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A STUDY OF CORPORATE BOND MARKET IN INDIA: THEORETICAL AND POLICY IMPLICATIONS

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Director
Development Research Group

DRG Study

A Study of Corporate Bond Market in India: Theoretical and Policy Implications

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ABBREVIATIONS

ABS	Asset Backed Securities
AFS	Available for Sale
AMFI	Association of Mutual Funds in India
BRIC	Brazil, Russia, India and China
BSE	Bombay Stock Exchange
CARE	Credit Analysis and Research Ltd
CCIL	Clearing Corporation of India
CDS	Credit Default Swaps
CFS	Company Finances Statistics
CRISIL	Credit Rating and Information Services of India Ltd
CFSR	Committee for Financial Sector Reform in India
CVM	Brazilian Securities and Exchange Commission
DvP	Delivery versus Payment
ETS	Electronic Trading System
FIMMDA	Fixed Income Money Market and Derivatives Association of India
FRB	Floating Rate Bond
GDP	Gross Domestic Product
GLS	Generalised Least Square
GoI	Government of India
HFT	Held for Trade
HTM	Held to Maturity
ICRA	Indian Credit Rating Agency
ICCL	Indian Clearing Corporation Limited
IMF	International Monetary Fund
IOSCO	International Organisation of Security Commission
ISMR	Indian Securities Market Review
ITC	Investment Trust Companies
JASDAQ	Japan Association of Securities Dealers and Automated Quotation
KCFG	Korea Credit Guarantee Fund
KSE	Korea Stock Exchange
MBS	Mortgage Backed Securities
NDRC	National Development and Reform Commission
NDS-OM	Negotiated Dealing System - Order Matching
NHB	National Housing Bank
NSCCL	National Securities Clearing Corporation Ltd
NSE	National Stock Exchange
OTC	Over-the-Counter
RBI	Reserve Bank of India
RTGS	Real Time Gross Settlement
SEBI	Securities and Exchange Board of India
SLR	Statutory Liquidity Requirement
TDS	Tax Deducted at Source
YTM	Yield to Maturity
RMBS	Residential Mortgage Backed Securities

A Study of Corporate Bond Market in India: Theoretical and Policy Implications

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Executive Summary

1. A well-developed capital market consists of equity and bond market. A deep and liquid bond market with a significant role of the corporate bond market segment is considered to be important for an efficient capital market. A vibrant corporate bond market ensures that funds flow towards productive investments and market forces exert competitive pressures on lending to the private sector. While India boasts of a world-class equity market, its bond market is still relatively underdeveloped and is dominated by the Government bond market. The share of outstanding Government bonds in India was 39.5 per cent of Gross Domestic Product (GDP) as of 2010 and compares favorably with other Asian countries such as China (27.6 per cent) and South Korea (47.2 per cent). The share of corporate bond outstanding in India, however, was only 1.6 per cent of GDP in 2010 compared to Malaysia (27 per cent) and South Korea (37.8 per cent) in the comparable period.
2. In this Study, we trace the reforms which have been put in place in the last decade and consequent developments of the corporate bond market in India. It is observed that though there is scope for further improvements in certain areas, such as reforming the stamp duty, substantial developments have taken place in the corporate bond market in India owing to measures taken by Securities Exchange Board of India (SEBI), Reserve Bank of India (RBI) and the Government of India (GoI) in order to implement the recommendations of various committees on corporate bond market. A study of the impact of the reform process on the corporate bond market shows that resources mobilised from the primary and secondary corporate bond markets have continued to increase over the years. The corporate bonds outstanding amount has increased from $ 3.8 billion in 2005 to $ 25 billion in 2010 (0.5 per cent of GDP in 2005 to 1.6 per cent of GDP in 2010). Secondary market trades grew from ₹ 959 billion in 2007-2008 to ₹ 7,386 billion in 2012-13. The increase in the corporate bonds' outstanding amount, and as percentage share of GDP, indicated the gradual impact of the reform process in India.
3. One of the objectives of this Study is to analyse the experience of other emerging and developing economies (EDEs) at similar stage of development to capture lessons in relation to the development of Indian corporate bond market. In this milieu, we looked at the development of bond markets in Japan, Korea, Singapore, Malaysia and Brazil. The Japanese experience suggested that bond

market development should be planned and implemented on a long-term basis with a reasonable sequence and should go hand in hand with economic development and banking reforms. The Korean experience showed that Government policy reforms and development of a vibrant Government bond market was crucial for the development of the corporate bond market. Korean experiment and consequent failure with the Bond Guarantee scheme on the other hand had important implications for the development of the Indian corporate bond market. The development of the mutual fund industry in mobilising and channeling funds to the corporate bond market in Brazil and the growth of pension funds in supporting the bond market in Chile also had interesting implications for the development of the corporate bond market in India. The issue of *Sukuk* bonds in Malaysia indicated that India could find innovative ways to improve the retail investor market. Finally, there were important lessons to be learnt from the reforms put in place in Singapore to improve the foreign investment in local currency bonds.

4. Bond guarantees have not been successful in other countries such as Korea in developing the corporate bond market. The Reserve Bank in its circular (RBI/2008-09/79 DBOD.No.Dir.BC.18/13.03.00/2008-09 dated July 1, 2008) specifically discouraged banks from guaranteeing bonds or debt instruments of any kind as it could have significant systemic implications and impede the development of an efficient corporate bond market. Bond guarantees in the long run could distort the risk return trade-off and would hinder the bond market from developing and acting as an effective alternate channel for raising resources. Further, the South Korean experience suggested that a financial crisis could trigger a collapse of the guarantee system.

5. The retail investors' presence in the corporate bond market in India, however, is still shallow despite the reforms put in place by SEBI to reduce the size of trading lots and the recent increase in foreign investor limits for the corporate bond market. India might explore innovative ways, such as the issue of *Sukuk* bonds in the case of Malaysia, to attract retail investors. Recently, European Governments and banks are increasingly turning to their citizens and customers by issuing patriotic bonds such as the "National Solidarity Bonds". It is worth exploring such innovative ways to expand investors' base in the corporate bond market in India. Another method to broaden the investor base is through advancement of the fund management industry by strengthening mutual fund offerings. In India, though the mutual fund industry accounts for a major share of lending in the CBLO and market repo segments, there is scope for further improvement in the retail investors' segment. Improvements in the retail investment sector of the mutual fund industry can help in enhancing the liquidity

in the corporate bond markets. Investor base can be further strengthened by encouraging foreign investment in local currency bonds. The GoI has closely monitored the developments in corporate bond market, revised the cap on foreign investment and the lock-in period from time to time to develop this market segment. Recently, the GoI reviewed and revised these limits and the lock-in period for investments. Previously, the lock in period of 3-year was perceived as a major hindrance in corporate bond market development in India. .

6. India, like many other developing countries, suffers from "original sin" phenomenon as foreign investors are reluctant to invest in local currency bonds of developing countries due to the uncertainty and risk. Though foreign currency bonds can be issued under Infrastructure Debt Fund (IDF), the problem of original sin remains. In order to increase foreign investor participation, India can follow the success of Singapore by easing regulations relating to disclosure requirements and give tax incentives to encourage foreign investments in local currency bonds. The recent liberalisation in FII investment in long term corporate debt in the infrastructure sector by the GoI is a positive development and will help alleviate the original sin problem.

7. The introduction of Credit Default Swaps (CDS) by the Reserve Bank and credit enhancements by the National Housing Bank (NHB) for Residential Mortgage Backed Securities (RMBS) by primary lending institutions viz. Housing Finance Companies (HFC) and banks are steps in the right direction. Another way Indian Corporate Bond Market can be improved is through the development of credit enhancements such as securitisations and through collateralised bond obligations (CBO) or collateralised loan obligations (CLO). However, recent Sub-prime crisis has brought to fore some of the problems with CBO/CLO. After implementing due safeguards against such problems, introduction of CBO/CLO could lead to further developments of corporate bond market. Moreover, this requires independent credit analysis and credit ratings and better disclosure standards. Though there are rating agencies in India with sound credit assessment capability and good track records, further efforts to create more credit rating agencies with due expertise will improve the credibility of ratings.

8. The Indian Government initiated reform measures to develop the corporate bond market and introduced prudent regulation and supervision. The Government of India in January 2007 clarified the regulatory jurisdiction of different agencies, which facilitated for the smooth development of the corporate bond market by avoiding conflicts arising from involvement of multiple organisations in the regulation. Such a clear demarcation would ensure market participants' understand the role of the Government as a supervisor and not as a market guarantor.

9. According to the pecking order theory, profitable firms tend to finance through internal sources first and then external sources. Amongst external sources, companies tend to finance with debt or issue of corporate bonds first and then equity. Analysis of trends in the sources of funds based on company finances studies of RBI on non-Government non-financial public limited companies for the period 1990-1991 to 2010 -2011 show that companies in India tend not to follow the pecking order theory and have instead depended more on external sources rather than on internal sources. Amongst the external sources, bank loans seem to dominate the borrowings for these companies. For example, for the 5-year period 2006-2010, 67.4 per cent of the total borrowings were financed through bank loans and only 7.0 per cent were financed through debentures. The share further increased to 71.1 per cent (bank loans) and 10.7 per cent (debentures) in 2010-11. This shows that bank loans continue to be the major borrowing source for companies. One of the reasons for the bank finance being preferred by corporations is due to the prevalence of the cash credit system in the banks in which the cash management of the corporations is actually done by the banks. This indicates that the corporate bond market still has a long way to go before becoming a viable source for companies to finance their investments.

10. Literature suggests that corporate bond market yields would be more efficient than bank lending rates in reflecting the risk return trade off. For example, in a recent Reserve Bank working paper Mohanty *et.al.* (2012) study on why the Benchmark Prime Lending Rate (BPLR) in India fell short of the Reserve Bank's objective of providing transparency to the lending rates. Competition forced the banks to price loans out of alignment with the original intent of the BPLR to provide transparency. Further, Mohanty *et.al.* (2012), noted that there was a public perception that the BPLR system had led to cross-subsidisation in terms of underpricing of credit for corporates and over pricing of loans to agriculture and small and medium enterprises.

11. There is very little analytical work on the corporate bond market in India due to lack of reliable data on a longitudinal basis. Researchers, however, have worked with the data limitation to reach interesting conclusions. We briefly surveyed available literature on the corporate bond market in India. Our analysis indicates that while the growth of the Government bond market has had positive influence on the development of the corporate bond market in India as in the case of other countries such as South Korea, the financing of Government deficit spending as reflected in the domestic credit extended by the banking sector has exerted a negative effect on its development. Other factors such as the size of the economy, openness, size of the stock market and institutional factors like

corruption have had little or no impact on the development of the corporate bond market.

12. We conclude by noting that the reform process in the corporate bond market has been encouraging but the implementation of reforms has proceeded slowly. Companies continue to finance their investments via private placement and bank loans rather than through public issues and corporate bonds despite policies implemented to encourage retail and institutional participation, streamline the issuance process and create new and missing markets.

Chapter 1: Introduction

The objective of this study is twofold. First, it traces the development of the corporate bond market in India and second, it attempts to seek policy inputs based on the experience of other emerging markets in developing their corporate bond market. A simple regression analysis is carried out based on data available from Reserve Bank of India, National Stock Exchange (NSE), Securities and Exchange Board of India (SEBI) and the Bank for International Settlements (BIS). While the principal focus of the study is the corporate bond market developments in India, we also take into account the developments of the Government bond market and equity market in India in relation to the corporate bond market. .

A well-developed capital market consists of equity and bond market. A sound bond market with a significant role played by the corporate bond market segment is considered to be important for an efficient capital market. The corporate bond market ensures that funds flow towards productive investments and market forces exert competitive pressures on lending to the private sector. While India boasts of a world-class equity market, its bond market is still underdeveloped as compared to other Asian countries (*e.g.* South Korea). The Asian financial crisis of 1997-98 brought to the forefront the limitations of even a well-managed, regulated and supervised banking system in countries like Hong Kong and South Korea. The crisis clearly showed that banking systems cannot be the sole source of long-term investment in an economy. In this context, Jiang, Tang and Law (2002) point out that one of the principal benefits of a well-developed corporate bond market is to provide an effective alternative source of financing to bank financing. Further, they list the following important advantages of bond financing over bank financing.

- Bank financing and corporate bonds deal differently with information asymmetries. While bond financing involves spreading credit risk over a large group of diverse bondholders, banks tend to minimise credit risks of borrowers and manage their risks by monitoring borrowers.
- Bank financing involves maturity transformation as liabilities of banks are typically short-term in nature and assets have longer maturities whereas in bond financing, investors are fully aware of the yields and time horizons of their investments.
- Bond market provides a yield curve or a market-determined term structure of interest rates. The yield curve serves as a benchmark for pricing credit risk and other financial products.

- Bond financing lowers funding cost for high quality borrowers as intermediation costs are lower for bond financing than for bank financing.
- A well-developed bond market introduces a healthy competition with the banking sector in providing corporate financing.
- Bond market allows pooling of risks through securitisation (such as mortgage backed or asset-backed securities).
- A well-developed corporate bond market increases economic welfare as it complements other financial instruments and provides a full spectrum of investment vehicles whose payoffs across contingencies or states of nature cannot be easily replicated by other securities in the market (for example, pension funds and insurance companies like to hold low risk debt instruments, with a stable income stream, which, in general, are not be provided by the equity market).
- Bond market helps in spreading the risk among ultimate savers rather than get concentrated in the intermediaries.

Luengnaruemitchai and Ong (2005) in their IMF working paper opine that core aspects such as benchmarking, corporate governance and disclosure, credit risk pricing, the availability of reliable trading systems, and development of hedging instruments are fundamental for improving the breadth and depth of corporate debt market. Further, the authors note that the demand and supply of corporate bonds are dependent on factors such as the investor base - both domestic and foreign, and Government policies toward the issuance process and associated costs as well as the tax regime.

Torre, Gozzi and Schmulker (2006) argue that there are two major approaches to develop capital markets, in general, in emerging markets. The first one explains that the gap between expectations and observed outcomes is due to the combination of impatience with imperfect and incomplete reform efforts. This view argues that past reforms are mostly right, reforms needed in the future are essentially known, and that reforms have long gestation periods before producing visible results. The second approach emphasizes on the right sequencing. This view claims that the gap is due to faulty reform sequencing where some reforms are implemented ahead of others, and argues establishing preconditions before fully liberalising domestic financial market and allowing free international capital mobility. Torre, *et al*. (2006), however, argue a case for a third approach, which notes that in the case of some developing countries, one needs to "revisit basic issues and reshape expectations." The authors contend that it is difficult to pinpoint which factors may explain the relative underdevelopment of domestic capital market in emerging markets such as Latin America. The study notes that intrinsic characteristics (such as small size, lack of risk diversification

opportunities, presence of weak currencies, and prevalence of systemic risk) of developing countries limit the scope for developing deep domestic capital market in a context of international financial integration and that these limitations are difficult to overcome by the reform process. In other words, even if emerging economies carry out all the necessary reforms, they might not be able to develop their capital market to the extent of industrialised countries. It seems, therefore, that the path emerging countries like India should follow is not unanimous. As a general rule, a gradual and complementary approach is beneficial, although in some cases, a given sequencing may be preferable. While countries like Australia have followed the sequencing approach by developing their debt markets before developing their bond market, others such as Latin American countries have developed their markets in conjunction with other markets. In India, various committees viz. the High Level Expert Committee on corporate bonds (Patil Committee) and the Committee for Financial Sector Reforms (CFSR), have recommended the sequencing approach, which entails developing a number of missing markets as well as complementary development of other sectors in the economy for a healthy development of the corporate bond market. In the next two chapters, we evaluate the success of such an approach, based on the available information.

This study is organised as follows. This introductory chapter is followed by Chapter 2 with a description of the development of bond market in other countries in the region as well as countries in similar stages of development as compared with India. Chapter 3 outlines the major developments and reforms that have been put in place in the Indian corporate bond market and Chapter 4 traces the effect of the implementation of the reforms by analysing data available from the corporate bond market. Chapter 5 provides a macro economic analysis to discern the crucial factors in the development of the corporate bond market in India. Finally, Chapter 6 summarises the findings and policy implications.

Chapter 2: Lessons from Corporate Bond Market in Other Countries

It is widely acknowledged that a well-functioning corporate bond market is important for an efficient capital market. The recent financial crisis, however, has made many countries wary of opening up their market too quickly and be exposed to the contagion spread of the crisis from other developed bond market. It is, therefore, crucial for a country to learn from the experiences of other countries in developing its corporate bond market. Studying similar emerging economies is a beneficial way for India to benchmark the development of its corporate bond market and the lessons learnt from these economies help avoid known pitfalls.

In this context, we look at the experiences of Japan, South Korea, Singapore, Malaysia and Brazil in developing their corporate bond market. These countries have similarities as well as differences in the factors that have influenced or inhibited the development of their corporate bond market. We study Japan, Korea, Singapore and Malaysia in the sense that they are part of the Asian continent and are, therefore, affected by similar developments. Brazil, like India, is part of the BRIC countries and is expected to witness rapid growth in output in the future. There are, however, significant differences in these economies in terms of their relative size and stages of development. Policies that may work well for a small country, such as Singapore and Malaysia, may not work well for a larger economy like India. Despite these differences, their policy experience could help India in implementing appropriate measures for corporate debt market.

