX	Volatility Index of Chicago Board of Exchange
WDI	World Development Indicators













## **Chapter 1 Introduction**

Capital is the most important resource in that it has the ability to attract other resources. Every entrepreneur desires to source capital at the lowest possible cost. Suppliers of capital desire to supply at the highest possible price. It is these desires that cause movement of capital from where it is in surplus to where it is in demand. *Capital flow* is the movement of finance capital from a capital exporting country to a capital importing country, facilitating cross-border investments. Capital flows take the form of direct investment in equity, portfolio investments and debt capital by official and private creditors to official and private borrowers.

*External Commercial Borrowings of India (ECBs) refer to commercial debt capital flow into India, borrowed by eligible domestic entities, from eligible foreign creditors at commercial lending rates.* Major channels of ECBs are through banks, bonds and Trade Credits. ECBs play an increasingly important role in India's external debt, especially since the mid-2000s. While India has been recording an increasing amount of capital flows since the economic reforms introduced during the 1990s, the dominant role of ECBs in external debt is a recent phenomenon that is observed since the mid-2000s. The research community has focused its attention till now on total capital flows into India. Literature specific to ECBs were limited at the commencement of this study. Over recent years, especially during this study, there is increased interest on ECBs. This study is set out in this context, with an aim to fill the gaps in literature and to provide new insights about ECBs.

### **1.1 International background**

Free mobility of capital is one of the primary assumptions of prominent economic theories. The international financial system continuously aims to achieve such free capital mobility. After the great depression of 1930s and the World War II, the attention of global community was the immediate reconstruction of the economy destroyed by the war. In the post-World War II era, the first major development was the establishment of the Bretton

Woods system, in which nations agreed to a system of fixed exchange rate, pegging against the US Dollar, which followed the gold-standard. The Bretton Woods System of exchange rates collapsed in the early 1970s.

This was closely followed by the oil crisis of the early 1970s, which increased export earnings of oil exporting countries, which in turn invested the funds in US Dollar in banks outside the United States. This acted as a catalyst for the international banks to pool in deposits and lend to developing countries in the form of syndicated loans. This was the first major development in global private debt capital flows in the post-World War II era. Implementation of macroeconomic structural reforms by various developing countries during the early 1980s and 1990s, resulted in increased integration with the global economy, providing further impetus to cross-border movement of finance. These movements are in the forms of direct investment, portfolio investments, loans and bonds. In recent years, easy money policy followed by the monetary authorities in Advanced Economies (AEs) contributes to increased global liquidity. Moreover, investors from AEs tend to shift their investments to foreign economies that offer higher interest rates. This acts as a favorable environment for international movement of capital.

Several other contributing factors over the past three decades added strength to the direction of the wind in favor of cross border movement of finance. As money begets money, flow of capital created further investment opportunities across the globe. This resulted in burgeoning international financial firms, growing in size and then by mergers and acquisitions. Innovations in financial derivatives, paradigm shift and vast improvement in communication technologies and software aided analytical tools facilitating high speed, high volume data analysis are some of the positive externalities actively aiding international movement of finance.

Data from the International Monetary Fund (IMF) shows the net private financial flows to Emerging and Developing Economies (EMDEs), which stood at a meagre USD 19.17 billion in 1980, increased ten folds by 1995 reaching a level of USD 192.77 billion. During its peak in 2007 (prior to the financial crisis of 2008), net financial flows stood at USD 714.50 billion, declining to USD 419.93 billion by 2013. Overall, net private financial flows have recorded an exponential growth since 1980.

Active participation of private investors and availability of private capital reduces dependence on official financial assistance on which developing countries relied earlier. Official financial assistance, formally called Official Development Assistance (ODA) refers to lending from official sources such as multilateral financial institutions or bilateral lending and borrowing between sovereign governments. Official capital flows are generally observed to be counter-cyclical, while private capital flows are pro-cyclical.

As a result of the changing global scenario, EMDEs' corporate borrowings is becoming increasingly internationalized. Debt capital flow from private creditors in the international market to private debtors in EMDEs is becoming significantly higher than lending by official creditors to official borrowers in such countries.

## **1.2 Indian scenario: changing composition of external debt**

India is no exception to the global phenomenon of heightened capital flow activity. The fact that, India's investment rate is higher than its savings rate over the past three decades evidences India's dependence on foreign capital to meet its investment needs. When a country's investment rate is more than its savings rate, it is an indication that the country is funding its investments by sourcing funds from the rest of the world, over and above what its own savings could meet. In the case of India, the gap between savings and investments is in the range of 1% to 3% of GDP over the years; during its peak in 2012, the savings-investment gap reached 4.8%.

Like the rest of the world, capital flows into India occur in the form of direct investments, portfolio investments and debt capital flow. The composition of India's external debt has undergone rapid changes in the first decade of the 2000s. The stock of external debt has been exponentially increasing, especially after 2005. Reports on external debt by the Ministry of Finance show, from a debt stock level of USD 134 billion as of March 31, 2005, there was more than three folds in a span of 10 years, raising up to USD 475.81 billion by March 31, 2015 (USD 484.3 billion by September 30, 2016). This is more than



twice the increase during the 14-year period from 1991 to 2005 (1991: USD 83.80 bn, 2005: USD 134 bn).

There are *three defining features* observed in recent changes in India's external debt. *Firstly, private creditors* are gaining *increasing* dominance in the share of external debt. From less than 50 percent in 2001, private creditors' share in external debt reached 82.6 percent by 2016. Share of official creditors, which was more than 50 percent in 2001 has fallen to less than 20 percent by 2016. *Secondly*, while the stock of external debt is increasing both in absolute amount and as a percentage of GDP, *the ratio of concessional debt* to total debt is continuously *decreasing*. This is an indication that the increase in external debt is on non-concessional terms. (Concessional debt is a debt offered at a lesser interest rate than prevailing market interest rates and is usually offered by official creditors). *Thirdly*, the channel-wise composition of external debt has a marked change. In 2001, multilateral creditors held the largest share in external debt (46.5 percent). *ECBs* started occupying *the largest share in external debt* since 2005. By March 2016, the ECBs accounted for 37.3 percent of total external debt; multilateral creditors occupied only 11.1 percent of the share in external debt. These three defining features highlight the *increasing dominance of private borrowing from private creditors in non-concessional and commercially priced loans*.

This changed composition and dominance of private debt creates a need to understand its characteristics, determinants and response to changes in determinants of private debt capital flow. As the change in composition of external debt is a relatively recent phenomenon observed over the past decade, research on this area is observed to be limited. This study aims to address this research gap.

### 1.3 External Commercial Borrowings

The term ‘External Commercial Borrowings’ covers a wide array of international borrowing choices available to Indian firms. ECBs take the form of bank loans, bonds and trade credits, with various forms or choices under these three major categories. ‘ECB’s as a choice of borrowing includes bank loans, securitized instruments (e.g. floating rate notes and fixed rate bonds, non-convertible, optionally convertible or partially convertible preference shares), buyers’ credit and suppliers’ credit. All these variety of choices are together governed by the regulatory policy on ECBs.

ECB policy has been evolving over the years. Under an overall guiding framework, several sub-level policy changes are continuously announced by the Reserve Bank of India (RBI). Basic features of the policy framework currently in force (introduced from November 30, 2015 are summarized as follows:

ECBs are permitted under three tracks, **Track I** (medium term borrowings), **Track II** (long term borrowings) and **Track III** (medium term borrowing in Indian Rupee). Borrowings are classified into two routes – *Automatic Route* and *Approval Route*. Automatic Route borrowings refer to borrowings that do not require prior approval of the RBI. Approval route borrowings need prior approval of the RBI. Borrowings permitted under Automatic Route and Approval Route are specified by the policy. In general, anything that is not covered under the Automatic Route falls under the Approval Route. There is also annual ceiling on amounts of borrowing under the Automatic Route, which varies according to the borrowing entity’s industry sector.

ECBs can be raised for capital investments towards new projects, modernization. The policy also permits ECBs for overseas acquisitions, investment in telecommunication, power and services sectors namely, hotels, hospitals and software sector. The end use restrictions are elaborate and change over time. The policy **prohibits** borrowings for the purpose of investment in capital market, on lending (other than by permitted financial institutions), real estate and investment in domestic equity.

The policy governs two other major conditions – *maturity and cost of borrowing*. The policy's principles on maturity are from 'minimum' limit rather than 'maximum' **maturity**. The minimum average maturity for ECBs less than USD 50 million is three years. The minimum average maturity for ECBs more than USD 50 million is five years.

The policy also prescribes ceiling on cost of borrowing. Termed as '**All-in-cost ceiling**', the policy aims to limit the cost of borrowing at a certain spread above the London Interbank Offered Rate (LIBOR, which is the widely used benchmark index rate). The All-in-cost ceiling is revised from time to time, in response to the prevailing market conditions.

ECBs can be raised through **recognized lenders**, such as international banks, multilateral institutions, capital markets, export credit agencies, suppliers of equipment, foreign collaborators and foreign equity holders.

In terms of **security** for borrowing, the choice of security is left to the borrower. Choices of security available are creation of charge on moveable and immoveable assets, financial securities and issuance of corporate and personal guarantees. The policy prescribes further regulations for creation of different forms of securities.

Reported new borrowings under ECBs has been growing exponentially since 1991. New borrowing approvals in fiscal year 1991 was USD 1,903 million. From 2012 onwards, it exceeds USD 33,000 million every year. ECB outstanding was USD 13, 909 million on March 31, 1991. By December 31, 2015, the outstanding amount stood at USD 183, 613 million (Quick Estimates). Except for reduction in new borrowings during times of global liquidity shortage (such as financial crisis of 2008), there is continuous increase in new borrowings, paving way for ECBs to occupy the largest share in India's external debt (close to 37.3 % as of March 31, 2016).

## 1.4 Need for the study

Each of the three forms of capital flows - equity, debt and portfolio investments - has its own characteristics, determinants, causes and effects.

Direct investments create ownership in firms of the capital importing country, in favor of residents of the capital exporting country. This form of capital flow is less volatile to financial shocks. However, it involves sharing or parting of control and ownership to residents abroad and therefore, parting profits in investments. As direct investments involve control in ownership, sovereign governments regulate direct investments by policies acceptable to the country. Portfolio investments are usually speculative in nature. They are highly volatile to financial shocks. Their sudden withdrawal can cause significant impact on exchange rates and foreign exchange reserves of the capital importing country. Private debt capital flows are not highly volatile and do not involve sudden withdrawal. However fresh flow of debt capital normally reduces during times of financial shocks. Debt capital flows do not require parting with control and ownership of firms to residents of capital exporting country. However, default in debt service payments simultaneously by many borrowers can trigger a financial crisis by itself. It will also affect credit worthiness of the capital importing country, besides inviting harsh debt restructuring conditions. On the other hand, official debt capital flow is generally counter-cyclical. It plays a stabilizing role in response to volatile private capital flows and fluctuations in output and commodity prices.

Being highly dependent on private debt capital from abroad has potential challenges for macroeconomic management of a capital importing country. As capital flow is dependent on global financial liquidity, a shortage in liquidity will result in short-supply of debt capital, thereby resulting in sudden stop in flow of capital. By transmission, it impacts domestic real activity. During times of financial shocks when capital flows reduce, it results in short-supply of foreign exchange, making the domestic currency to depreciate. Therefore, the liability of debt service obligations by existing domestic borrowers towards their foreign creditors increases due to weakening home currency. This is further aggravated by slowdown in domestic real activity, impacting income otherwise earned by

borrowers. This phenomenon further translates into probable default by a large number of borrowers towards debt service obligations. It then evolves into a crisis of confidence; as foreign creditors tend to panic due to impending default by a large number of borrowers of the debtor country. This in turn triggers withdrawal of other forms of capital, more immediately, the portfolio investments. Again, withdrawal of huge capital creates stress on foreign exchange reserves, exchange rate and other macroeconomic variables, thus bursting into an economic crisis. As the international economy is integrated across various countries, a crisis in one country affects other countries as a chain reaction.

Studies on various financial crises in the international scenario have observed that, *inter alia*, high external debt levels with short-term maturity is *one of the* contributing or catalytic factors in triggering or in furthering the crisis, as during times of liquidity crisis, creditors refuse to roll-over maturity of short-term debt. This evolves as a solvency crisis. Crises such as Brazil (1980s), Mexico (1982), Tequila crisis (1990s), East Asian crisis (1997) and the recent Russian crisis are some examples. Similar to other Emerging and Developing Economies, India too is building up its foreign exchange reserves, accumulating external debt, especially private debt.

Flow of debt capital also adds to building up of foreign exchange reserves, the management of which incurs a cost. While the extant policy intends to permit external borrowings as an '*additional*' source of finance, borrowers tend to expect it as '*cheaper*' source of finance. Literature recognizes the problem of moral hazard. As private borrowers tend to accumulate unhedged foreign currency exposure obligations, as they believe that the government would manage the exchange rate. When numerous borrowing firms as a class fail to hedge foreign currency exposure, their balance sheet is left open to exchange rate fluctuations. When exchange rate depreciates, their debt service obligation in domestic currency increases to the extent of depreciation. Further, when the interest rate on foreign currency is on floating rate, an increase in the underlying benchmark index rate (as applicable to the respective the foreign currency, such as London Inter-Bank Offer Rate for US Dollar), exposes the borrowing firms towards interest rate risk. The combined effect of interest rate risk on a foreign currency loan and exchange rate risk widen the gap in currency mismatch. When a large number firms in an economy do not hedge their currency

exposure, a shock-event creates a market failure, resulting in negative externalities to the rest of the citizens.

While the currency mismatch and moral hazard risk is recognized, the early school of thought that ‘foreign debt is dangerous’ is changing. With sufficient hedging measures, foreign debt capital can be a boon to meet domestic investment requirements; as it does not acquire ownership and control of domestic firms and does not involve huge reversals in case of shocks, it offers potential benefits in terms of cheaper source of financing if borrowing firms are able to manage the loan terms efficiently. Thus, if carefully managed, foreign debt capital can play an important role in the economic activity and growth of EMDEs.

Fast changing, highly volatile and contagion-prone global economic conditions necessitate a country’s economic management to maintain vigil, without losing opportunities to facilitate growth and development. There is a need to maintain a ‘rope walking like’ balance, in creating a policy environment that both supports free capital movements for investments, at the same time maintaining sufficient safeguards to mitigate risks arising out of shocks.

It is these challenges and opportunities that create a need to study macro and micro dimensions of External Commercial Borrowings of India.

## **1.5 Objectives**

In the backdrop of issues highlighted above, this study aims to achieve the following objectives:

*Firstly*, the study aims to explore key *descriptive characteristics of ECBs* such as type of firms, distribution of industry and sectors that accumulate foreign debt, maturity of borrowings, trends in pricing and firm level descriptive characteristics such as size of foreign currency borrowing firms, export-to-sales ratio, profitability, ratio of foreign currency debt to total debt and investment in new fixed assets.

**Secondly**, it aims to understand the relative significance of *determinants of flow of External Commercial Borrowings*, with specific reference to push factors and pull factors. Push factors considered are GDP growth rates and interest rate scenario of Advanced Economies, global liquidity flow and credit risk and volatility in the US financial market. Pull factors considered are domestic economic growth, domestic interest rate, exports, imports, size of the corporate sector and imports cover of foreign exchange reserves.

**Thirdly**, it aims to understand the *effect of exchange rate movements on investment by firms holding foreign currency debt*.

## 1.6 Scope

**Period:** The study traces evolution of ECBs since its origin in India, from the early 1980s. Determinants of ECB inflows are empirically analyzed by using global and macroeconomic data covering the period from 1995 to 2015. Effect of changes in exchange rate on investment by firms holding foreign debt is analyzed with firm-level data for the period from fiscal years 2003 to 2014.

**Source of Data:** Data of fiscal year-wise approvals of ECBs as published by the Ministry of Finance in its Status Report on External Debt (various years) are used. To study macro level descriptive characteristics of ECBs, monthly data on ECBs published by the RBI for the periods 2005-2016 is used. Firm level data is obtained from Prowess database of Center for Monitoring Indian Economy (CMIE).

Data of macroeconomic and international market variables such as GDP, foreign exchange rate, global capital flows and interest rate differential are collected from publications of the RBI, the World Bank and the International Monetary Fund. Data on pricing is collected from Bloomberg terminal.

## **1.7 Methodology:**

- Ordinary Least Squares regressions are used to understand significance of push and pull factors covering the period 1995-2015.
- Panel Data Fixed Effects model is used to study the effect of changes in exchange rate on investment by firms holding foreign debt.

## **1.8 Organization of the Thesis**

This work is organized into seven chapters including this introduction, which states the background, need for the study, objectives, scope and methodology. The second chapter reviews theoretical and empirical body of literature on different dimensions of capital flows and external debt, both in the international and the Indian context. The third chapter traces the origin and evolution of ECBs, along with the related economic and political environment. It also discusses the evolution of government policies on ECBs over time.

The fourth chapter presents a descriptive analysis of macro and micro dimensions of ECBs, such as distribution of borrowing by firm type, borrowing channel, industry and sector distribution of foreign debt outstanding, distribution of maturity patterns, trend in pricing of foreign debt, differences in characteristics of firms with and without foreign debt, differences in characteristics of various industries with foreign debt outstanding. The industry level characteristics presented are size of firms, share of exports in total sales, outstanding foreign currency debt, share of foreign currency debt in total liabilities, Debt to Equity ratio and cash outflow towards investment in new fixed assets indicating capital investments.

The fifth chapter presents an analysis of push and pull factors that cause of ECB inflows and their relative significance.



The sixth chapter aims to address the key question – effect of changes in exchange rate on investment by firms holding foreign debt.

The seventh and the last chapter summarizes the study, its findings and conclusions, discusses inferences and makes policy prescriptions.

It is hoped that, the outcome of this work will be highly useful in gaining new insights about ECBs and provide valuable inputs to policy makers.



## **Chapter 2 Literature Review**

Literature review on the subject of study warrants approaching from **four dimensions**, namely: (1) *International capital flows – theory, determinants, benefits and issues* (2) *Debt capital flow – theory, determinants, benefits and issues* (3) *Corporate finance – theory and evidence*; (4) *Literature specific to External Commercial Borrowings of India*; and (5) *Trade Credits*.

### **2.1 International Capital Flows – theory, determinants, benefits and issues**

It is already well known through economic theory that, capital moves from a country with lower Marginal Efficiency of Capital (MEC) to the country with higher MEC. In equilibrium, the net flow of capital must be equal to the current account balance. An equilibrium capital movement is the result of an excess of current absorption of present goods over current output for the borrowing country or excess of current savings over current supply of profitable uses in the lending country. Uninhibited capital flows will equalize world interest rates and MEC. As the stock of debt increases, the present value of future payments increases up to a certain point and then declines. This point of inflection is the threshold, beyond which the borrowing country would start defaulting.

(Miller, 1968) developed an equilibrium theory of international capital movement that parallels the theory of comparative advantage (of international trade). On the similarities between capital flows theory and comparative advantages theory, Miller posits that, in both the theories, each country specializes in the ‘good’ in which it has the lower relative price; equalization of world MECs and interest rates via capital movements would not stop future capital flows; underlying causes of commodity trade and capital movements are same, such as differences in factor endowments, production functions and ‘tastes’ (in the context of capital flows, ‘tastes’ refer to time-preferences). In a nutshell, Miller demonstrated pure trade theory can be extended and applied to international capital movements.

According to economic theory, international capital mobility is influenced by interest rate differentials between the capital importing country and the capital exporting country.

(Floyd, 1969), presents an analytical framework showing interest rate differential is *not* an important influence in determining capital mobility; capital flow is influenced by accumulation of money balances and the levels of investment at home and abroad; interest rate has an influence in so far as it determines the level of investment. Further, interest rate differential is simultaneously determined by capital flow.

On the effect of capital mobility on monetary and fiscal policies, Mundell-Fleming model, 1962 shows that, under conditions of perfect capital mobility, monetary policy is more effective than fiscal policy when there is flexible exchange rate; and fiscal policy is more effective than monetary policy under fixed exchange rate. The current world scenario is tending towards perfect capital mobility and most countries are operating under flexible exchange rate regime.

Making a theoretical analysis of growth pattern of a small open economy by linking with capital flows, (Onitsuka,1974) classifies three growth phases based on savings ratio. First scenario is when savings ratio is higher than the growth rate of population and world rate of interest. The next scenario is when savings ratio is low, sub-divided into two cases. Case I is when the savings ratio is low, but larger than investment-output ratio; Case II is when the savings ratio is lower than the investment-output ratio. In all the three scenarios, the open economy with a low capital-labor ratio typically imports capital during early stage of economic growth. In the first two scenarios, the economy gradually starts exporting capital after attaining certain level of capital accumulation; yet, it maintains its position as a net-debtor. Eventually, the economy becomes a fully capital exporting one (that is, becomes a creditor). In the third scenario (Case II), the economy never becomes a capital-exporter.

While theory expects capital to flow from rich to poor countries, (Lucas, 1990), in his seminal paper, raised a question as to why capital does not flow from rich to poor, instead it often flows the other way around. He offers possible explanations such as difference in human capital, market imperfections and political risk.

(Eden, 2013) presents a theoretical proposition on international liquidity. Liquidity rents provide an incentive to agents in developed countries to create opportunities for more liquidity. It leads to excessive capital accumulation in developed countries, which also

have the comparative advantage to create liquidity. Also, it creates buildup of collateral in the developing countries, in the form of privately backed claims with no productive use. The effect is both welfare reducing and Pareto inefficient.

Studying contagions and volatility of capital flows vis-à-vis progress in globalization, Calvo & Mendoza, 2000 show that, with progress in globalization, the choice of countries (to invest) available for investors widens, thereby resulting in decreased utility gain in paying fixed costs of information gathering about the countries to invest. There also exists a variable cost for the investors, which depends on the performance of the portfolio. The marginal cost of producing a mean return lower than the marginal gain of beating the market creates a 'contagion range'. Investors act within the contagion range. As globalization progresses, incentive to collect country-specific information decreases; in the presence of performance-linked variable costs or reputational costs, this results in volatility in capital flows.

By using gravity model to determine if the location of developing countries, measured by distance from developed countries matters in the inflow of capital into developing countries, Gosh & Wolf, 1998 show that, distance was not a significant factor, after controlling for country specific income levels (GDP per capita).

Studying the relationship between financial liberalization and growth, Bekaert, Harvey & Lundblad, 2001 conclude that, financial liberalization is positively associated with investment/GDP ratio; foreign capital contributes to growth, however with worsened trade balances.

Sethi, et. al, 2003 analyze pattern of Foreign Direct Investment flows from US during the period 1981-2000, to examine characteristics that influence the destination of FDIs. They conclude that, there is a *bandwagon effect* as well as *efficiency-seeking effect*. The initial bandwagon effect directs FDIs towards Europe. The bandwagon effect intensifies competition, resulting in decline in profitability. Therefore, investors look for more efficiency and shift towards low-wage destinations in Asia, further aided by increasingly liberalizing policies of Asian countries.

Stalling, 2007 analyzes and discusses distributional dimensions of foreign capital flow. East Asia, Eastern Europe and some Latin American countries received larger capital flows when compared to Sub-Saharan Africa, South Asia and non-oil exporters in the Middle East. Well established and large firms have greater access to foreign private capital. She also observes increasing evidence that countries with good corporate governance systems have deeper financial markets and greater opportunities to tap foreign capital. Stalling prescribes political stability, transparency in financial transactions and better institutional norms to attract more foreign capital. In terms of effect of foreign capital on growth, she observes that, except for China and Chile, results for other countries has not been favourable; this could be possibly due to domestic conditions than attributable to foreign investors. She calls for addressing issues of productivity of capital, equitable distribution and access to capital.

Studying net private capital flows to Emerging and Developing Economies, Ahmed & Slate, 2013 find that, in terms of determinants, growth differential, interest rate differential and risk aversion are the key determinants of capital inflow; capital control measures dampen capital flows; and when countries step-up intervention to manage currency appreciation, it is followed by stronger inflows of capital.

On the *debate between foreign capital and economic growth*, there are mixed evidences. Bordo & Meissner, 2007 who studied the relationship between growth and foreign capital during the first era of globalization covering the period 1880-1913, when conditions of capital mobility were similar to what prevails today, conclude that, there is a time lagged association between foreign capital and growth, possibly due to flow of most investments towards infrastructure.

Feldstein, 1994 and Bosworth & Collins, 1999 find a positive relationship between capital flow and domestic investment.

Summers, 2000 posits that, reallocation of capital from developed countries to developing countries leads to efficiency gains ultimately resulting in social benefits.

Aizenman, Jinjark & Park, 2013 study as to how different types of capital flows contribute to growth, covering the period from 1999-2010 and about 100 countries. The

results show that, Foreign Direct Investment (FDI) flows contributed significantly to growth, while non-FDI flows did not. Short-term debt flows had nil contribution before the financial crisis and turned to negative contribution during the crisis.

*On the other hand*, Prasad, Rajan and Subramanian (2007) show that, non-industrialized countries that have imported foreign capital have not grown faster than those that have not. The authors argue that, the possible reason could be the limited capacity of non-industrialized countries to absorb foreign capital.

Sachs (1990) views external debt as the cause of economic slowdown. Chowdhry (2000) showed evidence against both these propositions in the context of Australia, by establishing unilateral causation between external debt and growth.

Similarly, Carkovic and Levine (2000) do not find any association between FDI flow and growth.

On a cross-country evidence for three periods – 1970s, 1980s and 1990s, Global Development Finance report, World Bank finds a stronger relationship between private capital flows and growth; growth is also dependent on absorption capacity.

In the **Indian context**, Sethi (2013) finds strong evidence of association between foreign capital and economic growth.

Okafor and Tyrowicz (2008) study the relationship between foreign debt and domestic savings in developing countries. Their panel data estimation of developing countries' debt for the period from 1975 to 2004 shows that, foreign debt has a negative impact on domestic savings (the model tested assumed only government as the borrower).

Federico, Vegh and Veletin (2013) study the effects of capital flows composition on output volatility. The composition they considered comprised Foreign Direct Investment (FDI) and other investments (OTR –consisting portfolio flows and loans and trade credits. Their study brings out three findings: (i) the volatility of output is positively related to the volatility of capital flows (comprising FDI, portfolio investments, loans and trade credits). (ii) the volatility in output is an increasing function of correlation between FDI and other capital flows; and (iii) the output volatility is a decreasing function of share of FDI in total

capital inflows. These findings are important, as they help understand the relative importance of composition of capital flows (Direct investments, debt and portfolio investments) in contributing towards volatility in output.

There are four main *benefits* of financial openness that facilitates capital flows: (i) consumption smoothing – it allows a country to borrow in bad times and lend in good times. Capital flows increase welfare by allowing households to smooth their consumption path over time ; (ii) it helps low income countries to tap international pool of resources and use towards domestic investments and growth; (iii) it increases macroeconomic discipline, as the market forces the capital importing countries to follow appropriate policies and ensure stability in order to attract more capital; and (iv) it increases efficiency of domestic banking system, lowers costs of financial intermediation, lowering cost of investment and ultimately higher growth rates. (Agenor & Montiel, 2015).

Potential **costs** of financial openness are: (i) an increase in capital flows has been found to be concentrated in a small number of recipient countries. Therefore, concentration in the hands of a few countries, regardless of financial openness of other countries causes problem of lack of access to the other countries; (ii) among the countries that receive capital inflow, if the domestic banking and financial system is weak and does not have adequate supervisory mechanism, there is a possibility of misallocation of foreign capital to unproductive investments; (iii) large capital inflows often have macroeconomic effects such as rapid monetary expansion, inflationary pressures, appreciation in real exchange rate and widening current account deficits; (iv) pro-cyclicality of capital flows leads to a situation in which developing countries are able to borrow only in good times (when there is liquidity in the international market) and not able to borrow during bad times; and (v) volatility of capital flows may have adverse consequences when there are large reversals due to speculative pressures on the domestic currency; borrowers may face ‘liquidity runs’ or ‘sudden stops’. It can also lead to bank runs and trigger financial crisis. (Agenor and Montiel, 2015).

Various literatures discuss the *determinants of capital flows*, largely classifying into ‘**push**’ factors and ‘**pull**’ factors. ‘*Pull*’ factors are those that attract capital due to improvements in the risk-return characteristics of assets issued by developing country



debtors; ‘push’ factors operate by reducing the attractiveness of lending to industrial-country debtors; a third factor at work is a change in the degree of integration as a result of regulatory changes. Pull factors can be *welfare enhancing* or *welfare reducing*. A welfare enhancing pull factor is one that attracts capital flows by higher domestic returns by offering high-yield investment opportunities induced by reforms; a welfare reducing pull factor is caused by poorly supervised financial sector that creates an opportunity for foreign lenders to reap private returns that do not result in social returns. Push factor can be either due to deteriorating risk-return characteristics of assets in the industrial-country or due to structural change in the industrial-country such as increased role of financial intermediaries. (Montiel, 1998).

Several literatures, for instance Fernandez-Arias and Montiel (1996) and Forbes and Warnock (2012) empirically assess episodes of capital flows from the context of push and pull factors. Both factors have been found to be significant under different circumstances. Chandrasekhar (2009) argues that, in case of developing economies, capital flows is largely influenced by global liquidity than domestic factors. Montiel (1998) summarizes that, *push factors may help explain the timing and magnitude of new capital flows, while pull factors help explain the geographic distribution of flows during the time.*

An IMF study of 37 EMDEs shows, the more the capital account liberalization, higher the inflows and outflows, higher the real GDP growth per capita, lower the inflation, higher the equity returns and lower the capital adequacy ratios; bank intermediated capital flows and pre-crisis surge in capital flows are important predictors of decline in growth. EMEs with higher financial openness suffered higher decline in growth.

Experience in developing Asia shows Trade openness increases volatility of all types of capital inflows. Change in stock market capitalization, global liquidity growth and institutional quality lowers volatility (Mercado & Park, 2011).

Evidence from European Union finds important role played by loan-to-deposit ratio, openness and interest rate differential in determining capital flows; regulatory policies only had limited success in controlling capital flows (Tirpak & Rosenberg, 2008).

Brana & Lahet, 2011 show the key role played by international banks in facilitating cross-border claims.

(Cerutti, Claessens, & Puy, 2015) studied 34 EMs and find that countries that rely more on international funds and global banks are more sensitive to push factors.

Herwadkar, 2017 find evidence for increasingly important role of push factors such as world GDP and Fed rate.

By studying 34 EMs, Hannan, 2017 establish evidence for both world-specific and recipient-country specific factors. The magnitude and sensitivity differs upon different instruments.

Bruno & Shin, 2013 find evidence for push factors playing a dominant role in enabling global capital flows.

Cardoso & Goldfajn, 1998 show evidence from Brazil that the government reacts to capital flows by increasing controls during boom period and decreasing controls during distress; effect of controls prevailed for a short period only.

Tracking the monetary policy experience of India vis-à-vis, capital flows, Gupta (2016) finds monetary policy to be pro-cyclical to capital flows, specifically in the context of External Commercial Borrowings.

A current debate on capital flows is the potential impact of **normalization** (gradual withdrawal of easy money policy in the US, also called ‘**tapering**’ or withdrawal of ‘quantitative easing’) on capital flows. Eichengreen & Gupta, 2013 study the potential impact of tapering talk on EMs. Their results show that, a country having better macroeconomic fundamentals is not immune from the impact of sudden and large exchange rate depreciation and increase in current account deficit; “*Emerging markets (EMs) that allowed the real exchange rate to appreciate and the current account deficit to widen during the prior period of quantitative easing saw the sharpest impact.*’ Countries with larger size financial markets would experience higher pressure on exchange rate, foreign exchange reserve and equity prices.

Simulation by Burns et. Al, 2014 shows that, portfolio flows to EMs are most sensitive to external factors; Foreign Direct Investments are less volatile and cross-border bank lending is in the intermediate category. According to their estimate, a gradual process of normalization would result in slowdown in capital flows by 0.6 percent; an abrupt change in the monetary policy would result in far more and sharp reduction in capital flows, to the extent of 50 to 80 percent for several months.

Bhattarai & Chatterjee, 2015 estimated effects of US Quantitative Easing on EM economies. The results showed that, an expansionary US monetary policy resulted in exchange rate appreciation, stock market boom, reduction in long-term bond yields and increase in capital flows to EMEs.

While the effect of US unconventional monetary policy on Asian FDEs is generally small, the effect is more pronounced in case of India, owing to India's deeper financial markets and higher corporate and sovereign bond issuance (Rafiq, 2015).

## **2.2 Debt capital flows – theory, determinants, benefits and issues**

As the subject of this research is on External Commercial Borrowings – debt capital flow into India, it is imperative to survey the literature on cross-country experience of debt capital flows and relevant theories.

Eichengreen & Hausmann, 1999, in their seminal paper, answer the key question as to *why developing countries are not able to borrow in their domestic currency* from external sources. They propounded the now famous '**original sin hypothesis**', according to which, it is the incompleteness of the financial markets that is at the root of the financial fragility, leading to 'original sin', a condition in which a developing country cannot borrow in its own currency from external sources. What causes original sin is a question by itself. However, original sin is prevalent in all exchange rate systems – fixed, floating and pegged. It follows that, 'dollarizing' debt would reduce currency mismatches. It would allow countries to borrow long term. From the creditors point of view too, denominating their lending to local currency of the borrower would give room for manipulation of the

currency by the borrowing country. Therefore, a world of supranational currencies would be safer for capital mobility. Safe capital mobility, in turn, would result in acceleration of income convergence between Advanced Economies and Emerging Markets (EMs), move capital to the South by providing higher returns to the North and making interest rates less volatile.

Extending the original sin hypothesis, Eichengreen, et. al, 2003 show the implications of *original sin* on macroeconomic factors, terming it as ‘the pain of original sin’. They showed that, countries suffering from original sin found it difficult to move towards greater currency flexibility, higher interest rate volatility, capital flow volatility and reversal, lower credit ratings and crisis prone. They also analyze the determinants of original sin (‘mystery of original sin’). Country size emerged as the key determinant of original sin, with some exceptions. Even countries with strong policies and institutions did not escape original sin. The authors argue that, the developing countries are late entrants into the international financial market, while the developed countries have the first mover advantage over their currencies. Hence, developing countries are not able to add their currencies into international financial portfolio.

Hansen,1974 develops a theoretical framework to measure optimal international lending and borrowing. According to his framework, apart from the conventional rule of optimal borrowing, the ratio of foreign capital to total stock of capital (‘Debt-Equity’ ratio) can be considered as a good measure of expropriation risk, as this implicitly goes into lenders’ calculations.

It is well known in theory that **debt overhang** (Myers, 1977) is a situation in which the benefit of additional borrowing would go to existing creditors than prospective creditors, thereby preventing new creditors from providing additional credit. Countries or firms in this situation often need to negotiate for restructuring or forgiving existing debt service.