This chapter looks at a brief history of corporate developments in Japan, South Korea, Brazil, Singapore and Malaysia and the issues these countries had to deal with in the process of development of their corporate bond market. We then draw some lessons from their experiences for India.

2.1 Corporate Bond Market Development in Japan

We trace a brief history of the corporate bond market development in Japan and then go on to draw some lessons for India from their experiences.

2.1.1 History of development in the Japanese Corporate Bond Market

Heavily regulated until 1985, Japan's corporate bond market was under developed and dominated by banks. However, in the second half of the 1980s, there were important measures which helped the development of the primary market for corporate bonds. These measures included simplification of issuance procedures, deregulation of private placement, incorporation of 3 credit rating agencies, issuance

of dual currency bonds and reduction of underwriting fees and trust fees. Further, these measures were followed by the removal of corporate bond financing ceiling during 1990-93. The rationalisation of the primary market for corporate bonds led to a drastic decline in the influence of banks in corporate bond issuance - from 40 per cent in 1985 to zero by the end of 1989. Further, the development of the JASDAQ over the counter programme helped to increase investor interest in corporate bond trading. The development of the corporate bond market was also boosted by the introduction of Futures and Options market during the second half of the 1980s. The introduction of Futures and Options market helped to put in place a full-fledged price discovery mechanism, issue price commitment for corporate bond issues and auction mechanism, which facilitated the development of an efficient primary market.

According to Endo (2002), the development of the debt market in Japan was helped by the high savings and balance of payment surplus, existence and growth of institutional investors and integration with international market. The value and the share of outstanding bonds in Japan were $900.88 billion and 16.5 per cent of GDP, respectively, at the end of 2010.

2.1.2 Lessons from the Japanese experience

According to Endo (2002), developing countries like India should draw the following lessons from the Japanese experience.

- A healthy and vibrant Government bond market is important for the development of corporate bond market.
- The development of the corporate bond market should be complemented by the development of the banking system.
- The corporate bond market should be integrated with the global economy.

Endo (2002), therefore, suggested that bond market development should:

- Be planned and implemented on a long-term basis with a reasonable policy sequence;
- Go hand in hand with economic development;
- Be accompanied by banking industry reform for systematic risk alleviation; and
- Educate the industry and public about finance.

2.2 Corporate Bond Market Development in South Korea

The Korean bond market is one of the most robust bond markets in Asia in terms of size and growth. We trace the history of the bond market development in

Korea with particular emphasis on their experience with the development of the bond guarantee scheme and its subsequent failure. The Korean experience and experiment with the bond guarantee scheme and how it has evolved after the crisis has important implications for India. We would like to draw lessons from the failure of the bond guarantee system in Korea while underline other positive factors such as the development of credit rating system, credit enhancements and asset backed securities in its endeavor to develop its corporate bond market.

2.2.1 History of Corporate Bond Market Development in Korea

The South Korean corporate bond market has been a vital component of South Korea's rapid economic advancement. From Table 1 we can see that as of December 2010, the size of the Korean corporate bond market stood at US$ 380.62 billion (37.8 per cent of GDP).

Until the late 1960s, both the public and private sectors in South Korea depended heavily on overseas as well as local banks rather than financing through bonds. To encourage the growth of the corporate sector, the Government aggressively intervened in bank credit allocation practices through interest rate controls and direct bank ownership. As a result, banks became the dominant players in the debt market. The Korean Government realised the benefits of developing a robust corporate bond market early and put in place policies to increase the demand for corporate bonds by building an investor base and encouraging investors to buy bonds through credit enhancements. In order to build an investor base, the Capital Market Promotion Act was enacted in 1968 to promote equity and bond market. The Securities and Investment Trust Business Act (SITBA) 1969 introduced the contractual investment trust as a vehicle to mobilise domestic capital. The SITBA also authorised the Korean Investment Corporation (KIC) to engage in the investment trust. In 1974, the KIC's investment trust function was transferred to the newly established Korea Investment Trust Company (KITC). Thereafter, many other Investment Trust Management companies were established and the size of the contractual-type fund assets under Investment Trust Companies' (ITC) management grew rapidly from 240 billion won in 1978 to 3.6 trillion won in 1983. Fund assets continued to grow as the number of investors interested in trust products continued to increase. Pension funds and insurance companies played a significant role as institutional investors in the corporate bond market. In 1983, commercial banks introduced an investment called the bank trust accounts. Trust accounts became popular as they offered higher returns than deposit accounts while enjoyed similar guarantees as deposit accounts. The rise of bank trust accounts contributed to the growth of the corporate bond market because trust account portfolios included sizable investments in corporate bonds, commercial paper and central bank notes.

2.2.2 Experiment with Bond Guarantee Scheme

In order to build investor confidence and an investor base, the Korean Government developed a bond guarantee scheme. Under this scheme the Korean Investment Corporation (KIC) was selected as the sole guarantor of bonds in 1972. Korea Guarantee Insurance Company was allowed to start guaranteeing bonds to cope with increasing demands for bond guarantees in 1978. In 1989, the Government established the Hankook Fidelity and Surety Company to increase financial support for individuals and small businesses. The Government bond guarantee scheme included the explicit guarantees of financial institutions such as banks and securities firms. By the 1980s, banks were the major guarantors accounting for more than 50 per cent of all guaranteed bonds. Banks and other Non-Bank Financial Intermediaries entered the corporate bond guarantee business because the business was considered to be low-risk and high return given the robust economic growth in the 1980s.

The financial crisis during 1997 and the resultant economic crisis resulted in the increase in bankruptcies which, in turn, resulted in increased risks to bond guarantors. Most guarantors left the market after 1997. As private sector bond guarantors came to better understand the risk involved in guaranteeing bonds, they realised that guarantee fees were inadequate reward for the risks they were undertaking. Some tried to offer bond guarantees at much higher fees which were not acceptable to bond issuers. This resulted in the collapse of the guaranteed market in South Korea after 1997.

2.2.3 Corporate Bond Market Development after 1997 Financial Crisis

Though the 1997 crisis led to the collapse of the bond guarantee schemes, it also created opportunities for the development of the corporate bond market. Financial institutions in the midst of restructuring after 1997 were reluctant to extend loans to the corporate sector or to provide credit guarantees. Therefore, business sector, in need for more funds, turned to the corporate bond market. The Korean Government stepped in to support corporate borrowing by raising the commercial code ceiling on firms' corporate issuances from twice their net assets to four times net assets. Further, the Government eliminated any foreign investment restrictions in domestic bonds. Market factors were also favourable as the interest rates declined sharply after 1998. These developments enabled the corporate sector to raise funds by issuing non-guaranteed bonds. As a result, the value of outstanding bonds grew from $68.15 billion in 1997 to $162.06 billion in 1998. The fall in interest rates led to a surge of funds to Investment Trust Companies (ITCs) which guaranteed higher returns

to the investors on its beneficiary certificates. The ITCs in turn purchased corporate bonds with their increased inflow of cash.

The temporary bond market boom and growth of the ITCs after the financial crisis of the 1997 reinforced the public's perception of ITC as crisis-proof entities. In 1999, however, the bankruptcy of the Daewoo business group eroded investor confidence in the corporate bond market. Investors began withdrawing funds from the ITCs. The Government took several steps to alleviate the liquidity problems in the bond market. First, the Government introduced the Bond Market Stabilisation fund to stabilise bond yields. Banks and Insurance companies contributed to the fund. Second, the Government created incentives to invest in ITC products and launched new products with tax breaks. Third, the Government promoted investor confidence in ITCs through the execution of structural reforms including re-capitalising ITCs with public funds and permitting the write-off of ITC's non-performing assets.

The timely measures by the Government of Korea averted the crisis but it left one wondering about the moral hazard problems created by the high risk lending practices of the ITCs and the resulting bailout by the Government.

Korean Guarantee Insurance Company and Hankook Fidelity and Surety Company were left to control the market after the departure of many guarantors after the 1997 crisis. These two companies competed to guarantee bonds issued by the big business groups (*Chaebols*) in order to survive. By 1998, however, both these companies were forced into insolvency resulting in Government prohibition of new issuances guarantees by these two companies. Korea Guarantee Insurance Company and Hankook Fidelity and Surety companies merged in November 1998. Problems, however, continued to plague the merged company and the Government had to step in to help the company when its bonds matured in 2001.

2.2.4 Improvement in Credit Ratings

The post-1997 shift towards non-guaranteed corporate bonds placed a growing importance on credit rating agencies. Newly created financial products such as ABS, hybrid securities and equity-linked notes also increased the demand for credit rating agencies. Furthermore, with the introduction of mark-to-market system, credit rating assumed increasing importance as an element of pricing. Domestic credit agencies established joint ventures with prominent international agencies such as Moody's and Fitch IBCA.

2.2.5 Emergence of Asset Backed Securities

In 1998, the Government of South Korea enacted the Asset Securitisation Act, which was designed to facilitate corporate finance restructuring after the financial crisis. In 1999, the Mortgage Securitisation Act was enacted based on the reasoning that Mortgage-Backed securities were more long-term and homogenous than other asset securitisation. With the introduction of these two Acts, the Government provided tax incentives, such as exemption of acquisition tax, registration tax and withholding tax in order to promote the ABS and MBS markets. Investor confidence in the added layer of security of extra credit enhancement for ABS and MBS helped the market to develop.

2.2.6 Lessons from Bond Market Developments in Korea

Some of the important lessons for India from corporate bond market developments in Korea can be summarised as follows:

2.2.6.1 Synchronised Development of Infrastructure and Investor Base

The Korean Bond market development tells us that it is important to develop the bond market infrastructure and investor base concurrently in order to achieve a balanced and a viable bond market. As the Korean experience shows, preferential development of an investor base without the necessary market infrastructure can result in a dysfunctional market. For example, in the case of Korea, the Government bond guarantees created an artificial safety net which prevented the growth of a reliable credit rating system.

To keep pace with its need for infrastructure development, India should also expand its investor base, but as the Korean experience shows, bond guarantees may not be the optimal method of enhancing the investor base. Steps towards improving the transparency, reliability, accessibility, timeliness and market diversification would help develop the bond market. India should broaden the investor base by increasing the number and size of financial institutions that can invest in corporate bonds. However, in the course of expanding institutional investors, the Government must not become the implicit guarantor of these institutions as was the case with Korea.

Korean experiment and consequent failure with its Bond Guarantee scheme has important implications for the development of the Indian corporate bond market. RBI in its circular (RBI/2008-09/79 DBOD.No.Dir.BC.18/13.03.00/2008-09 dated July 1, 2008) specifically discouraged banks from guaranteeing bonds or debt instruments of any kind as it rightly felt that it would have significant systemic implications and impede the development of an efficient corporate bond market.

A view that the Indian Government should allow banks to guarantee corporate bonds has been aired by many at times. However, such a move has to be

implemented carefully. Though bank guarantees may initially help to build investor confidence and draw investors to the market, in the long run, it is likely to distort the risk return trade-off and to hinder the bond market from developing and to act as an effective "spare tyre". Furthermore, a financial crisis can trigger a collapse of the guarantee system as happened in the case of the South Korea during the East Asian Financial Crisis of 1997.

If bond guarantees are not the solution, how can India broaden its investor base? One way to broaden the investor base is through advancement of the fund management industry. This can help domestic financial industries through globalizing their market activities. The other important method to broaden the investor base is to encourage foreign investors to invest in domestic currency bonds. The real problem, however, has been that foreign investors have been reluctant to invest in developing countries. According to Eichengreen *et al*. (2004), emerging markets suffer from "Original Sin". According to their theory, foreign investors are reluctant to purchase local currency bonds and developing countries are forced to issue global bonds denominated in foreign currency with relatively short maturity and subject to the legal framework of an overseas financial center. The problems of "original sin", therefore, have prevented an increase in foreign investment in India. Eventually, as the size of the local bond market develops and transparency improves this problem is likely to disappear.

2.2.6.2 Development of Credit Enhancements

Considering the negative consequences of guaranteed bonds, one alternative is to focus on the issue of non-guaranteed bonds. The question then is how can one encourage investors' participation if bond guarantees do not work? One solution could be to try credit enhancements such as securitisations and partial guarantees through collateralised bond obligations (CBO) or collateralised loan obligations (CLO). This, however, requires independent credit analysis, credit ratings and better disclosure standards. Indian credit rating agencies have been developing. The process could be helped along by creation of more agencies with due expertise to help improve the credibility of ratings.

The introduction of Credit Default Swaps (CDS) by Reserve Bank of India and credit enhancement to Residential Mortgage Backed Securities (RMBS) by the National Housing Bank (NHB), are welcome steps. The launch of CDS should help in the development of corporate bond market, as it provides a hedging opportunity for both residents as well as FIIs. The introduction of RMBS would promote the development of secondary market for RMBS in India. The RMBS policy of NHB envisages the introduction of specialised institutional measures for providing credit enhancements to promote the development of secondary market for residential

mortgages. It may be mentioned that the presence of specialised forms of credit enhancements issued by institutions in developed nations, such as guarantees by Fannie Mae, Freddie Mac and Ginnie Mae for the RMBS in USA, have considerably contributed to the success of RMBS. Care should be taken, however, not to repeat the mistakes that contributed to the financial crisis in these countries. Credit enhancement for RMBS is, therefore, expected to reduce credit enhancement costs, improving viability of RMBS transactions and encouraging the HFCs and Banks to take up securitisation of their home loan portfolios.

2.2.6.3 Government Deregulation and Supervision

The Government should focus on deregulation and should substitute direct Government intervention with prudent regulation and supervision. The Government of India in January 2007 clarified the regulatory jurisdiction of different agencies which facilitated for the smooth development of the corporate bond market by avoiding conflicts arising from involvement of multiple organisations in the regulation of the market. Accordingly, it was decided that SEBI would be responsible for primary market (public issues as well as private placement by listed companies) as well as secondary market (OTC and Exchange traded) for corporate debt while RBI would be responsible for the market for corporate repos and reverse repos. However, if repos or reverse repos are traded on exchanges, trading and settlement procedures would be overseen by SEBI. It is, however, worth emphasising that while the different agencies and the Government of India have an essential role in the corporate bond market development, the role should be preferably as a supervisor and not as a market guarantor.

Park (2008) outlines the following lessons one can draw from the Korean experience for other Asian economies like India.

- Government policy reform is crucial in creating the needed infrastructure to enhance the overall liquidity and transparency of the primary and secondary bond market. Essential infrastructure and institutional arrangements such as auction system, primary dealer system, a delivery-versus payment (DVP) clearing and settlement, futures market and repurchase market for corporate bonds should be put in place for the smooth development of the corporate bond market.
- The Korean experience also shows the importance of the development of an efficient Government bond market as a necessary first step towards developing a strong local bond market.

- Embracing new technological systems like the electronic trading system (ETS) helped improve the transparency and liquidity in the Korean corporate bond market.
- The currency and financial crisis in the late 1990s in Korea highlighted the importance of securitisation and showed the importance of credit guarantee mechanisms to spread credit risk and overcome credit quality gaps.

2.3 Corporate Bond Market Development in Brazil

Despite the intense reform efforts in the last decade, capital market in the Latin American region seemed to have lagged behind, not only relative to developed countries, but also compared to emerging economies in other regions, such as East Asia (World Bank, 2004a). From Table 1, we can see that value of outstanding corporate bonds in Brazil and Chile were only $10.743 billion (0.5 per cent of GDP) and $29.709 billion (14.6 per cent of GDP), respectively as compared with $64.334 billion (27 per cent of GDP) in Malaysia and $380.619 billion (37.8 per cent of GDP) in South Korea at the end of 2010. Analysing the experience of Latin American countries may provide significant lessons for the capital market reform agenda going forward for emerging economies such as India. We look at the capital market development in one of the largest Latin American countries, namely Brazil.

2.3.1 History of Corporate Bond Market Development in Brazil

The shape of the current financial system in Brazil can be traced to 1976 with the establishment of Brazilian Securities and Exchange Commission (CVM) which transferred the responsibilities to oversee the stock and corporate bond market from the central bank to the CVM. In the 1980s, steps were taken to further strengthen the financial system. These steps involved the separation of the Central Bank from *Banco do Brasil* and the creation of the National Treasury Secretariat. Futures and options trading were introduced in 1979 and derivative trading commenced in the 1980s. In the 1990s, high inflation rates led to the introduction of Real Plan for economic stabilisation. In 1995, there were several bank insolvencies. The Central Bank intervened to merge failing banks with stronger ones to avoid further failures. A law allowing ABS to be more easily traded was introduced in 2000.

Despite these developments, the Brazilian corporate bond market (Table 1) appeared to be small relative to markets in Asia such as Korea and Malaysia but there were still important lessons for India. A thriving mutual fund industry in Brazil has been an important tool in mobilising household savings and channeling it to the capital market. In 2003, the domestic mutual fund industry gathered more than $150 billion in assets under management (30 per cent of GDP) which suggested that the mutual

funds played an important role in developing and bringing stability to local corporate bond market in Brazil. Torre, et.al (2006) argued that there were important lessons to be drawn from the experience of Latin American countries for other developing countries such as India. It showed that policy initiatives needed to take into account the intrinsic characteristics of developing countries (such as small size, lack of risk diversification opportunities, presence of weak currencies, and prevalence of systemic risk) and also how these features limit the scope for developing deep domestic capital market in a context of international financial integration. Further, they felt that these limitations were difficult to overcome by the reform process. In other words, even if emerging economies carried out all the necessary reforms, they might not have obtained a domestic capital market development comparable to that of other countries. Despite this, the implementation of pension reforms in Chile and other Latin American countries showed that pension funds played a key role in developing the depth and stability of the local bond market.

2.4 Corporate Bond Market Developments in Singapore and Malaysia

Felman *et al.* (2011), addressed how certain ASEAN countries addressed the problem of inadequate growth in their corporate bond market. Their experience might have important policy implications for India. Felman *et al.* (2011) pointed out that Malaysia's market has been supported with efforts to promote the issuance of Islamic bonds, while Singapore had tried to overcome its narrow domestic issuer base by encouraging foreign firms to issue in the local currency market.

2.4.1 Malaysia's Islamic Bond Market

Malaysia found a novel way to address the problems with the growth of corporate bond market. Over the past decade, Malaysia developed a burgeoning market in *Sukuk* or Shari'ah- complaint bonds. Unlike conventional bonds with fixed coupon payments, *Sukuk* are structured as participation certificates that provide investors with a share of asset returns, making them compatible with the Islamic prohibition of interest payments. As a result, they have been increasingly popular both domestically as well as investors from Islamic nations. The issue of *Sukuk* bonds was backed by other policy initiatives by the Malaysian Government such as the creation of a ten-year capital Market Master Plan for developing the bond market, both *Sukuk* and conventional. Tax exemptions have been granted for banks until 2016 on income earned from international banking and *Takaful* (Islamic insurance) operations in foreign currencies. *Sukuk* accounted for more than half the private securities outstanding in 2004. From Table 1, we can note that between 2005 and 2010, the value of outstanding bonds in absolute terms in Malaysia has steadily increased from

$27 billion in 2005 to $64 billion in 2010 (19.6 per cent of GDP in 2005 to 27 per cent of GDP in 2010).

What lesson can India learn from the experience of Malaysia? The Malaysian experience shows that it is important to find innovative ways of drawing investors into the corporate bond market. Corporate bond issue should address the concern of Indians for safety of their investments while assuring an adequate return. One way to address this concern is to structure the bond so that investors feel that they are contributing to the infrastructure development of the country. Companies, for example, can issue *Swadeshi* bonds which will appeal to the patriotic feeling of contributing to India's infrastructure development by investing in the corporate sector. This will help channel savings, which are currently invested in post office savings accounts or similar safe investments, into corporate bonds. Further, as in the case of the recent experience in Europe, these *Swadeshi* or patriotic bonds can be issued at a lower interest cost to citizens than to risk-averse institutional investors.

2.4.2 Singapore's Offshore-Based Issuers

Singapore has developed an active corporate bond market by encouraging foreign based firms to issue locally, thereby, compensating for the narrow domestic issuer base. Domestic issuance of Singapore dollar based bonds exceeded $16 billion in 2009 of which one-quarter was attributable to offshore-based companies. This is a significant achievement as the real problem has been that foreign investors have been reluctant to invest abroad.

A number of factors in Singapore have encouraged issuance by offshore companies. Legal and regulatory impediments are virtually non-existent. Disclosure documents are quite simple as most are marketed to wholesale buyers. Further, issues undertaken locally have no local tax filing requirements other than to file a tax return to the Monetary Authority of Singapore (MAS) and Inland Revenue Authority of Singapore after the issue date. Singapore corporate bond market, therefore, has been much more cost competitive compared to alternatives such as U.S. Regulation S or 144A issues. Regulatory measures adopted in 2009 have helped as well. For example AAA rated Singapore dollar debt securities issued by sovereigns, supranational and sovereign-backed corporate would be accepted as collateral under the MAS standing facility. Further, banks would be allowed to treat these securities as regulatory liquid assets, applying the same haircut as Singapore Government securities. Following the implementation of the framework, Singapore dollar debt market saw a surge in supranational issuances in 2009 totaling S$1.4 billion. Finally, foreign issuers are also attracted to Singapore because it is an international financial centre.

The important implication for India is to recognise the importance of foreign investor participation to address its narrow investor base. India has been taking steps in this direction. The Government of India increased the current limit of foreign institutional investment in corporate bonds from $15 billion to US $40 billion. However, increasing the limit of foreign investment alone will not be sufficient to ensure flow of foreign investment into the country. In fact, GoI has been monitoring FIIs subscription under the scheme and as on 31st August 2011, against a ceiling limit of $25 billion, or ₹1,12,095 crore, investments by FIIs under this scheme were only $109 million or ₹500 crore. It was concluded that the three-year lock-in period and doubts regarding the interpretation of the requirement of residual maturity of five years were discouraging FIIs from investing in this scheme. The GoI has since reduced the lock-in period to 1 year for investments up to $5 billion. India, however, needs to do more to solve the “original sin” problem by creating conducive policies like simple disclosure and tax filing requirements.

Chapter 3: Development of Corporate Bond Market in India

Having looked at how countries in the similar stage of their development have dealt with the problem of developing their corporate bond market, we now turn to chapter 3 where we survey the theoretical literature and developments of the corporate bond market in India and challenges ahead.

In India, the Government bond market has experienced a steady growth over the years due to the need to finance the fiscal deficit. The Government bond market, which is around 39.5 per cent of GDP in end-2010 (Table 2) in India compares favourably to most other Asian countries. The corporate bond market on the other hand is just 1.6 per cent of GDP in end-2010 (Table 1) and small in relation to the economy's size. Table 1 shows, however, that from 2008 to 2010 corporate bond market in India in value terms grew from $7.85 billion to $24.99 billion. In comparison to other countries such as South Korea ($380.62 billion) and China ($ 522.09 billion), the Indian corporate bond market appears to be under-developed. The under development of the corporate bond market in India is not incidental and is mainly attributable to the structure of the Indian financial system and regulatory structure.

We briefly survey the theoretical literature on corporate bond market in India and trace some of the recent developments in the capital market, Government bond market and corporate bond market in India.

3.1 Brief Survey of Theoretical Literature on Corporate Bond Market in India

Ever since the celebrated Modigliani-Miller (1958) theorem, corporate finance literature has trained its inquiry on the link between firms' financing and investment decisions. In a world without taxes, the value of the firm is independent of its debt-equity mix and depends only on the cash flows it generates. This is the now famous Modigliani-Miller Theorem. However, in the presence of taxes, the firms can benefit from the tax-debt shield and stands to gain from leverage. Therefore, capital structure is not irrelevant in the real world and corporate financing pattern becomes not only an outcome of the financial decision of the firms, but also a policy issue, with the fiscal, monetary, regulatory and institutional policies affecting the financing pattern. It has been recognised that the Modigliani-Miller theorem holds when capital market is perfect. However, financial markets are characterised by frictions and imperfections. Information flows are not symmetric. Principal-agent problems affect corporate governance and corporate decision-making. Myers and Majluf (1984) point out that high quality firms can reduce the cost of information asymmetries by resorting to external financing only if they did not have sufficient internal funds. If external

financing is necessary, the same argument implies that firms should issue debt before considering external equity. Firms in developed countries therefore tend to follow what is known, following Myers and Majluf (1984), as the “pecking order” pattern of finance. This refers to firms in advanced economies usually relying on internal finance as far as possible. If their investment need cannot be internally financed, they finance through bank loans or issue long-term debt and only as a last resort tap the equity markets. This is because issue of debt, as opposed to equity, signals to the market that managers would be more disciplined and would invest in positive net present value projects.

However, results on the empirical tests of the pecking order theory in developing countries seem to be mixed. Singh (1995) finds that firms in developing countries like India generally rely less on internal finance. As far as external finance, firms in these countries tend to rely more on equity finance and relatively very little on debt. Though Singh (1995) acknowledges that recently Indian firms seem to rely more on debt than equity he dismisses his finding as an outlier. Booth and *et al*., (2001) point out that controls on security prices along with Government sponsored credit programmes to preferred sectors would influence the pattern of corporate financing in these countries. Thus, for example, in India, Booth *et al*., (2001) argue that Government imposed ceilings on interest rates would lead to greater reliance on debt financing. Debt financing, however, has often meant financing through bank loans in developing countries like India. In general, bond financing is considered more suitable for large-scale, long-term financing of fixed assets and investments, whereas bank loans are thought to be more appropriate for financing short-term investments in working capital, inventories and other current assets. The lack of a well-developed corporate bond market, therefore, implies that corporations have to rely on bank loans for their long-term financing needs as well. There is very little work on debt financing via the corporate bond market, which remains underdeveloped in countries like India for reasons mentioned above.

One of the major problems with theoretical research in the area of corporate bond market in India is the lack of availability of reliable data on a longitudinal basis. Despite the data limitations, researchers have tried to study the bond market and draw some interesting conclusions.

Varma and Raghunathan (2000) analyse quarterly data available from Credit Rating and Information Services of India Limited (CRISIL) for the period January 1993 to October 1998 to examine credit rating migrations in Indian corporate bond market in order to understand credit risk of corporate bonds. They analyse the probability of what the rating of a bond would be next quarter given its current rating. They believe that their results provide usable estimates of the rating migration probabilities for modeling credit risk in the Indian bond market. They caution, however, that one might

need to adjust the estimates for bias in the sample period which was characterised by declining corporate credit and rising rating standards.

Bose and Coondoo (2003) examined the nature of the Indian corporate bond market using monthly data from the secondary market trades from NSE and BSE during the period April 1997 to March 2001. They examine several aspects of the market such as depth and composition of the market, relationship between yield to maturity (YTM) and volatility of return as implied by price movements, nature of spread between YTM of different categories of bond, relationship between market depth and price/YTM and market pricing of risk. They observe that the Indian corporate bond is characterised by lack of depth and width. Further, the market is characterised by infrequent trading, high liquidity risk, a high degree of dispersion of price/YTM over time and a lack of relationship between bond's credit rating (risk) and its market price/YTM. The study indicates that the then policy measures such as de-materialisation of instruments should encourage exchange based trading of debt securities. They opined that though there has been significant improvement in infrastructure in the corporate bond market, more needs to be done to improve disclosure and documentation standards for private issues. They recommend measures such as mandatory credit ratings and better disclosures to overcome problems of information asymmetry, low liquidity and consequent distortions in the corporate bond market.

Gajjala (2006) attempts to identify the determinants of risk premium in the Indian corporate bond market for the period 1998 to 2002. Using regression analysis, the study finds that the factors influencing risk premium differs for institutional and non-institutional trades. While default risk, liquidity risk and bond specific variables seem to explain the variation in the risk premium on retail bond trades, these factors did not explain institutional trades.

3.2 Capital Market Reforms

Capital market reforms in India have involved the creation of the Securities and Exchange Board of India (SEBI) in 1992 and the formation of the National Stock Exchange (NSE) in the mid-1990. Several measures were implemented to minimise risks in equities trading and to create a national market in stocks. These included the introduction of a clearing and settlement system, creation of a centralised counterparty for transactions, establishment of a modern depository system for stocks, and a shift from carry-forward system to the introduction of futures contracts. Trading in derivatives on the NSE started in 2000 - the Indian market is now the tenth largest globally for futures contracts on single stocks and indexes and the largest for futures on single stocks. In contrast to the development of equity market, the corporate bond

market is yet to respond to policy initiates undertaken. Before the 1990s, the Government securities market in India was regulated and banks and insurance companies were required to hold Government securities with administered coupon rates.

After the 1990s, several reforms were put in place (Table 8). In June 1992, the auction method for issue of Central Government securities was introduced and in August 1994, there was a voluntary agreement between the GoI and RBI to phase out automatic monetisation by limiting the issue of ad hoc treasury bills. This agreement proved crucial in the reform process. The GoI's willingness to borrow from the market at market rates along with the decision to introduce an auction system for the sale of Government loans paved the way for developing a sovereign benchmark yield curve which is important for the development of the corporate bond market. Primary dealers were introduced in 1996 to support the auction system. Primary dealers are a class of non-banking financial institutions with a threshold limit of net worth and proven track record in the Government securities market. The primary dealers were inducted into the market to perform the dual role of underwriting primary issuance of Government securities as well as to serve as market makers in the secondary market for Government securities. In order to reduce settlement risk, the Delivery versus Payment system in Government securities was introduced. In April 2001, the clearing corporation of India was established to act as clearing agency for transactions in Government securities. In order to improve transparency, the data on negotiated dealing system was made available on the Reserve Bank website. Since 2003, retail trading of Government securities has been permitted in the stock exchanges to facilitate easier access and wider participation. In June 2003, interest rate futures were introduced to facilitate hedging of interest rate risk. In April 2004, Real Time Gross Settlement (RTGS) was introduced to provide real time, online large value inter-bank payments and settlements. The Negotiated Dealing System-Order Matching (NDS-OM), an anonymous order matching system, was introduced in 2005 to provide NDS members with a more efficient trading platform. In 2006, the Government Securities Act was passed by Parliament to facilitate wider participation in the Government securities market and to create provisions for the issue of Separately Traded Registered Interest and Principal Securities (STRIPS).

What have been the implications of the growth of the Government securities market for the corporate bond market in India? The positive impact of the growth of the Government bond market has been the development of the sovereign benchmark yield curve for the corporate bond market. However, it is also true that the strong growth of the Government securities market, favourable tax treatment and reduced cost of capital of the equities market has made the corporate bond market unattractive to most firms and investors. Though the corporate bond market has grown over the

years, the growth is mostly in the area of private placement. The strong presence of development financial institutions, state owned banks and commercial banks has led to low interest rates and easy access to capital for most firms, making public placement of bond more expensive and less attractive. Another reason for corporations to prefer bank loans is due to the prevalence of the cash credit system in the banks in which the cash management of the corporations is actually done by the banks. Companies also find it less expensive and less cumbersome to privately place debt issue than public placement. This has led to a lack of transparency and information about the corporate bond market, making the corporate bond market more risky and less attractive to most investors.

Various Committees have been constituted in the recent years to study and develop the corporate bond market. In 2005, a High Level Expert Committee on Corporate Bonds and Securitisation (Patil Committee) was setup under the Chairmanship of Dr. R.H. Patil to examine the legal, regulatory, tax and market design issues in the development of corporate bond market. The committee then recommended two broad set of reforms. The first set of reforms was aimed at removing the hurdles that the debt market faces in terms of regulation of the securities market as well as tax treatment of debt securities. The second set of reforms was aimed at proactive steps to enlarge the issuer base and to develop the secondary market institutions in the corporate bond market. We can group the recommendations of the Committee as those relating to the primary market, secondary market, development of the debt market and specialised debt funds for infrastructure financing.

3.2.1 Development of Primary Market

The following policies have been recommended to help develop the primary market in corporate bonds.

- Rationalise stamp duty structure across the country and fix stamp duties based on tenor and issuance value.
- Eliminate tax deducted at source (TDS) for corporate bonds in line with Government securities.
- Enhance the issuer base by encouraging corporations to borrow from the bond market rather than from banks.
- Develop market makers in the corporate bond market similar to the primary dealers in the Government bond market. Investment banks and banks can be encouraged to be market makers.

- Enhance the scope of investment by provident /pension /gratuity funds and insurance funds in corporate bonds. Make bond ratings the basis for such investments rather than the category of issuers. Encourage retail investor participation through stock exchanges and banks. Increase foreign investment limits for corporate bonds to encourage foreign investor participation.
- Consolidate issue of privately placed bonds. Avoid fragmentation or multiple numbers of issues to improve liquidity and depth in the market. This is also expected to favor public issues over private placement.
- Create a primary issuance data base to provide information to investors to make a valued decision. Information on credit rating and credit migration should also be provided as part of the data base.

3.2.2 Development of Secondary Market

Listed below are policy recommendations by Patil Committee to improve the secondary market in corporate bonds.

- Use the existing infrastructure of national stock exchanges to establish a system to capture all information related to trading in corporate bonds and disseminate it to the market in real time.
- SEBI should setup a separate trading platform for institutional investors in line with bond market as in other countries.
- Reduce shut periods and adopt a unified convention of day count for corporate bonds.
- Introduce exchange traded derivatives to provide ways to hedge risk of holding physical bonds.
- Reduce the minimum market lot for corporate bonds from ₹10 lakh to ₹1 lakh to encourage participation of retail investors.
- The secondary market for asset backed securitisation products does not exist as these instruments cannot trade in the stock exchanges. Legal and regulatory issues need to be sorted out to facilitate growth of securitisation. The existence of secondary market for securitisation would help transfer risks by repackaging loans and selling them as bonds such as mortgage backed (MBS) and asset backed securities (ABS).
- There is a need to create specialised long term debt funds to cater to the needs of infrastructure development. This will enable larger volumes of debt financing to flow to infrastructure projects and help distribute risks across diverse projects.