Observing the pattern of the pattern of commercial borrowings from 1968 to 1975, (Bird, 1980) find increasing role of private banks in financing the current account deficit of non-oil-exporting LDCs. During 1968-75, official borrowing rose at an annual average of 25.3 per cent, whereas, private long-term borrowing from banks located abroad rose by an

annual average of 61.3 per cent. Most of the increase was observed after 1971 and in particular 1973, due to Balance of Payments deficits faced by LDCs. During 1975, among new loan commitments contracted by all LDCs, 53.5 per cent was with private creditors and only 19.5 per cent was with international organizations. By mid 1970s, LDCs constituted the single most significant group of borrowers in the Eurocurrency market. Bird identifies five major **determinants** of a potential borrower's creditworthiness, namely, the level of international liquidity as measured by the ratio of gross international reserves to import goods and services; economic growth, as measured by the rate of growth of real GNP over recent time; the external debt situation, measured by the expected change in the debt service ratio over the short-to medium-term; export performance; and the existing level of private banking exposure.

Eichengreen & Mody, 1998 study relationship between bond issuance, issuer characteristics, bond spreads, macroeconomic indicators and risk-free return (measured by proxy variable, yield on 10-year US Treasury bonds). The study was focused on a key question as to whether changes in bond spreads are explained by bond issuer characteristics or macroeconomic indicators. The study covered bonds issued by fifty-five EM countries, during the period 1991-1997. The findings show that, changes in bond spreads were largely influenced by macroeconomic indicators than bond issuer characteristics, indicating that, investment in bonds are determined largely by risk perception of investors than fundamentals of the issuer. Also, there was a negative relationship between bond issuances and U.S. interest rates, proving that, investors largely go by their need to hunt for yields.

Experience of firms in Finland shows find hedging is an important determinant of foreign debt. Other determinants are interest differential and firm size Keloharju & Niskanen, 2001.

Determinants of issuance of foreign debt by Mexican firms are found to be positively related to the value of imported goods as a ratio of sales, indicating that, firms used foreign currency borrowings to import capital and other goods from abroad. Share of foreign ownership, used as a control variable, did not prove to be significant; ex-post profits for firms with higher foreign currency borrowings were lesser (Gelos, 2002).

On the effect of changes in exchange rate on investment, Bleakley & Cowan, 2002 find a positive relationship between depreciation in exchange rate and new investment by firms already holding foreign debt.

Investigating the determinants of debt issuance in ten major countries, Kedia & Mozumdar, 2003 find foreign operations and information asymmetries between foreign and domestic investors as the two major factors; other variables such as arbitrage taxes, liquidity of the underlying debt market or legal regimes did not show sufficient evidence as determinants of issuance of foreign debt.

Analysis of bonds and loans raised by EMs between 1991 and 1999 show that macroeconomic fundamentals have a significant impact in determining the composition of external debt. Risk perceptions determine both borrowers' and lenders' decision as to whether to go for bonds or bank loans (Hale, 2007)

Brown, et. al. 2009 study foreign currency borrowing by small firms in 26 transition countries, by surveying more than 9,000 firms, taking into account both firm-level and country-level factors. At the firm-level, the results showed foreign currency earnings as the strong determinant of foreign borrowing. At the country level, the study differed from other literature - it did not find interest rate differential or exchange rate movement explaining foreign debt. Rather, corporate governance, capital controls and presence of foreign banks were observed to be the key factors determining debt capital flow.

Linking real sector and financial services, Justin Yifu Lin, et. al, 2009 hypothesize that, there exists a reverse relationship; factor endowment at each stage of development determines the optimal industrial structure in the real sector, which in turn determines the appropriate structure of financial services. Therefore, there is an endogenously determined optimal financial structure for the economy, at each stage of development.

A theoretical framework postulates low cost foreign currency debt ameliorates financial frictions in the economy, reduces borrowing firm's idiosyncratic risk but exposes the system to correlated default risk through exchange rate devaluation (Ariccia, Laeven, & Marquez, 2011).

Observing even small non-exporting firms in Lebanon borrowing in foreign currency, Mora, Neaime & Aintablian, 2013 approach the issue from the perspective of risk management hypothesis, signaling hypothesis and collateral hypothesis. Risk management hypothesis denotes firms with foreign exchange earnings tend to incur dollar debt in order to take advantage of the natural hedge they have against exchange rate risk. Signaling hypothesis stands for tendency of firms to borrow in foreign currency in order to signal creditors that they are 'good' firms. The foreign currency debt should discipline borrowers ultimately leading to higher ex-post profits. Collateral hypothesis posts that, firms that are able to offer more collateral are more likely to access foreign debt. The results support risk management hypothesis, informational transparency and ability to offer collateral as factors to increase likelihood of dollar debt.

Taking 30-year sample of 70 countries, Catao & Milesi-Ferretti, 2013 show that, net foreign liabilities in excess of 50 per cent of GDP in absolute term and higher than 20 per cent of the country specific historical mean possibly indicate a higher credit risk. Additionally, net external liabilities more than 35 per cent of GDP and the speed at which overall foreign liabilities accumulate are also key factors.

Evidence from Turkey shows firms with limited export revenues had higher foreign currency debt; Although, prima facie, this appears to be risky, on a closer observation, it is found that these firms were earning higher foreign exchange profits through other mechanisms Hulagu & Yalcin, 2015.

Evidence from **Mexico** suggests that, global liquidity has a significant influence on corporate finance. As global liquidity eases, large firms shift away from domestic sources of debt to foreign debt. This in turn results in crowding-in of funds to small and medium enterprises in the domestic market. Carabarin, Garza & Moreno, 2015.

Studying the effect of foreign debt on firm performance, Gabrijelcic, et. al, 2016 find while firm profitability is negatively related to total leverage, it improves positively with foreign debt.

Addressing the key question of risk hedging, Dominguez, 1998, adopt a risk-return methodology following Capital Asset Pricing Model, to study degree of hedging by

Japanese firms that are exposed to dollar by means of invoices. The results suggested that Japanese firms were not adequately hedged to dollar exposure.

With respect to the **effect of external debt on economic growth**, there are conflicting views.

Kapur, 1977 finds the flow of Eurocurrency credit is positively related to the rate of economic growth, export performance and the level of reserves and negatively related to the estimated debt burden and the existing degree of exposure.

By analyzing linkage between external debt and growth of 70 countries over the period 1976-2011, Shabbir, 2013 finds that, rise in external debt dampens growth by allocating fiscal space to service external debt.

*A non-linear relationship between debt and growth* was estimated for EURO area by Checherita & Rother, 2010. Consistent with this evidence, Dauda.M, Ahmad & Azman-Saini, 2013 find an *optimal level of external debt* in Malaysia.

Analysing 18 OECD countries over the period 1980 to 2010 covering government debt, non-financial corporate debt and household debt, Cecchetti, et. al, 2011 conclude the **optimum debt level hypothesis**, by summarizing ‘beyond a certain level, debt is a drag on growth’.

On the other hand, Uzun, et. al, 2012 find a positive relationship between external debt and growth in case of 19 transition economies during the years 1991-2009.

In the case of European Union, Ferreira, 2011 finds limited evidence for relationship between foreign debt and economic growth. However, there is bidirectional causality between public debt and growth.

Atik & Malik, 2012 shows that, external debt has an inverse relationship with growth. The authors concluded that, this is a possible evidence of Pakistan facing debt overhang problem.

Bordo & Missner, 2009, by analyzing macroeconomic data between 1880 to 1913 (18 countries) and 1972 to 2002 (45 countries), the two periods of financial globalization,



show that, AEs have always low level of hard currency debt and financial stability; some AEs during 19<sup>th</sup> century that had foreign debt also had financial stability. It is only in case of intermediate countries does foreign debt has a linkage with financial instability. Sound fundamentals (such as reserves and borrowing only at a sustainable level) are factors strengthening financial stability and therefore growth, than foreign hard currency debt itself.

On the question of **debt sustainability**, Hawkins & Tuner, 2000 prescribe emerging economies to impose limits and restrictions on foreign borrowing by corporate sector, in terms of amounts, credit rating and reporting to authorities on a regular basis, in order to monitor exposure and risk; prudential capital controls are also to be followed. The authors also prescribe developing domestic bond markets and maintain adequate reserves.

A G-20 discussion paper by UNCTAD on External Debt Sustainability posits that, the simplest indicator to monitor debt sustainability is debt to GDP ratio. The paper identifies three possible paths over time, for debt to GDP ratio, namely, rising, stabilizing and declining debt to GDP ratio. If GDP grows faster than debt or if real exchange rate appreciates, then the debt to GDP ratio will decline. If interest rate exceeds the rate of growth of GDP, then the debt to GDP ratio will rise. From policy perspective, it is important to look at resources available for domestic use of capital, after interest payments. The paper also discusses other possible indicators such as terms of trade, monetary indicators, interest rate and fiscal deficit. It also prescribes borrowing countries to set-up contingent financing to meet crises situations.

Roubini, 2001 discusses assessing a country's solvency. He argues that, *a non-increasing foreign debt to GDP ratio can be seen as a practical and sufficient condition for sustainability*. In other words, a country is *likely to remain solvent, as long as the ratio is not growing*. This difference is the 'resource balance gap', emanating from trade balances. The trade surplus required to fill the gap will be as large as the gap in debt-GDP ratio. Roubini prescribes that, in practice, one needs to look at both the debt-GDP ratio as well as the *resource balance gap* in order to assess solvency or debt sustainability. To achieve trade surplus, a country may have to introduce a cut in private investment. While this may

improve the gap in the medium term, it would affect growth in the long term, which in turn may impact debt servicing, ultimately leading to ‘debt overhang’.

Rodrik & Velasco, 1999 develop a theoretical framework showing, high level of short-term debt is a predictor of financial crisis. *On the other hand*, Rajan & Diamond, 2001 argue that, short-term debt per se does not lead to crisis. The authors cite the example of Korea in 1979, that was able to borrow highly on short-term and yet did not face any crisis situation. Therefore, it is the nature of the investment and liquidity that matters. Short-term lending to a low credit worthy investment and illiquidity is more likely to cause crisis than short-term debt per se.

Several literature such as Cho,1998 discuss the issue of ***external debt and financial crisis***. Corporate overinvestment with high short-term debt is one of the causes leading to the Korean crisis in 1997. Argentina too accumulated external debt over a period of time, from a debt-to GDP ratio of 32.35 percent in 1991 to 51.95 percent in 2001. When commercial banks stopped lending to Latin America following Mexican crisis, as much of the region’s external debt was short-term, there was ultimately no rollover of short-term debt. Following Mexico and Brazil, Argentina went into crisis. Argentina’s default is the largest in present value terms, since Russian repudiation of 1918 (Beker, 2016).

In terms of **debt management and risk**, (Ariccia, Laeven, & Marquez, 2011) show lower interest rate on foreign currency loans improves borrowers’ incentives, but results in systemic risks.

With respect to **currency mismatch**, Ranciere, et. al, 2010 find a positive link between currency mismatch of external debt and growth.

Forbes, 2002 studied 12 major depreciations and 13,500 firms, finding evidence for improved firm performance after depreciation, in terms of market capitalization and foreign sales.

## 2.3 Corporate Finance

A firm's primary motive is to earn profits. Its economic activity starts from finance (investment) and ends with finance (profit). It is already well known in corporate finance that, finance decisions of firms fall under four categories: (a) investment or long-term asset-mix decision; (b) financing or capital-mix decision; (c) Dividend or profit allocation decision; and (d) liquidity or short-term asset-mix decision. The subject of this research, External Commercial Borrowings, as a source of finance fall under the category of 'financing or capital-mix decision'. 'Capital-mix', also called 'capital structure' is a financing decision choosing the right mix between the firm's own funds and borrowed funds. Capital structure is one of the areas of Finance, which has been an area of theoretical and empirical research for many decades. Finance theory discusses capital structure from the point of view of its impact on a firm's market value.

The traditional or '**optimum capital structure theory**' holds that, the firm's value increases (or the weighted average cost of capital decreases) up to a certain debt-equity mix and then starts decreasing (increasing Weighted average cost of capital). Thus, there exists an optimum capital structure, according to traditionalists view. The Modigliani-Miller's **capital structure irrelevance theory** (1958) posited that, firm's value is unaffected by capital structure. Subsequently, by 1961, **Pecking Order Hypothesis** was propounded by Donaldson. The theory holds that, firms choose source of financing by sequential order, starting from internal financing or reinvested earnings, then debt, followed by issuance of equity. New equity is a last resort when the firms run out of debt capacity. There is also a **life-cycle approach** to corporate finance. Firms are more dependent on external financing early in their life, than later.

Developing an analytical framework, Myers (1977) shows a firm's borrowing is inversely related to the market value of the firm as a proportion of real investment options.

On the debate as to **whether capital structure is pro-cyclical or counter-cyclical**, there are different views. Kiyotaki and Moore (1997) and Covas and Den Hann (2011) argue

that, leverage is pro-cyclical. On the other hand, Hackbarth, Miao and Morellec (2006) and Fernandez and Gulan (2015) argue as counter-cyclical.

Singh (1995) made an attempt to study cross-country pattern of corporate financing by firms in Least Developed Countries. His results showed striking difference from *a priori* expectations and suggested reverse of the 'pecking order hypothesis'. Corporations in LDCs were observed to be relying largely on external sources of funds and on new issuance of equity shares. The explanations offered by Singh for the higher reliance on equity by LDC corporations are inter alia, active role of governments in developing stock markets and fall in cost of equity capital together with raise in cost of debt.

Samuel (1996) attempted a comparative study of financing pattern of Indian and U.S. firms. He concluded that, internal source of finance plays only a limited role for Indian firms. Rather, Indian firms are largely reliant on external sources, specifically debt sources of financing and stock markets play only a limited role.

Cobham and Subramaniam (1998) find Indian firms to be largely dependent on bank loans and internal finance, growing number of firms take the equity financing route.

Green, Murinde and Suppakitjarak (2002), who studied corporate financial structures in India, provide evidence contrary to the findings of earlier studies such as Singh-Hamid and Cobham-Subramanian. The authors analyzed firm financials for the period from 1989 to 1999, differentiating between quoted and unquoted firms. The results suggested that, unquoted firms are highly reliant on equity than quoted firms. Unquoted firms also have higher level of internal funds. And there are gradual changes in both categories as liberalization progresses. (Quoted firms are those listed in the Mumbai Stock Exchange).

Booth, et. al (2001) studied cross country differences in capital structure of firms. Their results found the variables determining capital structure choices to be the same for both developing and developed countries. In both groups of countries, Pecking-Order Hypothesis was holding good, suggesting external financing is costly. Debt-equity ratio was observed to be inversely related to profitability, connoting that, profitable firms might have less demand for external financing. Debt-equity ratios were observed to increase with GDP growth rate and decrease with increase in inflation, implying that, firms tend to

borrow against real growth prospects as against inflationary growth prospects. Development of equity markets showed a decline in debt-equity ratio, signifying that firms tend to use the widened availability of financing choices.

Majumdar (1997) studied the relationship between corporate leverage and profitability in the Indian context, for the period from 1988 to 1994. Results showed a negative relationship between debt-equity ratio and profitability, possibly indicating agency problem. During the period of study, most lending institutions were controlled by the government. Banks and financial institutions have less incentive to monitor firm performances, as there was an inherent protection of the government for the banks. From the borrowing firms' point of view, this encouraged managers to indulge in discretionary behavior, affecting firm performance.

Analyzing the effect of different types of corporate borrowings by Indian firms during the period 1988-1993, Majumdar and Sen (2010) find unsecured, private debt showing higher impact on profitability; this class of lenders often have the advantage of directly monitoring a firm's performance than other institutional lenders, thereby exercising a close association with profitability. Bank and institutional borrowing did not have significant relationship with profitability.

D'Souza (2005) argued that, Indian firms are highly dependent on debt source of financing, owing to inherent guarantee of the government to the banking system from failures. Increasing debt finance is an attempt to achieve market dominance, as increasing debt would allow increase in output and marginal profit.

Studying the relationship between corporate financing and investment behavior of Indian firms, Rajakumar (2005) finds debt financing by Indian firms was motivated by investment, while equity financing was motivated by internal liquidity. Demand was the only significant factor in debt financed firms.

Saggar (2005) studied the financing and investing pattern of Indian firms for the period from 1971 to 1999. Her results showed Indian firms following an atypical financing pattern, neither similar to developed countries, nor similar to developing countries, at least until 1992, confirming earlier results of Singh (1995) and Samuel (1996). During the

period 1971-75, large and medium public limited companies in India relied predominantly on internal sources of financing, to the extent of 55.2 per cent of total financing; external sources accounted for 44.8 per cent. Over a period of time, there was a gradual decline in dependence on internal sources. By 1996-99, internal sources accounted for 38.6 per cent of total financing and the share of external sources rose to 61.4 per cent. Within external sources, borrowings have been the largest source throughout the period. During 1971-75, share of borrowings in total external sources was 18 per cent. This rose to 35.6 per cent during the period 1996-99. Banks and Indian financial institutions are the largest lenders to Indian firms. This is, consistent earlier studies that, the Indian financial system is bank oriented (Singh, 1996).

In the post liberalization period, firms show an increasing preference towards internal financing and declining preference towards external sources of financing Beena (2011). This trend is across different industry groups such as manufacturing, metals, Drugs and Pharmaceuticals, Automobile ancillaries and Food. Only petroleum products industry showed an opposite trend. Even Indian firms that acquired firms abroad showed increasing preference towards internal sources of finance, although simultaneously borrowing in foreign currency to fund the acquisition. Such acquiring firms recorded retained profits as an internal source of finance to the extent of 15.83 per cent during 1991-94; this went up to 28.61 by 2006-09. On the other hand, external sources of finance declined from 68.40 per cent to 60.35 per cent during the same period. At the same time, foreign currency borrowings (a component of external sources of finance) increased from a meager 0.58 per cent in 1991-94 to 7.12 per cent by 2006-09, as the acquisitions had to be funded in foreign currency. Except for firms acquiring abroad, the study did not focus on foreign currency loans of other categories (industries).

Bhattacharjee and Chakrabarti (2013) argue that, the Indian corporate sector, with specific reference to manufacturing sector is credit constrained in the post-liberalization era, due to declined role of Development Finance institutions and risk-averse behavior of banks.

Rajakumar, 2014 studied foreign exchange spending by Indian corporate sector covering the period 1993-94 to 2011-12. An increasing trend in share of exports in sales, at the same

time, decrease in net export earnings (increase on the negative side) was observed; there is further evidence of increasing share of import of capital goods in the total purchase of capital goods as well as increasing share of import of raw materials, consumables, stores and spares in the total purchase of these items. Thus, Indian corporate sector was found to be becoming a significant contributor to current account deficit.

Examining whether Indian corporates are over-leveraged, Rajakumar, 2015 concluded in negative. Also, interest coverage ratio, the measure of a company's ability to service debt is well above one. Within external sources of funds, proportion of share capital and premium has raised by 5.8 per cent from 2012-13 to 2013-14. During the same period, share of bank borrowings declined from 10.2 per cent to 9.3 per cent. Rajakumar argues that, the substantive issue of reduction of bank financing could be attributed to lack of credit absorption by firms due to demand side factors.

Gozzi, et. al (2012), studied corporate bond issuances in 99 countries for the period 1991-2008, for four non-price characteristics: size, maturity, currency denomination and type of rate (fixed vs. floating). They

Analyzing difference in yields across 99 countries, Gozzi. Et. Al (2012) observe international bond issuances are larger in size, shorter in maturity, tend to be denominated in foreign currency and more likely to have fixed interest contracts. The observation holds good in the domestic market too, leading to the conclusion that, international bond markets specialize in different features than domestic markets; international bond issuances have lower yields than domestic market for the same currency.

## **2.4 Literature specific to ECBs**

ECBs started receiving attention of literature over the recent years.

From the perspective of projecting future capital flows, the Planning Commission (2006) modelled ECB inflows as a function of the debt service ratio, imports and interest rates in India.

Corporate choice for overseas borrowing is highly driven by domestic real activity, followed by interest rate arbitrage between domestic currency and international market and domestic liquidity conditions (Singh, 2007). Under the scenario of high output growth and stable liquidity, ECBs growth was estimated at 24 percent. Under expansionary money supply and high output scenario, ECBs growth was estimated at 19 percent. Under tight monetary conditions and decline in output, ECBs growth slowed to 12 percent.

In the short run, imports, interest rate differential, exchange rate and foreign investment are positively related with ECB and exports and domestic real activity (Index of Industrial Production) are negatively related. In the long run, IIP, interest rate differential and exchange rate are positively related to ECB, whereas imports and foreign investment share a negative relationship (Dev, 2014).

A large number of non-exporting firms with no natural hedge have borrowed in foreign currency. Therefore, resource allocation does not match up to the normative ideal of resource allocation, where the currency of the borrowing firm's revenue matches with its foreign debt (Patnaik, Shah, & Singh, 2015).

The most important amidst recent literature with respect to ECB is the Report of the Committee to Review the Framework of Access to Domestic and Overseas Capital Markets (Report III), commonly known as the Sahoo Committee Report, February, 2015. **Sahoo Committee** was appointed by the Ministry of Finance, Government of India with a wide range of terms of reference, including External Commercial Borrowings. The guiding principles by which the committee approached its study was '*market failure*'. According to the committee, state intervention should be from the perspective of addressing market failure, reducing administrative overhead, removing interventions which are not grounded on the principle of market failure and reinforcing rule of law. 'Market failure' occurs when negative externalities are imposed on the citizenry by failure of firms having foreign currency debt, due to large exchange rate volatility. The committee observed that, regulations governing ECBs are currently not designed to address systemic risk; rather, the regulations are tightened when there is exchange rate appreciation and relaxed when there is exchange rate depreciation. The committee further noted that regulations lack clear economic or legal rationale. The committee also estimated the natural hedge levels of firms



that have raised ECBs. It observed that, over 50 percent of firms have no or small natural hedge. More than 40 percent of firms have natural hedge by means of export revenue. In other words, more than 50 percent of firms that raise ECBs, constituting 70 percent of ECBs raised, have no natural hedge. The committee could not estimate the extent of financial hedges contracted by these firms (Sahoo, et al., 2015).

In line with the recommendations of earlier committees, namely, U.K. Sinha Committee (2010), S.S. Tarapore Committee (2006) and Raghuram Rajan Committee (2009), the Sahoo Committee called for relaxation of ECB regulations in order to be in tune with contemporary economic thought, predictability and relaxing or removing sectoral restrictions. The only guiding principle of regulation must be to address market failure. The **Sahoo committee** made some key recommendations with respect to ECB policy: (1) any and every firm must be allowed to raise ECBs, as long as the firm hedges a specific percentage of foreign currency exposure (as against current limits on various counts); (2) no restriction on who can lend; (3) removing the ceiling on amount of borrowing; (4) leaving the maturity pattern to the market, instead of current floor limits on maturity; (5) removing current ceiling on cost of borrowing, leaving it to the invisible hand in the market to decide; (6) doing away with sectoral restrictions; (7) removal of approval route and allowing all firms to borrow as long as the firms hedge currency risk; and (8) use neutrality – meaning, no restriction on end use of borrowing.

In a nutshell, the chief guiding principle of ECB regulations as recommended by the committee should be only from the point of view of systemic risk or market failure, which is to be monitored by the level of hedge. The committee also recommended to strengthen the derivatives market in India, as in the current set-up, there are limited choices leading to high cost of hedging. It also recommended to further develop Rupee denominated debt market.

Brookings Institutions studied EM corporate debt, including External Commercial Borrowings of India, with specific focus on hedging of currency mismatches. As against the conventional balance-sheet approach, the committee adopted market based risk-return approach, similar to Capital Asset Pricing Model. The report argues that, the coefficient of exchange rate return can be an indicator to identify firms that are potential candidates for

unhedged exposure. The event-study conducted to assess movement in stock prices of sample firms used approaches – based on balance sheet (ratio of foreign debt to total debt) and market based return of foreign exchange risk, i.e. sensitivity of the sensitivity of a firm's excess returns to the exchange rate. Results show that, market return based approach using Capital Asset Pricing Model serve as a better tool to identify firms that could potentially face trouble in case of a foreign exchange shock (Committee on International Economic Policy and Reform, 2015).

## 2.5 Trade Credits

The definition of ECBs includes trade credits. Therefore, this section reviews literature relating to trade credits. Trade credit has received attention of literature more in the domestic context than in the international context.

In a seminal work, Rajan & Petersen, 1997, discuss theories and evidence of trade credits. Under the '**Financing advantage**' theory, the supplier has an advantage over other lenders (such as financial institutions), in investigating credit worthiness of the buyer. The advantages that the supplier has are, advantage in information acquisition about the buyer, advantage in controlling the buyer and advantage in salvaging value from existing assets in case of a default. Trade credit can be used as a source of price discrimination. It helps reduce transaction costs by enabling separation of payment cycle and delivery schedule. The evidence showed financing advantage of the suppliers. Suppliers extended credit not based on current losses, but based on expected or potential business. It was further established that, trade credit offered by a firm increase in the size of its margin on sales. Trade credit is expensive than institutional financing, if used for medium-term financing, since suppliers tend to impose a penalty for a lengthy payment period. Firms with better access to capital redistribute credit to firms that do not have sufficient access to finance.

Costello's, 2013 findings were consistent with Rajan and Petersen (1997) that, firms redistribute credit. Trade credit translates into product pricing. Also, buyers invest increase in trade credits in inventory; whereas suppliers invest in capital expenditure and R & D.

By analyzing a large data set of firms in eight EURO area countries, Ferrando and Mulier (2012) find evidence for firms using trade credits to manage their growth. Both accounts payable and accounts receivable were found to be important components of trade credit. Firms operating under conditions of financial market imperfections are more likely to use trade credits. Interestingly, use of trade credit is found to shield firms from developments in financial sector. Also, consistent with expectations, availability of bank financing reduced use of trade credits.

Evidence from Russia suggests trade credit causes a signaling effect, resulting in increased access of bank financing; for firms that are able to obtain credit from suppliers, confirming complimentary role of trade credit (Cook, 1999).

An analysis of 30,000 trade credit contracts shows evidence for market power hypothesis; largest and creditworthy buyers are able to obtain trade credits for longer maturities from small suppliers; whereas, small suppliers extend such credits as a signal of certifying product quality (Klapper, Laeven & Rajan, 2012).

Preve, Love and Sarria-Allende (2007) studied trade credits in the context of financial crisis, by surveying about 800 firms in six emerging economies.

Evidence for **redistribution hypothesis** was found on an analysis of 800 firms in six emerging economies; firms with better access to institutional credit redistribute it to smaller firms with lesser access to institutional credit, by way of providing trade credit (Klapper, Laeven & Rajan, 2012).

Evidence from four East Asian Countries - Thailand, Korea, Indonesia and Philippines – is contrary to the position of earlier literature (Rajan & Petersen, 1997) holding the view that, suppliers provide credit to buyer firms that are credit constrained. Rather, such credit constrained firms were unable to increase reliance on trade credit after the crisis. Credit constrained firms are charged higher price or cost, as they are considered to be risky. Length of payables shortened after the crisis. In a nutshell, there was no sufficient evidence for **'substitution hypothesis'** (Love & Zaidi, 2010)

Experience in Italy shows cost of bank lending has a stronger impact on trade credits; firms offering discounts are able to reduce their credit period and firms with higher exports had lesser credit period (Marotta, 2001)

Ojenike & Olowoniya, 2014 show evidence from Nigeria that, firms switch to trade credit when they are credit constrained.

An analysis of 400 sample firms in Pakistan shows variables such as firm size, liquidity, product quality, sales growth and inventory are found to be positively associated with trade credit; on the macroeconomic side, GDP is positively related to trade credit (Ahmed, Xiaofeng & Khalid, 2014).

**Inventory management motive** is found to have strongest evidence as a determinant of trade credit in **India**; Highly profitable firms are found to provide as well as receive higher amount of trade credits (Vaidya, 2011)

Study on monetary transmission through trade credit channel in India shows demand for trade credit raises when monetary policy is tightened; however, the impact is likely to vary across firms. Firms that are better positioned to access institutional credit are less likely to seek trade credit, regardless of the monetary policy stance. Financial structure of the firm has an important role to play in the firm's choice to obtain trade credit. (Ghosh, 2015)

With respect to impact of financial crisis on trade credit in India, Ghosh, 2015 showed that, firms generally lowered supply of trade credit; as a counter-act, contractionary monetary policy raised the supply of trade credit during crisis. More distressed firms lowered their demand for trade credit during the crisis.

## 2.6 Summary and concluding remarks

Capital flows has been receiving increasing attention of literature in recent decades. The integration of world financial markets serve as a live laboratory for economists to study various aspects of capital flows. Capital flows from a country of low marginal efficiency of capital to high marginal efficiency of capital. There are benefits as well as potential costs of capital inflows. ‘Push’ and ‘pull’ factors drive capital flows. Volatility in capital flows often lead to large reversals, sudden stops, exchange rate depreciations and further current account imbalances. Capital flows also have other macroeconomic effects such as rapid monetary expansion.

Debt capital flows bring in an additional challenge of debt sustainability, exchange rate risk, short-term debts with potential to trigger crisis and difficulty monitoring hedging levels. There are conflicting views on the effect of debt capital flows on economic growth. Most studies favor the optimum debt level hypothesis.

In the specific context of private debt capital flows to India, i.e. External Commercial Borrowings, the subject is receiving attention during recent years. Some of the literature on ECBs cited are concurrent works. Not all issues relating to ECBs have been addressed by the literature reviewed above.

Dimensions that remain unanswered about ECBs are many. Understanding of determinants of inflow of ECBs into India unpacking relative importance of push and pull factors; firm behavior for changes in exchange rate; foreign currency risk management, systemic risks and costs, firm level determinants of foreign borrowing, trade credits and dimensions and issues of Foreign Currency Convertible Bonds.

This work aims to fill the gap in part, by seeking to address questions on determinants of inflow of ECBS and sensitivity of investment decisions to changes in exchange rate. It is hoped that, this would be the humble contribution of this study to the body of literature.

## **Chapter 3 Evolution of External Commercial Borrowings, related Policies and macroeconomic dimensions**

### **3.1 Introduction**

Like most Emerging and Developing Economies, India found itself in a sweet spot of declining official sources of credit and surplus private funds in the international market during the early 1980s. India responded by taking advantage of the opportunity by tapping this sweet spot in order to meet its capital investment needs. Since then, ECBs have evolved in terms of size and importance. This chapter traces the origin and evolution of External Commercial Borrowings, in the context of the economic environment and contemporary policies.

The chapter is organized into twelve sections. Section 1 provides a brief introduction of external assistance during formative years and until 1980, Section 2 describes the origin of ECBs during early 1980s, Section 3 traces the growth of ECBs during 1990-2000, Section 4 describes the expansion of ECBs during the period 2000-2008 (before the 2008 financial crisis) and Section 5 tracks ECBs in the context of the financial crisis and EM slowdown (2008-16). Section 6 compares ECB flows vis-à-vis global financial flows. Section 7 traces policy changes since the origin of ECBs. Section 8 discusses ECBs in the context of India's approach towards Capital Account Convertibility. Section 9 presents ECBs in its relative position with other main forms of private capital flows, Capital Account and Current Account. Section 10 illustrates increasing role of ECBs in India's overall external debt. Finally, section 11 presents an international comparison of external debt. Annex to this chapter presents a pictorial table of policy changes between 2004 and 2015. Section 12 draws concluding remarks.

### **3.1: The Formative Years: Dependence on External Assistance**

During her infancy, India depended largely on external assistance in the form of aid and concessional loans from multilateral institutions and other governments. By July 1958, India's Balance of Payments deficit was observed to be in a precarious situation, such that, it was anticipated that the foreign exchange reserves would be wiped out by the end of the year. Sensing the need for an urgent action, Mr. Eugene Black, the then President of the International Bank for Reconstruction and Development (the World Bank), initiated a discussion with Mr. Dillion, the then US Under Secretary of State for Economic Affairs. The World Bank had proposed an idea to assemble countries that would offer aid to India. As an outcome of the meeting, a wider consultation was scheduled by inviting Germany, Japan and the United Kingdom. Deliberations in this and subsequent meetings with wider participation, including India's representative, resulted in the formation of what was called the "**Aid India Consortium**" (hereinafter "the Consortium").

The charter members of the Consortium were the United States, Germany, the United Kingdom, Japan, Canada and the International Bank for Reconstruction and Development (IBRD). The membership expanded over the course of time, by the inclusion of France, The Netherlands, Australia, Italy, Belgium, Denmark and the International Development Association (IDA). The International Monetary Fund as well as India sent their representatives to the meetings of the Consortium.

Under the auspices of the Consortium and several rounds of consultations and reviews, India received continuous flow of external assistance in the form of aid.

### **3.2: The 1980s – beginning of the era of External Commercial Borrowings**

The oil price shock of the late 1970s had a severe effect on India's Balance of Payments during the beginning of the 1980s. Substantial increase in oil prices pushed up India's oil

bill from Rs. 1,687 crores in 1978-79 to Rs. 5,587 crores, a more than three-fold increase within two years. At the same time, exports were shrinking due to sluggish demand and increasing protectionism. Thus, India was moving towards yet another severe shortage of foreign exchange reserves. India could not afford to solely rely on external aid to meet her foreign exchange and investment requirements. At the same time, the oil exporting countries started accumulating their revenues in the form foreign currency deposits, due to the effect of oil price shock. This resulted in increased liquidity in the international banking system, paving the way for world-wide rise in syndicated loans.

Thus, there existed the right momentum for India – her facing shortage of foreign exchange over and above what external aid could support, and the availability of liquidity in the international market at the same time.

India slightly relaxed from her self-restraint and began tapping the international market for commercial loans, “*to the extent the availability of the low-cost multilateral and bilateral resources falls short of the requirement of external resources*” (Economic Survey, 1980-81). Euro-currency financing was arranged for the National Aluminum Company Limited for Rs. 544 crores and for the Oil and Natural Gas Corporation Limited for Rs. 160 crores, during the financial year 1980-81. Paradip Steel Plant and a major thermal power project were also candidates of External Commercial Borrowings of that time. In addition to these two major external financing, private companies were also allowed to borrow from sources abroad on a selective basis. Oil exporting developing countries were allowed to invest in equities and to lend to industrial projects, hotels and hospitals. The total volume of External Commercial Borrowings committed during the year 1980-81 was Rs. 880 crores. ***Thus begins the era of External Commercial Borrowings in India.***

By the mid-1980s, the availability of Official Development Assistance to developing countries, including India, started declining. This further strengthened the case for borrowing on commercial terms from the international market. The Government of India permitted more Indian firms to tap External Commercial Borrowings to meet their investment needs. Most of the firms were Public Sector Undertakings such as the *Oil and Natural Gas Corporation Limited, the National Aluminum Company Limited, the Bharat*



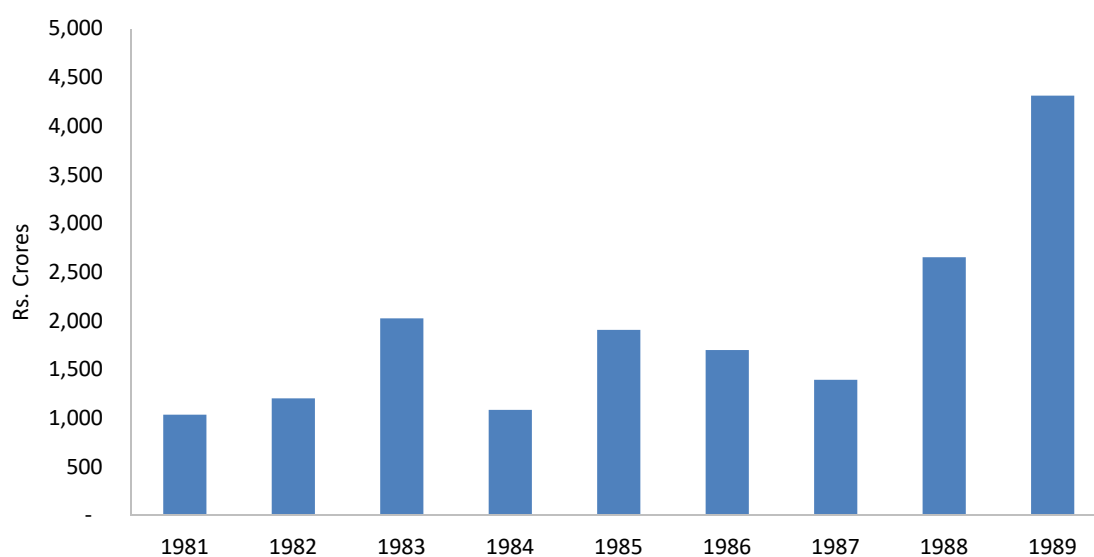
*Heavy Electricals Limited, Maruti Udyog Limited and the Air India.* Private firms were also permitted selectively.