Recent committees such as the Report of the High Powered Expert Committee on Making Mumbai an International Financial Centre in 2007 (Percy Mistry Committee) and A Hundred Small Steps [Report of the Committee on Financial Sector Reforms (CFSR)] in 2009 (Raghuram Rajan Committee) point to other barriers to the development of bond market and have made further recommendations. Both the committees pointed to the lack of activity in the corporate bond market and recommended number of "missing markets" such as the market for exchange traded interest rate and foreign exchange derivatives contracts to be created. They also recommend consolidation of the number of regulators and trading under SEBI. Recent developments in response to these recommendations include the inclusion of interest rate futures, currency futures and options trading in the exchanges. Listed below are some of the major recommendations of the Raghuram Rajan Committee related to the corporate bond market.

- Reforms in the corporate bond market cannot be considered in isolation and should be a part of the overall financial sector reforms and should be consistent across a number of policy areas. It is important to create a number of missing markets such as exchange traded interest rate and foreign exchange derivatives contracts to revive the corporate bond market.
- Allow domestic financial institutions greater flexibility to invest in corporate bonds.
- Reduce transaction costs in issuing and trading corporate bonds.
- Bring all regulation of trading under the Securities and Exchange Board of India (SEBI). Agencies, however, should continue to cooperate in areas where multiple regulators share concerns about a market. Supervision of all deposit taking institutions must come under RBI.
- Reduce the artificial preference for banks loans by subjecting loans and bonds to similar mark-to-market requirements.
- Set up a working group on financial sector reforms with the Finance Minister as the chairman to monitor progress on financial sector reforms (to include the implementation of the recommendation of various committees) and to initiate needed actions.

A recent working paper published by Wells and Schou-Zibell (2008) echoed the need for similar set of reforms in the corporate bond market in India. They list the following factors which limits the development of the corporate bond market in India.

- Private placements dominate the corporate bond market. This is due to excessive disclosure requirements for public issues and absence of provision for shelf registration.

- Private placement issues are small often to the same lender and mostly serve as syndicated loans as the largest investors are banks.
- Corporate demand for genuine bond finance is limited and companies have preferred bank loans to bond financing.
- The distribution of corporate bonds issued indicates that the number of sub-investment grade issues is minimal and is dominated by investment grade issues.
- Wholesale sale trading is over-the counter and Delivery payment clearing is not available for OTC. There is a lack of settlement infrastructure.

3.3 Progress in Implementing Recommendations

This section traces the progress that has been made till date on the implementation of the recommendations of the various committees. Table 9 summarises the major reforms taken by SEBI, RBI and the GoI with respect to the corporate bond market.

3.3.1 Clarifying the Roles of Different Agencies

The Government of India in January 2007 clarified the regulatory jurisdiction of different agencies in order to provide for the smooth development of the corporate bond market by avoiding conflicts arising from the involvement of multiple organisations in their regulations. Accordingly, it was decided that SEBI would be responsible for primary market (public issues as well as private placement by listed companies) as well as secondary market (OTC and Exchange traded) for corporate debt while RBI will be responsible for the market for corporate repos and reverse repos. However, if repos or reverse repos are traded on exchanges, trading and settlement procedures would be determined by SEBI.

3.3.2 Reduction in Cost and Length of Issuance Process

In order to simplify the requirements for debt securities, SEBI put in place the simplified listing for debt securities in May 2009. According to the new listing requirements, issuers with listed equity, who are already subject to detailed disclosure requirement have to make now only minimal disclosures. In July 2009, SEBI issued a circular to all mutual funds, AMFI, stock exchanges and FIMMDA for making it mandatory to report inter-scheme transfers of corporate bonds by mutual funds on either of the reporting platforms of BSE, NSE or FIMMDA.

Union Budget 2008-09 had announced exemption of Tax Deduction at Source (TDS) for corporate bond instruments issued in demat form and listed on recognised stock exchanges in order to implement the recommendations of the Patil Committee on corporate bond market that TDS rules for corporate bonds should be similar to the ones applicable to Government Securities.

3.3.3 Improving Transparency in Secondary Market Trades

One of the important recommendations of the Patil Committee was that the trades have to be reported to the reporting systems in order to make the system transparent. In response to this recommendation, SEBI mandated that all regulated entities report trades on the reporting platform of exchanges. Currently, the secondary market trades in corporate bonds are being reported on the FIMMDA platform. Further, in order to create a centralised database for corporate bonds, a system to capture secondary market trades was set up by the exchanges and the new issuance data is now being captured by the National Stock Exchange (NSE) and the Bombay Stock Exchange (BSE). In order to ensure that clearing and settlement of trades in the corporate bond market follow the IOSCO standards and the global best practices by way of well-established clearing and settlement procedures through recognised clearing and settlement agencies, facilities of BSE/NSE shall be used for settlement of transactions executed on the exchange platforms and no separate infrastructure is being set up for trading. Transactions on the OTC would be settled by the respective parties till all transactions compulsorily shift to the anonymous order matching system on the trading platforms of exchanges.

3.3.4 Encouraging Participation of Retail Investors

In order to encourage participation of retail investors, SEBI reduced trade lot size for all classes of investors from ₹10 lakh to ₹1 lakh. With the aim of developing a transparent and efficient secondary market for corporate bonds, SEBI issued a circular on April 13, 2007 providing for a policy framework for trading, clearing and settlement for corporate bonds including anonymous trading. The limits as well as foreign investor base for Government and corporate bonds have been gradually enlarged. The limit for investments in Government securities and corporate bonds by FIIs, Qualified Foreign Investors (QFIs) and long term investors [Sovereign Wealth Funds (SWFs), multilateral agencies, Pension/Insurance/Endowment Funds, Foreign Central Banks] registered with SEBI has been enhanced to $30 billion and $51 billion, respectively effective June 12, 2013.

3.3.5 Clearing and Settlement of Trades

SEBI had vide its circular dated October 16, 2009 informed the stock exchanges to undertake the clearing and settlement activity of trades in corporate bonds through the clearing corporations. SEBI had earlier authorised BSE, NSE and FIMMDA to set up and maintain reporting platforms to capture information related to trading in corporate bonds. Subsequently, SEBI authorised BSE and NSE to set up and maintain trading platforms for corporate bonds. It had been decided that all trades in corporate bonds between specified entities, namely, mutual funds, foreign institutional investors/ sub-accounts, venture capital funds, foreign venture capital investors, portfolio managers, and RBI regulated entities as specified by RBI would be cleared and settled through the National Securities Clearing Corporation Limited (NSCCL) or the Indian Clearing Corporation Limited (ICCL) from December 1, 2009. This would be applicable to all corporate bonds traded over the counter (OTC) or on the debt segment of stock exchanges.

3.3.6 Introduction of New Debt Instruments

New debt instruments have been created by both SEBI and RBI to facilitate the development of the secondary market in corporate bond. We outline some of the important developments in this section.

3.3.6.1 Introduction of Corporate Repos

While SEBI was responsible for the development of the primary and secondary markets for corporate bonds, the responsibility for creating repurchase agreements (repos) and reverse repurchase agreements for corporate bonds rested with RBI. Having an efficient repo market is important for supporting secondary market activity and is a key element in a liquid bond market. A deep and liquid repo market provides market players with a means of financing positions, and enables them to take long/short positions such as buying one bond and selling another to take advantage of yield curve arbitrage opportunities. In addition, it also facilitates portfolio management. In markets where foreign players participate, the ability to execute repos is important, especially if they do not have access to the domestic deposit base. RBI placed on its website, on September 17, 2009, the draft guidelines on repo in corporate bonds for comments and feedback. The draft guidelines were also deliberated by the Technical Advisory Committee on Money, Foreign Exchange and Government Securities Markets at its meeting held on September 23, 2009. The Reserve Bank issued guidelines on January 08, 2010 under section 45W of the RBI Act, 1934 to introduce repo in corporate bonds. Taking into consideration the experience gained, the Reserve Bank has permitted repo in corporate debt on commercial papers, certificates

of deposits and non-convertible debentures of less than one year of original maturity with effect from January 7, 2013. The minimum haircut applicable on the market value of the corporate debt securities has been revised by the Reserve Bank in the range of 7.5 per cent to 10 per cent for AAA to AA rated corporate bond.

3.3.6.2 Credit Default Swaps (CDS)

RBI has recently decided to implement the guidelines relating to introduction of CDS effective December 1, 2011. All CDS trades will be required to be reported to a centralised trade reporting platform and in due course they will be brought on a central clearing platform. The launch of CDS could help in the development of corporate bond market, as it provides a hedging opportunity for both residents as well as FIIs. The GoI gradually increased the FIIs limit in the corporate bond market to $51 Billion. However, the corporate bond limit has not been utilised fully. With the launch of the CDS, it is expected to provide the FII with much needed hedging opportunities and would help increase FII in the corporate bond market in India. Effective January 7, 2013 the Reserve Bank has permitted CDS on unlisted but rated corporate bonds even for issues other than infrastructure companies. Further, CDS have been permitted on securities with original maturity up to one year like commercial papers, certificates of deposits and non-convertible debentures with original maturity less than one year.

3.3.6.3 Bond Index

Though equity indices such as Nifty 50 and the BSE Sensex index have existed for a long time and serve as popular benchmark for equities, designing debt indices has posed challenges in India as the breadth and depth of the debt market is shallow. However, market participants need a debt index to compare their performance as well as the performance of different asset classes. A widely tracked benchmark in this context is the ICICI securities (ISEC) bond index (I-Bex) which measures performance of the bond market by tracking returns on Government securities. The index has two variants namely a principal return index (PRI) and Total Return Index (TRI). There are also other indices like the NSE's G-Sec Index and the NSE's T-Bills Index.

Despite these reforms, the corporate bond market in India has not developed as expected. What are, therefore, the problems with the corporate bond market in India? In the next chapter, we analyse, based on available data, how the reform process has helped in the development of the corporate bond market in India and what are the problems that still persist.

Chapter 4: Effect of Implementation of Reforms on the Corporate Bond Market

In this chapter, we examine available data to evaluate developments that have taken place in the corporate bond market in India. In particular, we look at areas where the reform processes have succeeded and areas where further strengthening of policy are needed. We start with trends in the primary market and then go on to examine secondary market trends. We also look at how corporate bond yields and spreads have changed over time. We calculate yield spreads based on the spread between AAA corporate bonds and Government bond yields and examine trends in sources of funds for companies based on company financial data. Finally, we discuss where problems persist and their plausible solutions.

4.1 Primary Market

Table 4 and Graph 1 show the resource mobilisation from the primary debt market and Government bond market. Resources raised from the corporate bond market have tended to increase steadily from 2000-2001 to 2010-2011. Resources mobilized from the bond market rose sharply by 38 per cent to ₹81,846 crore, during 2005-2006 compared with the previous year. Ever since 2005-2006, resource mobilised from the primary debt markets has shown a steady increase and stood at ₹2,01,676 crore in 2010-2011. Though resource mobilised from the bond market has shown a steady increase, it continues to be dominated by private placement rather than public issues. Private placement accounted for 95 per cent of the total resources mobilised from the debt markets in 2010-2011.

Table 3 shows the resources mobilised through private placement in the financial and non-financial sector based on data compiled from merchant bankers and financial institutions by the RBI. The financial sector has accounted on an average for 60 per cent of all private placements in debt from 2000-2001 to 2008-2009 and non-financial sector has accounted on average for the remaining 40 per cent. Private placement in debt grew from ₹67,836.4 crore in 2000-2001 to ₹2,38,396.4 crore in 2010-2011 or about 250 per cent. Tables 3 and 4 indicate that the debt market continues to be dominated by private placement and by the financial sector.

Table 5 looks at the resources mobilised from public issues in the equity and debt markets from 2000-2001. While in 2000-2001 resources raised from the public issue of equity and debt markets were 52.79 per cent and 47.21 per cent, respectively, by 2007-2008 almost all of the public issues were in the equity market.

Tables 4 and 5 show that there was a lack of retail investors in the debt markets as shown by very few public issues and the fact that the market was

dominated by private placement. Therefore, to deepen the bond market in India, policy makers could look towards encouraging the participation of retail investors in the market.

Economic conditions, such as low interest rate and the financial crisis of 2008, may have also played a part in making the bond market more attractive compared to the stock market. Due to the recent economic conditions, companies have found it more attractive to raise money through bonds at a lower cost than through the equity market. Whatever the reason for the growth of primary market trades, it is heartening to note that the true goal of the reform process, namely that of creating a well-functioning corporate bond market to provide an efficient alternative to equity market and bank financing, seems to have been achieved to some extent.

4.2 Secondary Market

To improve the transparency in the secondary corporate bond market, SEBI has been publishing secondary market trades under three platforms, namely BSE, NSE and FIMMDA since 2007. From Table 6 and Graph 3, we can see that trading activity in the secondary market has been increasing over time. Overall volumes in the secondary market for bonds have been rising steadily from 2007, though the market is still illiquid and dominated by private placement. For fiscal year 2007-2008, the value of total bonds traded was ₹95,889 crore which increased by 55 per cent to ₹1,48,166 crore for the fiscal year 2008-2009 and by 171 per cent to ₹4,01,198 crore for the fiscal year 2009-2010. In the fiscal year 2010-2011, total bonds traded hit another high of ₹6,05,274.24 crore. In 2011-2012, the value of total bonds traded lowered slightly to ₹5,93,783 crore. Graph 3 also shows that number of trades has more than doubled in four years from 19,079 in 2007-2008 to 51,533 in 2011-12.

The rapid growth in the value of total bonds traded in the bond market can be explained in part by the reforms put in place by the RBI, SEBI and the GoI to improve transparency in the corporate bond market.

4.3 Corporate – Government Bonds Yield Spreads

The average yield spread between corporate bonds and Government bonds is shown in Table 7. The yield spreads have increased from the period 2003-2004 to 2010-2011 across different maturities.[2]

Thus, for the 1 year maturity, yield spread was at 0.66 in 2003-2004 but increased to 1.49 in 2010-2011. Further, yield spread tends to widen during periods of economic uncertainty as corporate securities tend to become more risky and investor

[2]Yield spreads have increased in 2010-2011 compared to 2003-2004, however, for years such as 2004-05 and 2009-2010 (across different years), the yield spreads have actually dropped.

demand a premium to hold them over Government security of similar maturity. Table 7 indicates that the recent financial crisis led to widening of the yield spread for the period 2007-2008 to 2008-2009 for securities across all maturities.

4.4 Source of Funds for Companies

Based on the Reserve Bank of India Company Finances Studies, Table 15.1 showed the average sources of funds for 5-year periods from 1981 to 2010 and for 2010-11 and 2011-12 for non-Government non-financial public limited companies. Data indicate that companies had tended to finance more through external sources than through internal sources. Thus, for the 5-year period 2006-2010, 60.7 per cent of funds came from external sources and only 39.3 per cent came from internal sources. The trend remained similar in subsequent two years viz. 2010-11 and 2011-12. Graph 4 shows companies' sources of funds year-wise for the period 1990-91 to 2011-12 . Graph 4 confirms that companies had tended to finance their investments more through external sources (such as shares and borrowings) than through internal sources (paid up capital, reserves and surplus).

Table 15.2 shows the average percentage breakdown for borrowings for 5-year period from 1981 to 2010 and for 2010-11 and 2011-12. Bank loans seemed to dominate the external borrowings for these companies. For the 5-year period 2006-2010, 67.4 per cent of the total borrowings were financed through bank loans and only 7.0 per cent was financed through debentures. Share of financing by borrowings, through banks declined sharply in 2011-12 while that of debentures remained above the 2006-10 average level in both 2010-11 and 2011-12. Graph 5 looks at the breakdown of external sources of financing via borrowing through debentures, loans and advances from banks and other financial institutions year-wise for the period 1990-91 to 2011-12. Once again we see that bank loans were the largest contributor to external borrowings. It is however encouraging to note that companies started looking towards debentures to raise money from 2006-10 onwards providing some evidence that the effects of the financial reforms put in place to improve the corporate bond are yielding positive results.

Our preliminary analysis further reveals that companies in India tend not to follow the pecking order theory and have instead tended to depend more on external sources and bank loans rather than on internal sources. We, therefore, feel that structural and regulatory constraints have forced companies to prefer bank loans to other sources of financing their investment. In the next section, we briefly discuss the efficiency of the bank lending rates.

4.5 Efficiency of Bank Lending Rates

In a recent RBI working paper series, Mohanty *et al*. (2012) argued that Benchmark Prime Lending rate (BPLR) introduced by RBI in 2003 to serve as a benchmark rate for banks and to truly reflect their actual cost of lending has not functioned effectively in providing transparency about bank lending rates. They point out that "competition forced the pricing of a significant proportion of loans far out of alignment with BPLRs and in a non-transparent manner". Further, there was a widespread public perception that the BPLR system had led to cross-subsidisation in terms of underpricing of credit for corporates and overpricing of loans to agriculture and small and medium enterprises. They computed a Weighted Average Nominal Bank Lending Rate based on granular data from the Basic Statistical Returns (BSR). The authors noticed that the nominal WALR for the banking industry as a whole has shown a gradual decline. It has come down from a range of 16-17 per cent in most part of the 1990s to about 10.5 per cent by March 2010 (Table 16 & 17). The declining trend is clearly visible in the 2000s and has been broad-based across all sectors.

Despite these bright spots discussed above, the Indian corporate bond market has developed slowly. What could be some of the reasons for this slow growth? Mitra (2009) points to demand, supply and market structure related issues as to why the Indian corporate bond market is stuck in what he calls the Nelson's low level equilibrium trap.

On the demand side, Mitra (2009) points to regulatory restrictions and low retail participation. Restrictions imposed on Pension Funds, Employee Provident Funds and Public Provident Funds have prevented them in investing in corporate bonds. Further, despite the high savings rate in India, investors have stayed away from the corporate bond market due to illiquid secondary markets in corporate bonds as well as relatively high rates offered on substitute products like small savings schemes.

On the supply side, Mitra (2009) points to the fact that most corporate debt in India is raised through private placement rather through public issues. According to the author, this has prevented the emergence of a liquid secondary market and has led to fragmentation in the market due to multiple small issues via private placement. Another crucial supply side deterrent for the corporate bond market is the absence of sub-investment grade securities Mitra (2009). This is due to the fact that corporate bonds have to be rated before they can be issued and regulatory restrictions prevent insurance and pension funds from investing in sub investment grade securities. Lack of supply of innovative debt instruments such as step-up bonds, index bonds and dual currency bond and missing markets such as bond derivative markets are other supply side factors which have prevented the development of a robust corporate bond market in India.

Finally, Mitra (2009) lists market structure and tax related issues which have prevented corporate bond market development in India. These range from the long and expensive issuance process and stamp duties to absence of a liquid yield curve in the Government securities market, which is due to the concentration of liquidity in a few issues rather than the full length of the yield curve. Mitra (2009) makes the following recommendations to improve the corporate bond market.

- Creation of market makers in corporate bond market.
- Streamlining clearing and settlement mechanism.
- Streamlining issuance process.
- Activating interest rate derivatives.
- Relaxing norms on short selling of Government bonds.[3]
- Active consolidation of existing stocks in the Government securities market to create floating stocks in one or two issues.
- Allowing insurance and pension funds to play a bigger role as investors in the corporate bond market.

In the next chapter, we use regression analysis to test how various factors such as development stage of the economy, openness, size of the banking system, size of the Government bond market, development of the stock market and corruption have impacted the development of the corporate bond market in India.

[3]There has been a recent policy announcement relaxing norms on short sale by banks and PDs.

Chapter 5: Empirical Analysis of the Indian Corporate Bond Market

In this chapter, we test several hypothesis regarding factors which have affected the development of corporate bond market in India. The regression analysis of annual data for the period 1990 to 2008 was chosen to reflect the fact that most of the capital market reforms in India were put in place in the early part of 1990s; and we wanted to examine the impact of these factors on the development of the corporate bond market in India.

5.1 Regression Analysis

In this section, we test the importance of several factors influencing the corporate bond market. The dependent variable in this regression analysis is outstanding domestic bonds issued by corporate issuer. All equations are estimated in first difference with corrections for autocorrelation and heteroscedasticity. Our preliminary regressions exploring individual importance of different variables and our final regression considering all the variables are reported in Table 13.

5.1.1 Development Stage of the Economy

In general, development of corporate bond market in a country would be positively correlated with the overall development of the economy. This is because development brings less volatile investment environment, less Government involvement in commercial activity and strong creditor rights, transparency and good corporate governance. We use GDP per capita to capture the overall development of the economy.

5.1.2 Natural Openness

Rajan and Zingales (2001) point out that open economies do less to suppress securities market. This is because entrenched interests will be less able to adopt policies that suppress competing sources of supply when the economy is exposed to international competition. We use the total exports as a measure of openness and the expected sign is positive.

5.1.3 Size of the Banking System

Banks and bond market compete in providing external finance and thus a well-developed banking system may be a deterrent to the development of the corporate bond market. Another reason for the negative impact of domestic credit provided by

the banking system in the corporate bond market in countries such as India may be because banks are required to finance the Government budget deficit by holding Government securities. On the positive side, banks serve as dealers and market makers, whose presence is needed for the development of a liquid and well-functioning bond market.

The expected impact of banking sector development on the corporate bond market is, therefore, expected to be positive if they are complementary and negative if they compete in providing funds and are required to finance Government deficit by holding Government securities.

5.1.4 Size of the Government Bond Market

Park (2008) and Fabella and Madhur (2003) believe that for the corporate bond market to develop in a country, it is important to first develop the sovereign bond market. Their argument is that sovereign bond market provides benchmark yield curve for valuing corporate bonds and, therefore, serve as a catalyst to develop a country's corporate bond market. However, developments in Government securities market may also prevent price discovery, crowding out the trading of all or a fraction of the existing securities (see Subrahmanyam (1991) and Gorton and Pennacchi (1993)) in corporate bond market. This is a real possibility in countries like India where Government securities typically tend to have a higher credit rating than their counterparts. As a result, Government securities may be more attractive to foreign investors as a substitute to corporate bonds, reducing the liquidity in the corporate bond market developments. We use the total outstanding Government bonds to examine the impact on the corporate bond market. If the expected sign is positive, then we can conclude that Government bond market has a positive impact on the corporate bond market. If the impact is negative, then it is possible that the development of the Government bond market is crowding out the issue of corporate bonds in India.

5.1.5 Development of the Stock Market

India has a well-developed equity market but its bond market is underdeveloped and dominated by the Government bonds. As in the case of the impact of Government market on the development of corporate bond market, the equity market can either complement or compete with the bond market development. By providing alternative sources of external finance to companies, the bond market can complement the development of the equity market. It is also possible that companies may favor to finance their investments from the equity market rather than bond market due to lesser regulations and ease of raising funds. We use the stock market capitalisation to capture the development of the stock market. The impact of

the stock market is expected to be positive if the equity market complements the corporate bond market as a source of financing for the companies. The impact would be negative if the stock market competes with the corporate bond market.

5.1.6 Corruption Index

A country where corruption is high undermines law enforcement and corporate bond market in these countries then becomes less attractive to investors. The level of corruption and bond market developments in a country, therefore, is expected to be negatively correlated. We use the time series data on corruption perception index published by Transparency International to capture corruption. According to this index, lesser the corruption, higher the index score and the expected sign is, therefore, positive between bond market development and the corruption index.

5.2 Regression Analysis of Sources of Funds

In this section, we analyse the results of the time series regression analysis of trends in the sources of funds data for non-Government non-financial public limited companies for the period 1990-1991 to 2009-2010. The results of the regression were corrected for autocorrelation and are reported in Table 14. The *p* values are reported in brackets. The explanatory variables in our regression were GDP at constant prices, a financial dummy variable (FINDUM) assuming a value of 1 for years we had a significant financial policy change and 0 otherwise and a time trend. The dependent variables included debentures (bonds), bank loans, external equity and debt to equity ratio.

5.2.1 GDP at Constant Prices

All the dependent variables in our analysis, namely debentures (bonds), bank loans, external equity and debt-equity ratio are positively related to output and the coefficient is significant at the 1 per cent level (as indicated by the values) for all the variables except debt to equity ratio. This shows that as output increased in India the non-Government non-financial companies have tended to increase funds raised through bonds, bank loans and equity.

5.2.2 Financial Dummy Variable

The financial dummy variable (FINDUM) was included to test the effect of financial reforms on the growth in the corporate bond market relative to the equity market. Equation 5 (column 5, Table 14) reports the results of the regression of the debt to equity ratio on the financial dummy variable. Though the sign is positive, it is not significant which may reflect the fact that while reforms have had an impact on the growth of the corporate bond market, it may be too early to measure how significant these were for the overall development of corporate bond market in India.

5.2.3 Time Trend

Time trend was used as an explanatory variable to see how debentures, bank loans and debt to equity ratio have changed over time. Equations 1, 2 and 5 (Columns 1, 2 and 5 of Table 14) reveal that debentures, bank loans and debt to equity ratios have declined over the sample period.

5.3 Results and Analysis

The results of the regression analysis on domestic securities issued by corporate issuers are presented in Table 13. The dependent variable in the regression is the outstanding domestic debt securities issued by corporate sector. From Model 1 (column 1, Table 13) one can see that growth in GDP per capita, our proxy for development stage of the economy and exports our proxy for openness are not significant and in fact, have the negative sign. Government bond market development (total outstanding Government bonds) is, however, positive and significant at 1 per cent level.

Model 2 (column 2, Table 13) looks at the effect of the Government bond market development (total outstanding Government bonds), banking sector development (domestic credit provided by the banking sector as a percentage of GDP) and stock market development (total value of stocks traded) on the corporate bond market. The Government bond market seems to have a positive effect on the corporate bond market. The coefficient is positive and significant at 1 per cent level. This shows that in India, like in the case of Korea, Government bond market development has helped the corporate bond development and is not crowding out the corporate bond market. On the contrary, we see that domestic credit provided by the banking sector has a negative impact on the development of the corporate bond market. The coefficient is negative and significant at 1 per cent level. This supports the hypothesis that in India, companies in general prefer to finance through bank loans and are reluctant to finance through the corporate bond market. Further, banks

in India are required to hold Government securities and thereby implicitly finance the Government budget deficit. Model 3 (column 3, Table 13) shows that Government bond market and domestic credit provided by the banking sector have had the major impact on the corporate bond market.

Finally, Model 4 (column 4, Table 13) includes a corruption perception index obtained from Transparency International. Model 4 shows that though the corruption index has the expected positive sign (a higher value for the index implies a lower level of corruption) it is not significant. Model 4 once again indicates that the crucial factors influencing the development of the corporate bond market in India are the development of the Government bond market and the domestic credit provided by the banking sector.

Based on our regression analysis, we conclude that the growth of the Government bond market has been a major positive influence on the development of the corporate bond market in India. This conclusion points towards the factors which have helped to develop corporate bond market in other countries, for instance South Korea. On the other hand, the financing of the Government deficit by the banking sector in India may have inhibited the corporate bond market development. Other factors such as the size of the economy, openness, size of the stock market and institutional factors like corruption have had little or no impact on the development of the corporate bond market.

Chapter 6: Summary and Policy Prescriptions

6.1 Introduction

A well-developed domestic capital market consists of equity market and bond market. A robust bond market with a significant role for the corporate bond market segment is considered important for an efficient capital market. A vibrant corporate bond market ensures that funds flow towards productive investments and market forces exert competitive pressure on lending to the private sector. While India boasts of a world-class equity market, its corporate bond market remains less developed and is dominated by the Government bond market. One of the principal benefits of an efficient corporate bond market is to provide an effective alternative source of financing to bank financing.

Mitra (2009) has argued that the corporate bond market in India is stuck in the 'Nelson low level equilibrium trap' due to demand, supply and market structure related issues. On the demand side, Mitra (2009) lists regulatory restrictions on institutional investor and low retail participation. Supply side issues listed by Mitra (2009) include lack of public issues, absence of investment grade securities, lack of supply of innovative debt instruments and missing markets. Finally, market structure and tax related issues such as the long and expensive issuance process, absence of liquid yield curve and stamp duties according to Mitra (2009) have impeded the development of the corporate bond market in India.

The objective of this study was two-fold; viz., first, to trace the development of the corporate bond market in India and to conduct analytical work based on the available macroeconomic data and secondly, to make policy recommendations based on the experience of other emerging markets in developing corporate bond market.

The GoI, RBI and SEBI have initiated several reforms in the Government and corporate bond market to address the factors impeding the corporate bond market in India. Several committees such as the High Powered Expert Committee on the corporate bond market (Patil Committee), Committee for Financial Sector Reforms etc. have made recommendations to improve the corporate bond market.

The recent reforms undertaken by the GoI, RBI and SEBI have focused on addressing the recommendations of the various committees on corporate bond market. Substantial progress has been made in addressing the problems which have hindered the development of the corporate bond market in India. These reforms include the following:

- Clarifying the role of different agencies involved in legislating the corporate bond market such as RBI, SEBI and GoI to avoid conflicts and provide for the smooth development of the corporate bond market.
- Reduction in the cost and length of the issuance process by simplifying listing requirements for debt securities.
- Improving the transparency in secondary market trades.
- Encouraging the participation of retail investors by reducing the trading lot size of investors from ₹10 lakh to ₹1 lakh.
- Improving the clearing and settlement of trades through clearing corporations.
- Introduction of new debt instruments such as corporate repos, credit default swaps, floating rate bonds and creating a bond index.
- Introduction of credit enhancements for RMBS by the NHB.
- Reduction in the lock-in period to 1 year for investments up to $5 billion for FII in long-term bond investment in the infrastructure sector.

Tracing the development of corporate bond market in countries such as Korea, Japan, Singapore, Malaysia and Brazil reveals the following important lessons for India.

- Government policy reform is crucial in creating the needed infrastructure to enhance the overall liquidity and transparency of the primary and secondary bond market. The Korean experience shows the importance of the development of an efficient Government bond market as a necessary first step towards developing a strong local bond market.
- Korean experiment and consequent failure with the Bond Guarantee scheme has important implications for the development of the Indian corporate bond market. It has been suggested that the Government of India should let banks guarantee corporate bonds. Though bank guarantees may initially help build investor confidence and draw investors to the market, in the long run it would distort the risk return trade-off and would hinder the development of bond market as an alternative source of financing. Further, a financial crisis can trigger a collapse of the guarantee system as in the case of the South Korea.
- The Japanese experience shows that healthy interaction between the Government and corporate bond market is important for the development of the corporate bond market and such development should be complemented by the development of the banking system.

- Like the issue of *Sukuk* bonds in Malaysia, India may consider innovative ways to increase retail participation and also emulate the experience of Singapore in creating a market for foreign investment in local currency bonds by easing regulations and giving tax incentives.
- The important role played by the mutual fund industry in Brazil and Pension funds in Chile in mobilising savings and channeling funds towards the capital market are insights India may take in developing its corporate bond market.

6.2 Policy Implications and Need for Future Reforms

Our regression analysis of macroeconomic variables affecting the corporate bond market indicates that the growth of the Government bond market has been a major positive influence on the development of the corporate bond market in India. On the other hand, the banking sector lending, in part driven by its preference to hold Government securities and thereby implicitly financing Government deficit may have been a factor inhibiting corporate bond market from developing further. Other factors such as the size of the economy, openness, size of the stock market and institutional factors like corruption have had little or no impact on the development of the corporate bond market.

Preliminary analysis of the data available on sources of funds from company finances data base for non-Government non-financial public limited companies shows that companies have tended to finance their investments through external rather than internal sources. An analysis of borrowing sources reveals that Indian companies have tended to rely on bank loans rather than bonds to finance their investments perhaps due to the regulations in place which favour financing through bank loans as opposed to corporate bond financing.

Significant reforms have taken place in the Indian corporate bond market and the agencies responsible for implementation of reforms such as RBI, SEBI and GoI have followed through the recommendations of various committees. The reforms in the area of encouraging retail participation, making secondary market more transparent, creating smooth clearing and trading mechanism and reducing the cost and length of issuance process have been significant. Despite these measures, much work needs to be done before the corporate bond market in India becomes as developed as the equity markets and can emerge from the “low level equilibrium trap”. We suggest below the following areas for improvement.

6.2.1 Encouraging Retail Participation

As previously stated, various measures such as reducing the trading lot size of investors from ₹10 lakh to ₹1 lakh and encouraging foreign investment by increasing

the limits for foreign holdings in Government and corporate bonds gradually to $30 billion for Government bonds and to $51 billion for corporate bonds have been useful policy initiatives. The retail investor market in corporate bonds, however, is still shallow despite the reforms put in place by SEBI to reduce the size of trading lots and the recent increase in foreign investor limits for the corporate bond market. More, however, needs to be done to make corporate bonds attractive relative to other small savings schemes. One way to broaden the investor base is through advancement of the fund management industry through the creation of mutual funds. This can help domestic financial industries through technology and globalisation of market activities. Investor base can be further strengthened by increasing foreign investment in local currency bonds. In this regard, increasing the cap on Foreign Institutional Investor (FII) limits alone is not sufficient to attract foreign Investment in local currency bonds. India like other developing countries suffer from “Original sin” phenomenon as foreign investors are reluctant to invest in local currency bonds of foreign countries due to the uncertainty and risk. India should emulate the success of Singapore in increasing foreign investment in local currency bonds by easing regulations relating to disclosure requirements and give tax incentives to encourage foreign investments in local currency bonds.

6.2.2 Encouraging Foreign Investment Participation

The Government of India (GoI) gradually increased the cap on Foreign Institutional Investor (FII) limits for corporate bond to US $51 billion. On a review, the existing sub-limits of Corporate debt [(a) USD 1 billion for Qualified Foreign Investors (QFIs), (b) USD 25 billon for investment by FIIs and long term investors in non-infrastructure sector and (c) USD 25 billion for investment by FIIs/QFIs/long term investors in infrastructure sector have been merged effective April 1, 2013 for simplification and operational ease. Previously, the auction of debt limits were conducted, effective April 27, 2012, by the SEBI on 20th of every month based on availability of free limits at the end of previous month. With a view to impart flexibility, FIIs have been permitted to invest in corporate debt without purchasing the debt limits till the overall investment reaches 90 per cent after which auction mechanism would be initiated for allocation of the remaining limits. Further the facility of re-investment and restrictions on re-investment will not be applicable in respect of limits held/investment made by the FIIs in the corporate debt category till the limits are available on tap. The above policy measures and liberalisation of rules in the FIIs scheme are expected to encourage foreign investment in the corporate bond market.