In terms of policy administration for commercial borrowings during the 1980s, the Department of Economic Affairs (DEA) scrutinized potential deals for lending and borrowing and sent for the approval of the RBI under the Foreign Exchange Regulation Act (FERA, 1976). The key consideration for approval of external commercial borrowing was potential for export promotion or import substitution as well as consideration towards Development Financial Institutions such as the IDBI, ICICI and the IFCI.

By late 1980s, the international market shifted from *syndicated loans to securitized instruments*. Indian borrowers too adapted to this change, by tapping Japanese market for **Shibosai** and **Samurai bonds**, the **D.M. Public Bond market**, the **Swiss Franc** public market and the **Eurodollar** fixed rate bond market.

Figure 3-1 shows the trend of approval of External Commercial Borrowings during the period 1980-89. During the period, ECB approvals recorded a Compounded Annual Growth Rate of 9.5% in US Dollar terms.

*Figure 3-1: ECB approvals during 1981-89*



Source: Economic Survey 1989-90, Ministry of Finance

### 3.3: ECBs during the 90s: BoP Crisis and the New Economic Policy

As is well known in the economic history of India, the year 1991 is a watershed year, with the introduction of the New Economic Policy. At the dawn of the decade, the country faced severe crisis on the external sector in terms of extreme shortage of foreign exchange reserves, owing to the payment obligations towards the already growing commercial borrowings as well as the Gulf crisis. The Balance of Payments crisis had to be dealt with by means of several immediate and long-term solutions. One of the policy actions was to liberalize various controls on the inflow of foreign exchange. The RBI devalued the Rupee twice during 1991. Considering the country's severe Balance of Payment deficit situation, India's credit rating in the international market was significantly lowered. In addition, the overall savings in the developed economies was low during the early 1990s, thus reducing international liquidity. As a result, approval of External Commercial Borrowings at the beginning of the decade was much lower than the late 1980s.

The *difficulties faced at the dawn of the 1990s shaped policies during the decade*. Besides ushering in the era of liberalization, on the external sector, several schemes were introduced to promote exports and to attract foreign exchange. While External Commercial Borrowings bring in foreign exchange, it was dealt with prudently, as ECBs are debt creating obligations and the country's international credit rating was already not in a favorable level. "*The market was not open for Indian borrowers to undertake ECBs on a significant scale*" (Economic Survey, 1992-93). Given the Balance of Payments situation, the government decided to reduce the share of short-term borrowings. As a result, not only did the fresh approvals of commercial borrowings shrink, but also the bulk of the borrowings during the early 1990s was in the form of export credits.

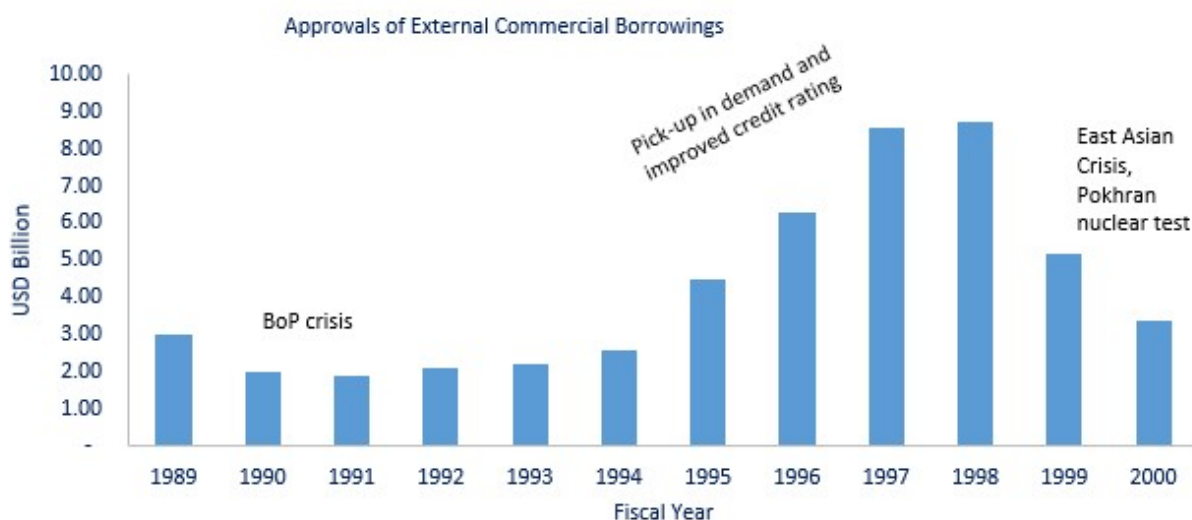
The policy towards ECBs was to maintain a carefully calibrated approach. The overall policy was to permit ECBs within an overall annual ceiling at the country level and to permit utilization of borrowings only to finance foreign currency capital expenditure except for power projects. In terms of sectoral focus, infrastructure sector was given priority access to borrow abroad. Starting in the mid-1990s, due to improved domestic demand and improved credit rating, and policy limits towards amounts, maturity and

eligible borrowers were gradually relaxed. There was an annual ceiling of commercial borrowing at the country level, amounting to USD 5 billion. (The gradual changes in policies are depicted in the pictorial representation at the end of this chapter).

While the economic environment started showing some improvement by the mid-1990s, the East Asian Crisis of 1997 had its impact on availability of international funds to Indian borrowers. Also, certain economic sanctions imposed on India following the nuclear testing in Pokhran in 1998 curtailed availability of external commercial sources of funds.

To tide over the difficulties faced during 1990s, the Government of India attracted funds from Non-Residential Indians by issuing bonds at commercial rates targeted at the Indian diaspora. These bonds being issued at commercial rates fall within the ambit of External Commercial Borrowings. Thus, the disbursement of ECBs during 1998-99 and 2000-01 is largely on account of USD 4.2 billion towards Resurgent India Bonds (RIBs) and USD 5.5 billion towards India Millennium Bonds (IMDs).

*Figure 3-2: ECB approvals during 1989-2000*



Source: Economic Survey and Report on External Debt, Ministry of Finance, various years.

\*Disbursements from Resurgent India Bonds are excluded

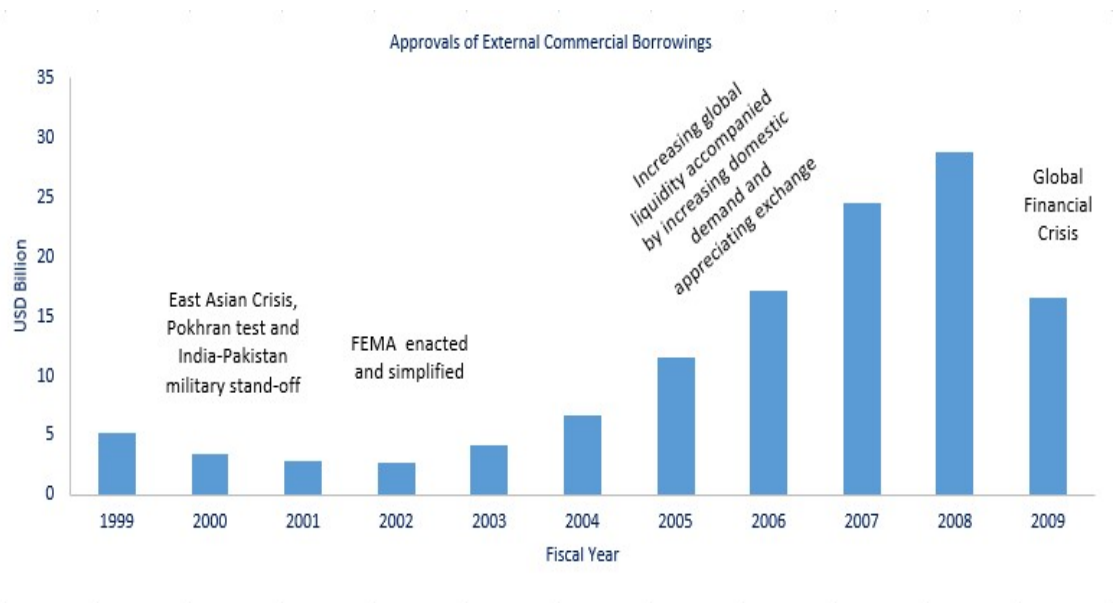
### 3.4: The period of surge: 2000-08

After declined flow between 1999-2002 following the East Asian crisis and economic fallout of Pokhran nuclear test, the period thereafter, until 2008 proved to be golden years for international capital flows as well as for the domestic economic activity, reflecting in increased flow of External Commercial Borrowings.

The period also witnessed important policy changes. The fundamental law that governed foreign exchange transactions – *Foreign Exchange Regulation Act, 1976* was repealed and a new law, '**Foreign Exchange Management Act, 1999**' came into force. As the name suggests, the approach of the law changed from 'regulation' to 'management', signaling a new era in dealing with foreign exchange reserves. With specific reference to ECBs, hitherto scattered policy guidelines were consolidated and a new set of policy guidelines were issued on **January 31, 2004**. The objective was to issue a "**more transparent and simplified policies and procedures**", as stated in the introduction to the circular issued on January 31, 2004. From then on, policy on ECBs shows **gradual liberalization over the years**, as shown in the heat-map at the end of this chapter.

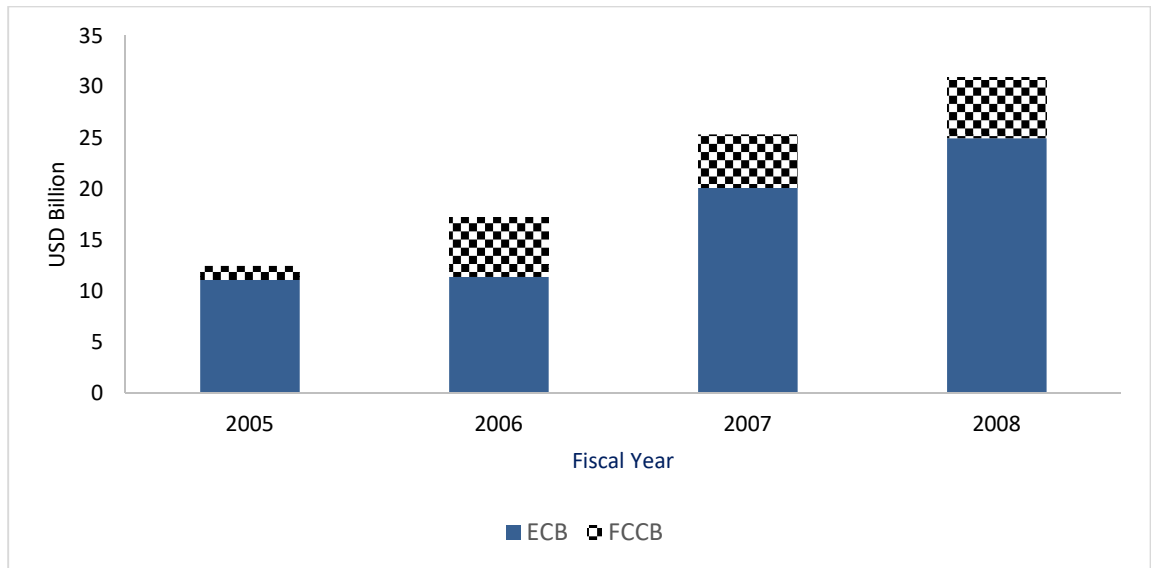
External Commercial Borrowings became an attractive channel of mobilization of funds by Indian corporates during this period. Encouraged by favorable exchange rate Figure 3-5 and higher international liquidity Figure 3-8, many Indian firms increasingly raised funds through ECBs. More specifically, the FCCBs, became an attractive instrument during this period. FCCBs are debt instruments that carry the option of being converted into equity upon maturity. As shown in Figure 3-4 the period records increasing deals of FCCBs.

Figure 3-3: ECB approvals during 2000-09



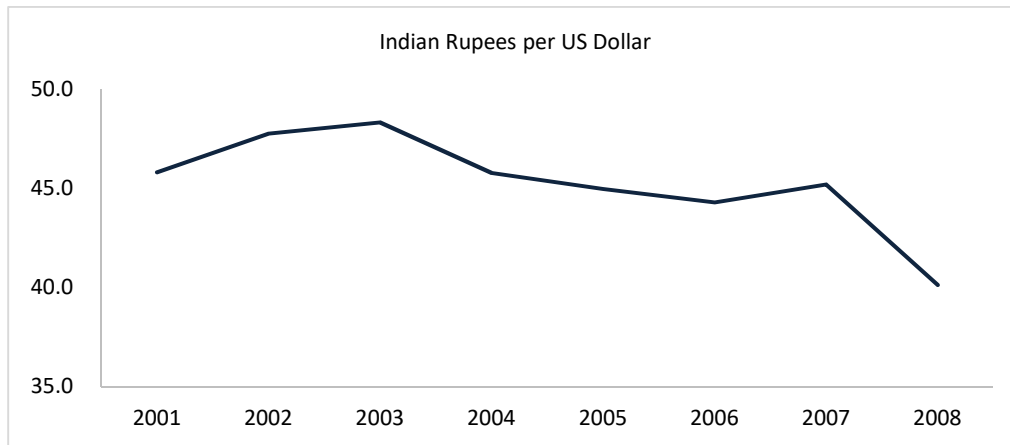
Source: Report on External Debt, Ministry of Finance, various years.

Figure 3-4: ECBs and FCCBs during 2005-09



Source: Aggregated from RBI's monthly bulletins. May slightly differ from annual ECB approval data published by the Ministry of Finance, as RBI's publication is based on allocation of Loan Registration Number, whereas Ministry of Finance's data is based on the date of loan agreement.

*Figure 3-5: Appreciation in nominal exchange rate*

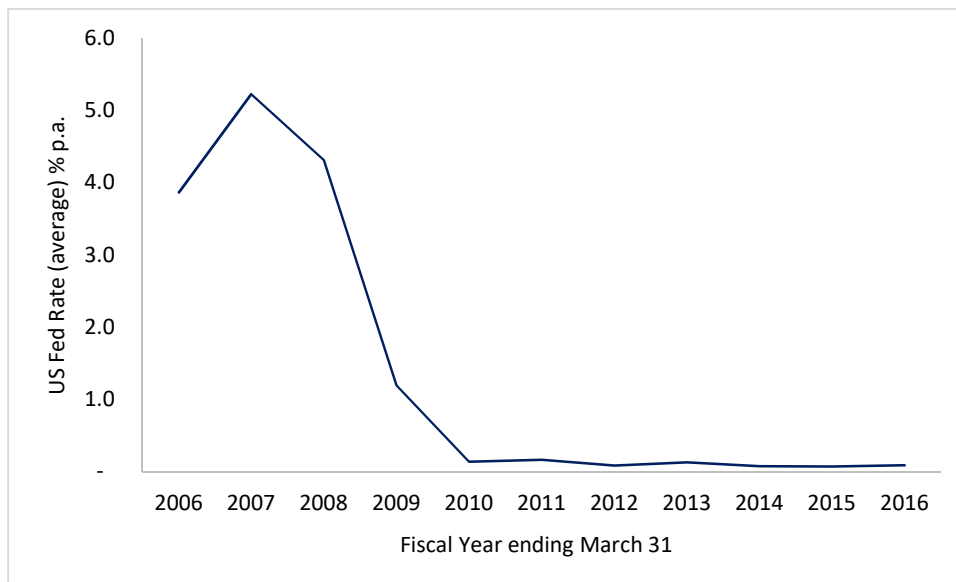


Source: RBI month-end reference rates, averaged for Fiscal Year

### **3.5: The post-financial crisis period (2008-16)**

The financial crisis that triggered in the US in 2008 made its impact felt across the world through various transmission channels. One of the key impacts was the decline in global capital flows, which had its bearing on inflow of ECBs. Therefore, the financial year 2009 recorded a significant decline in the ECB inflows. However, as a crisis-response, the AEs, especially the US resorted to easy money policy (Quantitative Easing), by bringing down interest rates (Figure 3-6).

Figure 3-6: US Fed Funds Rate



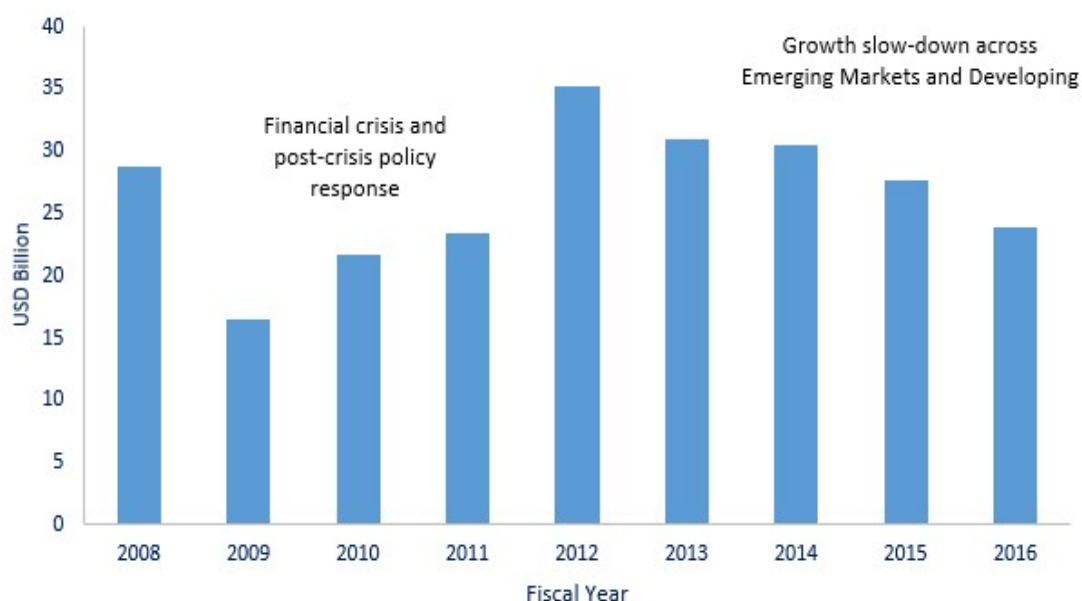
Source: St. Louis Fed Economic Data, average calculated for the Indian Fiscal Year

Correspondingly, the RBI too relaxed certain policy restrictions to facilitate flow of ECBs. Several firms that had raised FCCBs faced a critical situation of unfavorable pay-outs towards foreign investors. In order to assist such borrowers who may want to mitigate such a risk by buying-back the previously issued FCCBs, the RBI permitted raising of fresh ECBs towards meeting FCCB buy-back.

Also, considering the highly restricted liquidity in the international market, as one of the crisis response measures, the RBI withdrew the hitherto prescribed All-in-Cost ceiling on ECBs (after a gradual rise during the crisis period). The All-in-Cost ceiling is a percentage ceiling above LIBOR, which places an upper limit on the pricing of ECBs.

Thus, ECB flows during the period after the financial crisis record an initial decline, then rise and again another decline due to slow-down in output growth across EMDEs. The approvals in ECBs during the period from 2008 to 2016 are shown in Figure 3-7.

Figure 3-7: ECB approvals during 2008-16



Source: Report on External Debt, Ministry of Finance, various years.

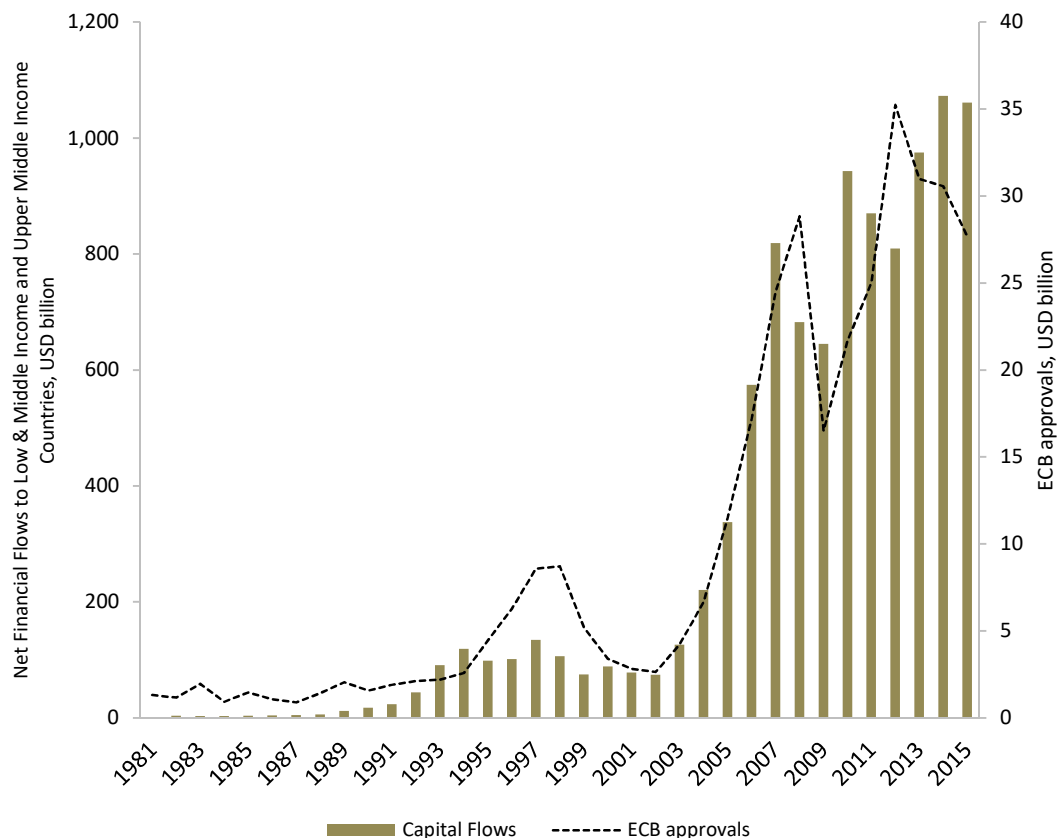
### 3.6 ECBs and Global Capital Flows

Besides macroeconomic conditions specific to India, a comparison of External Commercial Borrowings vis-à-vis trend of global capital flows towards developing countries shows that, ECB flows into India follow almost the same trend as that of global capital flows. Figure 3-8 shows ECB approvals in comparison to Net Financial Flows to Low & Middle Income Countries, Middle Income Countries and Upper Middle Income Countries. ECB flows almost mirror the global trend, indicating greater influence of global liquidity conditions.

1980 was the beginning for global capital flows following the collapse of the Bretton Woods System and the oil price shock during the 1970s. As oil exporting countries accumulated their revenues in Petrodollars, the resultant 'Petrodollar cycle' created an international liquidity of finance. With simultaneous decline in official aid, many developing countries including India were at the right point of demand and supply match for private international finance.



Figure 3-8: ECBs vis-a-vis Global Financial Flows



Global Net Financial Flows is a 2-year moving average for calendar year; ECB approvals are as per India's financial year (April to March).

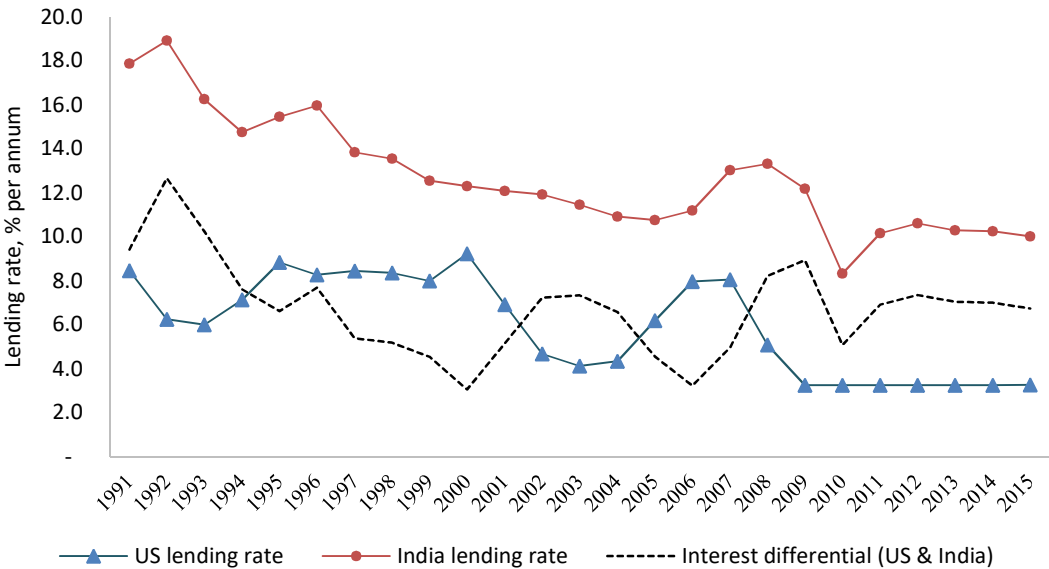
Source: Net Financial Flows to LMICS, MICS and UMICs – World Development Indicators, World Bank; ECB approvals: Economic Survey and Report on External Debt (various years), Ministry of Finance.

As may be observed from Figure 3-8, both global capital flows and ECBs show a gradual beginning and rise during 1980s. (Global capital flows are represented by Net Financial Flows to Low & Middle Income Countries, Middle Income Countries and Upper Middle Income Countries). Global capital flows decline after 1997 due to East Asian Financial crisis. ECB approvals to India too flatten by the same time. Between 2002 and 2008, there is a steep increase in global financial flows, which is mirrored by ECB approvals to India. 2008 and after is the period of post-financial crisis (global) and general slowdown of

EMDEs, resulting in declining and volatile net financial flows across the world. Again, ECB approvals to India mirror the same trend.

Economic theory holds that, one of the important determinants of capital flows is interest rate differential. Capital tends to flow from countries with lower Marginal Efficiency of Capital to countries with higher Marginal Efficiency of Capital. Interest differential can be measured by using several indicators such as prime lending rates, yields on comparable bonds or money market rates between representative economies. Figure 3-9 illustrates interest differential between India and the rest of the world, by using lending interest rates of India and the United States as a proxy. Throughout the period of ECB’s evolution, there has been positive interest differential between India and the AEs. Lending rate in India is consistently on a higher level than the United States.

Figure 3-9: Interest rate differential



Source: Calculated from WDI; source data is for calendar years.

### 3.7: Evolution of ECB policies

A close study of history of policies over the years shows that, the policy approach towards ECBs has been one of gradual liberalization, with thrust on infrastructure sector as well as a consideration towards prudent management of external debt. Throughout the evolution of ECBs, the policy maintained an annual cap on total borrowings at the country level. Data of the annual cap is not in the public domain, except in some occasional media or official reports, with incomplete information. The following paragraphs discuss evolution of policies pertaining to ECBs. Table 3-1 provides a high level summary of different policy regimes.

*Table 3-1: Phases of ECB policies*

<b>Period</b>	<b>Policy approach</b>
1981-1990	Selective permission, largely public sector
1990-1995	Strict controls in order to manage Balance of Payments crisis; New Economic Policy; only foreign exchange cost of capital investment allowed.
1995-2003	Relaxation specifically towards infrastructure sector; Special initiatives by issuing diaspora bonds to meet foreign exchange requirements; Enactment of Foreign Exchange Management Act; delegation of powers to the RBI.
2004-2008	Further liberalization of policies, consolidation and simplification of procedure; gradual relaxation of sectoral limits with specific focus on infrastructure.
2009-2016	Relax controls as measure of response to global financial crisis; widen sector coverage and increase per borrower annual limits; focus on infrastructure; Revised Framework of ECBs, Rupee external borrowing; Monitor currency risk hedging.

Source: Summarized from RBI circulars, notifications and Economic Survey reports of various years

### 3.7.1 Policies during 1980s and 1990s

During the 1980s, the early years of ECBs, the Department of Economic Affairs scrutinized offers for commercial borrowings and provided approvals. The approach towards approvals favored large public sector undertakings that had recurring foreign exchange requirements. Private sector firms with potential for export promotion or import substitution and Development Financial Institutions, which facilitate meeting foreign exchange requirements of the private sector were also permitted.

The **early 1990s** began with the policy guidelines specifying priority to infrastructure and core sectors, export-oriented and import substitution units. The policy guidelines restricted ECBs only for meeting **foreign exchange cost of capital investment**. Borrowings towards Rupee expenditure were not allowed. The policy also stipulated a minimum final maturity of five years.

By June, **1996**, certain policy changes were announced. Telecommunications, power and railways were permitted to use ECBs for financing project-related Rupee expenditure, in addition to meeting foreign currency capital expenditure. Exporters were permitted to raise ECBs up to USD 15 million or the average annual exports of the previous three years, whichever is lower. The hitherto maximum limit of USD 1 million window was enhanced to USD 3 million for Small and Medium Enterprises towards meeting their working capital requirements. Infrastructure and greenfield projects were permitted to avail ECBs up to 35 percent of the total project cost. By **1997**, the ECB limit for Telecommunication sector was raised to 50 percent of total project cost.

The policy was further revised between **1997 and 1998**. The revised policies **delegated powers to the RBI** to sanction ECBs up to USD 3 million. Borrowing firms that had foreign exchange earnings were permitted to raise ECBs up to twice the average amount of annual exports during the previous three years, subject to a maximum limit of USD 100 million. This is a **substantial increase** from the previous limit of USD 15 million.

With a view to encourage borrowings with longer term maturity, the revised policy excluded ECBs of 10-year average maturity from the ECB ceiling, subject to prior approval. It also relaxed end-use restrictions for such long-term borrowings.

By **1999-2000**, a fresh set of guidelines were issued. This was the time when the hitherto *Foreign Exchange Regulation Act* was repealed and a new law *Foreign Exchange Management Act* enacted.

Salient features of the 1999-2000 policy guidelines include minimum average maturity of three years for borrowings up to USD 20 million and five years for borrowings above USD 20 million, for all sectors, except 100 percent Export Oriented Units (which are restricted to a minimum average maturity of three years for any amount).

In order to further encourage long term borrowings, the previously announced exception of keeping borrowings with 10-year maturity outside the ECB ceiling was reduced to eight years, (subject to prior approval of the Ministry of Finance and RBI).

By now, the policy saw liberalization by permitting prepayments subject to certain conditions. Also, the policy took a liberal view with respect to borrowing for the purpose of refinancing existing loans, by raising fresh loans at lower cost.

Also, the policy simplified procedures by delegating powers to Regional Offices of RBI for accepting loan agreements after approval from the Government and RBI.

### 3.7.2 Policies from 2000 to 2008 (pre-financial crisis)

By **2000-01**, fresh set of policy guidelines were issued that signaled further liberalization and ease of procedures. For the first time, an '**Automatic route**' was created, through which, eligible borrowing firms were permitted to raise ECBs up to USD 50 million without prior approval of the government / RBI.

Further **delegation of powers** vested the **RBI** with authority to approve ECBs up to **USD 100 million**. Another important change in the policy was, the term maturity was by now

redefined to mean 'weighted average maturity', which is the weighted average of all disbursements.

The year **2004** witnessed another **milestone** towards liberalization of ECB policies by introducing major changes. For the first time, the policy **segregated** External Commercial Borrowings from foreign borrowings of **financial institutions** and banks. Thus, from 2004 onwards, the definition of ECBs pertains to only non-financial corporations.

The eligible list of borrowers was widened to include almost all sectors, except capital markets and real estate. The automatic route covered ECBs up to USD 20 million with a minimum average maturity of three years; above USD 20 million and up to USD 500 million were permitted under approval route. An Empowered Committee was set-up to consider projects that exceed this limit.

In terms of end-use, the policy by now permitted NGOs engaged in micro-finance activities, borrowings for the purpose of investment in overseas Joint Ventures / Wholly Owned Subsidiaries as well as Mergers & Acquisitions. Multi-state Cooperative Societies were also permitted to raise ECBs.

By **December, 2006**, the amount ceiling on borrowing was further liberalized from USD 500 million to USD 750 million under Approval route. Limit of prepayment of ECBs without prior approval of the RBI was raised to USD 400 million.

The policy further widened its provisions for infrastructure sector by raising limit of borrowing for Rupee expenditure to USD 100 million. Annual limit of borrowing by infrastructure sector was substantially raised from USD 100 million to USD 500 million per borrower, per financial year. '*Mining*' was included under the definition of infrastructure. Also, ECBs were permitted for development of integrated townships.

Another important change in the policy was inclusion of select **Services sector** as eligible borrowers – Hospitals, Hotels and Software companies were permitted to raise ECBs up to USD 100 million per borrower, per financial year under Approval route for import of capital goods.

### 3.7.2 Policies from 2008 to 2016 (post-financial crisis)

The global financial crisis of 2008 had its impact on various dimensions of External Commercial Borrowings. Not only there was a sharp reduction in inflows of ECBs, firms that had previously borrowed whose loans and bonds were due for maturity began to face pressure due to sharp depreciation of Indian Rupee, as their liability in Rupee terms increased correspondingly.

Especially, firms that had raised FCCBs during the high global liquidity period (2002-08) had to face impending redemption of the bonds. The nature of FCCB contracts provided an option for the investors to convert the bonds into equity if the share price was not attractive. As share price of several firms declined due to stock market volatility of the corresponding period, the share price of most firms did not favor conversion of the FCCBs into equity. To meet the pressure of redemption, firms had to once again tap the international market to source foreign currency funds for use during redemption.

In order support firms facing pressure of FCCB redemption, one of the key policy changes during the post-crisis was to allow buy-back of FCCBs as well as permit fresh foreign currency borrowings to facilitate refinancing or redemption of FCCBs. Another policy change was frequent increase in the all-in-cost ceiling over LIBOR, as there was a liquidity crunch in the international market. By January, 2009, the RBI **entirely removed the all-in-cost ceiling** over LIBOR and **reintroduced** it by January, 2010. Changes in all-in-cost ceiling during the post-crisis period is shown in Table 3-2.

Table 3-2: All-in cost ceiling above LIBOR during post-financial crisis period

Effective Month - Year	Maturity			Ceiling over LIBOR, basis points		
	Slab-1	Slab-2	Slab-3	Slab-1	Slab-2	Slab-3
May-07	3 - 5 years	> 5 years		150	250	
May-08	3 - 5 years	> 5 years		200	350	
Sep-08	3 - 5 years	5 - 7 years	> 7 years	200	350	450
Oct-08	3 - 5 years	5 - 7 years	> 7 years	300	500	500
Jan-09	3 - 5 years	5 - 7 years	> 7 years	<i>No ceiling</i>	<i>No ceiling</i>	<i>No ceiling</i>
Jan-10	3 - 5 years	> 5 years		300	500	
Nov-11	3 - 5 years	> 5 years		350	500	
Mar-12	3 - 5 years	> 5 years		350	500	

Source: Collected from AP (DIR) circulars of RBI, various years

An important milestone during this period was **increase in annual borrowing limit** per borrower from USD 500 million to **USD 750 million**.

It also relaxed controls over the **services sector** by permitting hospitals, hotels and software sector to raise ECBs beyond USD 100 million under Approval route.

Throughout the period, the frequent policy changes were introduced to encourage **infrastructure** sector, such as further widening the definition of infrastructure (by including social infrastructure, cold storage facilities and fertilizers), increasing borrowing



limits and sub-limits for infrastructure, simplifying procedures, permitting bridge finance, permitting to borrow in Renminbi currency and allowing borrowing for working capital by civil aviation sector.

As the government also conducted spectrum allocation between 2009 and 2012, correspondingly, the ECB policy relaxed certain norms for firms participating in the auction or otherwise undertaking telecommunication projects.

Major policy changes in terms of an overall framework for ECBs were announced in 2004 and 2015. During this intervening period, there was a plethora of policy changes. Important features of such changes are as described in the preceding sections. **Annex to this chapter** presents a pictorial summary of relaxation and tightening measures during this intervening period. The number of such policy changes during this intervening period amount to more than 100.

As illustrated in the pictorial representation of policy changes between 2004 and 2015, there has been a continuous relaxation of controls on ECBs, generally on ad-hoc basis as and when the economic conditions warrant. On the amount of borrowing, the per-borrower, per financial year limit has been gradually relaxed, bringing the current limit USD 750 million per borrower per financial year. Sectoral and End-use restrictions show frequent policy relaxations. Most of these changes pertain to infrastructure sector, either by enhancing borrowing limit for infrastructure or by widening the definition of the term ‘infrastructure’ by including more business activities or by allowing certain specific end-use of borrowing for infrastructure sector, otherwise not applicable to other sectors. Under ‘Others’, most of the changes pertain to simplification of procedures and delegating certain powers to Authorized Dealers to take decision on matters pertaining to change of loan terms, prepayment, etc. The All-in-Cost ceiling, which is the ceiling on overall pricing over LIBOR (interest and fees), has also been continuously relaxed, to be in tune with the market liquidity conditions as shown in Table 3.2.

By 2014, the Government constituted a Committee to Review the Framework of Access to Domestic and Overseas Capital Markets under the chairmanship of M.S. Sahoo. The Sahoo Committee’s report submitted in 2015 noted that, over the years, policies towards External

Commercial Borrowings lacked focus. It observed that, by frequent policy changes announced on ad-hoc basis, there was **no clearly defined objective of ECB policies**. Each policy change had its own objective, generally not communicated well to the public. Commonly known policy objectives were foreign exchange reserve management, sectoral thrust and prudent debt management. Also, such frequent policy announcements and plethora of policy changes are not in line with the principle of predictability. The Committee suggested that, the **fundamental principle of the ECB policy should be to address ‘market failure’**, i.e. to safeguard the system from collapsing due to moral hazard effect arising out of unhedged foreign currency exposure by a large number of borrowers.

Following the recommendations of the Sahoo Committee, the RBI introduced two key changes in the ECB policy:

- i. It has now been made mandatory for the borrowers to report hedging of risks; and
- ii. Borrowing in Rupees from external lending sources are now permitted.

By **November 2015**, the RBI announced a **revised framework** of External Commercial Borrowings. The revised framework is based on the following principles:

- i. A more liberal approach, with fewer restrictions
- ii. A more liberal regime for Indian Rupee denominated ECBs where the currency risk is borne by the lender
- iii. Expansion of the list of overseas lenders to include long-term lenders such as insurance companies, pension funds and sovereign wealth funds
- iv. Only a small negative list of end-use restrictions
- v. Alignment of the list of infrastructure entities eligible for ECBs with the Harmonized List of the Government of India.

The revised framework also noted that, it will be a “major tool to calibrate policy towards capital account management in response to evolving macroeconomic situation”. Thus, the revised ECB framework introduced three tracks of ECB as in *Table 3-3*.

*Table 3-3: Tracks of ECBs under Revised Framework, 2015*

<b>Track</b>	<b>Description</b>
Track I	Medium term foreign currency denominated ECB with Minimum Average Maturity of 3 / 5 years **
Track II	Long term foreign currency denominated ECB with Minimum Average Maturity of 10 years
Track III	Indian Rupee denominated ECB with Minimum Average Maturity of 3 / 5 years **

Source: Revised ECB Framework, RBI, November 2015

\*\* Minimum Average Maturity: 3 years for ECBs up to USD 50 million or its equivalent; 5 years for ECBs beyond USD 50 million or its equivalent.

The revised framework prescribed individual borrowing limits under Automatic Route as in Table 3-4. Borrowings in excess of the limit indicated would come under Approval route.

*Table 3-4: Borrowing limits under Revised Framework, 2015*

<b>Borrowing entity's industry sector</b>	<b>Limit per borrower, per financial year (USD million or equivalent)</b>
Infrastructure and manufacturing	750
Software development	200
Micro-finance	100
Remaining entities	500

Source: Revised ECB Framework, RBI, November 2015

It appears that, the Government and the RBI, have partly accepted the recommendations of the Sahoo Committee. The Committee was in favor of doing away with all restrictions, and imposing only conditions so as to mitigate risk of market failure. While further liberalizing ECB policies in tune with the Sahoo Committee recommendations, not all of its recommendations seems to have been accepted.

### **3.8 ECBs in the context of Capital Account Convertibility**

“Currency convertibility refers to the freedom to convert the domestic currency into other internationally accepted currencies and vice versa. Convertibility in that sense is the obverse of controls or restrictions on currency transactions. While current account convertibility refers to freedom in respect of ‘payments and transfers for current international transactions’, capital account convertibility (CAC) would mean freedom of currency conversion in relation to capital transactions in terms of inflows and outflows” (Tarapore Committee, 2006).

As inflows and outflows of External Commercial Borrowings of India are accounted in the Capital Account, it is imperative to understand the policy approach towards Capital Account Convertibility (CAC) in general as well as with specific reference to ECBs.

India being a member country of the International Monetary Fund, it is bound by the Articles of Agreement of the IMF. Article VIII makes it mandatory not to impose restrictions on current international transactions. However, Article VI (3) permits the member countries to regulate international capital movements.

On two occasions, the Government of India constituted a group of experts to study various aspects of Capital Account Convertibility and make suitable recommendations. **Committee on Capital Account Convertibility, 1997** and again the **Committee on Fuller Capital Account Convertibility, 2006** were constituted, both under the Chairmanship of **S.S. Tarapore**.

The **1997 Committee** prescribed a three phased approach towards CAC, subject to meeting certain conditions, such as reducing fiscal deficit, controlling inflation, reducing Non-Performing Assets and achieving a prescribed level of effective Cash Reserve Ratio. With respect to ECBs, the 1997 Committee had recommended a three- phased approach with gradual relaxation of restrictions on each phase. During the first phase (1997-98), it recommended ensuring no crowding out of smaller borrowers by a few very large

borrowers. Also, end use restrictions for borrowed funds were prescribed to be removed. It further suggested to keep loans with maturity beyond 10 years outside the ceiling of ECBs. This was further reduced to 7 years in the second phase (1998-99). Prescriptions for the third phase (1999-2000) were largely the same as that of the second phase.

The recommendations of the 1997 Committee were implemented in part, such as permitting borrowers to raise ECBs up to USD 500 million per financial year under the Automatic route and easing end-use restrictions.

The **2006 Committee** was constituted with an objective to review the progress towards Capital Account Convertibility after 1997 and to study the direction towards Fuller Capital Account Convertibility. The approach of the Committee was to rationalize and gradually liberalize controls. It prescribed a 5-year roadmap with three phases (Phase I 2007-07, Phase II 2008-09 and Phase III 2009-10 and 2010-11). It further recommended that a review be undertaken at the end of each phase and a comprehensive review at the end of the third phase to chalk out the future course of action.

With specific reference to External Commercial Borrowings, the 2006 Committee recommended gradual raising of the overall ceiling as well as the ceiling under Automatic route. It also prescribed that Rupee denominated ECBs (payable in foreign currency) be kept outside the purview of the ECB ceiling. Further, it recommended that, ECBs over 10-year maturity and 7-year maturity be treated outside the ECB ceiling under Phase I and Phase II respectively. It also recommended removal of end-use restrictions during Phase I.

In line with the recommendations of the two Committees on Capital Account Convertibility (1997 and 2006), the overall direction of policies towards External Commercial Borrowings has been one of phased approach towards Capital Account Convertibility, aided by gradual liberalization of controls. However, the recommendations of the two committees were not implemented in totality.

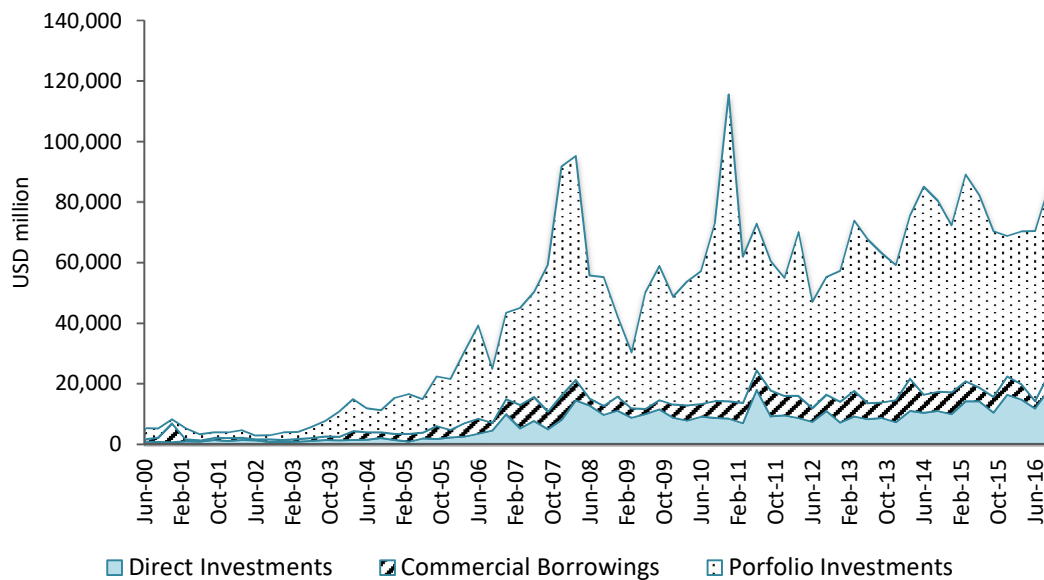
### 3.9: ECBs vis-à-vis other forms of Capital Flows, Capital Account and Current Account

#### 3.9.1 ECBs and Capital Account

Private capital, flows primarily through three channels, namely, Foreign Direct Investment (FDI), Portfolio Investments and Commercial Borrowings that are accounted in the Capital Account of a country's Balance of Payments. An observation of India's Capital Account shows that, it is the portfolio investments that account for a larger share in capital inflows. Figure 3-10 shows gross flows in relative comparison among the three forms of private capital flows.

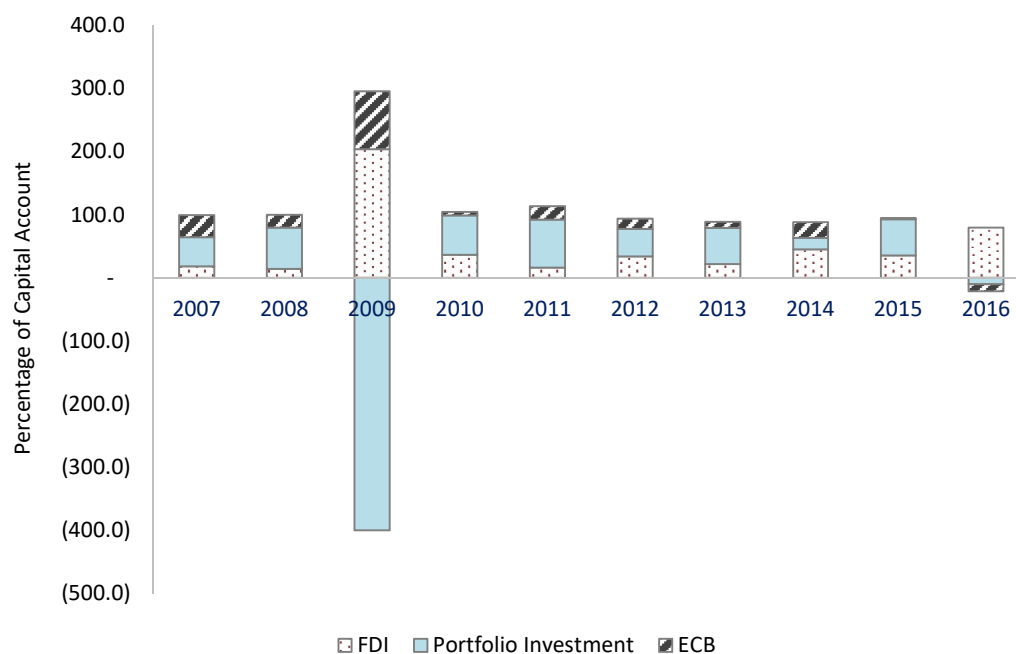
Figure 3-11 depicts *net flows* of FDI, Portfolio investments and ECBs as a percentage share of total Capital Account. As observed, in most of the years, the flows on account of ECBs is lesser than that of FDI and portfolio investments.

Figure 3-10: Capital inflows



Source: Quarterly Data on Balance of Payments, RBI

Figure 3-11: Select components of net flows as a percentage share of Capital Account



Source: Calculated from data on Sources of Variation in Foreign Exchange Reserves, RBI, various years

### 3.9.2 ECBs and Current Account

By means of National Income Accounting, a country that runs a deficit on its Current Account balance must allow the rest of the world to build claims on the country by sourcing foreign capital in various forms such as direct investments, portfolio investments, external assistance, commercial borrowings and investments by non-resident citizens. Like many countries in the same income group, India has been running Current Account Deficit, indicating that it is building liabilities towards the rest of the world.

Table 3-5 shows India's Current Account balance since 1991, in comparison with gross flows of foreign investments (FDI and Portfolio investments) and commercial borrowings (medium term and long term). The table also differentiates by highlighting the years when

the Current Account was in surplus as well as the years when commercial borrowings contributed more than foreign investments.

Except for the years 2002, 2003 and 2004, in all other years, the Current Account has recorded a deficit. Between 1991 and 1993, the formative years of the New Economic Policy, commercial borrowings far exceeded foreign investments. This is as expected of a country that had just faced a Balance of Payments crisis and began to open up its economies to the rest of the world. During this period, the Indian Rupee was allowed to float, thus opening up a new era in the country's foreign exchange market. Besides, policies were liberalized to attract foreign investment. The results of such policy changes are evident by a seven-fold increase in foreign investment flows in the year 1994, when compared to the previous year. From then on, due to continuous approach towards policy liberalization and favorable market conditions, foreign investment is continuously recording an increase. Commercial borrowings, on the other hand, while still contributing towards Current Account Deficit, play a lesser role in relative comparison to foreign investments. Decline in foreign investments in fiscal year 1999 can be attributed to conditions following Pokhran nuclear test as well as spillover effects of East Asian economic crisis. Following the financial crisis of 2008, both foreign investment and commercial borrowings record a decline.

As a post 2008-crisis effect, the Current Account Deficit widened sharply until 2013, without corresponding contribution from commercial borrowings. This is illustrated by Figure 3-12 and Figure 3-13 that compare Current Account Deficit vis-à-vis gross and net flows of commercial borrowings respectively. The period between 2002 and 2008 recorded a high inflow of commercial borrowings, adequately bridging the gap in Current Account balance. After 2008, the effect of global financial crisis and EM slowdown had its impact both on commercial borrowings as well as Current Account balance. The Current Account Deficit widened significantly until 2013, simultaneously receiving lesser contribution from commercial borrowings. For a closer view, these different sub-period observations are shown in Figure 3-13 and Figure 3-14 (Current Account Deficit and net flows of commercial borrowings), covering two sub-periods, 1991-2007 and 2008-2016.



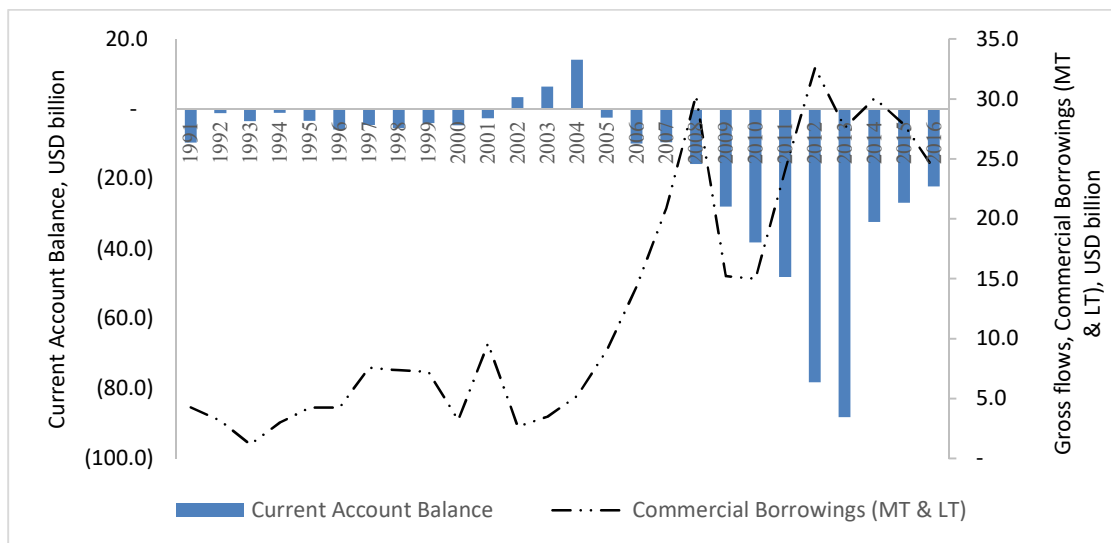
*Table 3-5: Current Account Balance and Credit Side of Capital Account towards Direct Investments and Commercial Borrowings*

Amount USD billion (amounts in parenthesis are in negative)			
<b>Fiscal Year ending March 31</b>	<b>Current Account Balance</b>	<b>Foreign Investment (FDI + Portfolio)</b>	<b>Commercial Borrowings (MT &amp; LT)</b>
1991	(9.7)	0.1	<b>4.3</b>
1992	(1.2)	0.2	<b>3.2</b>
1993	(3.5)	0.6	<b>1.2</b>
1994	(1.2)	4.6	3.0
1995	(3.4)	5.8	4.2
1996	(5.9)	5.6	4.3
1997	(4.6)	7.8	7.6
1998	(5.5)	9.3	7.4
1999	(4.0)	5.9	<b>7.2</b>
2000	(4.7)	12.2	3.2
2001	(2.7)	17.7	9.6
2002	<b>3.4</b>	15.5	2.7
2003	<b>6.3</b>	14.0	3.5
2004	<b>14.1</b>	32.7	5.2
2005	(2.5)	46.9	9.1
2006	(9.9)	77.3	14.3
2007	(9.6)	133.2	20.9
2008	(15.7)	271.1	30.3
2009	(27.9)	171.7	15.2
2010	(38.2)	198.7	15.0
2011	(48.1)	292.6	24.1
2012	(78.2)	234.6	32.6
2013	(88.2)	215.0	27.6
2014	(32.3)	246.8	30.1
2015	(26.9)	308.6	27.8
2016	(22.2)	276.4	24.2

Source: Prepared from Quarterly data on Balance of Payments, RBI

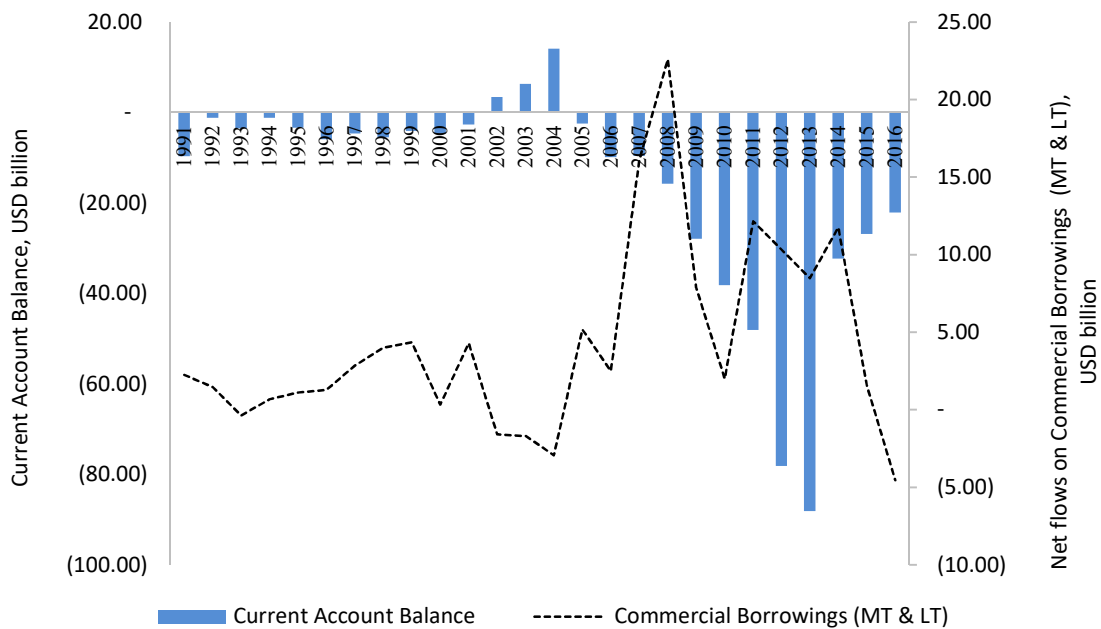
Bold fonts denote commercial borrowings greater than FDI and portfolio investments

Figure 3-12: Gross flows on commercial borrowings vis-a-vis Current Account balance



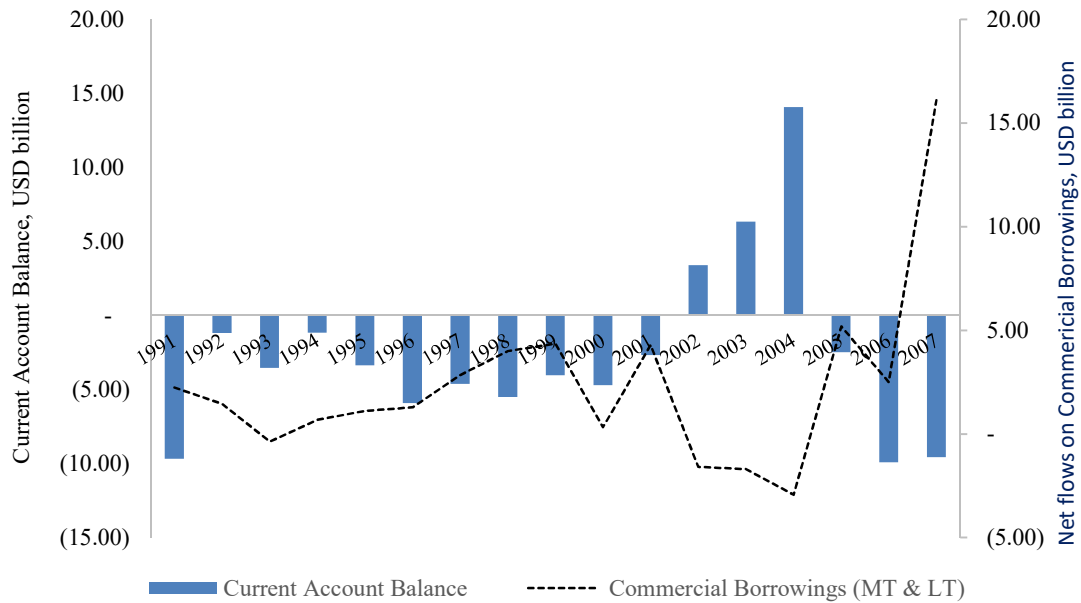
Source: Prepared from Quarterly data on Balance of Payments, RBI

Figure 3-13: Net flows on commercial borrowings vis-a-vis Current Account balance



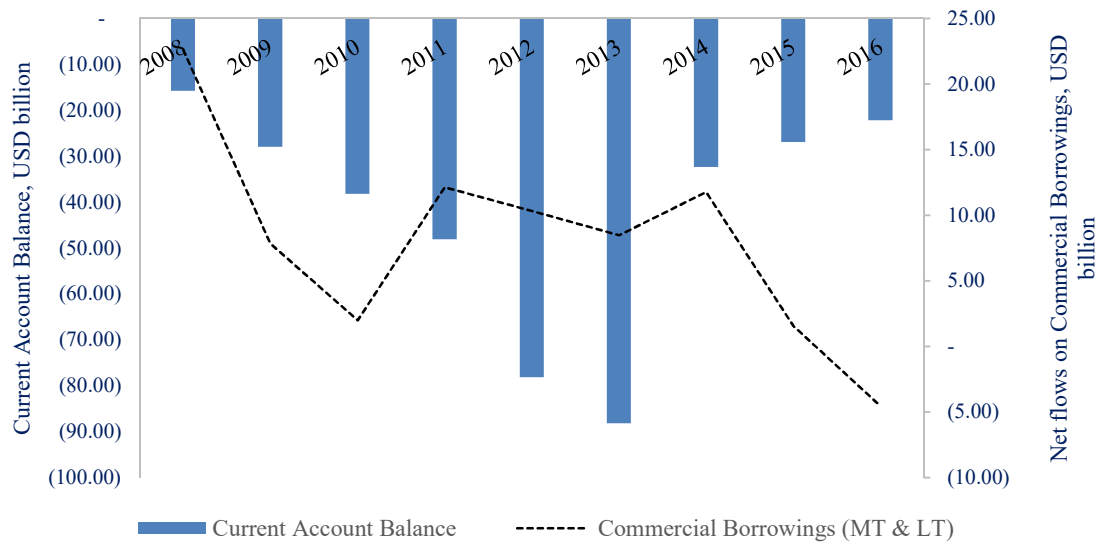
Source: Prepared from Quarterly data on Balance of Payments, RBI

Figure 3-14: Net flows on commercial borrowings vis-a-vis Current Account balance (1991-2007)



Source: Prepared from Quarterly data on Balance of Payments, RBI

Figure 3-15: Net flows on commercial borrowings vis-a-vis Current Account balance (2008-16)

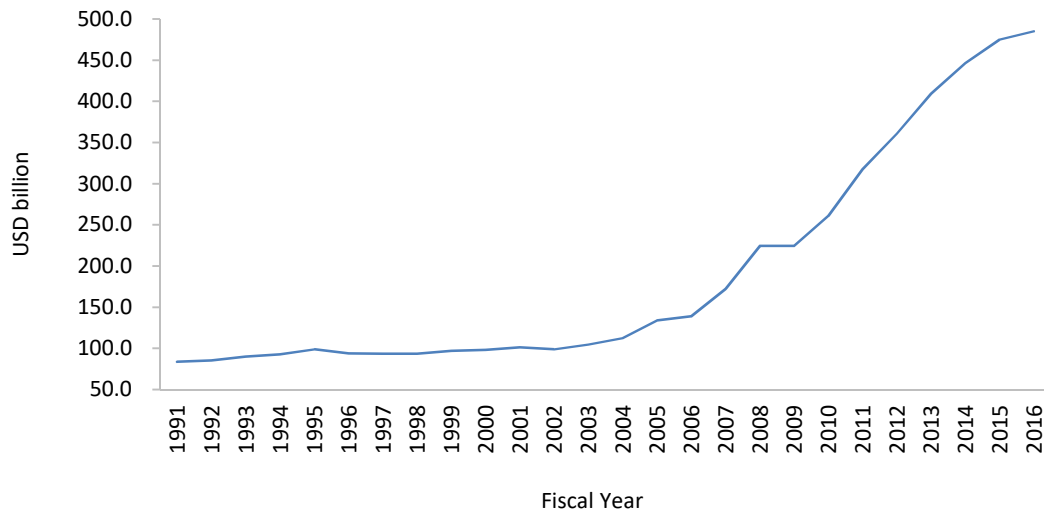


Source: Prepared from Quarterly data on Balance of Payments, RBI

### 3.10 ECBs in relation to India's External Debt

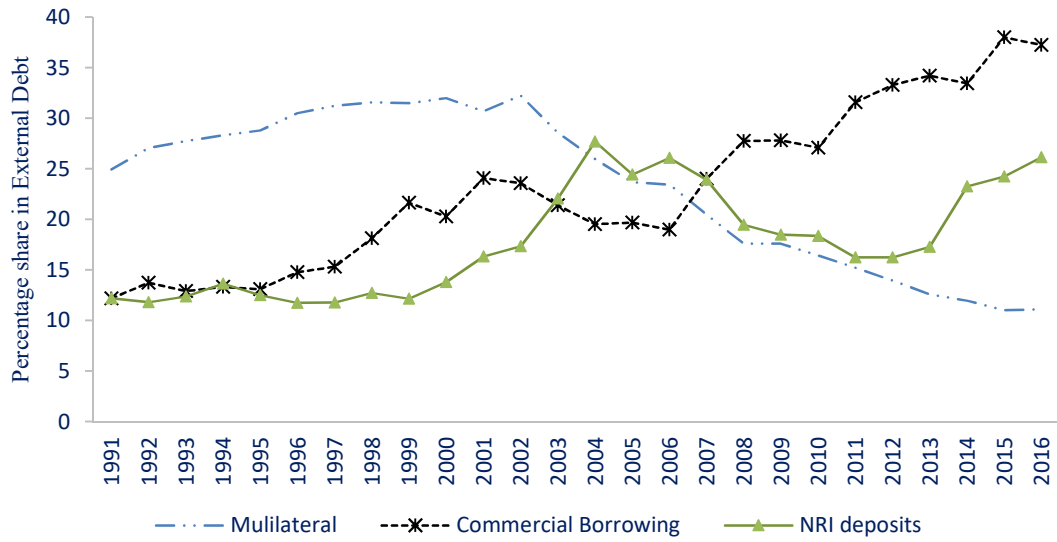
Study of External Commercial Borrowings would be incomplete without taking a review of its relative position in the overall gamut of India's external debt. India's external debt has recorded an exponential growth, especially after fiscal year 2005 (Figure 3-16). The accumulation to external debt stock, was primarily driven by multilateral debt until 2004. Multilateral debt pertains to borrowings from multilateral agencies such as the World Bank. The years 2004 to 2006 witnessed high proportion of Non-Resident Indian deposits in external debt stock, owing to special deposit schemes targeted at Non Resident Indians during the preceding years. As the domestic and global economic conditions eased from early 2000s, there was an increase in commercial borrowings, resulting in ECBs occupying the largest share in India's external debt from the fiscal year 2008 onwards (Figure 3-17).

*Figure 3-16: External Debt Outstanding*



Source: External Debt Statistics, RBI

Figure 3-17: Share in External Debt Stock

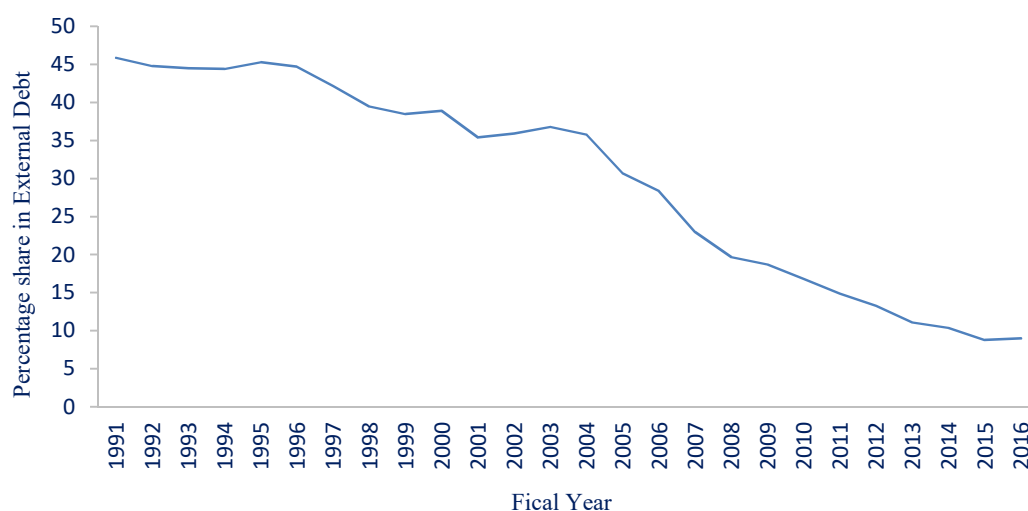


Source: Calculated from External Debt Statistics, RBI

The increasing role of commercial debt is further evidenced by declining share of concessional debt in total external debt (

Figure 3-18). The concessional debt was in the range of 35-45 percent of total debt until 2004. It started declining rapidly since then. By 2008, concessional debt's share was about 19 percent, further declining to less than 10 percent range after 2014. In other words, this declining trend of concessional debt indicates the corollary that non-concessional or commercial debt is increasing proportionately.