6.2.3 Encouraging Institutional Participation

In developed countries, institutional investors like insurance companies and pension funds play a vital role in the corporate bond market. In fact, the growth of pension funds was a crucial factor in the development of bond market in Chile and other Latin American countries. In India, however, institutional investors prefer to finance through bank loans rather than through the corporate bond market as seen by our analysis of sources funds. This is because of regulatory restrictions in place which favor bank loans over corporate debt. For example, insurance companies are permitted to hold a maximum of 25 per cent of their portfolio in bonds rated less than AA and pension fund managers are regulated to invest about 10 per cent of the funds in corporate bonds that are investment grade. Another reason for corporations to prefer bank loans is due to the prevalence of the cash credit system in the banks in which the cash management of the corporations is actually done by the banks. Further, banks face Statutory Liquidity Requirements (SLR) which requires them to hold one quarter of their assets in unencumbered approved securities. Banks have, therefore, preferred to advance loans rather than invest in the bonds of the companies. Measures, therefore, should be initiated to ease these restrictions on institutional investors to provide for the growth of the corporate bond market in India. With a view to enlarge the investor base and market making, primary dealers have been allowed to invest in corporate bonds up to a sub-limit of 50 per cent of their net owned funds effective January 30, 2013.

6.2.4 Streamlining Issuance Process

Our analysis reveals that the corporate bond market continues to be dominated by private placement and there is very little public issues. Measures such as simplifying listing requirements for debt securities by SEBI and exemption of TDS for corporate debt instruments by the Government of India have been aimed at reducing the cost and length of the issuance process and encouraging public issue of debt securities. Significant work, however, needs to be done towards rationalising stamp duty structure across the country and to fix stamp duties based on tenor and issuance value to encourage public offerings of corporate debt.

6.2.5 Creation of New Debt Instruments

Measures have been undertaken recently to create new instruments such as the introduction of repos in corporate debt and credit default swaps. These instruments would prove helpful for primary dealers and banks to impart liquidity and manage their risk exposure.

Recently, European Governments and banks are increasingly turning to their citizens and customers by issuing patriotic bonds such as the “National Solidarity Bonds”. David Enrich and Sara Munoz (2011) article in the Wall Street Journal shows that borrowing a page from wartime finance, cash-strapped European Governments are issuing bonds to citizens at interest rates considerably lower than what the issuers would have to pay attract risk-averse institutional investors. (One suggestion for India is to issue similar National Solidarity Bonds called *Swadeshi* bonds.)

6.2.6 Credit Enhancements

The introduction of CDS by RBI and credit enhancements by the National Housing Bank (NHB) for Residential Mortgage Backed Securities (RMBS) by primary lending institutions viz. HFCs and banks is an encouraging development. Another way Indian corporate bond market could be improved is through the development of credit enhancements such as securitisations and partial guarantees through collateralised bond obligations (CBO) or collateralised loan obligations (CLO). This, however, requires independent credit analysis and credit ratings and better disclosure standards. Indian credit rating agencies have been evolving with sound credit assessment capability and good track records.

To conclude, the reform process towards developing the corporate bond market in India has been encouraging but the implementation of these reforms has proceeded at a slower pace. Measures such as improving the investor base by encouraging retail and institutional participation in the corporate bond market, introduction of innovative instruments, streamlining the issuance process, improving credit enhancement, creating an investment climate for foreign investment by easing regulation and giving incentives for foreign investment should help in moving the corporate bond market forward.

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Table 1: Value of Outstanding Corporate Bond (in USD Billions) and Value as a Percentage of GDP

Country	2005	2006	2007	2008	2009	2010
ASIA						
China	39.429 (1.7)	70.416 (2.6)	104.389 (3.0)	165.505 (4.1)	353.735 (7.1)	522.089 (8.9)
INDIA	**3.812** **(0.5)**	**5.315** **(0.6)**	**10.207** **(0.9)**	**7.854** **(0.6)**	**19.346** **(1.5)**	**24.995** **(1.6)**
Malaysia	27.086 (19.6)	32.500 (20.7)	52.113 (27.9)	55.684 (25.1)	54.929 (28.5)	64.334 (27.0)
Singapore	4.532 (3.6)	6.031 (4.1)	3.716 (2.1)	5.527 (2.9)	2.799 (1.5)	2.653 (1.2)
South Korea	225.202 (26.7)	230.896 (24.3)	230.964 (22.0)	216.105 (23.4)	309.538 (37.2)	380.619 (37.8)
LATIN AMERICA						
Brazil	4.777 (0.5)	5.695 (0.5)	7.848 (0.6)	6.746 (0.4)	9.799 (0.6)	10.743 (0.5)
Chile	13.756 (11.6)	15.063 (10.3)	16.685 (11.4)	16.429 (10.8)	27.559 (17.1)	29.709 (14.6)
MATURE MARKETS						
Australia	33.697 (4.6)	42.048 (5.4)	43.561 (4.6)	29.819 (2.8)	38.341 (3.9)	44.127 (3.6)
Japan	704.763 (15.5)	671.859 (15.4)	728.221 (16.6)	766.623 (15.7)	782.675 (15.6)	900.886 (16.5)
USA	2649.014 (21.0)	2748.770 (20.5)	2885.930 (20.5)	2917.350 (20.3)	2792.361 (19.8)	2896.345 (19.8)

Source: Bank for International Settlements (BIS) and International Monetary Fund (IMF).
Figures in parenthesis denote outstanding value as a percentage of GDP.

Table 2: Value of Outstanding Government Bond (in USD Billions) and Value as a Percentage of GDP

Country	2005	2006	2007	2008	2009	2010
ASIA						
China	615.875 (27.3)	785.635 (29.0)	1136.679 (32.5)	1416.536 (31.3)	1459.796 (29.3)	1622.815 (27.6)
INDIA	**268.033 (33.1)**	**304.856 (33.6)**	**416.872 (36.2)**	**387.633 (30.8)**	**530.506 (41.8)**	**608.252 (39.5)**
Malaysia	51.565 (37.4)	59.211 (37.7)	69.672 (37.3)	76.628 (34.5)	93.747 (48.6)	127.981 (53.8)
Singapore	46.869 (37.4)	55.947 (38.5)	68.068 (38.4)	72.679 (38.4)	88.143 (48.1)	102.757 (46.1)
South Korea	384.36 (45.5)	459.886 (48.3)	465.961 (44.4)	337.500 (36.2)	425.643 (51.1)	475.082 (47.2)
LATIN AMERICA						
Brazil	416.677 (47.0)	512.223 (46.8)	694.060 (50.4)	545.819 (33.0)	803.677 (50.2)	829.413 (39.7)
Chile	19.309 (16.3)	14.866 (10.1)	14.544 (8.9)	15.396 (9.0)	16.065 (10.0)	22.617 (11.1)
MATURE MARKETS						
Australia	88.758 (12.0)	96.946 (12.4)	116.235 (12.4)	109.300 (10.3)	230.487 (23.3)	339.948 (27.5)
Japan	6604.732 (145.1)	6747.766 (154.7)	7145.056 (163.2)	9113.163 (166.8)	9654.238 (191.8)	1,1632.306 (213.1)
USA	5916.241 (46.8)	6232.289 (46.5)	6599.613 (46.9)	7898.506 (55.0)	9471.796 (67.1)	1,1151.665 (76.1)

Source: Bank for International Settlements (BIS) and International Monetary Fund (IMF).
Figures in parenthesis denote outstanding value as a percentage of GDP.

Table 3.1: Resources Mobilisation in Private Placement – Amount (in ₹ crores)

Source / Years	2000-2001	2001-2002	2002-2003	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012
Financial	**39464**	**33377**	**29861**	**39012**	**46505**	**65628**	**100531**	**144476**	**126201**	**216731**	**170960**	**162177**
Private Sector	13263	16019	9454	12551	20974	26463	48414	88291	60586	142441	71977	38710
Public Sector	26201	17358	20407	26461	25531	39165	52117	56185	65615	74290	98983	123467
Non-Financial	**28372**	**31499**	**37087**	**24889**	**36900**	**30845**	**45335**	**68249**	**77856**	**126548**	**67436**	**55805**
Private Sector	9843	12601	15623	6209	14820	14727	33426	41386	35103	90852	49476	23201
Public Sector	18529	18898	21464	18680	22080	16118	11908	26863	42753	35696	17960	32604
Total	**67836**	**64876**	**66948**	**63901**	**83405**	**96473**	**145866**	**212725**	**204057**	**343279**	**238396**	**217982**

Source: Reserve Bank of India (RBI) based on data received from Merchant Bankers and Financial Institutions.

Table 3.2: Resources Mobilisation in Private Placement – Issues

Source / Years	2000-2001	2001-2002	2002-2003	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012
Financial	**320**	**530**	**484**	**476**	**379**	**512**	**759**	**1037**	**810**	**1781**	**1090**	**757**
Private Sector	208	363	327	344	255	375	632	905	687	1630	878	527
Public Sector	112	167	157	132	124	137	127	132	123	151	212	230
Non-Financial	**267**	**428**	**660**	**398**	**531**	**603**	**922**	**778**	**474**	**707**	**498**	**97**
Private Sector	171	309	550	296	462	571	892	711	383	640	460	61
Public Sector	96	119	110	102	69	32	30	67	91	67	38	36
Total	**587**	**958**	**1144**	**874**	**910**	**1115**	**1681**	**1815**	**1284**	**2488**	**1588**	**854**

Source: Reserve Bank of India (RBI) based on data received from Merchant Bankers and Financial Institutions.

Table 4: Distribution of Equity and Debt Issues from Market Mobilisation (in ₹ crores)

	Year	2000-2001	2001-2002	2002-2003	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011
Equity Issue (1)	1 – Total Equity Issue	**6108**	**7543**	**4070**	**23272**	**28256**	**27382**	**33508**	**88029**	**16220**	**57555.2**	**67608**
Debt Issues (2,3)	2 – Public Issues	4139	5341	4693	4324	4095	0	0	1000	1500	2500	9451
	3 – Private Placement	52433	46220	48424	48428	55184	81847	92355	115266	174327	189490	192225
	4 – Total Debt Issue	**56572**	**51561**	**53117**	**52752**	**59279**	**81847**	**92355**	**116266**	**175827**	**191990**	**201676**
Total	5 – Total Mobilisation (1+4)	**62680**	**59104**	**57187**	**76024**	**87535**	**109229**	**125863**	**204295**	**192047**	**249545**	**269284**
	Percentage of Private Placement of Debt /Total Debt (3/4)	93	90	91	92	93	100	100	99	99	99	95
	Percentage of Debt / Total Mobilisation (4/5)	90	87	93	69	68	75	73	57	92	77	75
	Percentage of Equity / Total Mobilisation (2/5)	10	13	7	31	32	25	27	43	8	23	25

Source: ISMR, NSE, reports from different years

Table 5: Share of Resources Mobilised through Debt and Equity (Public Issues)

(Per cent)

Year	Equity	Debt
2000-2001	37.46	62.54
2001-2002	16.85	83.15
2002-2003	18.13	81.87
2003-2004	80.47	19.53
2004-2005	83.96	16.04
2005-2006	100.00	0
2006-2007	100.00	0
2007-2008	98.12	1.88
2008-2009	58.14	41.86
2009-2010	94.92	5.08
2010-2011	83.73	16.27

Source: ISMR, NSE reports from different years

Table 6: Trading in Corporate Bonds

Fiscal Year	BSE		NSE		FIMMDA		Grand Total	
	No. of Trades	Amount (₹ crore)	No. of Trades	Amount (₹ crore)	No. of Trades	Amount (₹ crore)	No. of Trades	Amount (₹ crore)
2007 – 2008	11203	40957.56	3787	31453.14	4089	23479.01	19079	95889.71
2008 – 2009	8327	37320.47	4902	49505.39	9501	61534.84	22730	148360.7
2009 – 2010	7408	53323.50	12522	151920.00	18300	195954.55	38230	401198.04
2010 – 2011	4465	39581.09	8006	155951.23	31589	409741.92	44060	605274.24
2011 – 2012	6424	49842.00	11973	193435.00	33136	350506.00	51533	593783.00
2012 – 2013	8639	51622.00	21141	242105.11	36603	444904.15	66383	738632.00

Source: Securities Exchange Board of India (SEBI)

Table 7: Corporate Bond Yield Spreads

Year / Duration	AAA Yield				AAA Spreads			
	1 year	3 year	5 year	10 year	1 year	3 year	5 year	10 year
2003 – 2004	5.28	5.59	5.72	6.27	0.66	0.58	0.60	0.73
2004 – 2005	5.49	6.33	6.65	6.99	0.35	0.64	0.71	0.79
2005 – 2006	6.54	6.99	7.34	7.61	0.50	0.46	0.49	0.36
2006 – 2007	8.37	8.57	8.70	8.90	1.29	1.14	1.03	0.95
2007 – 2008	9.29	9.35	9.46	9.57	1.73	1.50	1.53	1.49
2008 – 2009	9.93	9.97	9.98	10.06	2.59	2.32	2.23	2.14
2009 – 2010	6.09	7.50	8.25	8.70	1.36	1.11	1.16	1.23
2010 – 2011	8.09	8.30	8.64	8.86	1.49	0.96	0.76	0.72
2011 – 2012	9.60	9.54	9.49	9.46	1.18	1.13	0.90	0.88
2012 – 2013*	9.55	9.43	9.38	9.34	1.29	1.19	0.94	0.77

Source: Bloomberg, Reuters; * up to end Aug 2012

Note: Figures are average from March through April of each year yield spread.

Table 8: Major Reforms Development in the Indian Government Bond Market

Year	Reforms	Objectives	Outcomes
June 1992	Introduction of Auction methods for issue of central Government Securities	To make yields on Government securities market determined	Price discovery has improved over a period of time.
August 1994	Agreement Between the reserve Bank and Government of India on limiting issue of ad hoc Treasury Bills.	To do away with automatic monetisation	Cash management of Government has improved
March 1995	Primary Dealer system Introduced	To strengthen the market intermediation and support primary issue	PD System has evolved as an important segment of Government securities Market
July 1995	Delivery versus Payment (DvP) system in Government Securities introduced	To reduce settlement risk	Transition from Funds and securities settlement on gross basis to net basis
February 2002	Clearing Corporation on India Limited (CCIL) established	To act as a clearing agency transactions in Government securities	Stability in market has improved greatly mitigating the settlement risk
October 2002	Trade data of NDS made available on Reserve Bank Website	To improve transparency	The measure is helping the small investors as well
January 2003	Retail trading of Government securities permitted on stock exchanges	To facilitate easier access and wider participation	Efforts are being made to improve the position
February 2003	Regulated constituents permitted participation in repo markets	To widen the market	Activity in the repo market has improved
June 2003	Interest rates futures introduced	To facilitate hedging of interest rate risk	These futures have not taken off
July 2004	Introduction of DvP III	To obtain netting efficiency and to enable rollover of repos	Running Successfully
April 2004	Introduction of RTGS	To provide real time, online, large value inter-bank payment and settlements	Running Successfully
August 2004	The Negotiated Dealing system-Order Matching (NDS-OM) ,an anonymous order matching system which allows straight-through processing (STP) was established	To provide NDS members with a more efficient trading platform	Over 60 per cent of the transactions in Government securities are done through NDS-OM
August 2006	Government Securities Act, 2006 passed by Parliament	To facilitate wider participation in Government securities market and create the enabling provisions for issue of separately Traded registered interest and principal securities (STRIPS)	

Source: Bond market in India (2008), Chakrabarti, R, Retrieved from http://ssrn.com/abstract=1149322

Table 9: Major Development in the Indian Corporate Bond Market

Year	Reforms	Objectives	Outcomes
December 2006	SEBI permits BSE to setup a reporting platform.	Capturing all trade information about corporate bonds to enable efficient price discovery and reliable clearing and settlement process.	SEBI has been publishing data on trades on the three platforms (BSE, NSE and FIMMDA) on its website from 2007.
January 2007	SEBI will be responsible for the primary market (Public issues and private placement by listed companies) and secondary market. RBI will be responsible for the repo/ reverse repo transactions in corporate debt.	Clarity on the agencies responsible for different segments of the corporate debt market.	SEBI has been implementing reforms in the public issues and private placement market. RBI recently introduced guidelines for corporate repos.
January 2007	Corporate Bonds will be traded using existing exchanges at NSE and BSE. There would be no separate trading platforms for different kinds of (retail vs. Institutional) investors.	Efficient use of existing infrastructure	Functioning well.
April 2007	SEBI allows stock exchanges to provide services for clearing and settlement of corporate bonds.	Develop a transparent and efficient secondary market for corporate bonds	Became operational (July 2007). Trading is captured and reported by SEBI on its website from August 2007.
April 2007	SEBI permits both BSE and NSE to have in place corporate bond trading platforms.	Capturing all trade information about corporate bonds to enable efficient price discovery and reliable clearing and settlement process	Progress has been slow as market continues to be dominated by private placements.
April 2007	SEBI reduces tradable lots in corporate bonds	Encourage participation of retail investors Provide access to better information about companies issuing debentures.	Expected to improve participation in the corporate bond market.
August 2007	SEBI makes it mandatory that companies issuing debentures should disseminate all information (default to pay interest, revision of ratings etc) about the debentures to the investors and general public.	Provide access to better information about companies issuing debentures.	Expected to improve participation in the corporate bond market.