Figure 3-18: Share of Concessional Debt in total External Debt



Source: Calculated from External Debt Statistics, RBI

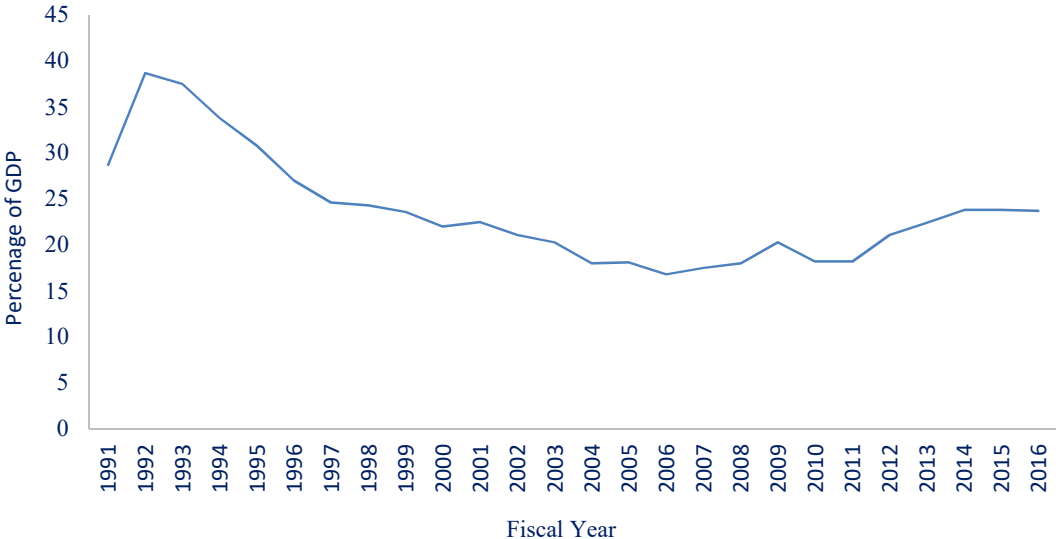
Exponential growth of external debt would also mean that, there is a risk of debt accumulation reaching uncontrollable levels, either in terms of solvency or liquidity. Problem of **solvency** arises when total debt stock reaches a high level beyond the country's ability to honor debt obligations calling for debt restructuring. Problem of **liquidity** arises when a country is unable to meet its immediate debt service obligations (in the short-term). Overall levels of debt are monitored by share of external debt in GDP. Debt service (immediate liquidity) is monitored by **Debt-Service Ratio**, which is a ratio of current payments to current receipts as well as share of **Short-term debt to Total debt**. When Debt-Service Ratio is high, it indicates that the country is not in a favorable position to

meet its immediate debt service obligation. A high Short-term debt ratio and high Debt Service Ratio would indicate that a country is in a dire situation of liquidity.

Figure 3-19 presents India’s external debt levels as a percentage share of GDP.

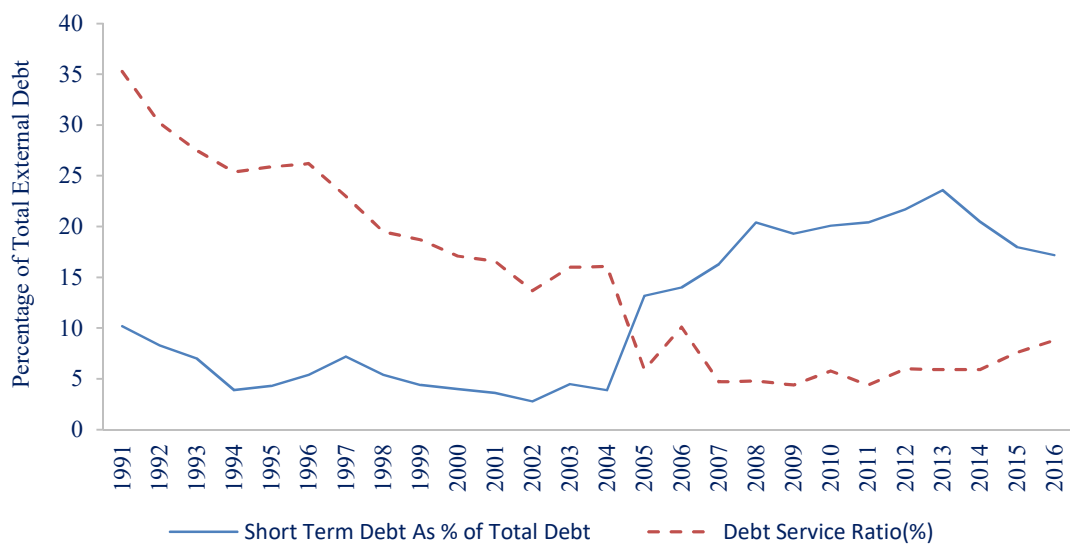
Figure 3-20 show Debt Service Ratio and Short-term Debt ratio in comparison. As observed, from a high level of external debt, India has recorded a performance of controlling its external debt by lowering debt levels continuously, from a level of above 30 percent during early 1990s to below 20 percent by early 2000s. Due to increasing commercial borrowings, once again, the debt level shows a rising trend from 2010, however still maintaining below 25 percent of GDP as of fiscal year 2016. These levels are significantly lower than the early 1990s when the country faced BoP crisis.

*Figure 3-19: External Debt as a percentage share of GDP*



Source: External Debt Statistics, RBI

Figure 3-20: Debt Service Ratio and Short-term Debt Ratio



Source: External Debt Statistics, RBI

Figure 3-20 evidences that, Short-term debt ratio, which was below 10 percent of total debt before 2004, increase significantly since then, recording a range of 18-23 percent of total debt up to 2016. This is naturally expected, following increase in commercial borrowings



that would result in continuous debt service requirements every year for loans borrowed during the previous years. When the Short-term debt ratio is compared with Debt Service Ratio, there is a satisfactory indication of significantly low and declining levels of Debt Service Ratio, indicating that, the country is able to comfortably meet its current debt service obligations utilizing its current receipts. There is a small increase in DSR between 2013 and 2016 due to declined current receipts (attributing to lower exports). However, from an overall perspective, the Debt Service Ratio shows a comfortable position for the economy, signaling the country's ability to meet short-term debt service obligations amidst increasing commercial borrowings.

### **3.11 International Comparison**

As foreign currency borrowing by private sector is a global phenomenon, an international comparison would help understand India's relative position among its peers. The Sahoo Committee attempted such a comparison by studying policies of BSST countries (Brazil, South Africa, South Korea and Turkey), that are comparable to India in size and governance. This section borrows policy comparisons from the Sahoo Committee report, by further adding statistical comparisons.

For the purpose of comparison, this section presents three statistical measures pertaining to the countries in consideration – current account balance as a percentage share of GDP, amount of external debt stock and annual growth in GDP, shown in Table 3-6, Table 3-7 and Table 3-8 respectively. The data is presented by calculating average of four periods 1991-1995, 1996-2001, 2002-2008 and 2009-2015, broadly covering different periods of growth in global capital flows as well as pre-and post-financial crisis years. Data for South Korea was not available for all variables, hence omitted. Data for South Africa has missing values for certain years.

*Table 3-6 Current Account Balance – international comparison*

Current Account Balance as a percentage share of GDP, mean for the period				
Period	Brazil	South Africa	Turkey	India
1991-1995	(0.25)	0.64	(0.68)	(1.15)
1996-2001	(3.70)	(0.76)	(0.69)	(0.86)
2002-2008	(0.32)	(3.07)	(3.96)	(0.37)
2009-2015	(3.07)	(3.86)	(5.90)	(2.68)

Source: Calculated from WDI; source data is for calendar years. Data for South Africa not available for certain years.

*Table 3-7: External Debt Stock -international comparison*

External Debt stock, USD billion, mean for the period				
Period	Brazil	South Africa	Turkey	India
1991-1995	141.87	9.41	63.21	91.13
1996-2001	223.39	25.91	98.97	97.80
2002-2008	224.66	51.53	195.50	151.45
2009-2015	437.52	124.01	344.15	376.88

Source: Calculated from WDI; source data is for calendar years. Data for South Africa not available for certain years.

*Table 3-8: GDP growth - international comparison*

<b>Annual growth in GDP, mean for the period</b>				
<b>Period</b>	<b>Brazil</b>	<b>South Africa</b>	<b>Turkey</b>	<b>India</b>
1991-1995	3.1	0.9	3.3	5.1
1996-2001	2.0	2.8	2.5	5.9
2002-2008	4.0	4.4	5.9	7.2
2009-2015	1.8	1.7	3.8	7.5

Source: Calculated from WDI; source data is for calendar years.  
Data for South Africa not available for certain years.

As observed in Table 3-6, all countries in comparison have been running a deficit on Current Account, indicating that the countries are building liabilities to the rest of the world. The post-financial crisis average current account deficit is higher than that of the pre-crisis period for all countries, indicating the countries' common response to the post-crisis period. This is further corroborated by Table 3-7 that evidences that all the four countries are accumulating significant amount of external debt, as measured by mean debt stock for the respective periods. Observing average of annual growth in GDP shows that, all countries attained higher growth rates during the period 2002-08, which corresponds to increased international financial liquidity. For the post-financial crisis period (2009-2015), all countries, except India record a decline in GDP growth. Thus, all countries in comparison source foreign capital to meet their growth needs and to finance Current Account Deficit.

In terms of policies, the Sahoo Committee made a comparison of ECB policies of India vis-à-vis BSST countries on important dimensions such as cap on amount of foreign borrowing, eligibility to borrow, eligibility to lend, end-use of borrowing, all-in-cost ceiling and maturity of borrowing.

With respect to amount of borrowing, Brazil, South Korea and Turkey do not impose any ceiling. South Korea imposes a limited ceiling, by requiring approval from the government if the amount of borrowing exceeds USD 30 million. On the other hand, in case of India, there is a ceiling of borrowing for different categories of borrowers, which has undergone changes over a period of time.

In terms of eligibility to borrow, India has a plethora of conditions that have been gradually liberalized over the years yet some restrictions remain. South Korea, Brazil, South Africa and Turkey do not impose any such restrictions as to who can borrow.

On the dimension of eligibility to lend, broadly, there are no restrictions by BSST countries, except for minimal restrictions such as ‘only an investment grade lender can lend’ or ‘investment grade lender with no domestic interests can lend’. In case of India, the restrictions are relatively higher.

With respect to maturity of borrowing, the BSST countries impose a minimum maturity of one year. Brazil has an additional clause of prohibiting open maturity borrowing. On the other hand, India has adopted a two-slab maturity conditions, minimum of three years and five years depending on the amount of borrowing. India also has sub-conditions for certain class of borrowers.

In terms of cost of borrowing, South Korea, Brazil and Turkey impose no restrictions. Brazil only adds a clause that, the cost should be in tune with market conditions and does not allow undefined charges. South Africa imposes cost restrictions of Base rate + 2% for foreign currency loans and Base rate + 3% for Rand loans. India imposes all-in-cost ceiling on borrowing, which is revised from time to time.

On the question of end-use of borrowed funds, except India, none of the BSST countries impose any restriction. India has a plethora of end-use restrictions that have been liberalized over a period of time. South Africa imposes only one condition that, investment in sinking funds are not allowed.

### **3.12 Concluding Remarks**

This chapter traces the history and evolution of ECBs, corresponding policies in the backdrop of contemporary global and domestic economic conditions. It also discusses ECBs in the context of India's approach towards Capital Account Convertibility, Current Account balance and Capital Account in relative comparison to other forms of capital flows. An overview of key indicators of India's overall external debt and the relative position of ECBs in total external debt is also presented. An international comparison of policies and macroeconomic conditions of comparable countries is provided.

In summary, ECBs play an increasing role in India's external debt, specifically accounting for the largest share in total debt stock. Policies towards ECBs follow the approach of gradual liberalization of restrictions, prudent external debt management, simplification of procedures and a thrust on infrastructure sector. In terms of Balance of Payments, while ECBs make some contribution towards Current Account Deficit and Capital Account, its contribution is lesser in comparison to other major forms of capital flows, such as Foreign Direct Investments and Portfolio investments. Yet, being a country running a Current Account Deficit, India needs to import capital to meet its investment needs. ECBs play an important role. Unlike FDI, ECBs do not part with ownership of controls; and unlike portfolio investments, ECBs do not face sudden withdrawals in the event of a crisis.

### **Annex to Chapter-3**

Policy changes between 2004-2015 (intervening period of announcements of framework on ECBs, 2004 and 2015)

**Green** – policy relaxed; **Red** – policy tightened

Month & Year	Borrowing amount		Sectoral restriction		All-in-cost ceiling		End use / Purpose		Pre-payment limit without RBI approval		Borrower type		Others	
	Relax	Tighten	Relax	Tighten	Relax	Tighten	Relax	Tighten	Relax	Tighten	Relax	Tighten	Relax	Tighten
Apr-02														
Oct-03														
Jan-04	Consolidation of hitherto temporary policy measures, more transparent and simplified policies with clearly laid-out guidelines													
Feb-04														
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Apr-05														
Aug-05														
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Nov-11														
Dec-11														
Jan-12														
Feb-12														
Feb-12														
Mar-12														

Month & Year	Borrowing amount		Sectoral restriction		All-in-cost ceiling		End use / Purpose		Pre-payment limit without RBI approval		Borrower type		Others	
	Relax	Tighten	Relax	Tighten	Relax	Tighten	Relax	Tighten	Relax	Tighten	Relax	Tighten	Relax	Tighten
Apr-12			█											
Apr-12							█							
Apr-12			█											
Jun-12							█							
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## **Chapter 4 Descriptive Analysis**

This chapter presents a descriptive analysis of External Commercial Borrowings, at the macro level and at the firm level. At the macro level, the analysis covers types of borrowing firms, distribution between Automatic and Approval routes of borrowing, distribution of size of borrowing, industry and sector distribution, pricing and maturity pattern of borrowing. At the firm level, industry and sector level characteristics such as size of the industry, size of foreign currency debt outstanding, ratio of foreign currency debt to total debt, investment in new fixed assets and profitability are presented.

### **4.1 Sources of Data**

The data source for the **macro level** descriptive analysis is the monthly data on ECBs published by the RBI, which is based on the date when the RBI allots Loan Registration Number to the borrower. This does not correspond to the exact date when the actual borrowing occurred or when the loan contract was signed.

**Firm level** data has been collected from Prowess database of Center for Monitoring Indian Economy. The Prowess database contains data of financial statements of more than 38,000 Indian firms from the year 1989, which serves as the single largest source of data on financials of Indian firms. Prowess database covers bulk of foreign currency borrowings by Indian firms (Patnaik, Shah, & Singh, 2015).

### **4.2 Sample size and period:**

Macro level analysis using monthly ECB data covers an 11-year period from Fiscal Year ending March 31, 2006 to Fiscal Year ending March 31, 2016. The cumulative of monthly data aggregates to a total number of 7,960 External Commercial Borrowings. The macro level descriptive analysis presented hereunder covers 100 percent of the data set, thus the sample size is 7,960.

Firm level descriptive analysis covers three fiscal years ending March 31, 2014, 2015 and 2016. 333 unique firms were identified with foreign debt outstanding during this period. To facilitate comparison, 2,507 unique firms without foreign debt outstanding were also identified during this period. Thus the sample size for firms with foreign currency debt (FCB firms) is 333 and firms without foreign debt (Non-FCB firms) is 2,507, after omitting incomplete data on variables under consideration.

### **4.3 Types of Borrowing Firms**

Borrowing firms, based on their registration under law, can be classified as either Public Limited or Private Limited companies. A Public Limited Company's minimum shareholding membership requirement is larger and its shares are typically traded in the market. A Private Limited Company's membership is restricted to a closed group and its shares are held within its group of members, without opening to the public.

Table 4-1 shows the amount of ECB funds raised by public and private limited companies during the fiscal years 2006-2016. Figure 4-1 shows the percentage share of public and private limited companies in the annual borrowings. Public limited companies account for a larger share of borrowings, an average of 86.4 percent of borrowings during the period under observation. Typically, public limited companies are bigger in size and operations. This explains the reason for larger share of foreign currency borrowings by public limited companies.

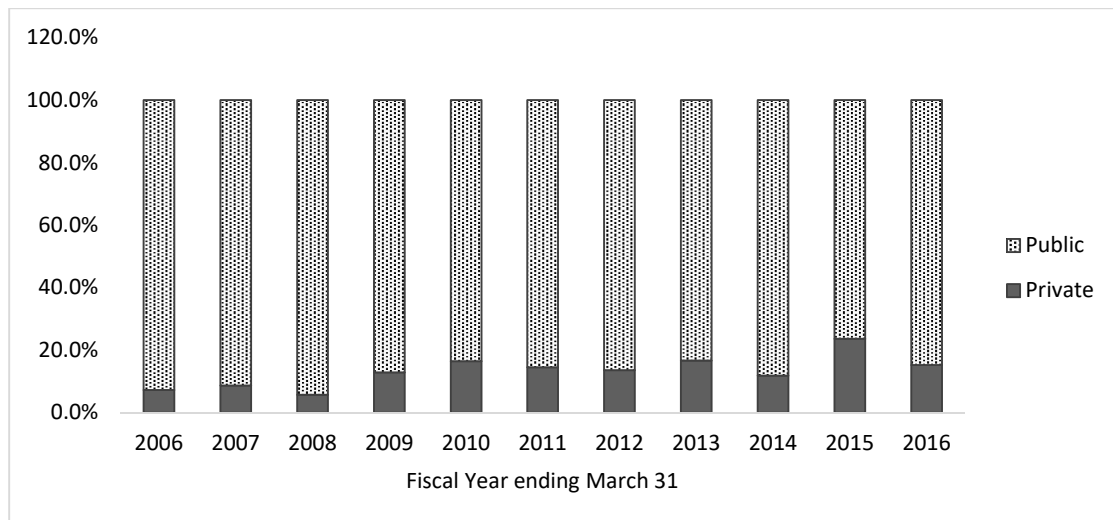
Table 4-1: Amount of ECBs raised by firm type

Amounts in USD billion

Fiscal Year ending March 31	Private Limited Companies	Public Limited Companies	Total
2006	0.8	10.5	11.4
2007	1.7	18.4	20.1
2008	1.4	23.4	24.8
2009	2.2	14.8	17.0
2010	2.9	14.7	17.6
2011	3.5	20.9	24.5
2012	4.6	29.4	34.1
2013	5.0	24.9	29.8
2014	3.9	29.0	32.9
2015	5.8	18.8	24.6
2016	3.6	20.1	23.7

N =7960; Source: Calculated from monthly data of ECBs, RBI

Figure 4-1: Share of Public Limited and Private Limited companies in new ECB deals



N =7960; Source: Calculated from monthly data of ECBs, RBI

Amounts borrowed through Automatic route are consistently higher than that of Approval route, with the exception of the year 2014; there were significant borrowings by firms in the Oil & Gas sector in 2014. While aggregate borrowings in a year under Automatic route exceeds that of years under Approval route, the *average size* of borrowings under Automatic route is *smaller* than that of Approval route, as shown in Table 4-3. Average of amounts borrowed under Approval route is consistently higher than that of Automatic route (on an average 5-6 times higher than Automatic route).

*Table 4-2: Route-wise amount of ECBs*

Amounts in USD billion

<b>Fiscal Year ending March 31</b>	<b>Approval Route</b>	<b>Automatic Route</b>	<b>Total</b>
2006	1.2	10.2	11.4
2007	6.6	13.5	20.1
2008	10.0	14.8	24.8
2009	8.3	8.7	17.0
2010	6.4	11.2	17.6
2011	9.5	15.0	24.5
2012	10.0	24.1	34.1
2013	12.7	17.1	29.8
2014	20.9	12.0	32.9
2015	7.9	16.8	24.6
2016	10.7	13.1	23.7

N =7960; Source: Calculated from monthly data of ECBs, RBI

*Table 4-3: Average size of borrowings under Approval and Automatic Routes*

Amounts in USD billion

<b>Fiscal Year ending March 31</b>	<b>Approval Route</b>	<b>Automatic Route</b>
2006	46.7	20.3
2007	108.4	17.3
2008	188.6	29.4
2009	57.2	21.8
2010	80.8	22.5
2011	126.1	23.6
2012	123.6	24.3
2013	142.7	21.1
2014	148.2	21.2
2015	91.5	23.0
2016	237.0	19.6

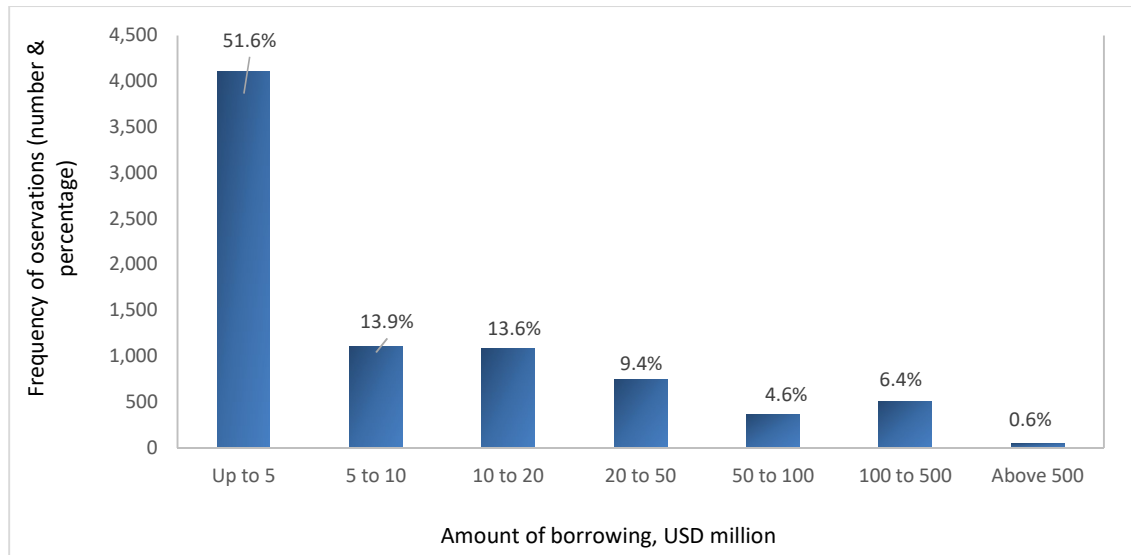
N =7960; Source: Calculated from monthly data of ECBs, RBI

The ECB policy permits borrowings within certain annual limits under Automatic route. When the amount of borrowing exceeds the limit or when the borrowing does not otherwise satisfy the stipulated conditions for Automatic route, the borrowers have to approach the RBI seeking approval for the borrowing. This explains the higher average size of borrowings under Approval route than Automatic route.

#### 4.4 Size of Borrowing

Analysis of size distribution of ECBs shows that, a large number of borrowings (51.6 percent of the samples) are of small amounts up to USD 5 million. Another 36.9 percent of the samples are spread out between USD 5 million to USD 50 million and the rest up to and above USD 500 million, as shown in Figure 4-2.

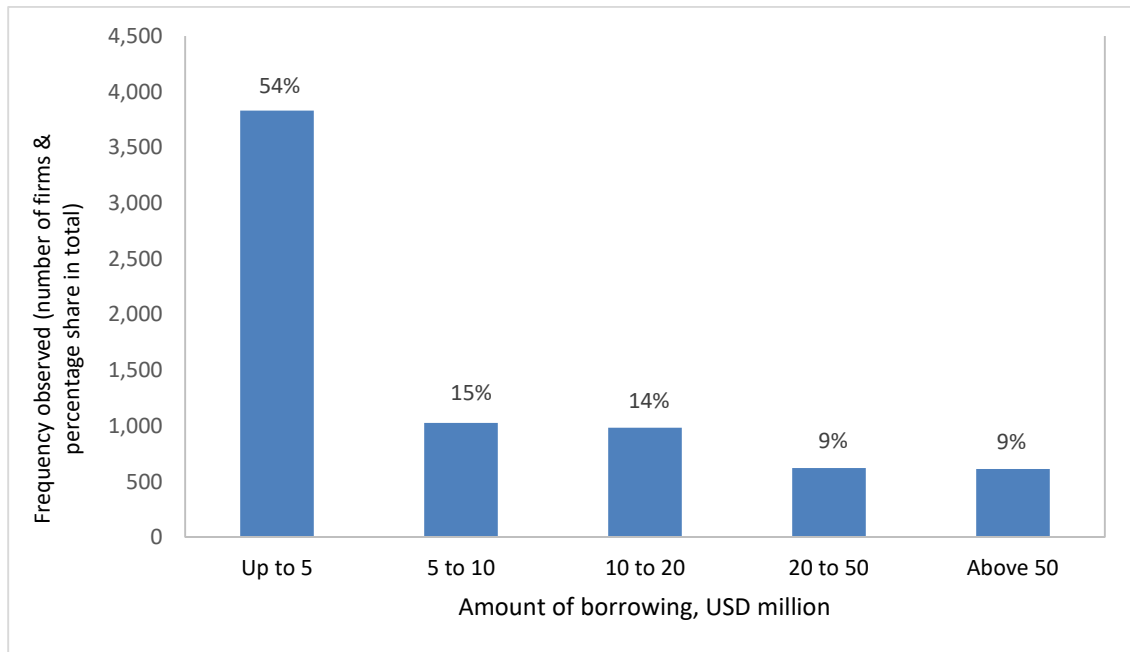
*Figure 4-2: Distribution of size of borrowing*



N= 7960; Mean = 32.73 USD million, Standard Deviation = 105.41 USD million  
Source: Calculated from monthly data on ECBs, RBI (Fiscal years 2006-2016)

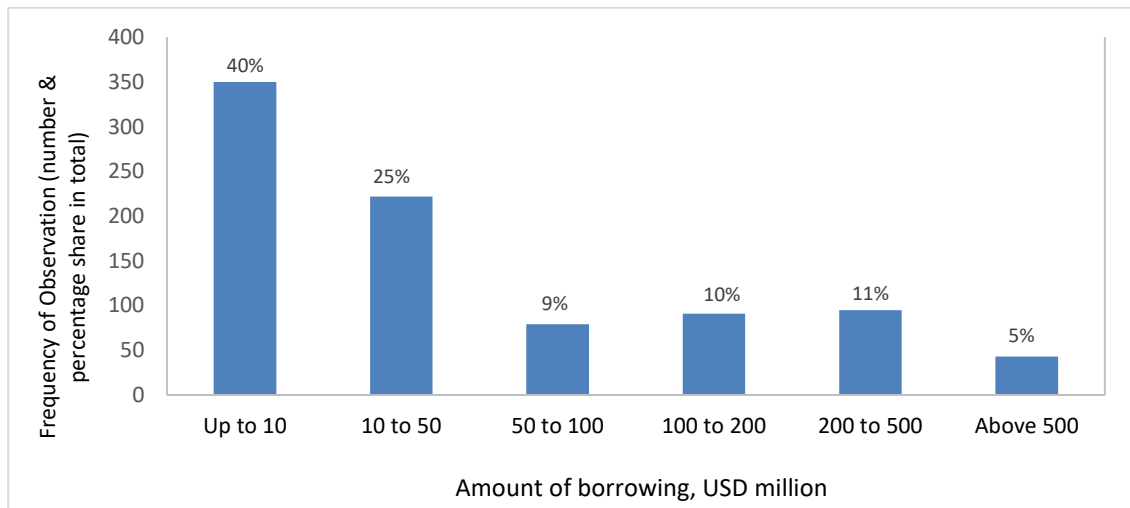
The observation holds good even after dividing the samples between Automatic and Approval routes. Under both the routes of borrowing, a large number of loans are of small size. The size of loans under Approval route is higher than that of Automatic route. However, under both Automatic and Approval routes, there are high concentrations of loans of size up to USD 5 million and USD 10 million respectively (Figure 4-3 and Figure 4-4).

Figure 4-3: Distribution of size of borrowing - Automatic route



N = 7960, Mean = USD 22.10 million, Standard Deviation = USD 61.18 million  
 Source: Calculated from monthly data on ECBs, RBI (Fiscal years 2006-2016)

Figure 4-4: Distribution of size of borrowing - Approval route



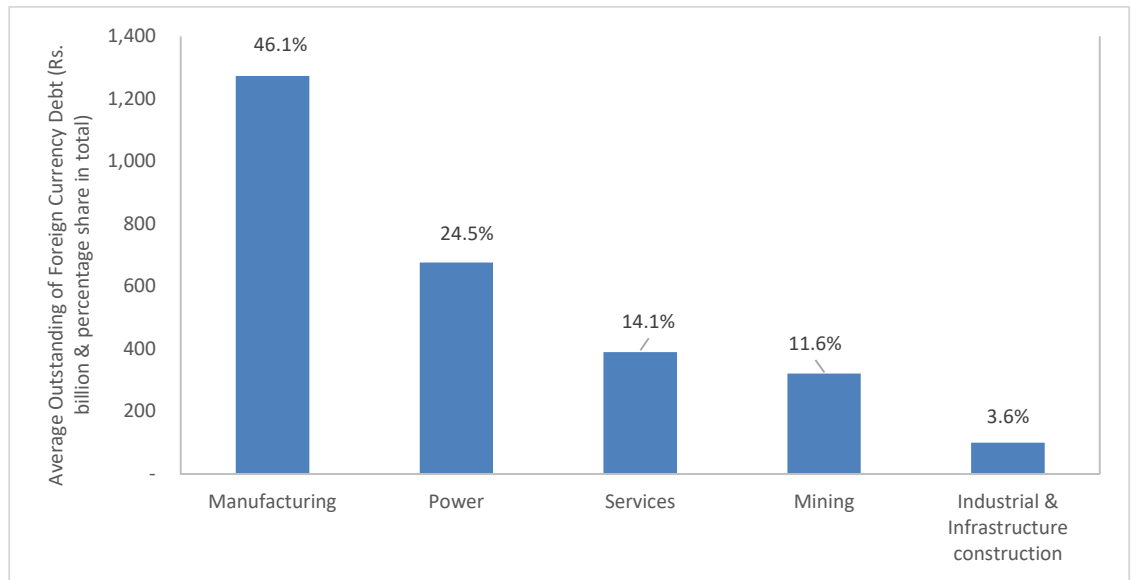
N = 880, Mean = USD 118.24 million, Standard Deviation = USD 249.44 million  
 Source: Calculated from monthly data on ECBs, RBI (Fiscal years 2006-2016)

#### 4.5 Sector-wise distribution

Sector-wise distribution of ECBs is estimated by computing average outstanding of long-term foreign currency debt of the sample firms during the three fiscal years ending March 31, 2014, 2015 and 2016. The largest share of ECB average outstanding is held by the manufacturing sector (46.1 percent), followed by power (24.5 percent) and the remaining share is accounted by services, mining and industrial and infrastructure construction (Figure 4-5). Among the industries (Table 4-4), chemicals & chemical products, metals & metal products hold the largest share of outstanding foreign debt. Within the services sector, transport services accounts for the largest share, followed by communication services.

*Figure 4-5: Distribution by sector*

(3-year average outstanding, Fiscal Years ending March 31, 2014 -2016; amount in Rs. Billion)



N = 333; Source: Calculated using data from Prowess database, CMIE.



Table 4-4: Industry distribution of foreign debt outstanding

(Average for fiscal years 2014-2016)

<b>Industry / Sector</b>	<b>Average outstanding</b>	<b>FCB</b>	<b>% share in total</b>
<b>Manufacturing</b>		<b>1,273.36</b>	<b>46.4%</b>
<i>Chemicals &amp; Chemical products</i>		734.64	26.7%
<i>Construction materials</i>		50.62	1.8%
<i>Consumer goods</i>		21.14	0.8%
<i>Food &amp; Agro</i>		37.70	1.4%
<i>Machinery</i>		13.75	0.5%
<i>Metals &amp; metal products</i>		303.00	11.0%
<i>Misc. Manufacturing</i>		10.53	0.4%
<i>Textiles</i>		21.66	0.8%
<i>Transport equipment</i>		80.31	2.9%
<b>Electricity / Power</b>		<b>676.50</b>	<b>24.6%</b>
<b>Services</b>		<b>390.00</b>	<b>14.2%</b>
<i>Communication services</i>			4.2%

	114.85	
<i>Hotels &amp; tourism</i>	21.41	0.8%
<i>Information Technology</i>	37.64	1.4%
<i>Misc. Services</i>	8.48	0.3%
<i>Transport services</i>	207.62	7.6%
<b>Mining</b>	<b>321.04</b>	<b>11.7%</b>
<b>Industrial &amp; Infrastructure construction</b>	<b>85.99</b>	<b>3.1%</b>

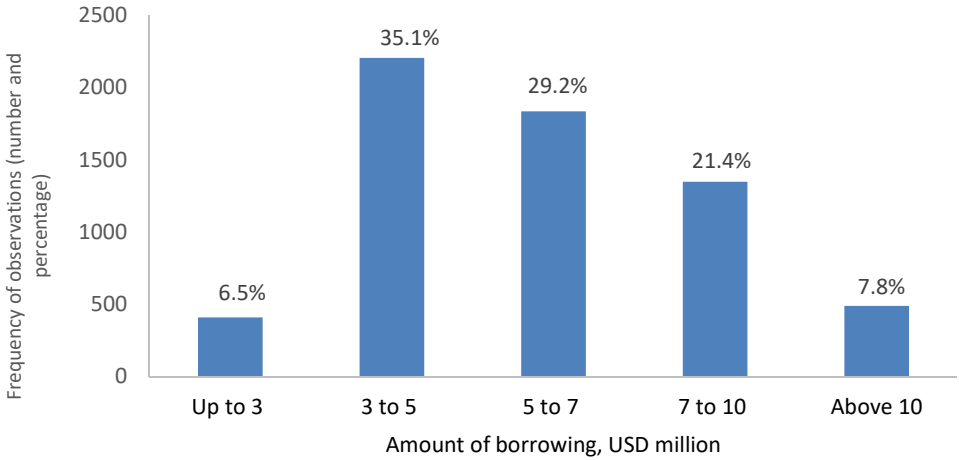
N = 333; Source: Calculated using data from Prowess database, CMIE.

#### 4.6 Maturity

Policy guidelines on ECBs stipulate minimum maturity terms for amounts borrowed. The policy is in terms of ‘average maturity’ after taking into account installments of loan disbursements and repayments during the life of a loan. Data of ‘average maturity’ is difficult to obtain, as it requires access to internal records of borrowing firms. However, the RBI publishes data on contracted maturity of each borrowing. Figure 4-6 and Figure 4-7 show the distribution of contracted maturity for borrowings up to USD 20 million and above USD 20 million, which is the threshold limit under ECB policy for different maturity slabs. There is a minimum of three years for borrowing up to USD 20 million and minimum of five years for borrowings above USD 20 million. Both Figure 4-6 and Figure 4-7 show that, most of the borrowings concentrate nearer or slightly higher than the minimum maturity period prescribed by the policy. This is contrary to the objective of the policy, as the policy aims at achieving longer maturities, prescribing only a minimum years of maturity instead of maximum. The tendency towards shorter maturities reflects risk

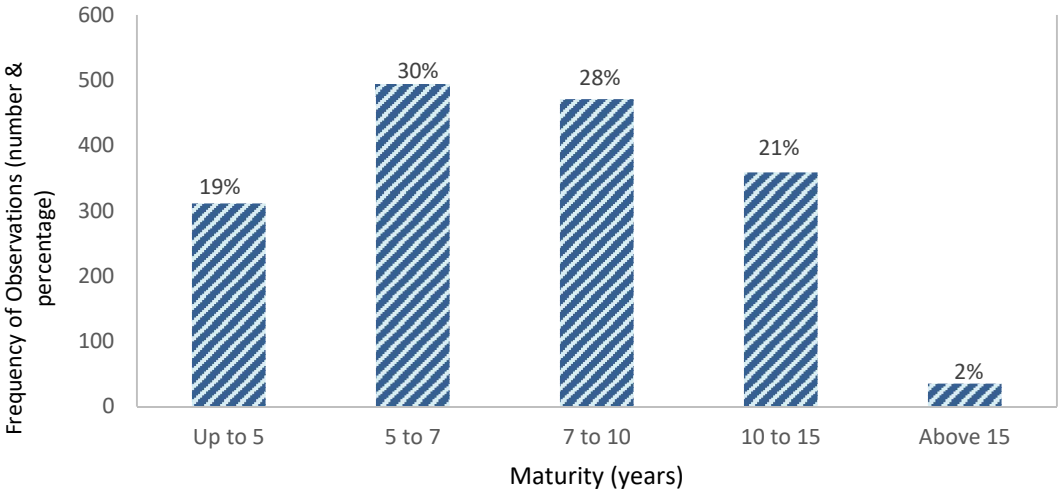
perception of the borrowers and the lenders, as well as the nature of underlying projects to generate cash returns to repay the borrowed amounts.