Table 9: Major Development in the Indian Corporate Bond Market (Cont.)

Year	Reforms	Objectives	Outcomes
May 2008	Corporate Bonds and securitisation Advisory committee (CoBoSAC) set up to make recommendations to SEBI.	Advisement on developing market for corporate bonds and securitised debt instruments.	Functioning well. Four meetings have been conducted so far to discuss and advise on the bond market.
May 2009	Simplified listing agreement put in place by SEBI.	Reduction in time and cost of issuance process. (Especially for companies with listed equity who have compiled with the detailed disclosure requirements)	Expected to reduce the long and expensive issuance process for corporate debt.
August 2009	Mandatory to report inter-scheme transfers of corporate bonds by Mutual funds (on NSE, BSE and FIMMDA).	More detailed information dissemination of trading	Operational
October 2009	SEBI mandated the clearing and settlement of all trades through National Securities Clearing Corporation (NSCCL) or the Indian Clearing Corporation Limited (ICCL).	Clearing and settlement of trades in this market to follow the International Organisation of Security Commissions (IOSCO) standards and the global best practices by way of well-established clearing and settlement procedures through recognised clearing and settlement agencies.	Clearing and settlement commenced through both clearing agencies at BSE and NSE from December 2009.
Source: Securities Exchange Board of India (SEBI).			

Table 10: Major Development in the Korean Bond Market

Years	Developments	Objectives	Outcomes
1968	The enactment of the Capital Market Promotion Act The establishment of Korean Investment Corporation (KIC)	To promote equity and bond market. To enact open market measures to stabilise prices, analysing securities, financing securities on the basis of collateral, making payment guarantees of corporate debt securities.	Supported the growth of guaranteed bonds, and establishment of other bond guarantee institutions in the future.
1969	Ssangyong Cement issued the first corporate bond in Korea The enactment of the 1969Securities Investment Trust Business Act (SITBA)	Regulates the securities investment trust business. Controls contractual types of investment trusts, licensing of fund management companies, and its activities.	
1972	KIC authorised to engage in investment trust business, and selected as the sole guarantor of bonds. Presidential Decree “8/3 Emergency Action”	To revive economic activity by stimulating investment demand and to release interest burden on overextended firms.	Issuances of corporate debentures were halted and interest rates were cut. Previous loan agreements were modified
1974	KIC investment trust function was transferred out to the new established Korea Investment Trust Company, the first ITC in Korea	To encourage the growth of investment trust companies and contractual-type fund asset.	More ITC companies were established in the subsequent years and manages asset grew.
1976	The establishment of Korea Fidelity and Surety Company, later changed to Korea Guarantee Insurance Company		The company subsequently became a guarantor in the bond guarantee scheme in 1978
1977	Daehan ITC established		
1982	Kookmin ITC established		
1983	Development of bank trust accounts	To allow bank competitively enter the trust business	Trust account became popular as they were de facto guaranteed like deposit accounts but offered higher returns. They grew at annual rate of 29.7 per cent.

Table 10: Major Development in the Korean Bond Market (Cont.)

Years	Developments	Objectives	Outcomes
1984	Ministry of Finance announced plan to promote bond market.	Institutionalisation of the OTC market and improvements to asset management methods of investment trust.	
1986	The Ministry of Finance announced the Plan to Raise Capital through the capital markets	The promotion of rights offering, corporate disclosure, and issuance of corporate debentures.	
1990s	Emergence of guaranteed funds and surety companies in the bond guarantee scheme.	To enter into the lucrative bond guarantee business, seen as low-risk, high-return opportunity	Grew and take up to 56 per cent of the bond guarantee business in 1997 while banks declined to 23 per cent.
1993	The Ministry of Finance announced a plan to advance the bond market		Development of real-time disclosure of yields and adoption of a dealer system
1997	The development of the 1997 East Asian Financial Crisis. Government restricted bond guarantee and limits the abilities of banks and surety companies in guaranteeing bonds. At the same time Government relaxes corporations' ability to issue bonds, and eliminated any foreign investment restrictions in domestic bond market.	Commercial Code ceiling on bond issuance was raised to 4 times net assets.	Kia Group and Hanbo Group, Korea's 7th and 14th largest conglomerates went bankrupt. Many smaller companies went bankrupt, spurring non-performing bonds, on KGIC and HFSC, leading to its insolvency. Banks and NBFIs were no longer willing to guarantee corporate bonds. Companies unable to guarantee bonds had to issue bonds with high interest rates.
1998	Insolvency of Korea Guarantee Insurance Company and Hankook Fidelity and Surety Company		The two companies merged to become Seoul Guarantee and Insurance Company (SGIC). Government banned new guarantee of corporate bond by the merged company. In 2001, when the last bonds insured by the company matured, USD 8.5 billion had to be injected to enable their redemption.

Table 10: Major Development in the Korean Bond Market (Cont.)

Years	Developments	Objectives	Outcomes
1998	Financial Supervisory Commission established Interest rate declined sharply, enabling companies to issue large quantities of non-guaranteed bonds Announcement of "Government Bond Market Stimulus Plan" Demolished arbitrary control of bond issuance	To unify oversee of securities, banking, insurance and thrift aspects of Korean finance.	Total assets managed by ITCs grew to USD 210 billion in June 1999.
1999	Development of Daewoo Crisis, creating a pressure on the corporate debt market		Daewoo collapsed due to massive debts and inability to repay debentures issued years earlier. Faith in the corporate bond market eroded and ITCs were under pressure to redeem funds in bond-type certificates
	Establishment if a stabilisation fund for bonds Establishment of Inter-Dealer market (IDM) Enactment of Primary Dealer (PD) System Introduction of Government Bond futures Introduction of Delivery versus Payment (DVP) System	To adequately response to requests for fund redemptions by ITC companies affected by Daewoo bankruptcy	
	Establishment of the Financial Supervisory Service	Integration of the Office of bank Supervision, The Securities Supervisory Board, Insurance Supervisory Board and Non-bank Supervisory Authority.	
2000	Introduction of Inter-Dealer Brokers (IDB) Securities financing facilities for primary dealers Implementation of Dutch auction system from Multiple Price auction		

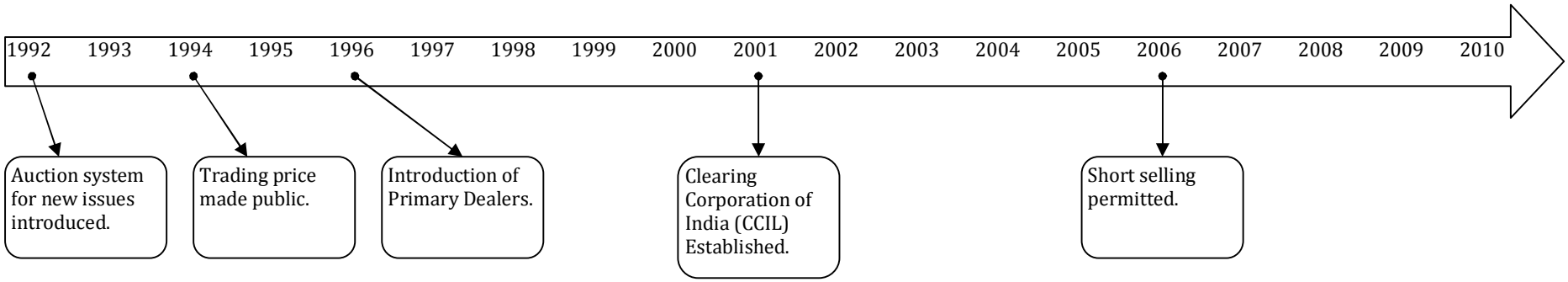
Table 10: Major Development in the Korean Bond Market (Cont.)

Years	Developments	Objectives	Outcomes
2002	Mandatory Exchange trading requirement for benchmark issues		
2003	Strengthening obligations of primary dealers. Unifying interest payment dates in preparation for STRIPS		
2005	Introduction of STRIPS		
2006	Issuance of 20-year Government Bonds. Issuance of Inflation-Index Bonds Design Products for retail investors.		
2009	Measures to improve the efficiency of the secondary market for bonds were announced.		

Source: Study on Korea's Corporate Bond Market and Its Implications on China's Bond Market Development, World Bank Country Study Paper, January 2004.

Table 11: Government Securities Market Development Timeline

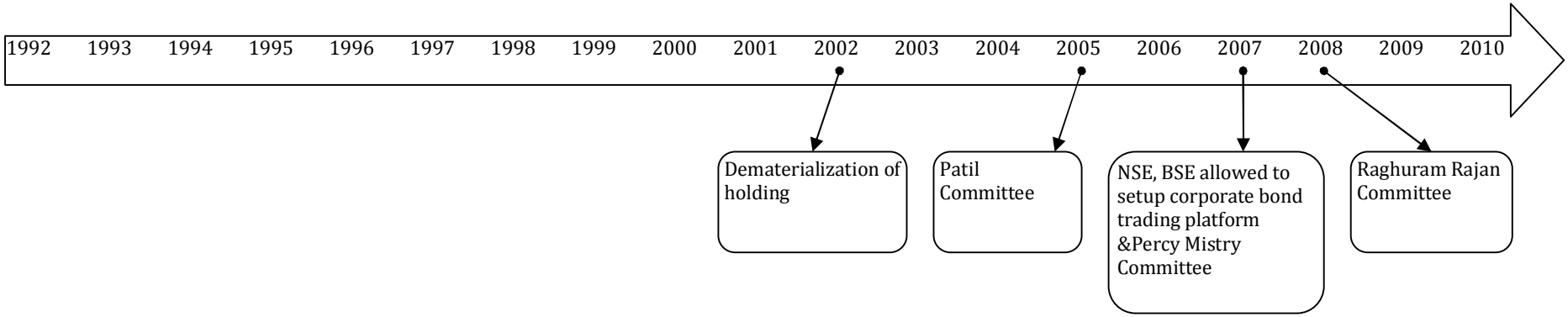
1992 – Auction system for new issues introduced.
1994 – Trading price made public.
1997 – Introduction of Primary Dealers
2001 – Clearing Corporation of India (CCIL) Established
2006 – Short selling permitted



Source: Securities Exchange Board of India (SEBI), Reserve Bank of India (RBI), Asian Bond Monitor.

Table 12: Corporate Bonds Market Development Timeline

2002 – Dematerialisation of holding
2005 – Patil Committee
2007 – NSE, BSE allowed to setup corporate bond trading platform &Percy Mistry Committee
2008 – Raghuram Rajan Committee



Source: Securities Exchange Board of India (SEBI), Reserve Bank of India (RBI), Asian Bond Monitor.

Table 13: Regression Analysis on Domestic Debt Securities by Corporate Issuers

	Model (1)	Model (2)	Model (3)	Model (4)
Dependent Variable / Independent Variable	Outstanding Domestic Debt Securities by Corporate Issuer			
Constant	-319.139 (.560)	-227.413 (.3513)	-227.998 (.3745)	41.04 (.9492)
GDP per capita (constant 2000 US$)	-.019 (.328)			-.013 (.4520)
Total Exports	-.004 (.9137)			
Stocks Traded, Total Value		7.066 (.4194)		
Domestic Credit Provided by Banking Sector (per cent of GDP)	-43.823 (.0000)	-45.282*** (.0000)	-39.734*** (.0000)	-43.325 (.0000)
Outstanding Government Domestic Debt Securities	45.47*** (.0000)	39.210*** (.0000)	40.816*** (.0000)	44.94*** (.0000)***
Corruption Perception Index				-0.343 (.5976)
Adjusted R^2	.65	.68	.68	.67
The dependent variable in all the regressions is outstanding domestic debt securities by corporate issuers. Regressions are run after first differencing the values except for the Corruption Perception Index which are in levels. Absolute value of *p* statistics are shown in parentheses * indicates significant at 10 per cent ** indicates significant at 5 per cent *** indicates significant at 1 per cent				

Table 13: Data Appendix

1. The dataset covers the period from 1990 to 2008 at an annual frequency for India unless otherwise noted.
2. Definitions of variables used

a. Domestic Debt Securities:
Domestic Debt Securities are from Table 16A and 16B of BIS securities review statistics, which are regularly published in the annex tables of the *BIS Quarterly Review*. The data is accessible at http://www.bis.org/statistics/secstats.htm.

b. Corruption Perception Index:
This index is derived from the Corruption Perceptions Index (CPI) prepared by Transparency International, which measures the perceived level of public-sector corruption in 160 countries and territories around the world. The CPI is a "survey of surveys", based on 13 different expert and business surveys. The index used in this report only pertains to India. The data is accessible from http://www.transparency.org/policy_research/surveys_indices/cpi/.

The following are derived from World Bank *World Development Indicators* series, along with the data definition.

c. Domestic credit provided by banking sector (per cent of GDP):
Domestic credit provided by the banking sector includes all credit to various sectors on a gross basis, with the exception of credit to the central Government, which is net. The banking sector includes monetary authorities and deposit money banks, as well as other banking institutions where data are available (including institutions that do not accept transferable deposits but do incur such liabilities as time and savings deposits). Examples of other banking institutions are savings and mortgage loan institutions and building and loan associations.

d. GDP per capita (Constant 2000 US$):
GDP per capita is gross domestic product divided by midyear population. GDP is the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products. It is calculated without making deductions for depreciation of fabricated assets or for depletion and degradation of natural resources. Data are in constant U.S. dollars.

e. Total Exports of goods and services (Constant 2000 US$):
Exports of goods and services represent the value of all goods and other market services provided to the rest of the world. They include the value of merchandise, freight, insurance, transport, travel, royalties, license fees, and other services, such as communication, construction, financial, information, business, personal, and Government services. They exclude compensation of employees and investment income (formerly called factor services) and transfer payments. Data are in constant 2000 U.S. dollars.

f. Stocks Traded, Total Value (Current US$):
Stocks traded refers to the total value of shares traded during the period.

Table 14: Regression Analysis on Sources of Funds by Indian Companies

	Model (1)	Model (2)	Model (3)	Model (4)	Model (5)
Dependent Variables / Independent Variable	Debentures	Bank Loans	External Equity	Debt to Equity Ratio	Debt to Equity Ratio
Constant	-21977.145 (.0162)**	-142339.677 (.000)***	-96554.380 (.0129)**	.642 (.213)	.723 (.0504)
GDP (Constant 2000 Rs)	.031 (.0116)**	.155 (.000)***	.065 (.0001)***	-.977 (.6483)	
Time Trend	-3951.195 (.0325)**	-15388.036 (.000)***			-.029 (.3514)
FINDUM (Financial Dummy)					.080 (.6874)
Observations Adjusted R^2	.23	.96	.63	.11	.11
Financial dummy takes value of 1 if there was a financial policy change, and takes value of 0 otherwise. Absolute value of t statistics are shown in parentheses * indicates significant at 10 per cent ** indicates significant at 5 per cent *** indicates significant at 1 per cent					

GDP (Constant 2000 Rs)
GDP is the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products. It is calculated without making deductions for depreciation of fabricated assets or for depletion and degradation of natural resources. Data are in constant local currency.