Figure 4-6: Distribution of contracted maturity for borrowings up to USD 20 million



N= 6290, Mean = 6.2 years, Standard Deviation = 2.5 years  
 Source: Calculated from monthly data on ECBs, RBI (Fiscal years 2006-2016)

Figure 4-7: Distribution of contracted maturity for borrowings above USD 20 million



N =1670, Mean = 7.70, Standard Deviation: 3.22  
 Source: Calculated from monthly data on ECBs, RBI (Fiscal years 2006-2016)

#### 4.7 Purpose of borrowing

The policy prescribes the purposes towards which ECBs can be raised. Overall policy objective is to encourage domestic capital investment and infrastructure. Based on needs of the economy, the policy has also been revised from time to time to permit overseas investments, buy-back of FCCBs, on-lending and micro-finance activities. Table 4-5 presents distribution of purpose of borrowing, based on a sample of 7,981 borrowings during the 11-year period comprising fiscal years 2006 -2016, as published by the RBI. A borrowing can be for more than one purpose, therefore, the summation of frequency of observations will exceed the sample size.

As observed, most of the borrowings (25.55 percent) are for the purpose of import of capital goods. Modernization, investment in new projects, Rupee expenditure on capital goods are other major purposes, each accounting for about 19 percent of the samples. With increasing foreign activity of Indian firms, borrowings for overseas investments and acquisition has recorded 2.56 percent of the frequency observed.

*Table 4-5: Distribution of Purpose of borrowing*

<b>Purpose of borrowing</b>	<b>Frequency of observations</b>	<b>Percent of observations</b>
Import of Capital Goods	2039	25.55%
Modernization	1576	19.75%
New project	1572	19.70%
Rupee Expenditure (on capital goods / investment)	1513	18.96%
Refinancing of old loans or Rupee loans	333	4.17%
General Corporate Purpose & Others	369	4.62%
Overseas investment / acquisition	204	2.56%
Power	197	2.47%

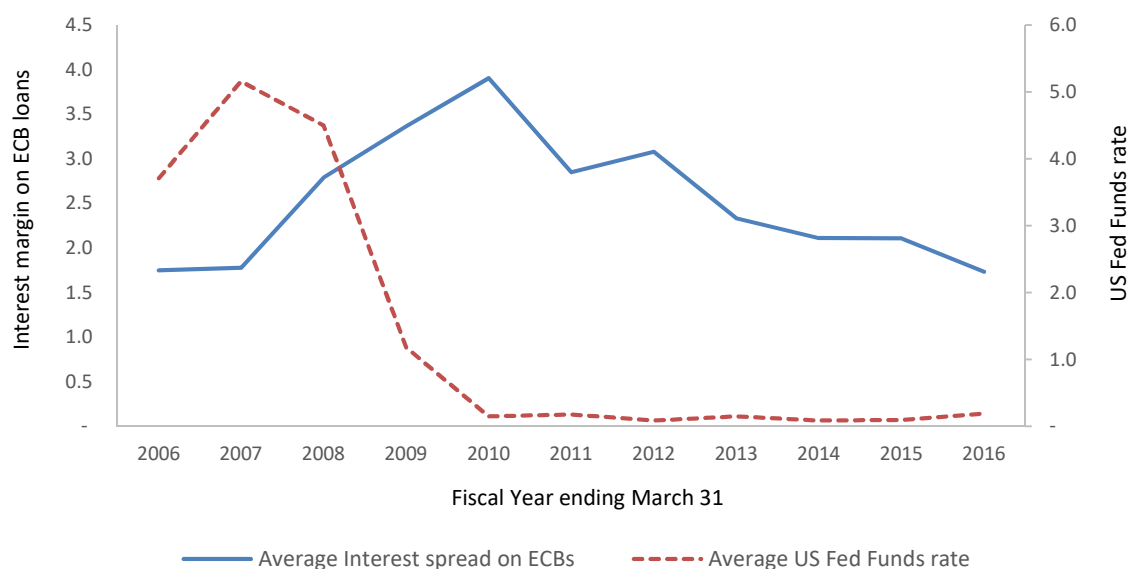
Working Capital	118	1.48%
Microfinance	58	0.73%
On-lending / sub-lending	45	0.56%
Redemption of FCCBs	41	0.51%
Buy-back of FCCBs	32	0.40%
Telecommunication	31	0.39%
Expansion of activity	14	0.18%
Roads	7	0.09%
Ports	4	0.05%

N = 7981; purpose of borrowing is not mutually exclusive. A borrowing can be for more than one purpose, therefore the cumulative distribution will exceed the total number of samples; Source: Calculated using monthly data on ECBs, RBI (FYs 2006-2016)

#### 4.8 Pricing

Pricing of ECBs is observed by studying a sample of 189 foreign currency term loans reported in Bloomberg financial market database, for the fiscal years 2006 to 2016. The market convention for quoting price is a spread over the London Interbank Offered Rate (LIBOR + Spread). As the LIBOR is the base or index and the spread is the component negotiated between the borrower and the lender, the spread or interest margin reflects the true nature of pricing. Figure 4-8 shows the trend of average of interest margin on foreign currency term loans during the period under study. For international comparison, the figure also shows the corresponding trend of average US Fed Funds rate. The interest margin on foreign currency term loans raised sharply after the 2008 financial crisis. Subsequently, as the global interest rate scenario reached close to zero, the interest margin on foreign loans records a continuous decline, indicating that the cost of borrowing has been declining over the years.

Figure 4-8: Pricing of foreign currency loans



Source: Interest margin on ECB loans -calculated using Bloomberg data; US Fed Funds rate - collected from Federal Reserve of St. Louis Economic Data.

#### 4.9 Characteristics of Foreign Currency Borrowing firms

A comparison of firms with and without foreign debt helps understand the differences in key characteristics of both types of firms. This is achieved by comparing firm size (measured by total assets), sales, share of export in sales, Debt to Equity ratio, profit efficiency (ratio of Profit before Depreciation, Interest, Tax and Amortization to total income, EBDITA ratio) and investment in new capital assets, measured by cash outflow towards purchase of fixed assets, of firms with foreign currency borrowings ('FCB firms) and firms without foreign currency borrowings ('Non-FCB firms). A sample of 333 FCB firms and 2,507 Non-FCB firms is compared. The difference in sample size represents the theoretically small proportion of firms accessing foreign currency borrowings. Average for the three fiscal years 2014, 2015 and 2016 is computed to enable the comparison.

*Table 4-6: Comparison of firms with and without foreign debt outstanding*

(Amount in Rupees Million, average for fiscal years 2014, 2015 and 2016)

<b>Firm type</b>	<b>Number of observations</b>	<b>Total assets</b>	<b>Sales</b>	<b>Export / Sales (%)</b>	<b>Debt to equity ratio (times)</b>	<b>EBDIT A as % of total income</b>	<b>Cash outflow towards purchase of fixed assets</b>
FCB	333	94,808.0	75,694.6	19.94	1.82	19.10	3,904.51
		6	9				
Non-FCB	2507	17,448.4	12,991.6	14.93	2.69	17.66	956.40
		2	2				

FCB = Foreign Currency Borrowers; Non-FCB = non-borrowers in foreign currency

Source: Calculated using data from Prowess IQ database, Center for Monitoring Indian Economy

From Table 4-6, it may be observed that FCB firms are larger in size as measured by average total assets, record higher level of sales and export turnover. FCB firms also show lower debt to equity ratio, as a likely indication of access to equity funds), better efficiency in achieving profitability (measured by EBDITA ratio) and larger capital investments, as reflected by higher average cash outflow towards purchase of fixed assets.

Table 4-7 further breaks-down the characteristics observed in Table 4-6 to industry and sector level for FCB firms. To enable comparison of aggregate outstanding and size for each industry,

Table 4-7 presents the data for the fiscal year ending March 31, 2016. As observed, the aggregate size (measured by total assets) of the manufacturing sector is the largest, followed by electricity & power, industrial & infrastructure construction, services and mining. In terms of aggregate foreign debt outstanding, manufacturing sector records the largest outstanding foreign debt, followed by electricity & power, mining, power and industrial & infrastructure construction. However, the export to sales ratio is higher for the services industry and mining than manufacturing sector. Efficiency of profitability is also

higher for the services and mining sectors. Reflecting the higher investment needs for manufacturing sector, investments in new fixed assets is larger in case of manufacturing. Within manufacturing sector, chemicals & chemical products and metals & metal products account for larger size, foreign debt and investment in fixed assets. Within services sector, transport services are larger in size and accounts for higher level of foreign debt. Communication services and transport services have recorded higher level of investment in fixed assets.

*Table 4-7: Firm level characteristics of firms with foreign currency debt*

Fiscal year ending March 31, 2016

<b>Industry / Sector</b>	<b>Total assets (Rs. Billion)</b>	<b>Total Long term foreign currency borrowings (Rs. Billion)</b>	<b>Average of Long-term Foreign Currency borrowings to total liabilities %</b>	<b>Average of Export / Sales (%)</b>	<b>Average of EBDIT A as % of total income</b>	<b>Total Cash outflow towards purchase of fixed assets (Rs. Billion)</b>
<i>Electricity / Power</i>	<i>7,259.4</i>	<i>732.1</i>	<i>6.0</i>	<i>0.0</i>	<i>50.2</i>	<i>286.17</i>
<i>Industrial &amp; Infrastructure construction</i>	<i>1,686.1</i>	<i>85.7</i>	<i>4.0</i>	<i>18.6</i>	<i>17.6</i>	<i>13.99</i>
<i>Manufacturing</i>	<i>14,196.8</i>	<i>1,262.3</i>	<i>7.9</i>	<i>20.5</i>	<i>14.3</i>	<i>550.52</i>
Chemicals & Chemical products	6,444.1	772.3	9.1	28.2	17.1	264.28
Construction						



materials	936.0	45.6	7.5	17.3	13.3	18.25
Consumer goods	586.1	17.2	6.7	14.7	10.8	6.31
Food & Agro	273.1	25.2	8.9	15.0	14.2	20.37
Machinery	222.1	11.1	5.7	23.6	12.7	7.71
Metals & metal products	3,371.5	290.0	9.7	19.7	12.8	95.82
Misc. Manufacturing	196.8	7.7	5.4	7.2	19.6	17.54
Textiles	528.4	21.8	5.2	19.6	11.0	10.77
Transport equipment	1,638.7	71.3	7.0	11.6	12.2	109.47
<b><i>Mining</i></b>	<b><i>1,531.8</i></b>	<b><i>404.0</i></b>	<b><i>13.5</i></b>	<b><i>17.8</i></b>	<b><i>31.5</i></b>	<b><i>41.00</i></b>
<b><i>Services</i></b>	<b><i>2,166.3</i></b>	<b><i>373.9</i></b>	<b><i>15.2</i></b>	<b><i>26.2</i></b>	<b><i>38.4</i></b>	<b><i>70.34</i></b>
<b><i>Communication services</i></b>	<b><i>515.5</i></b>	<b><i>97.3</i></b>	<b><i>18.3</i></b>	<b><i>0.0</i></b>	<b><i>26.8</i></b>	<b><i>27.15</i></b>
<b><i>Hotels &amp; tourism</i></b>	<b><i>173.0</i></b>	<b><i>20.2</i></b>	<b><i>10.2</i></b>	<b><i>32.2</i></b>	<b><i>31.4</i></b>	<b><i>2.85</i></b>
<b><i>Information Technology</i></b>	<b><i>205.5</i></b>	<b><i>24.9</i></b>	<b><i>12.3</i></b>	<b><i>42.5</i></b>	<b><i>35.0</i></b>	<b><i>10.51</i></b>
<b><i>Misc. Services</i></b>	<b><i>78.0</i></b>	<b><i>6.7</i></b>	<b><i>6.9</i></b>	<b><i>2.6</i></b>	<b><i>63.8</i></b>	<b><i>5.34</i></b>
<b><i>Transport services</i></b>	<b><i>1,194.3</i></b>	<b><i>224.8</i></b>	<b><i>21.1</i></b>	<b><i>24.7</i></b>	<b><i>38.4</i></b>	<b><i>24.49</i></b>

N = 264; Source: Calculated using data from Prowess IQ database, CMIE

#### **4.10 Concluding remarks**

This chapter presented descriptive analysis of macro and micro dimensions of ECBs. Public limited companies raise large amounts of foreign borrowings, Most ECBs are through Automatic route with small size of loans, while Approval route borrowings are larger in size and smaller in numbers. In terms of maturity, the average contracted maturity for borrowings up to USD 20 million is 6.2 years; the average contracted maturity for borrowings above USD 20 million is 7.7 years.

Manufacturing sector accounts for the largest share of foreign debt outstanding, followed by power, mining and services. Among industries, chemicals & chemical products, metals & metal products, transport services and communication services are large borrowers of foreign currency loans. Firms that borrow in foreign currency are larger in size, show better profit efficiency, higher level of investment in new fixed assets, a higher share of exports in total sales and lower debt equity ratio, thus evidencing that, foreign debt flows towards larger and better efficient firms.

## **Chapter 5 Macro Dimensions: Determinants of ECBs – Push vs. Pull factors**

### **5.1 Introduction**

Capital flows are driven by several factors. Pull factors are those that are specific to the capital importing country. Some examples of pull factors are the recipient country's size of GDP, growth of GDP, growth of investment, capital openness, financial market development, institutional qualities such as political stability, business regulatory environment, rule of law with respect to enforcement of contracts and ease of doing business. Push factors are exogenous and emanate from outside the borders of the recipient country. Examples of push factors include macroeconomic conditions, political and investment climate in AEs, global financial liquidity and presence or absence of financial crisis in the rest of the world.

Understanding the drivers of capital flows is essential in order to develop suitable policies to attract or control capital inflows or outflows. It helps identify potential areas of events that could lead to a systemic risk or events such as sudden stop or sudden reversal of capital flows. Each type of capital flow – direct investments, portfolio investments and debt flows behave differently in response to various drivers. Sudden capital reversals or stops as a response to push factors may cause Balance of Payments impact for the recipient country. Countries with adequate policy buffers and investor confidence may be in a position to rely on prudential policies to deal with such capital retrenchment (Burns, et. al, 2014). Identification of factors underlying capital inflows matters considerably for policy formulation (Agenor & Montiel, 2015).

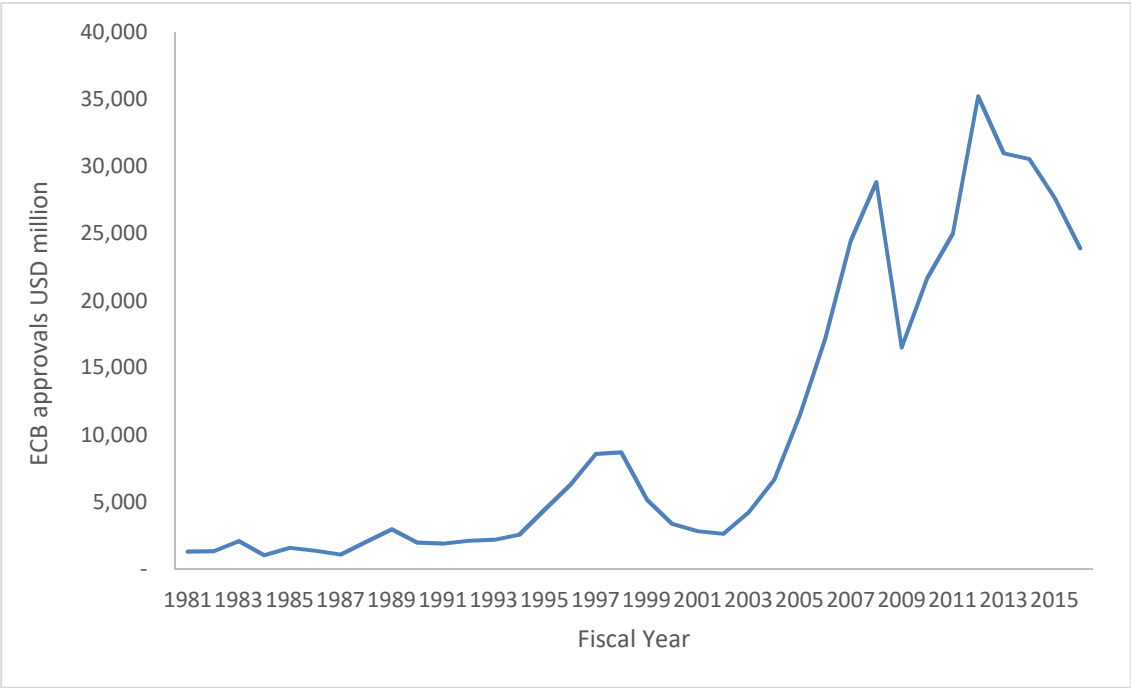
With this introduction, this chapter aims to study the determinants of ECBs with a view to understand the relative role of push and pull factors. Major determinants of inflows of ECBs identified by earlier literature are domestic real activity, interest rate differential and domestic money supply (Singh, 2007). A long term positive relationship exists between

Index of Industrial Production, interest rate differential and exchange rate (Dev, 2014). There is a gap in the literature with respect to unpacking the relative role of push and pull factors that determine ECBs. The present work is an attempt to fill this gap.

The rest of this chapter is organized as follows. Section 5.2 presents and discusses a time-series plot of ECB approvals or new ECB deals vis-à-vis domestic and global events over the years. Section 5.3 describes the methodology, choice of variables and sources of data. Section 5.4 presents scatter plots showing relationship of ECB inflows vis-à-vis push and pull factors. Section 5.5 presents regression results. Section 5.6 draws concluding remarks.

**5.2. A brief time-series account of ECB inflows**

*Figure 5-1: ECB new deals*



Source: India’s External Debt, A Status Report, various years, Ministry of Finance

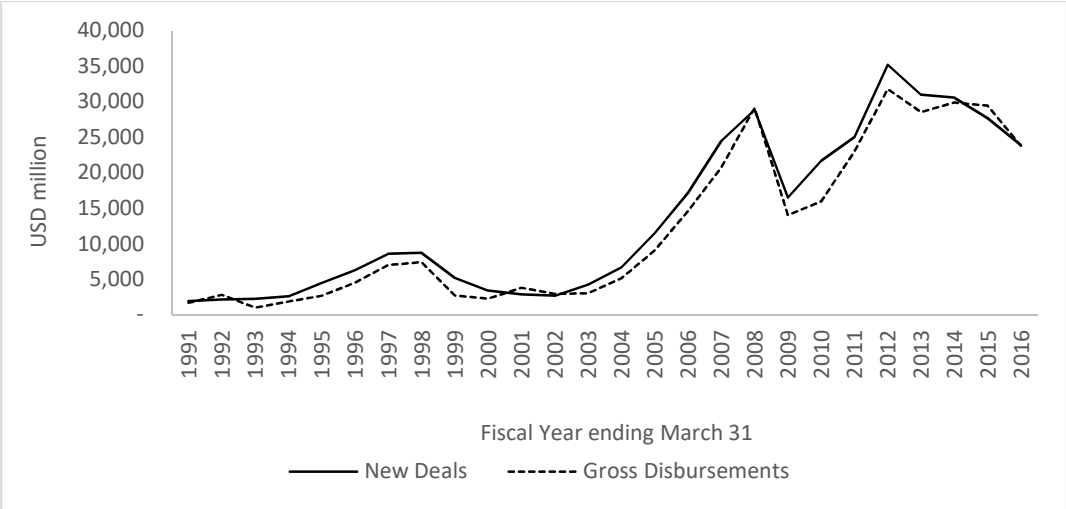
Figure 5-1 shows a time-series plot of ECB approvals or new ECB deals from fiscal year ending March 31, 1981. The early 1980s mark the beginning of ECB flows into India. From 1994, i.e. after the introduction of New Economic Policy, the flow of ECBs records an increase. The period from 1997 to 2002 coincides with the East Asian economic crises

and sanctions on India following Pokhran nuclear test (1998). The period 2003-2008 is a period of surge in the global capital flows. The period from 2008 (India’s fiscal year 2009) mark the post-financial crisis era. This simple illustration traces a mix of domestic and global factors having a bearing on ECB inflows into India.

**5.2.1 Measuring ECB inflows – disbursements vs. new deals**

Actual inflow of borrowed ECB funds (i.e. disbursements) is conceptually different from new ECB deals (approvals). Disbursements depend upon the cash flow requirement of the underlying projects and conditions of disbursements agreed upon between the borrower and the lender. On the other hand, new deals or approvals represent the tendency or propensity to borrow or lend. Also disbursements are highly correlated with new deals (Figure 5-2). As the objective of analysis in the present context is to understand the tendency to borrow or lend, econometric models in the following sections consider new ECB deals as the dependent variable unless otherwise stated to the contrary. The terms ‘ECB inflows’, ‘approvals’ or ‘deals’ are used interchangeably.

*Figure 5-2: ECB New Deals and Disbursements*



Source: India’s External Debt, A Status Report, various years, Ministry of Finance  
 Note: Disbursement data adjusted by deducting disbursements on account of India Millennium Bonds and Resurgent India Bonds

### 5.3 Choice of variables, data and methodology

Push and pull factor determinants are identified in line with various literature [for example (Cerutti, Claessens, & Puy, 2015)].

**Pull factors** are a mix of macroeconomic and institutional variables. As an indicator of domestic real activity, *India's real GDP growth* is considered as a variable of interest. Role of interest rate differential between India and the AEs in determining ECBs is already established by literature (Singh, 2007). It is important to understand the relative role of domestic interest and foreign interest, as both form components of interest rate differential. Therefore, India's *domestic lending rate* is chosen as a variable. Theoretically, an increase in domestic interest rate should result in an increase in the inflow of ECBs. As the corporate sector is the primary player in ECBs, to measure if ECBs flow in response to the growth of corporate sector and its market activity, *market capitalization as a share of GDP* is considered. To account for lenders' perception on India's political and business environment, India's position in the world as measured by the World Bank's Governance Indicators, on the criteria -Regulatory Quality and Political Stability -are considered.

To represent push factors, average of GDP growth of 5 AEs (the US, the UK, Japan, Germany and France) and average of interest rates of the same countries are chosen. As a measure of global financial liquidity, cross-border claims of banks as reported by the Bank of International Settlements is used by converting the amounts into an index (1981=100). The US economy plays a dominant role in the global financial scenario. To factor into account expectations on volatility in the US, VIX index of the Chicago Board of Exchange is taken as a variable. As an indicator of perception of default risk in the US, TED spread (difference between the three-month LIBOR and the three-month Treasury bill) is considered. Theoretically, an increase in TED spread or VIX should motivate the investors to look for safer investments, thereby potentially causing capital flows to other countries especially EMs.

Data on ECB new deals is collected from the reports on external debt published by the Ministry of Finance during various years.

To control for overall trend of foreign capital flows, foreign investment inflows during the given year is also taken as a variable. Data on GDP growth and market, market capitalization, interest rates of AEs and India's rank on Regulatory Quality and Political Stability are collected from World Bank's open data platform. VIX is collected from Chicago Board of Exchange; TED spread is collected from St. Louis Fred.

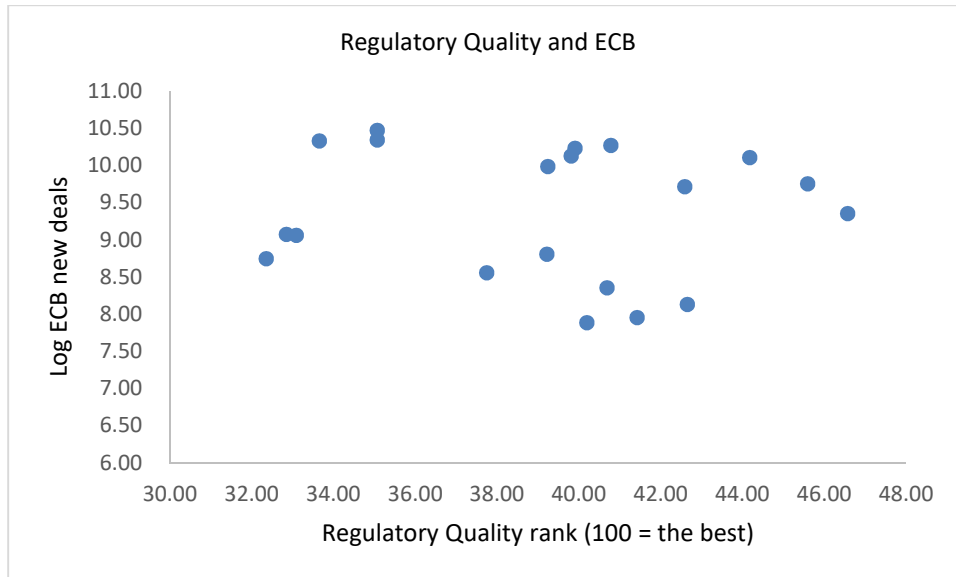
The period of analysis is between 1995 and 2015. Choice of the period is considering homogeneity in macroeconomic policy regime and availability of data.

### **5.3.1 Methodology**

All the variables are time-series. As the number of observations is 20 annual data, advanced time-series models may not be appropriate. Therefore, the analysis is based on Ordinary Least Squares by duly taking into account the problem of autocorrelation. In order to handle autocorrelation, lag variable or Newey-West Heteroscedasticity and Autocorrelation corrected Standard Errors are used.

## 5.4 Scatter Plots

*Figure 5-3: Regulatory Quality and ECB inflows*



*Figure 5-4: Political Stability and ECB inflows*

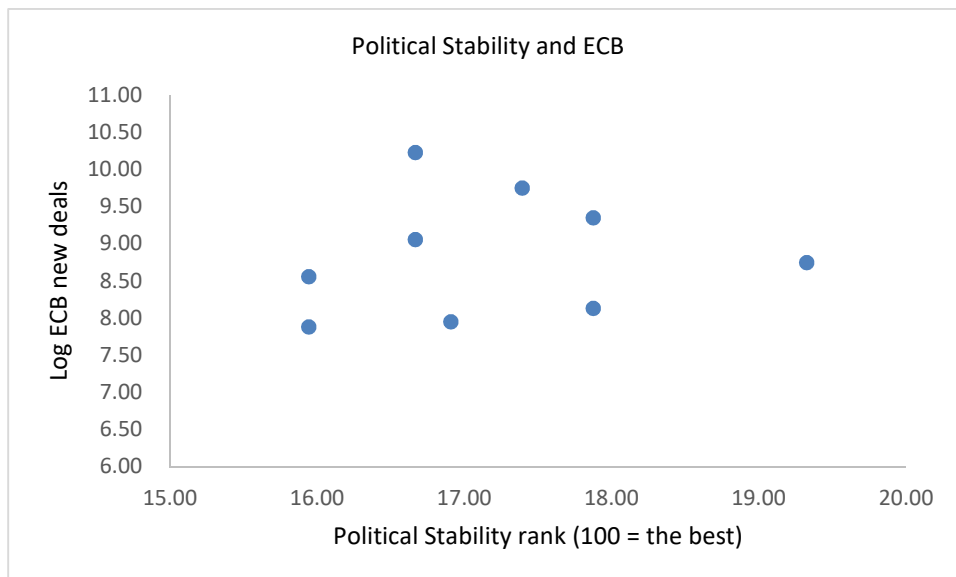




Figure 5-5: Domestic GDP growth and ECB inflows

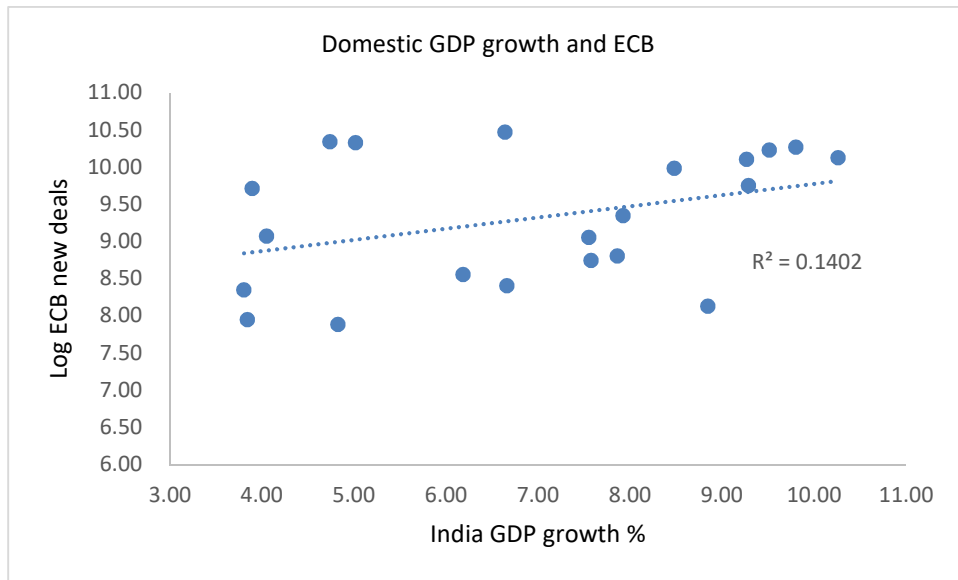


Figure 5-6: Market capitalization and ECB inflows

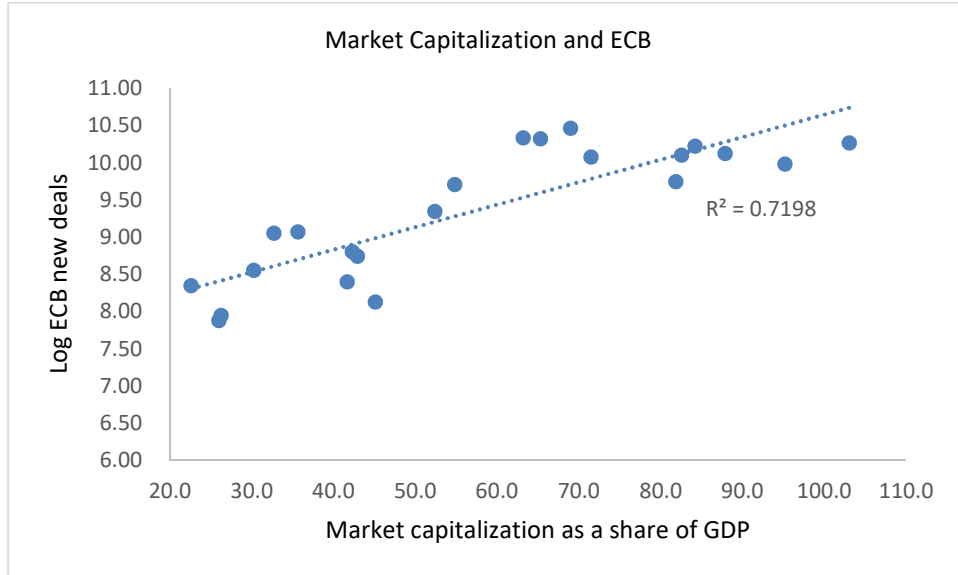


Figure 5-7: Import cover and ECB inflows

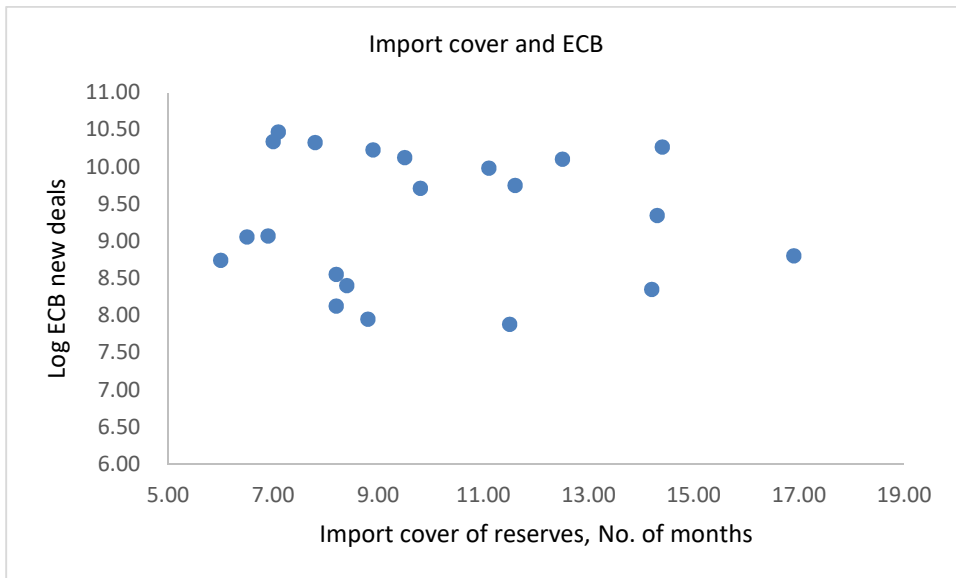


Figure 5-8: Domestic interest rate and ECB inflows

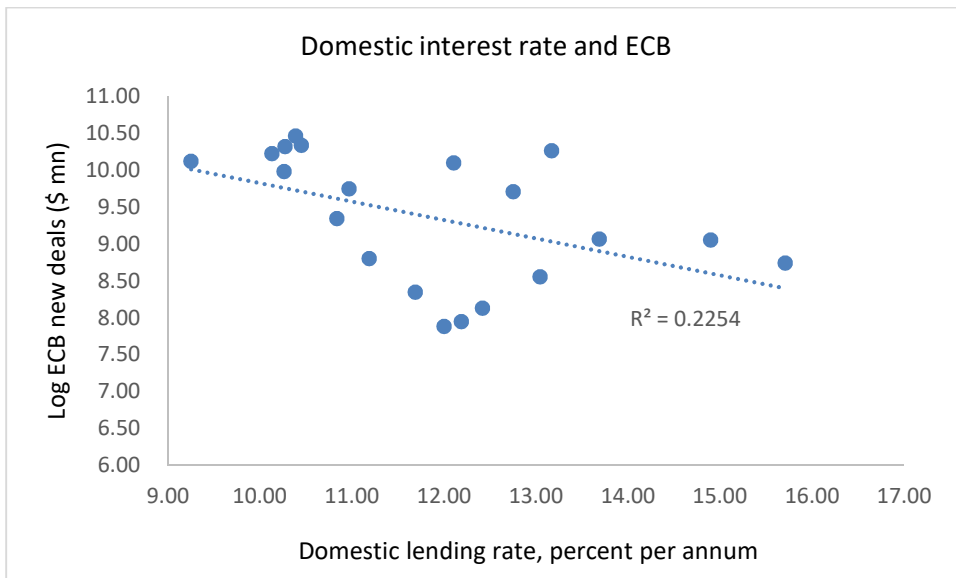


Figure 5-9: Advanced Economy interest rates and ECB inflows

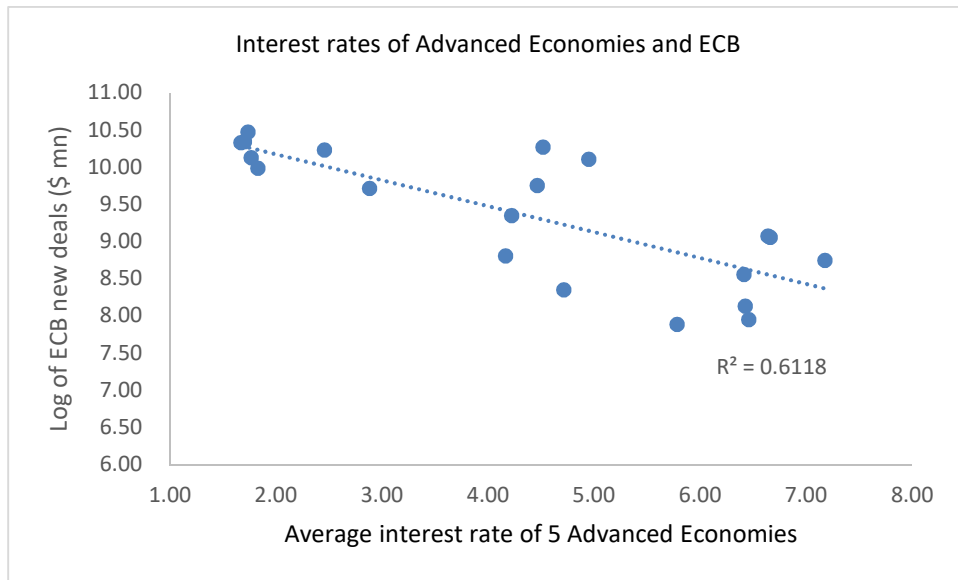


Figure 5-10: Advanced Economy growth and ECB inflows

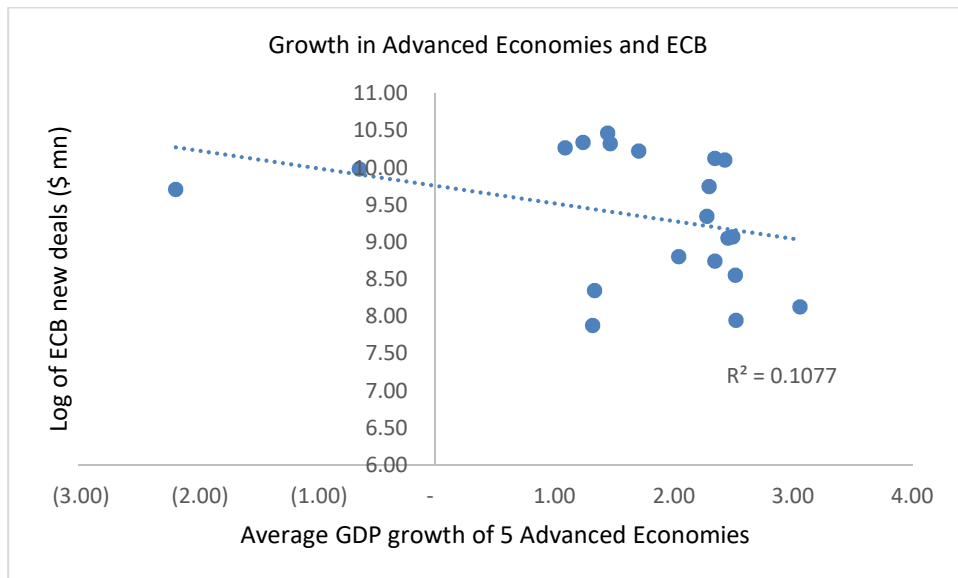


Figure 5-11: Global liquidity and ECB inflows

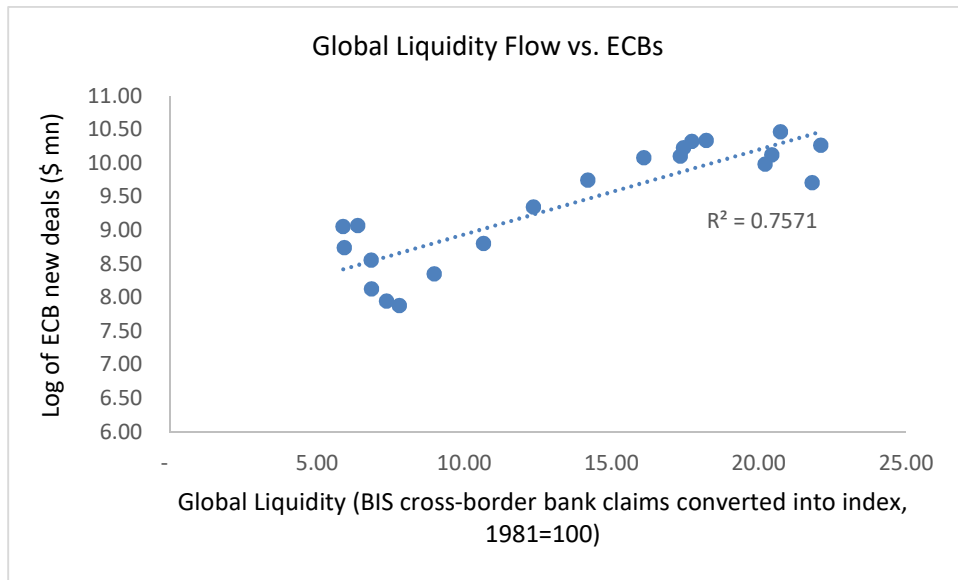


Figure 5-12: TED spread and ECB inflows

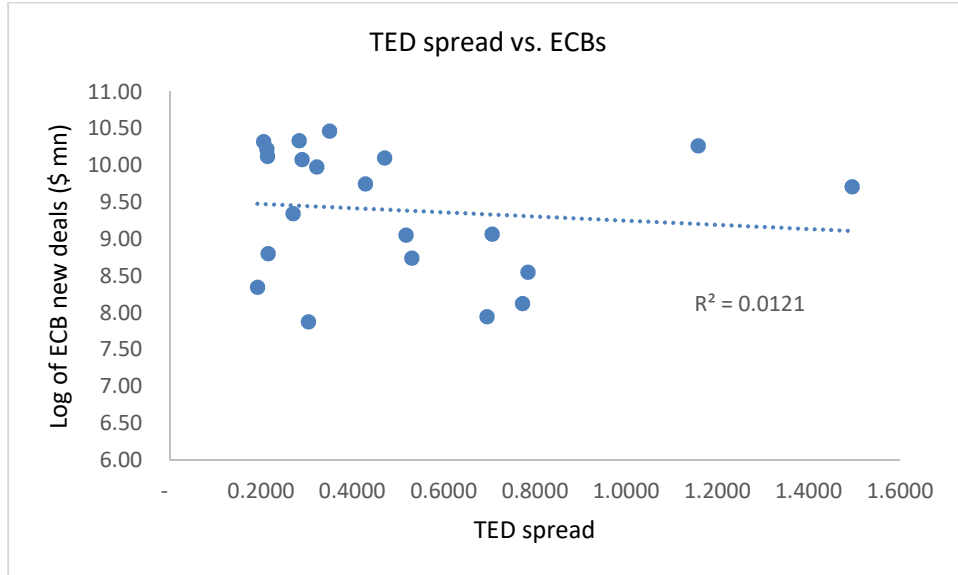


Figure 5-13: US market volatility and ECB inflows

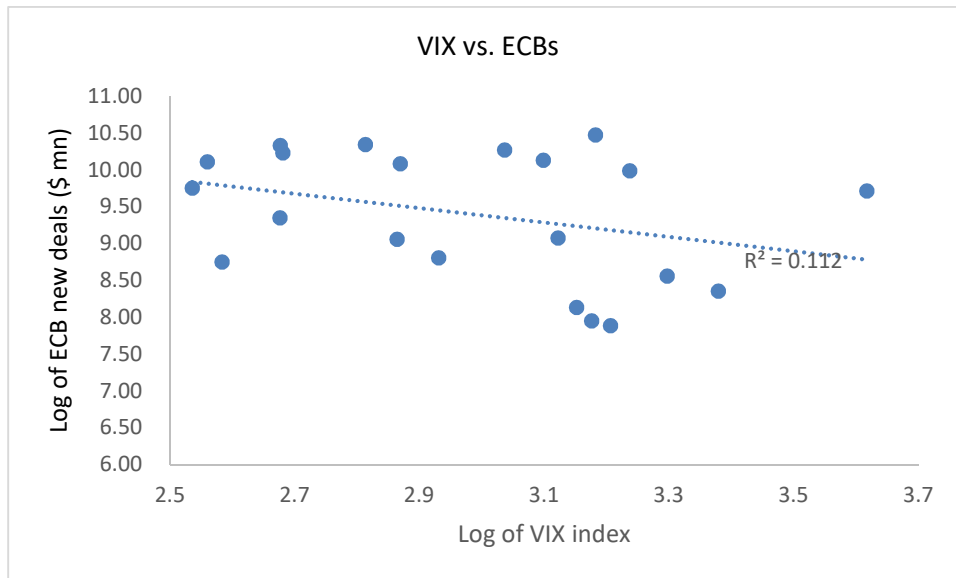
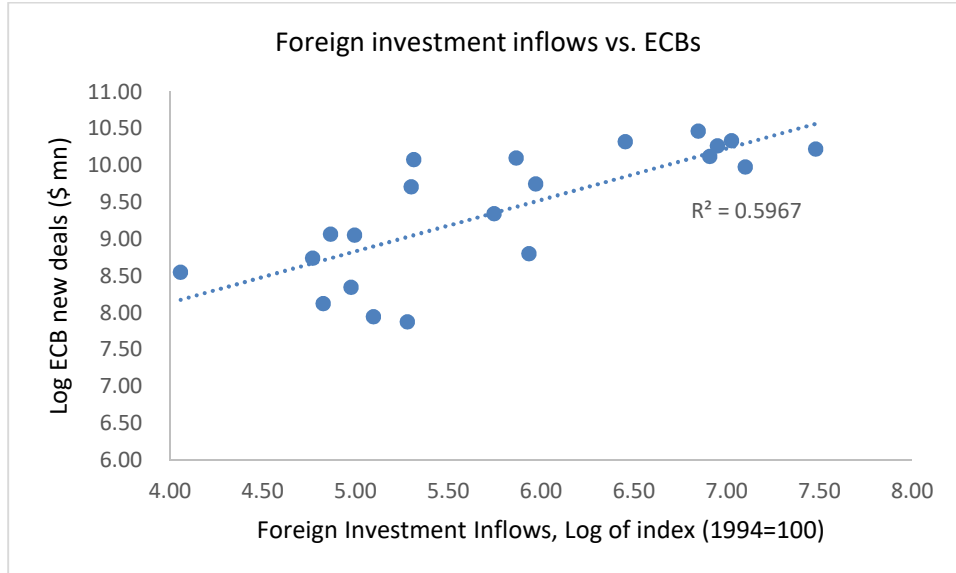


Figure 5-14: Foreign investment inflows and ECB inflows



The scatter plots show a strong relationship between interest rates of AEs, global liquidity and market capitalization of the domestic corporate sector. Interestingly, the scatter plot of domestic interest rate shows a negative relationship, although weak. As an additional

evidence that ECBs are pushed by global financial flows, there is a strong positive relationship between foreign investment inflows and ECBs. Perception of business regulatory quality or political stability do not show any relationship. The next section establishes statistical significance of these variables using OLS.

## **5.5 Regression estimates**

Regression results of ECB inflows on push and pull factors under different combination of variables are shown in Table 5-1, Table5-2 and Table 5-3.

Among the push factors, interest rate of AEs and global financial liquidity have high explanatory power (R-squared value of 0.61 and 0.76 respectively) and are statistically significant. The sign of the AEs' interest rate is negative, implying a lower interest rate in the developed countries results in ECB inflows into India. Global liquidity has a positive sign implying an increase in global liquidity results in increased inflow of ECBs.

Among the pull factors, only market capitalization of domestic corporate sector provides a high explanatory power (R-squared = 0.7). ECB inflows are highly correlated with foreign investment inflows into India. Both corporate sector activity and foreign investment inflows are likely to be correlated with global economy. GDP growth has a weak explanatory strength for ECB inflows. Regulatory quality and political stability rank do not become statistically significant (on a global level, capital flows towards countries with higher institutional quality. The present results do not support the view that institutional quality is of least importance to attract foreign capital).

Table 5-1: OLS estimation of Push factors

**Dependent variable: Log ECB new deals**

AE GDP growth	-0.259 (0.1249)**						0.0468 (0.075)	
AE Interest rate		-0.345 (0.0546)***						
Log VIX			-0.685 (0.7972)		-0.589 (0.210)***			
TED spread				-0.511 (0.195)***				-0.240 (0.749)
Global liquidity							0.1245 (0.022)***	
1-lag of dependent variable				0.920 (0.091)**	0.892 (0.075)**	0.926 (0.073)***		
<i>R-squared / Adjusted R-squared</i>	0.078	<b>0.613</b>	0.008	0.889	0.889	0.851	<b>0.760</b>	-0.040
<i>P (F-statistic)</i>	0.118	0.000	0.294	0.000	0.000	0.000	0.000	0.691

\*, \*\* and \*\*\* denote significance at 10%, 5% and 1% respectively; figures in parenthesis are Newey-West HAC Standard Errors.

Table 5-2: OLS estimation of Pull factors

**Dependent variable: Log ECB new deals**

Domestic GDP growth	0.150 (0.076)*							
Domestic interest rate		-0.257 (0.075)***						
Market capitalization			0.029 (0.005)***					
Import-cover				-0.008 -0.077				
Regulatory-quality rank					-0.01 (0.052)			
Political stability rank						-0.107 (0.087)		
Foreign investment inflow							0.737 (0.000)***	
1-lag of dependent variable								0.899 (0.082)***
<i>R-squared / Adjusted R-squared</i>	<i>0.140</i>	<i>0.267</i>	<b><i>0.715</i></b>	<i>0.000</i>	<i>0.005</i>	<i>0.114</i>	<b><i>0.675</i></b>	<i>0.855</i>
<i>P (F-statistic)</i>	<i>0.090</i>	<i>0.016</i>	<i>0.000</i>	<i>0.900</i>	<i>0.749</i>	<i>0.145</i>	<i>0.000</i>	<i>0.000</i>

\*, \*\* and \*\*\* denote significance at 10%, 5% and 1% respectively; figures in parenthesis are Newey-West HAC Standard Errors.

Combining both push and pull factors (Table 5-3) suggest a stronger role played by domestic and AEs interest rates. Global liquidity and AE GDP growth are positive and significant, while domestic GDP is not. The co-efficient of AE interest rate is the second highest (next to the lag of dependent variable). Market capitalization of domestic corporate sector is also significant (omitted due to multi-collinearity). Domestic GDP growth does not become significant, possibly indicating a lesser role played by domestic factors.



*Table 5-3: OLS estimation of Push and Pull factors*

**Dependent variable: Log ECB new deals**

	<b>Co-efficient</b>	<b>Std. Error</b>	<b>t-ratio</b>	<b>p-value</b>	
Constant	2.8680	1.0899	2.6315	0.0197	**
Domestic GDP growth	0.0263	0.0350	0.7521	0.4644	
AE interest rates	-0.3010	0.1055	-2.8552	0.0127	**
Domestic interest rate	0.2360	0.0807	2.9235	0.0111	**
Global liquidity	0.0559	0.0312	1.7944	0.0944	*
AE GDP growth	0.2363	0.0889	2.6579	0.0187	**
1-year lag of dependent variable	0.3955	0.1469	2.6922	0.0175	**
R-squared = 0.944789; Adjusted R-squared =0.921127; F (6,14) =39.92854; p-value(F) =0.0000					

\*, \*\* and \*\*\* denote significance at 10%, 5% and 1% respectively; figures in parenthesis are Newey-West HAC Standard Errors.

### **Tests for Heteroscedasticity, Autocorrelation and Residual Normality:**

Breusch-Pagan test for Heteroscedasticity:

Null hypothesis: Heteroscedasticity not present

Test statistic:  $LM = 7.85457$

with p-value =  $P(\text{Chi-square}(6) > 7.85457) = 0.248953$

LM test for autocorrelation up to order 1:

Null hypothesis: no autocorrelation

Test statistic:  $LMF = 1.24582$

with p-value =  $P(F(1, 13) > 1.24582) = 0.28456$

LM test for autocorrelation up to order 2:

Null hypothesis: no autocorrelation

Test statistic:  $LMF = 0.616986$

with p-value =  $P(F(2, 12) > 0.616986) = 0.555836$

LM test for autocorrelation up to order 3:

Null hypothesis: no autocorrelation

Test statistic:  $LMF = 0.415126$

with p-value =  $P(F(3, 11) > 0.415126) = 0.745581$

Test for normality of residual:

Null hypothesis: error is normally distributed

Test statistic:  $\text{Chi-square}(2) = 0.447753$

with p-value = 0.799414

Figure 5-15: Interest rate differential and ECB inflows

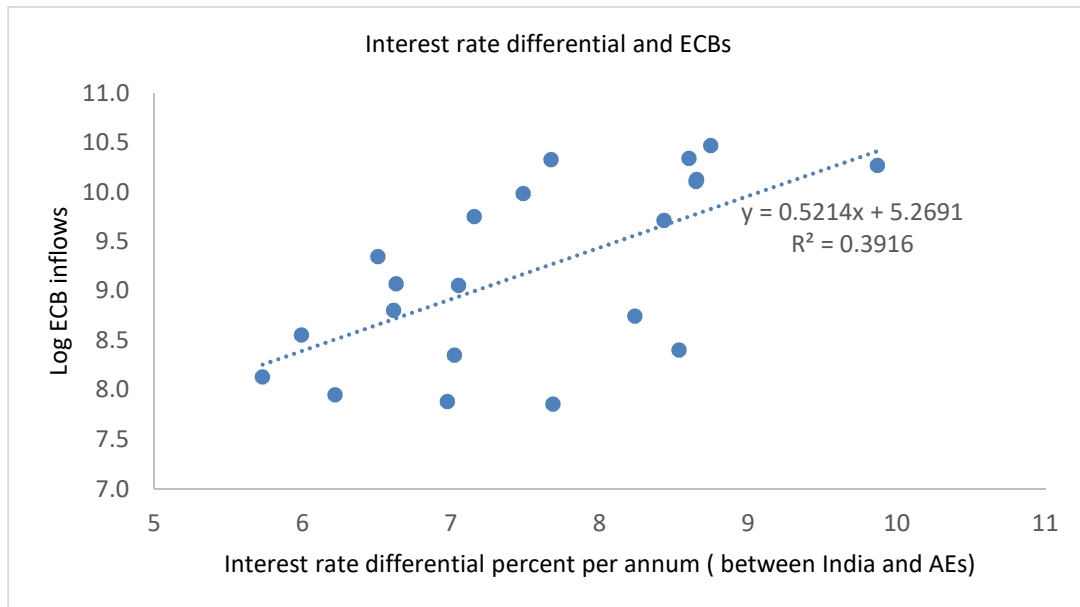
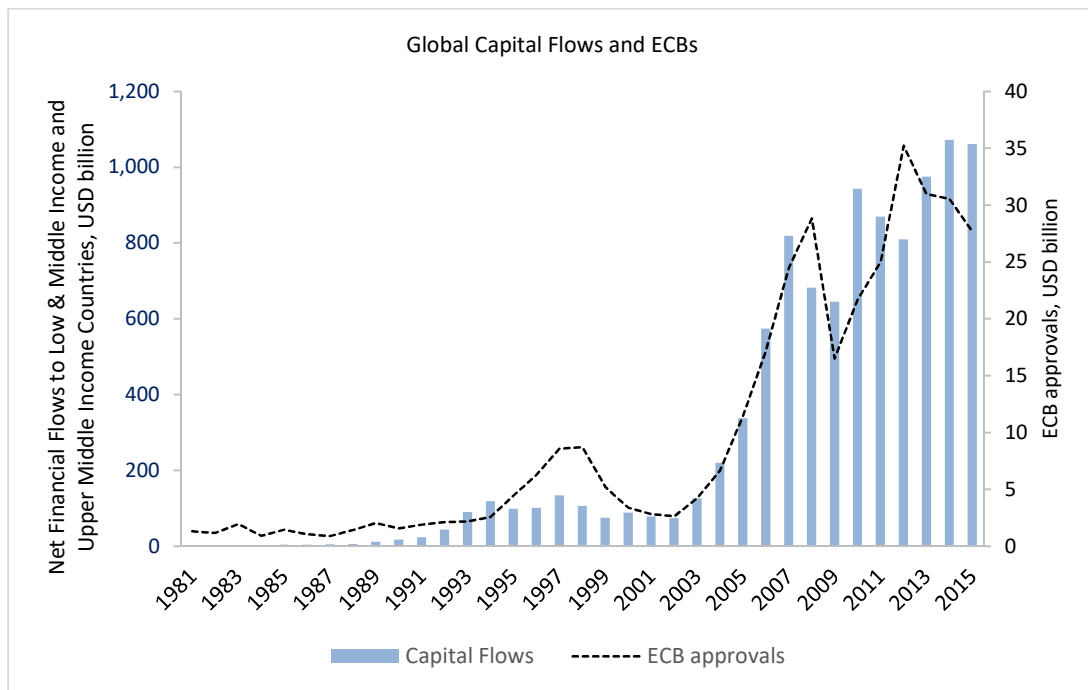


Figure 5-16: Global Capital Flows and ECBs



Source: WDI and Ministry of Finance

Global capital flows are represented by 2-calendar year moving average Net Financial Flows to LMICs and UMICs; ECB approvals are for India's fiscal year.

## 5.6 Concluding remarks

Interest rate differential appears to be a key factor (Figure 5-15) in determining ECBs. When interest rate differential is broken down into domestic and foreign components, interest rates of AEs is consistently significant with a negative sign and higher explanatory power. On the other hand, domestic interest rate showing a negative sign may not indicate lower ECB inflows at higher interest rates, which is opposite to the theoretical construct. It needs to be looked into from the perspective of interest differential between India and the AEs. Higher explanatory power of AE interest rates may be an indication of interest rate differential being largely driven by AEs. Global liquidity is yet another factor with higher explanatory power. As an additional evidence, *Figure 5-16* shows ECB inflows closely following the direction of net financial flows to Low and Middle Income countries. Simple analysis presented here favor the conclusion that push factors play a key role in determining ECBs. Nevertheless, pull factors cannot be ignored. ECBs are highly correlated with imports, exports (*Singh, 2007*) and market capitalization of domestic corporate sector. More elaborate analysis may be necessary to corroborate this conclusion.

# Chapter 6 Effect of changes in exchange rate on investment decisions of firms holding foreign currency debt

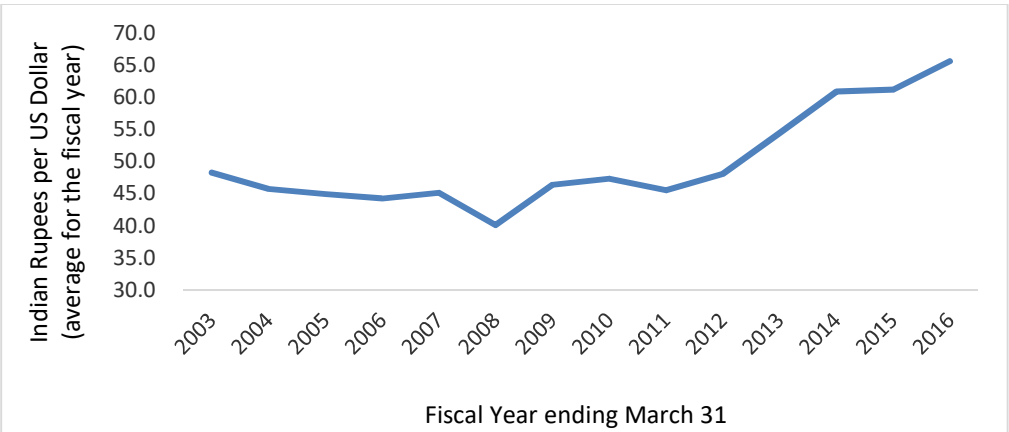
## 6.1 Introduction

Exchange rate plays an important role in foreign currency debt holding. Depreciations in exchange rate increase domestic currency value of firm liabilities by acting through net-worth channel; appreciations result in the opposite.

In the event of sharp currency depreciation, firms with unhedged foreign currency liabilities would find it challenging to meet debt service obligations. A large number of firms with unhedged exposure during sharp depreciations are potential triggers for systemic risk. Using IMF’s internal database and taking a sample of 114 countries (Ariccia, et. al., 2011) show a clear link between the degree of foreign currency borrowing in a country and the occurrence of banking crises.

In the Indian experience, when exchange rates sharply depreciated after the global financial crisis of 2008, firms that had imminent maturity of FCCBs faced an increase in their liabilities. The RBI stepped in by permitting firms to raise fresh ECBs to buy-back or redeem FCCBs and thus helped the firms tide over the difficult situation. The Indian Rupee has been depreciating continuously from fiscal year 2009 to the present day (Figure 6-1)

Figure 6-1: Nominal Exchange Rate, Indian Rupee per US Dollar



Source: Calculated from RBI’s month end foreign exchange rates

Given this backdrop, it is important from policy perspective to understand the effect of changes in exchange rate on firm behavior. This chapter aims to address this need by empirically addressing a key question:

***What is the effect of changes in exchanger rate on investment decisions of firms already holding foreign currency liabilities?***

The rest of the chapter is organized as follows.

Section 6.2 describes the methodology. Section 6.3 describes choice of variables and sources of data. Section 6.4 describes selection of sample period and firms. Section 6.5 presents results of estimation. Section 6.6 sums up the findings and draws concluding remarks.

## **6.2. Methodology**

The central methodology used in this empirical analysis is hereunder adopted from Bleakley and Cowan's 2002 study (BC).

A firm's choice of capital is affected by four mechanisms, following a movement in exchange rate:

- a) Domestic currency value of foreign currency debt will change, altering the value of total debt
- b) Current profits change, which in turn affect the internal funds available for investment
- c) Changes in expected future profits will alter the firm's current collateral; and
- d) Shifts in relative prices will change the marginal product of capital.

The first two mechanisms affect the firm's balance sheet. Furthermore, if the firm is credit constrained, its investment will be affected due to changes in cost of capital. The third mechanism will affect the firm's ability to offer collateral to creditors, thus affecting

investment by changing the cost of capital. The fourth mechanism will affect the demand for capital by altering current and future marginal product of capital.

BC abstractly model the net effects of these mechanisms in a two-period economy  $t$  and  $t+1$ . BC's model shows it is not always the case that firms with higher levels of foreign currency debt will experience larger reductions in investment during depreciations. Rather it depends on how foreign currency debt is distributed among firms. If firms match the currency composition of their liabilities, then the "competitiveness effect" would offset the "net-worth effect" brought about by changes in exchange rate.

Thus, BC decomposed the investment response to changes in exchange rate into "competitiveness effect," in which a shock in exchange rate affects optimal capital stock level, and "net-worth effect," in which resultant profit changes and level of debt affect investment in period  $t+1$  by altering the cost of external funds.

To empirically test the effect of changes in exchange rate, BC derive the following equation:

$$Y_{it} = \gamma (D_{i,t-1}^* \times \Delta e_t) + \delta D_{i,t-1}^* + \alpha \Delta e_t + \phi D_{i,t-1}^T + \lambda_i + \psi M_t + \epsilon_{it} \dots\dots\dots (Eq. 1)$$

Where

$Y_{it}$  = firm level outcome of interest such as investment of  $i$  th firm at time  $t$

$D_{i,t-1}^*$  = Foreign Debt at  $t-1$

$\Delta e_t$  = change in exchange rate

$D_{i,t-1}^T$  = Total Debt at time  $t-1$

$\lambda_i$  = firm / industry control variable

$M_t$  = control variable for macroeconomic conditions

In the equation, *the variable of interest* is the *interaction between foreign debt in period t-1 and change in exchange rate during the current period* ( $\mathbf{D}_{i,t-1}^* \times \Delta e_t$ ). The sign and significance of the coefficient of the interaction variable  $\gamma$  denotes the response of the dependent variable  $Y_{it}$ , which measures investment. *A positive and significant  $\gamma$  would indicate that the given change in exchange rate has a positive impact on investments. A negative and significant  $\gamma$  indicates that the given change in exchange rate has a negative impact on investments.*

BC empirically test the equation in the context of Latin American Countries and find that the co-efficient of interest was  $\gamma$  positive. *Evidence from Brazil shows a positive co-efficient for smaller share of foreign debt in total debt; as the share increases, the co-efficient becomes negative* (Lourenco Paz, 2009).

The present work attempts to extend the work of BC to the Indian context.

### 6.3 Variables and sources of data

The dependent variable  $Y_{it}$  measures investments by firms borrowing in foreign currency. To measure investment, cash outflow towards purchase of new fixed assets is considered. Thus  $Y_{it}$ , representing new investments, is measured by investment in new fixed assets, as it is an investment in fixed assets that indicates an investment in productive capital.

$\mathbf{D}_{t-1}^*$  and  $\mathbf{D}_{t-1}$  indicate foreign debt and total debt in period t-1 respectively.

Two firm level **control variables**  $\lambda_i$  are introduced. As firms with higher profit efficiency tend to invest more, controlling their profit efficiencies, ratio of Earnings Before Interest, Tax, Depreciation and Amortization (**EBITDA**) is considered. **EBITDA** ratio measure a firm's profitability. As larger firms tend to invest more, in order to control for firm size, **Total Assets** are taken as another control variable.

Firm level data for  $Y_{it}$ ,  $\mathbf{D}_{t-1}^*$  and  $\mathbf{D}_{t-1}$  is obtained from Prowess database of CMIE



To control for the macroeconomic environment of the corresponding period, macroeconomic control variable  $M_t$  is measured by ratio of capital formation to GDP. A positive change in capital formation ratio indicates economy-wide capital investments. This control variable is under the assumption that a firm would usually follow the flow of the economy in making investments.

Currency composition of firm level debt is not known. More than 50 percent of India's external debt is denominated in US Dollars, followed by Indian Rupee and a small amount in other currencies (Report on India's External Debt, Ministry of Finance, various years). Therefore, it is assumed that the largest portion of firms have their foreign debt holdings in US Dollars. Exchange rate  $e_t$  is obtained from the RBI's statistical publication of nominal exchange rates (Indian Rupee per US Dollar), and converted into average for the fiscal year.

#### 6.4 Sample period

In order to correctly capture the response of investment to changes in exchange rate, it is important to choose a sample period that includes an appreciation and a depreciation. The period from fiscal year 2003 to 2008 recorded a continuous appreciation in nominal exchange rate, as measured by Indian Rupees per US Dollar. On the other hand, the period from fiscal year 2009 to 2014 recorded a continuous depreciation in nominal exchange rate, as shown in Table 6-1.

*Table 6-1: Average annual change in nominal exchange rate (INR / USD)*

Period	Average annual change
<b>2003-2008</b>	-2.8%
<b>2009-2014</b>	7.4%

Source: Calculated using RBI's data on exchange rates

Therefore, the empirical analysis is carried out for two sub-periods: (i) 2003-2008 when exchange rate appreciated; (ii) 2009-2014 when exchange rate depreciated; and again for the full period 2003-2014.

A sample of 842 firms is used, accounting for 4,001 observations for the full period. This is divided into 614 firms with 1,612 observations for the sub-period 2003-2008 and 679 firms with 2,389 observations for the sub-period 2009-2014. The firms are from the manufacturing sector, as during this period, the borrowing limits and policy restrictions were relatively more constant across the manufacturing sector compared to the services or infrastructure sectors.

### 6.5 Results of estimation

As the number of samples are larger than the time period observed ( $N > T$ ), tests for appropriateness of Pooled OLS, Panel Data Random Effects model and Panel Data Fixed Effects model suggest Fixed Effects model.

Results of the Panel Data Fixed Effects Model, with respect to the variable of interest  $\gamma$ , the co-efficient of interaction term between foreign currency debt and change in exchange rate is presented in Table 6-2. Estimations for all the variables and periods are presented in Table 6-3, Table 6-4 and Table 6-5 at the end of this chapter.

*Table 6-2: Estimation of co-efficient  $\gamma$*

Sample period	Co-efficient $\gamma$	t-statistic ( p-value)
2003-2008 (appreciation)	0.1481	0.750 (0.456)
2009-2014 (depreciation)	0.4919	3.200 (0.001)
2003-2014 (full period)	0.2263	2.330 (0.02)

As observed in Table 6-2, the co-efficient  $\gamma$ , which denotes the response of investment to changes in exchange rate is *positive, but not significant* during the period of *appreciation*, *positive and significant* during the period of exchange rate *depreciation* and *positive and significant* during the *full period*.

This indicates that investment decisions of firms with foreign currency denominated liabilities are independent of changes in exchange rate. The period 2009-2014 is a post-financial-crisis period that records a general economic slowdown across the globe. This depreciation in exchange rate, when interacted with foreign debt, still has a positive effect

on new investments. This positive co-efficient is statistically significant. The whole sample period (2003-2014) also shows the same result (positive and significant).

## **6.6 Concluding Remarks**

This chapter presents empirical analysis of the effect of changes in nominal exchange rate on investment decisions of firms that hold foreign debt. Results show that *investment decisions by foreign currency borrowing firms are independent of changes in exchange rate*. The results are similar to those in Latin America (Bleakley and Cowan, 2002). Tendency of firms holding foreign currency liabilities to invest more after depreciation is likely an indication that the net-worth effect (increase in the domestic currency value of foreign currency debt) is more than offset by the competitiveness effect. It is also likely that the firms consider a depreciating exchange rate scenario as given and factor in interest rate differential. Moreover, the benefits from interest rate differential is likely to outweigh the costs of depreciation. This is a question for potential investigation.

In the debate relating to capital flows and financial crisis, a depreciating exchange rate scenario causes concern for authorities due to its effect on firm balance sheets by rising firm liabilities of foreign debt. The positive relationship between exchange rate depreciation and investment is also an indirect evidence of currency matching behavior by the firms.

Table 6-3: Fixed Effects Estimation (2003-2008)

Period: 2003-2008

Dependent Variable: Log new investments

	Constant	Co.efficient	Robust Std. Error	t	P>t	[95% Conf. Interval]
Log Total Assets t-1		1.669	0.220	7.580	0.000	1.236 2.101
Log Foreign Debt t-1		0.054	0.037	1.470	0.143	-0.019 0.127
Log Total Debt t-1		-0.815	0.141	-5.760	0.000	-1.092 -0.537
Delta log exchange rate		1.696	1.413	1.200	0.230	-1.079 4.471
Delta log capital formation		0.245	0.721	0.340	0.734	-1.170 1.661
Log Foreign Debt t-1 * Delta log exchange rate		0.148	0.199	0.750	0.456	-0.242 0.538
Exports to sales ratio		0.002	0.004	0.510	0.613	-0.006 0.011
Constant		-0.919	0.964	-0.950	0.341	-2.813 0.975

Fixed-effects (within) regression	Number of obs =	1,509
Group variable: samplecode	Number of groups =	587
R-sq:	Obs per group:	
within = 0.1312	min =	1
between = 0.5929	avg =	2.6
overall = 0.5927	max =	6
	F(7,586) =	11.82
corr(u <sub>i</sub> , Xb) = 0.0045	Prob > F =	0

Table 6-4: Fixed Effects Estimation (2009-2014)

Period: 2009-2014

Dependent Variable: Log new investments

	Co.efficient	Robust Std. Error	t	P>t	[95% Conf. Interval]	
Log Total Assets t-1	0.557	0.145	3.830	0.000	0.272	0.843
Log Foreign Debt t-1	0.002	0.035	0.050	0.956	-0.067	0.070
Log Total Debt t-1	-0.302	0.114	-2.660	0.008	-0.526	-0.079
Delta log exchange rate	2.428	1.044	2.330	0.020	0.378	4.478
Delta log capital formation	-1.046	0.422	-2.480	0.013	-1.874	-0.218
Log Foreign Debt t-1 * Delta log exchange rate	0.492	0.154	3.200	0.001	0.190	0.794
Exports to sales ratio	0.003	0.004	0.740	0.459	-0.005	0.011
Constant	-5.315	0.633	-8.390	0.000	-6.558	-4.071

Fixed-effects (within) regression	Number of obs =	2,287
Group variable: samplecode	Number of groups =	660
R-sq:	Obs per group:	
within = 0.0257	min =	1
between = 0.6138	avg =	3.5
overall = 0.5691	max =	6
	F(7,659) =	4.50
corr(u <sub>i</sub> , Xb) = 0.6607	Prob > F =	0.0001
(Std. Err. adjusted for 660 clusters in samplecode)		

Table 6-5: Fixed Effects Estimation (2003-2014)

Period: 2003-2014

Dependent Variable: Log new investments

	Co.efficient	Robust Std. Error	t	P>t	[95% Conf. Interval]	
Log Total Assets t-1	0.952	0.981	9.700	0.000	0.759	1.145
Log Foreign Debt t-1	0.079	0.244	3.260	0.001	0.032	0.127
Log Total Debt t-1	-0.517	0.081	-6.360	0.000	-0.676	-0.357
Delta log exchange rate	0.149	0.689	0.220	0.829	-1.203	1.501
Delta log capital formation	-1.184	0.332	-3.560	0.000	-1.836	-0.531
Log Foreign Debt t-1 * Delta log exchange rate	0.226	0.972	2.330	0.020	0.036	0.417
Exports to sales ratio	0.003	0.003	1.210	0.228	-0.002	0.008
Constant	-3.663	0.332	-11.030	0.000	-4.315	-3.011

Fixed-effects (within) regression	Number of obs =	3,796
Group variable: samplecode	Number of groups =	809
R-sq:	Obs per group:	
within = 0.1048	min =	1
between = 0.6194	avg =	4.7
overall = 0.5929	max =	12
	F(7,808) =	28.91
corr(u_i, Xb) = 0.5147	Prob > F =	0.0000
(Std. Err. adjusted for 809 clusters in samplecode)		

## Chapter 7 Summary and Conclusions

### 7.1 Background

Capital flows to Emerging and Developing Economies (EMDEs) have been growing exponentially since early the 1980s. This is in part due to several conducive factors and events such as the accumulation of dollar deposits by oil exporting countries after the oil price crisis of the 70s, the accumulation of liquid funds by international commercial banks in the early 1980s and the decline in ODA. Another factor is the implementation of favorable economic policies by several EMDEs, such as relaxing controls on capital account, liberalizing the economy and orienting policies to encourage private sector investment.

Capital flows can be through official or private channels. Official channels are in the forms of debt or aid. Private capital flows are mainly in the form of direct investments, portfolio investments and debt.

**Salient features** of the trend in debt capital flows include the drastic decline in the share of official flows and the increase in private debt flows. *Borrowing by private creditors in EMDEs from private foreign creditors has far exceeded borrowing by official borrowers (such as EMDE governments) from official creditors (such as multilateral financial institutions).* India is no exception to this global phenomenon. From the mid-2000s, foreign borrowings, largely by India's corporate sector from private creditors abroad at commercial lending rates - **External Commercial Borrowings** ('ECBs'), *occupy the largest share in India's external debt.* As of March 31, 2001, the share of multilateral creditors in India's external debt was 27.3 percent, and the share of ECBs was 18.4 percent. By 2005, the composition reversed; the share of ECBs exceeded that of multilateral creditors, as well as other sources. As of September 30, 2016 (the most current available data at the time of this thesis), the share of ECBs in external debt was 36.7

percent, followed by deposits from Non-Resident Indians (26.8 percent). ECBs currently comprise the largest component of external debt.

The dominant position of ECBs in India's external debt calls for an understanding of its different dimensions. In the backdrop of that need, this work explores the macro and micro dimensions of ECBs.

Economic theory holds that capital flows from a country of lower marginal efficiency of capital to a country of higher marginal efficacy of capital or from rich to poor countries. In practice, however, capital does not always flow towards poor countries. Instead, it has been observed to flow towards rich countries, known as *Lucas Paradox*. Differences in institutional quality and structure, human capital and information asymmetry are some of the factors that explain Lucas Paradox.

Determinants of capital flows are classified into “push” factors and “pull” factors. *Push factors* are exogenously determined, while pull factors are endogenously determined. *Pull factors* are generally welfare-enhancing.

Major **benefits** of financial openness that facilitate capital flows are an increase in welfare by facilitating consumption smoothing, aid to low-income countries to tap into the international pool of resources for use in domestic investments, an increase in macroeconomic discipline and an increase in efficiency of the domestic banking system. Financial openness also has certain **costs**, such as concentration of capital flows in a small number of countries, misallocation of foreign capital when the capital-importing country has poor supervisory mechanisms, macroeconomic effects like rapid monetary expansion, inflationary pressures, appreciation in exchange rate and widening current account deficit. Pro-cyclicality of capital flows leads to a situation in which EMDEs are able to borrow only when global liquidity conditions are favorable. Volatility of capital flows may cause adverse effects such as liquidity runs and sudden stops, as well as sometimes triggering a currency or financial crisis (Agenor and Montiel, 2015).



With respect to debt capital flows, there exists an optimal level of debt up to which, it would be welfare enhancing for a country to borrow. Incompleteness of the financial markets is at the root of the financial fragility leads to “**Original sin,**’ a condition in which a developing country cannot borrow its own currency from external sources (Eichengreen & Hausmann, 1999). Countries suffering from Original sin often face higher interest rate volatility, capital flow volatility and reversal, lower credit ratings and are more prone to crises (Eichengreen, et al, 2003).

Literature on ECBs is sparse. Singh (2007) studied its determinants. Patnaik, et al. (2015) raised policy concerns arising out of foreign currency borrowings.

Regulatory policy on ECBs follows a gradual approach towards liberalization and relaxation of restrictions. Evolution of regulatory policy can be classified into six phases. The approach during *first phase* (1981-90) was to give selective permission to predominately public sector firms, allowing them to borrow abroad. The approach during the *second phase* (1990-95) was influenced by the Balance of Payments crisis of 1991; these policies introduced stricter controls. The *third phase* (1995-2003) witnessed relaxation of the infrastructure sector; special initiatives were undertaken to attract diaspora bonds. The *fourth phase* (2004-2008) was one of further liberalization, consolidation and simplification of procedure. During the *fifth phase* (2009-16), controls were relaxed as a response to the global financial crisis; sector coverage was widened and borrower limits increased. The *sixth phase*, beginning in November 2016, introduced a Revised Framework of ECBs by further relaxing and consolidating policies; it introduced norms to monitor currency risk hedging and permitted borrowing in Indian Rupees.

The most pertinent literature is the report of the **Sahoo Committee**, constituted by the Ministry of Finance. The objectives of ECB policy and its governance over the years has mixed directions and complex administrative mechanisms (The Sahoo Committee, 2015). The key recommendation of the Committee is to ensure policy direction and focus on addressing market failure and systemic risk.

## 7.2 Objectives and questions addressed

Given the theoretical and empirical underpinnings, this work has set out to address the following three objectives:

1. To understand important descriptive aspects of ECBs, such as the industry and sector distribution of foreign borrowing, size of borrowing, maturity, pricing, types of firms and firm characteristics.
2. To understand the relative significance of push and pull factors that cause ECB inflows into India.
3. To understand the effect of changes in nominal exchange rate on investment by studying behavior of firms holding foreign debt

## 7.3 Findings

ECBs are largely borrowed by public limited companies, through the Automatic route, often in small sizes up to USD 10 million (with maturity terms mostly concentrated up to 3-5 years for debt below USD 20 million and 5-7 years for borrowings above USD 20 million). Compared to firms that do not have foreign currency debt, firms that borrow in foreign currency are larger in size, record higher sales turnover, higher profitability, higher share of exports in sales, lower debt equity ratio and higher cash outflow towards purchase of fixed assets (for investments).

In terms of *Sector-wise distribution*, the manufacturing sector holds the largest share of foreign debt outstanding (46.1%), followed by power (24.5%) and services (14.1%). Chemicals and chemical products, metals and metal products and transport services account for a higher share among the industries.

The *purposes of borrowing are distributed as follows*. 25% of the borrowings are towards import of capital goods, followed by modernization (20%) and new projects (20%). Purpose of borrowing is not mutually exclusive, as a single borrowing can fulfill multiple purposes.

In attempting to study relative significance of push and pull factors in driving ECB inflows, in line with earlier literature, this work considered several variables as below:

*Pull factor* determinants considered are domestic GDP growth, domestic interest rate, size of the corporate sector as measured by the ratio of market capitalization to GDP, import cover measured as number of months of foreign exchange reserves available to cover imports, perceptions on India's political stability and business regulatory policies as measured by India's rank on these criteria under the World Governance Indicators of the World Bank.

*Push factor* determinants considered are average growth of real GDP of 5 (AEs) (the United States, the United Kingdom, Japan, France and Germany), average of lending rates of the same 5 AEs, global liquidity as measured by cross-border banking claims position of the Bank of International Settlements, US TED Spread (spread between 3-month USD LIBOR and Treasury bill) and US VIX (CBOE S&P 500 Volatility index). An increase in TED Spread indicates heightened default risk, prompting investors to move towards safer investments, potentially resulting in increased capital flows to EMs. VIX index measures expected volatility.

Constrained by shorter time period and number of observations, instead of using advanced time series models, this work relies on a series of simple regressions to determine statistical significance of push and pull factors.

Among the pull factors, size of the domestic corporate sector as measured by market capitalization, exports and imports are highly correlated with ECB inflows. Domestic

capital formation also has a statistically significant positive influence on ECBs. The relationship between GDP growth and ECBs appears to be weak.

It is already well established in economic theory that interest rate differential plays a crucial role. By examining the impact of interest rate differential on different types of capital flows into India, Verma & Prakash, 2011 find foreign direct investments and portfolio investments are not sensitive to interest rate differential, whereas ECBs and NRI deposits are sensitive to changes in interest rate differential.

The present work breaks down the interest rate differential into domestic interest and foreign components. Results suggest ECBs are highly negatively correlated with interest rates of AEs, rather than being predominantly influenced by domestic interest rates.

ECBs are weakly and negatively correlated with expected default risk and volatility in the US market; and highly and positively correlated with global liquidity.

Both pull factors and push factors play a role in determining ECB inflows, of which two push factors—global liquidity and interest rates of AEs—play a key role. Among the pull factors, exports, imports and market capitalization of the corporate sector play roles in determining ECBs.

A key question that this work addressed is: What are the **effects of changes in exchange rate on investment** by firms with foreign debt stock? A sample of 809 firms from 9 industries in the manufacturing sector is analyzed for the period from 2003 and 2014. (ECB policy with respect to manufacturing sector has remained relatively stable during this period, as compared to services and infrastructure sectors, making manufacturing sector as an ideal candidate for sample selection). Nominal exchange rate, as measured by Indian Rupee per US Dollar appreciated between 2003 and 2008 and depreciated between 2009 and 2014. Panel Data Fixed Effects model is employed for the sub-periods 2003 - 2008 (period of exchange rate appreciation) and 2009 – 2014 (period of exchange rate depreciation) and again for the full period (2003-2014). Results suggest that, during the

period of exchange rate depreciation, interaction term between the previous period's foreign debt and the appreciation in exchange rate did not show a statistically significant relationship with investments in that period. On the other hand, when nominal exchange rate depreciated between 2009 and 2014, the interaction term between foreign debt and depreciation proved to have a positive and significant influence on investments. This finding is similar to that of Bleakley & Cowan, 2002, in the context of Latin American countries.

#### **7.4 Conclusion and Policy implications**

Thus, **in summary**, *ECBs are largely raised by firms that are larger in size, have higher investment needs and have a generally higher fraction of exports in their sales and lower debt equity ratio. At the aggregate level, ECBs predominantly move through Automatic route (although borrowing size in Approval route cases is higher with longer maturity). Inflow of ECBs is highly correlated and significant with global liquidity, interest rates in Advanced Economies and global liquidity flows. Among the domestic factors, ECB inflows are correlated with market capitalization of the corporate sector, exports and imports, which are in turn correlated with external factors. Thus, simple analysis leads to an indication that, push factors play a larger role than pull factors in determining ECB inflows. This conclusion needs to be verified upon availability of more data. Changes in nominal exchange rate do not have a bearing on new investment decisions of firms holding foreign debt. Analysis of a sample of 809 firms from the manufacturing sector shows that, firms holding foreign debt made capital expenditure on new investments both when the nominal exchange rate appreciated (2003-2008) and when depreciated (2009-2014). This evidences that the net worth effect caused by a depreciating exchange rate is more than offset by the competitiveness effect of the firms.*

## 7.5 Discussions

Like any other country, India faces the *policy trilemma* or the '*impossible trinity*' shown by the Mundell-Fleming model. At any given time, a country can choose only any two of these three objectives: an independent monetary policy, fixed exchange rate or free capital mobility. India has somewhat managed to meet all the objectives and successfully tide through the policy trilemma, by actively managing its exchange rate, exerting certain restrictions on international financial flows while also maintaining some control over its monetary policy (Sengupta, 2015).

Nevertheless, as global economic conditions emerge rapidly, India needs to keep itself open for all options to meet challenges. At the same time, as the interest rate differential, specifically the component of interest rate of AEs, plays an important role in determining ECB inflows, Indian policy makers need to be cognizant of monetary policies of AEs.

Although ECBs are only a small fraction of inflows when compared to portfolio investments and FDI, their debt-creating nature places ECBs on a special footing. While interest rate differential may reduce the borrower idiosyncratic risk, it exposes the system to the risk of correlated defaults. This results in a trade-off between average performance and systemic stability (Ariccia, et al., 2011).

As the results of this work find evidence that investment decisions by firms holding foreign debt are independent of changes in exchange rate, *ceteris paribus*, a depreciation in exchange rate is unlikely to limit foreign borrowing in the Indian context; exchange rate would not function as a shock absorber. This is in contrary to the argument that currency devaluation or depreciation will lead to a recession by affecting balance sheet of firms.

The results also suggest that *the competitive effect* likely offsets the *net-worth effect* caused by currency depreciation. Furthermore, it is more likely an indication of currency matching practices by firms holding foreign liabilities. This could not be confirmed by direct

evidence for want of data on currency risk hedging otherwise than by natural hedging (exports).

The finding is in conformity with the Mundell-Fleming model, according to which a depreciation leads to increase in aggregate demand by stimulating exports (and thus investments).

At the time of commencement of this work, hedging was not closely monitored by the authorities. In more recent years, RBI has made hedging mandatory. Considering the sparse data on hedging, it would be pertinent to suggest making **disclosure of hedging of exchange rate and interest rate risks a mandatory requirement** in the annual reports of foreign currency borrowing firms.

**Corporate debt market** in India has been elusive and is underdeveloped given its potential. If the country has to reduce systemic risk due to accumulation of foreign currency borrowings, it is highly pertinent to develop the domestic debt market. Penetration of corporate bonds in India is about 15 percent of GDP, while countries like Malaysia and South Korea have well above 40 percent. With increasing stressed assets in the banking system and the requirement of banks to allocate higher level of capital to meet Basel norms, the banking system is more likely to have inadequate resources to meet the financing needs of the corporate sector. This underlines the need for strengthening the domestic corporate debt market. It is also important to strengthen the **currency derivatives market**, with a view to facilitate lower cost and to process hedging.

While relaxation of capital controls and increasing capital account openness is potentially welfare enhancing, systemic risks induced by moral hazards and large unhedged exposure by borrowers will create welfare reducing effects and possibly even economic crisis. Evidence from earlier crises such as the East Asian financial crisis show that large, especially short-term and unhedged exposure was a contributing factor.

Unlike banks or financial institutions, the corporate sector is not subject to stringent financial prudential norms. Similarly, in the event of a liquidity crisis—unlike domestic currency—authorities will not be able to provide an unlimited supply of currency in the event of a liquidity crisis.

In this context, the concept of ‘**national liquidity**’ is being debated. Private sector borrowings do have an impact on national balance sheet, so authorities need to keep close watch on private sector borrowings. The counter argument is that this may lead to still excessive borrowing and lending by private parties, due to the effect of moral hazard, thus leading to currency mismatches.

Foreign borrowings by the private sector present certain policy issues such as the existence of externalities; large borrowings by a few large entities tend to increase country risk premium and thus raise the interest rate charged to all borrowers. Considering this, levying some form of **tax on foreign borrowing** may be considered. Maintenance of a **real-time credit register** to monitor external debt of the private sector is also being debated by some countries.

There is also a need to boost domestic credit flows. On an international comparison with its peers, India’s domestic credit to private sector is the lowest (Table 7-1).

*Table 7-1: Domestic credit to private sector*

<b>Country</b>	<b>Domestic credit as a share of GDP</b>
Brazil	67.8%
China	208.02%
India	52.6%
Russian Federation	56.3%
South Africa	149.1%
Korea, Republic of.	140.5%

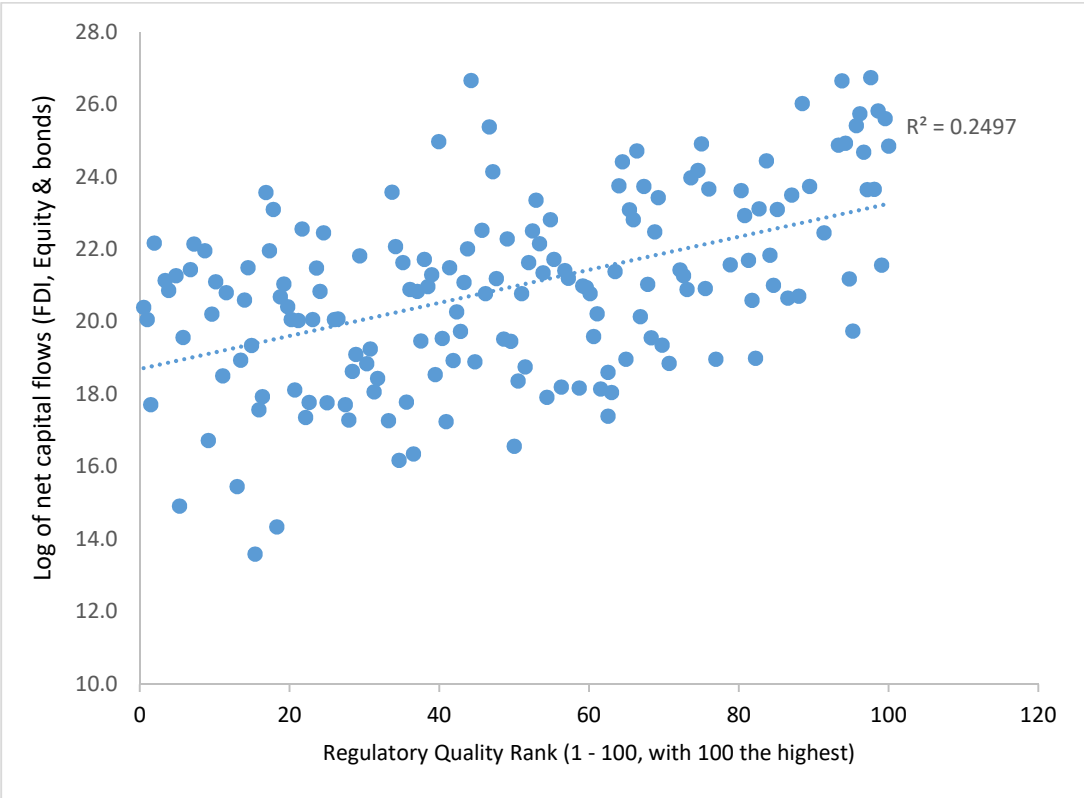
Source: WDI, 2015



This underlines the need for formulation of policies to unlock the potential of domestic banking and financial sectors in order to improve domestic credit. While ECBs may be an attractive option for the individual borrower, there is a *cost to the nation in terms of stringent debt management and foreign exchange reserve management*.

India's Business Regulatory ranking and perception on Political Stability do not show any significant relationship with ECB inflows. However, as India is in a relatively better position than many other countries, coupled with the size of its GDP, India has been receiving capital flows regardless of its institutional quality ranking. Countries with better Regulatory Quality ranking receive larger capital flows (Figure 7-1). India's Regulatory Quality has been declining between 2004 and 2014. It is important for Indian policy makers to ensure a better regulatory environment to attract and boost investments. Institutional Quality is an important driver of capital flows.

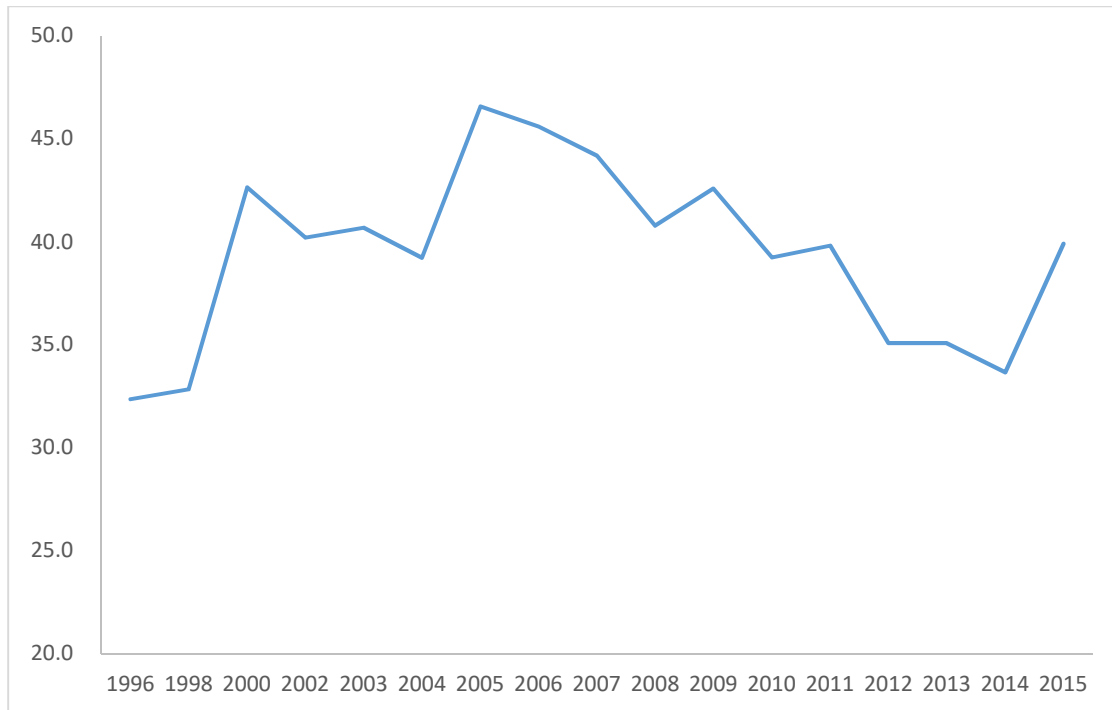
Figure 7-1: Regulatory Quality and Capital Flows



N=168; Source: Calculated using World Governance Indicators and World Development Indicators, World Bank

Figure 7-2: India's rank in Regulatory Quality

(1-100, with 100 the highest)



Source: World Governance Indicators, World Bank

The larger question remaining is whether ECBs are beneficial to the Indian economy. One of the key measures to address this question is ECBs' relationship with GDP growth. Figure 7-3 shows a positive but not so strong relationship between ECB inflows and GDP growth. Supporting this evidence is Figure 7-4 showing a similar positive but weak relationship between foreign investment inflows (FDI and portfolio investments) and GDP growth.

Figure 7-3: ECB inflows and GDP growth of India

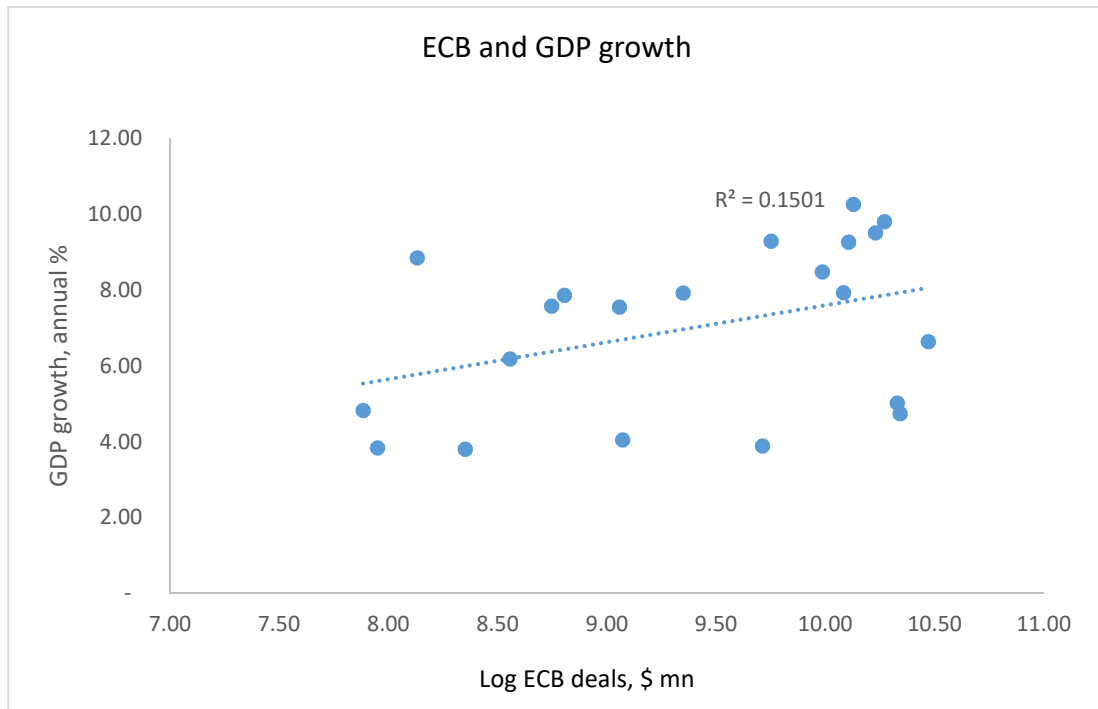
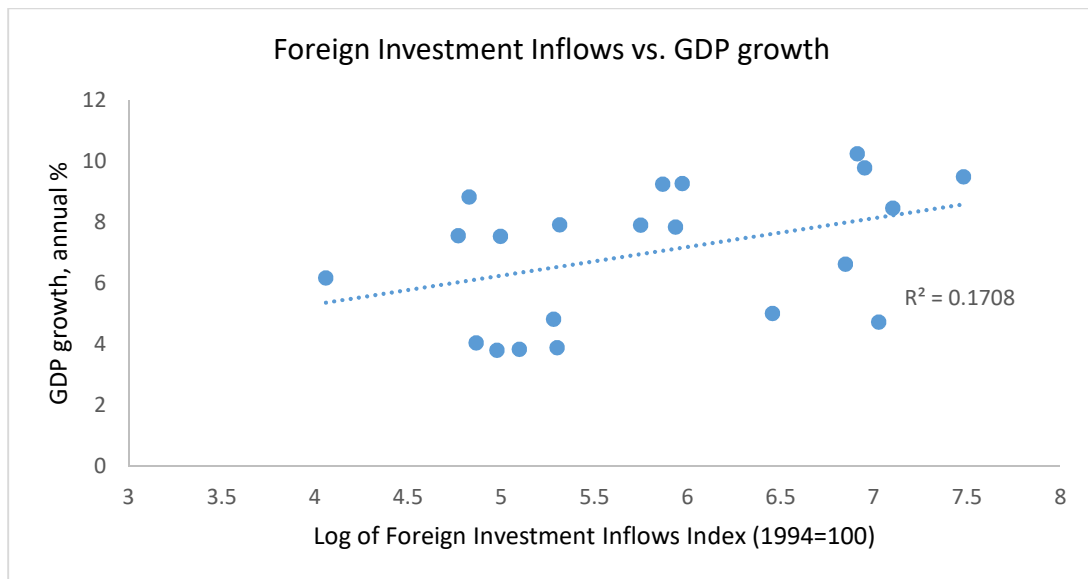
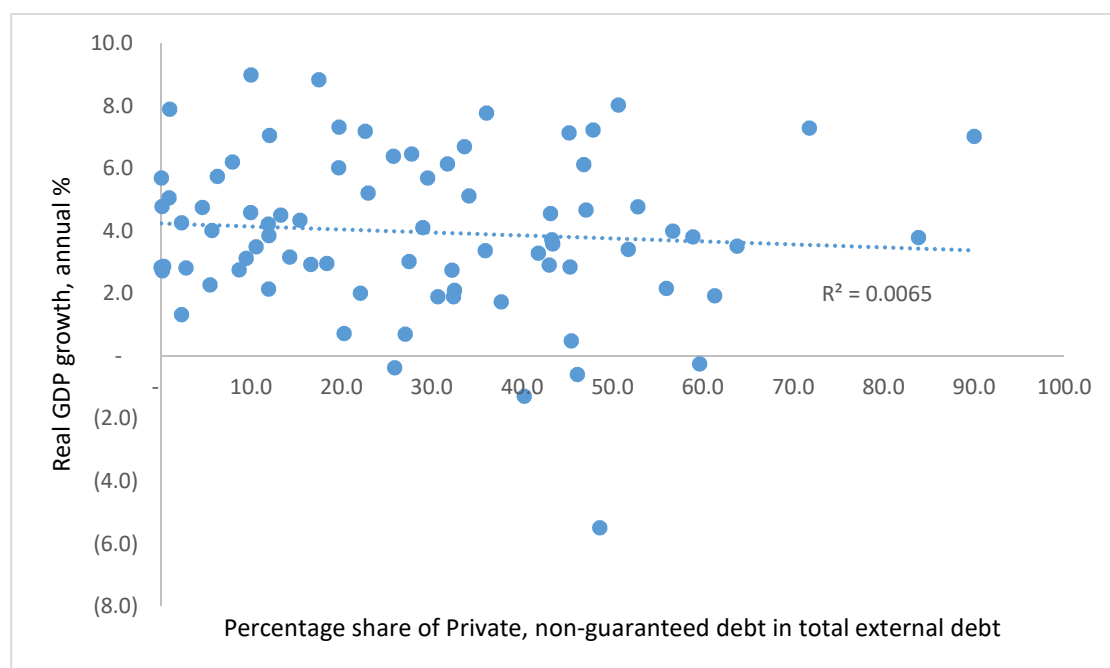


Figure 7-4: Foreign investment inflows and GDP growth of India



Globally, studies on the relationship between capital flows and growth show mixed results. Prasad, et. al, 2007 find no evidence that an increase in foreign capital inflows directly boosts growth. Lack of absorptive capacity for foreign resources, underdeveloped financial markets or overvaluation caused by rapid capital inflows are likely reasons for this lack of correlation. In the Indian context, FDI is positively associated with economic growth while Foreign Institutional Investment is negatively contributing to growth (Sethi, 2007). Studies on the effect of private debt capital flows on economic growth in India is sparse and should be considered as an area for future research. A simple observation of 79 countries (Figure 7-5) suggests a weak and negative relationship between share of private debt capital flows and economic growth, after adjusting for long-term lag effects.

*Figure 7-5: Private sector external debt and GDP growth, international comparison*



N = 79; Source: Calculated from WDI

These figures suggest unanswered questions on the role of private external debt on economic growth and thus is a scope for further research.

Despite these questions, ECBs play an important role by promoting capital goods, as evidenced by high correlation with import of capital goods. As the policies regulating

ECBs have been carefully directed and rationed towards specific purposes and sectors and towards creating productive assets. Also, the availability of ECBs as yet another choice of financing investments creates avenue for firms that are larger in size and better positioned to tap into the international market, thus preventing them from crowding out the domestic market. This releases the domestic credit for better utilization by smaller players.

In the current macroeconomic environment, governments are constrained by funds, making public investments scarce. As the private sector plays a key role in economic growth, development and job creation, ECBs play a role in enabling private sector investment, particularly in the infrastructure sector (communication, commercial and social infrastructure).

The policy approach over the years has been gradually liberalized controls on borrowing abroad. Whether the controls on ECBs are to be liberalized or enhanced is a question for larger debate. Literature does support some minimum restrictions on capital flows; foreign currency borrowings are highly associated with risks. At the same time, it is yet another source for financing investments. Within the scope of this study, given that firms are likely matching currencies and lenders tend to favor countries with better institutional quality, a preliminary conclusion can be made in favor of relaxing controls and placing restrictions only to monitor systemic risks and investment in productive assets; priority needs to be given to improve institutional quality, such as better regulatory environment, rule of law, ease of government procedures with respect to investments and ease of access to finance. These improvements, together with relaxed investment restrictions, will bring more capital flow to India and, in turn, strengthen the economy in general.

## **7.6 Limitations and scope for further research**

ECBs offer wide scope for research. Predominant among them is the extent of risk hedging by borrowing firms. This key question could not be observed directly for want of data. Even the high-powered Sahoo Committee report has observed this limitation and has not been able to successfully obtain this data despite the committee's reach and access to information. Disclosure of hedging data by the RBI or the borrowing firms is necessary to facilitate research on this dimension.

FCCBs, which is a special type of ECB, is another area for future research. Data on the terms of conversion, pricing, redemption, buy-back and actual conversion could help shed more light on varied aspects of FCCBs.

Trade credits are yet another area for future research. While trade credits in general have received the attention of literature both in India and elsewhere, the cross-border dimension of trade credits remains an unexplored area.

The question on effect of changes in exchange rate and foreign debt holding on investment may be further examined to identify behaviors based on firm size, share of foreign currency debt and industry sectors. The same question may be extended to other dimensions such as firm profitability and earnings.

## **7.7 Contribution**

Despite the limitations and several unexplored areas mentioned above, to the best of our knowledge, this work is likely an early attempt to show firm level evidence on effect of changes in exchange rate on investment decision by firms holding foreign debt. It provides new insights as well as opens up more questions.

The present work differs from the earlier literature in two aspects. *Firstly*, it covers periods of different economic cycles, boom periods and periods of crisis; *secondly*, it makes an

attempt to segregate push and pull factor determinants and concludes that push factors play a larger role; and thirdly, it explores both macro and micro dimensions of ECBs

It is hoped that the findings of this work make a significant contribution to the literature and will serve as a useful input for future researchers and policy makers alike.

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