Table 15.1: Average of Sources of Funds by Non-Government Non-Financial Public Limited Companies (per cent of total)

SOURCES OF FUNDS	1981-1985	1986-1990	1991-1995	1996-2000	2001-2005	2006-2010	2010-11	2011-12
Number of companies	*1745*	*1957*	*1835*	*1897*	*2083*	*3180*	*3485*	*3041*
INTERNAL SOURCES	**34.0**	**31.7**	**29.7**	**36.8**	**59.7**	**39.3**	**36.3**	38.3
Paid-up capital	2.0	2.3	1.3	0.9	0.1	1.2	0.4	0.1
Reserves and Surplus	8.5	5.1	12.0	13.4	9.7	24.5	22.5	21.5
Provisions	23.6	24.3	16.4	22.5	49.9	13.7	13.4	16.7
EXTERNAL SOURCES	**66.0**	**68.3**	**70.3**	**63.2**	**40.3**	**60.7**	**63.7**	**61.7**
Paid-up capital	2.9	7.0	19.0	12.8	9.2	15.6	14.8	7.3
Net issues	2.0	2.8	4.4	4.3	4.2	1.5	2.6	3.9
Premium on shares	0.8	4.2	14.6	8.5	5.1	14.1	12.3	3.4
Capital receipt	0.3	0.3	0.1	0.3	0.6	0.3	0.1	0.1
Borrowings	37.7	37.8	32.9	35.1	10.6	27.3	25.2	25.8
Debentures	8.2	11.1	7.4	6.4	-1.0	1.5	2.7	2.3
Loans and advances	22.6	24.4	24.6	27.3	11.7	25.2	22.5	22.9
From banks	12.0	13.5	8.1	11.7	18.6	19.1	17.9	15.3
From other financial institutions	7.9	7.4	10.2	9.7	-3.0	-0.4	0.8	0.0
From others	9.7	5.7	7.3	7.3	-4.0	7.1	3.7	8.2
Trade dues & other current liabilities	24.9	23.3	18.3	15.0	19.8	17.5	23.6	28.1
TOTAL	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Table 15.2: Percentage Breakdown of average sources of funds through borrowing (per cent of total)

Borrowing Sources	1981-1985	1986-1990	1991-1995	1996-2000	2001-2005	2006-2010	2010-11	2011-12
Debentures	22.0	29.3	22.2	18.1	-57.5	7.0	10.7	8.8
Banks	32.1	36.0	23.3	35.5	504.0	67.4	71.1	59.3
Other Indian financial institutions	20.7	19.5	30.1	27.5	-174.9	-1.1	3.3	0.0
Foreign institutional agencies	2.1	0.9	7.6	1.1	-103.6	11.9	6.3	18.4
Government and semi-govt companies	-0.2	2.9	2.9	1.8	14.0	0.6	0.9	-0.5
Companies	1.2	2.4	2.4	4.3	1.5	6.8	5.6	7.2
Deferred payments	4.0	3.1	8.4	8.5	-55.0	5.0	2.1	4.6
Public deposits	4.9	0.0	0.1	0.5	-7.3	0.9	-1.5	5.5
Others	13.3	6.0	3.0	2.8	-21.2	1.7	1.5	-3.3
TOTAL	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Source: RBI, Company Finances Studies, Sources and Uses of Funds, Various Issues

Table 16: Trends in Weighted Average nominal Lending Rate (WALR) for all loans and for main sectors for SCBs

(End-March)

Year	Agriculture		Industry		Services		Loan For Housing		Other Personal Loans		All Others		Total	
	Share	WALR	Share	WALR	Share	WALR	Share	WALR	Share	WALR	Share	WALR	Share	WALR
1992	8.5	14.8	58.7	17.9	22.6	17.1	3.4	7.9	3.2	15.2	3.6	16.4	100	16.8
1993	8	15.7	58.5	17.9	22.9	17.2	3.6	8.3	3.2	15.7	3.9	16.9	100	17
1994	7.5	15.5	57.1	17.4	23.5	16.5	3.5	8.7	3.8	15.2	4.7	16.3	100	16.5
1995	6.8	15.3	52.8	16.5	25.9	16.2	3.1	9.6	4.6	15.5	6.9	16.1	100	16
1996	6.7	15.7	54.8	17.8	23.3	17.2	3.1	10.9	4.4	16.3	7.8	17	100	17.1
1997	6.8	15.7	55.8	17.5	22.5	17	3	11.3	5	16.5	6.9	16.8	100	16.9
1998	6.6	15.3	54.8	16.7	23.5	16.2	3.1	11.2	5.7	16.2	6.3	16.2	100	16.2
1999	4.5	15.2	61	15.5	24.4	15.4	1.8	12.4	2.6	16.2	5.8	15.5	100	15.4
2000	4.1	14.8	57.4	14.9	27.7	14.5	2.6	12.5	2.3	15.5	5.9	15.2	100	14.8
2001	4.1	14.4	52.7	14.5	30.2	13.6	3.5	12.8	2.7	15.2	6.9	14.4	100	14.1
2002	5	13.9	49.6	14	29.7	13.2	4.1	12.1	2.8	14.7	8.9	13.9	100	13.7
2003	5.2	13.3	49.4	13.7	29.2	12.9	5.8	11.6	3.6	14.4	6.8	13.6	100	13.3
2004	6.8	13	45.7	13.5	27.4	12.6	9.6	12.6	5.5	15.1	4.9	13.2	100	13.2
2005	6.3	12.5	46	13.2	26.2	12.6	11.5	8.9	6.3	14.8	3.7	13.2	100	12.6
2006	7.5	11.7	44	12.6	25.8	12.1	12.9	8.6	6.7	14.6	3.2	11.8	100	12
2007	7.9	11.7	43.8	12.4	26.6	12.1	12.6	9	6.5	14.5	2.6	11.9	100	11.9
2008	7.2	11.8	44	12.4	27.4	12.6	11	10.5	6.5	14.3	3.9	12.6	100	12.3
2009	6.9	11	44.9	11.3	29.4	11.7	10.6	10.7	5.9	13.2	2.2	11.9	100	11.5
2010	7.6	10	45	10.5	30.2	10.6	9.7	9.7	5	12.4	2.7	10.9	100	10.5

Note:- Related to accounts with credit limit more than ₹25,000 till 1998 and more than ₹2,00,000 thereafter

Source: Measures of Nominal and Real Effective Lending Rates of Banks in India, Deepak Mohanty, A B Chakraborty, and S Gangadaran, RBI Working Paper Series, May 2012

Table 17: Structure of Interest Rates

(Per cent per annum)

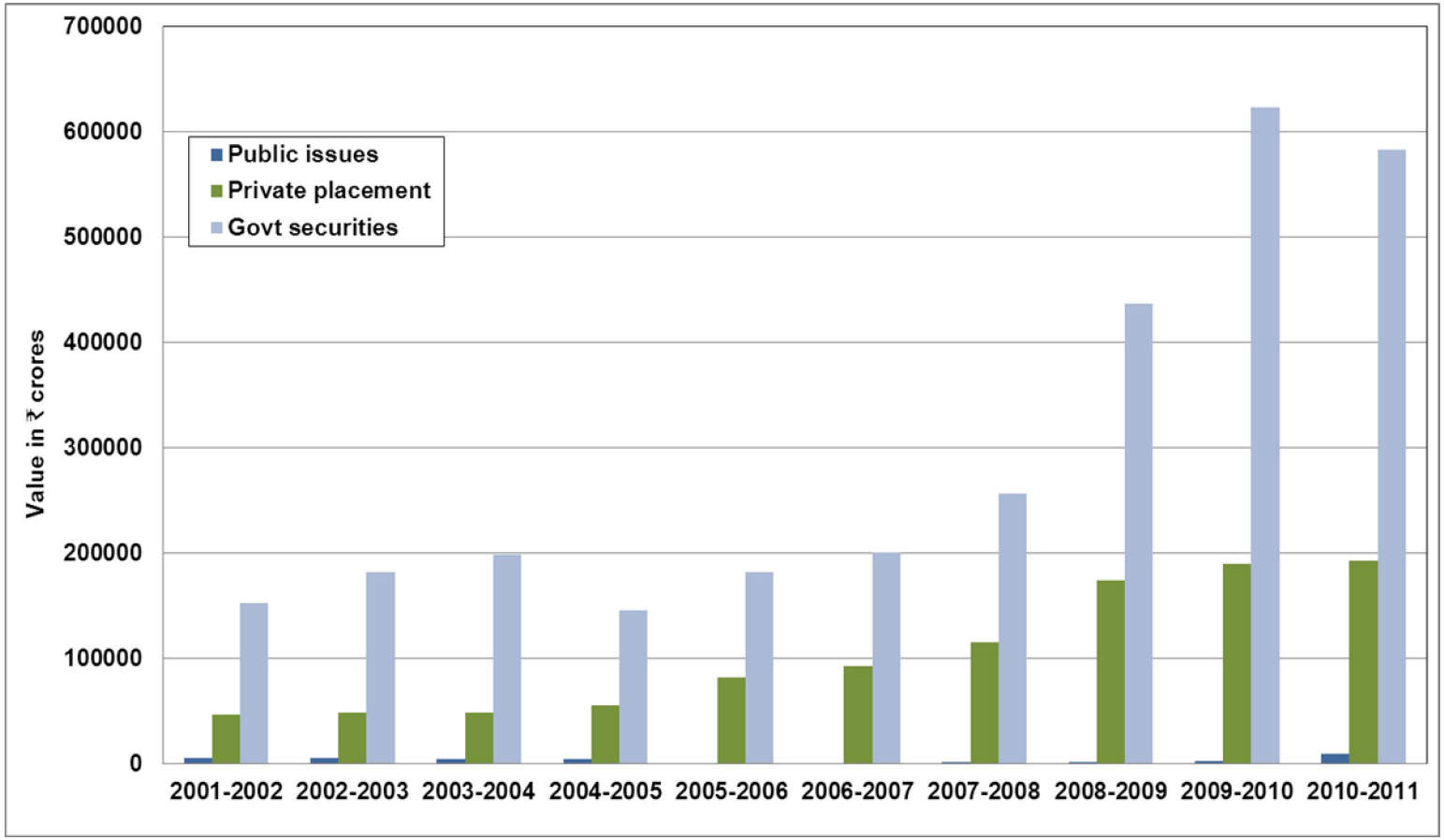
Year	Call/ Notice Money Rates	Commercial Bank lending Rates				Prime Lending Rates of Term Lending Institutions				
		SBI Advance Rate	Key Lending Rates as Prescribed by RBI (All Commercial Banks including SBI) -Ceiling Rate General	Key Lending Rates as Prescribed by RBI (All Commercial Banks including SBI) - Minimum Rate General	Key Lending Rates as Prescribed by RBI (All Commercial Banks including SBI) - Minimum Rate Selective Credit Control	IDBI	IFCI	ICICI	IIBI / IRBI	SFCs
1991-92	19.57	16.50	-	19.00	19	18.00-20.00	18.00-20.00	18.00-20.00	18.00-20.00	9.00-20.00
1992-93	14.42	19.00	-	17.00	17	17.00-19.00	17.00-19.00	17.00-19.00	18.50-21.00	(11.50-20.00)
1993-94	6.99	19.00	-	14.00	15	14.50-17.50	14.50-17.50	14.50-17.50	14.50-17.50	(11.50-20.00)
1994-95	9.40	15.00	-	15.00	Free	15.00	14.50-18.50	14.00-17.50	14.50-17.50	(12.00-13.50)
1995-96	17.73	16.50	-	16.50	Free	16.00-19.00	16.00-20.00	14.00	15.50-18.50	(12.00-13.50)
1996-97	7.84	14.50	-	14.50-15.00	Free	16.20	15.00-19.50	16.50	17	(12.00-27.50)
1997-98	8.69	14.00	-	14.00	Free	13.30	14.50-18.00	14.00-14.50	12.50-13.50	(12.00-18.00)
1998-99	7.83	12.00-14.00	-	12.00-13.00	Free	13.50	13.50-17.00	13.00	-	12.00-18.50
1999-00	8.87	12.00	-	12.00-12.50	Free	13.60-17.10	13.50-17.00	12.50	14	12.00-18.00
2000-01	9.15	11.50	-	11.00- 12.00	Free	14.00	13.00	12.50	13.25	9.75-17.00
2001-02	7.16	11.50	-	11.00-12.00	Free	11.50	12.50	12.50	11.5	9.50-16.75
2002-03	5.89	10.75	-	10.75-11.50	Free	10.20	12.50	-	11	9.50-14.50
2003-04	4.62	10.25	-	10.25-11.00	Free	8.90	12.50	-	8.5	9.50-14.51
2004-05	4.65	10.25	-	10.25-10.75	Free	-	12.50	-	8.5	9.50-14.51
2005-06	5.60	10.25	-	10.25-10.75	Free	-	12.50	-	8.5	9.50-13.00
2006-07	7.22	12.25	-	12.25-12.50	Free	-	-	-	-	9.50-14.50
2007-08	6.07	12.25	-	12.25-12.75	Free	-	-	-	-	9.50-15.00
2008-09	7.67	12.25	-	11.50-12.50	Free	-	-	-	-	-
2009-10	-	11.75	-	11.00-12.00	Free	-	-	-	-	-
2010-11	4.51	8.25	-	8.25-9.50	Free	-	-	-	-	-

Table 17: Data Appendix

1. For the year 1995-96, interest rate on deposits of maturity above 3 years, and from 1996-97 onwards, interest rates on deposit for all the maturities refer to the deposit rates of 5 major public sector banks as at end-March.
2. From 1994-95 onwards, data on minimum general key lending rates prescribed by RBI refers to the prime lending rates of 5 major public sector banks.
3. For 2011-12, data on deposit rates and Base rates of 5 major public sector banks refer to the period up to July 31, 2010. From July 1, 2010 BPLR System is replaced by Base Rate System. Accordingly the data reflects the Base Rate of five major public sector banks. Data for 2010-11 for Call/Notice Money rates are average of April-July 2010.
4. Data for dividend rate and yield rate for units of UTI are based on data received from Unit Trust of India.
5. Data on annual (gross) redemption yield of Government of India securities are based on redemption yield which is computed from 2000-01 as the mean of the daily weighted average yield of the transactions in each traded security. The weight is calculated as the share of the transaction in a given security in the aggregated value.
6. Data on prime lending rates for IDBI, IFCI and ICICI for the year 1999-00 relates to long-term prime lending rates in January 2000.
7. Data on prime lending rates for State Financial Corporation for all the years and for other term lending institutions from 2002-03 onwards relate to long-term (over 36-month) PLR.
8. Data on prime lending rate of IIBI/ IRBI from 2003-04 onwards relate to single PLR effective July 31, 2003.
9. IDBI ceased to be term lending institution on its conversion into a banking entity effective October 11, 2004.
10. ICICI ceased to be a term-lending institution after its merger with ICICI Bank.
11. Figures in brackets indicate lending rate charged to small-scale industries.
12. IFCI has become a non-bank financial company.
13. IIBI is in the process of voluntary winding up.

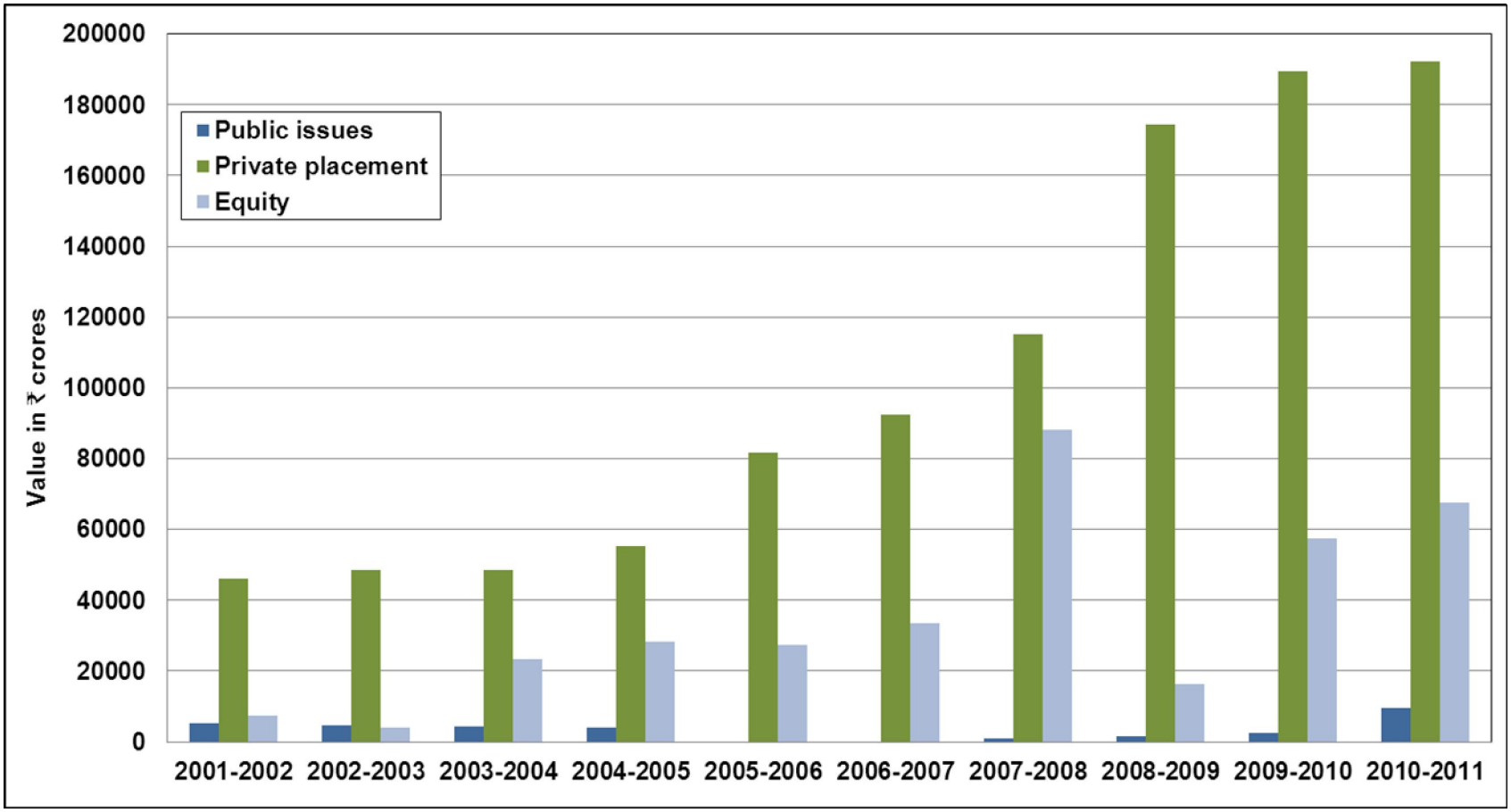
Also see Notes on Tables.
Source: Respective financial institutions and Reserve Bank of India

Graph 1: Resource Raised from Debt Market



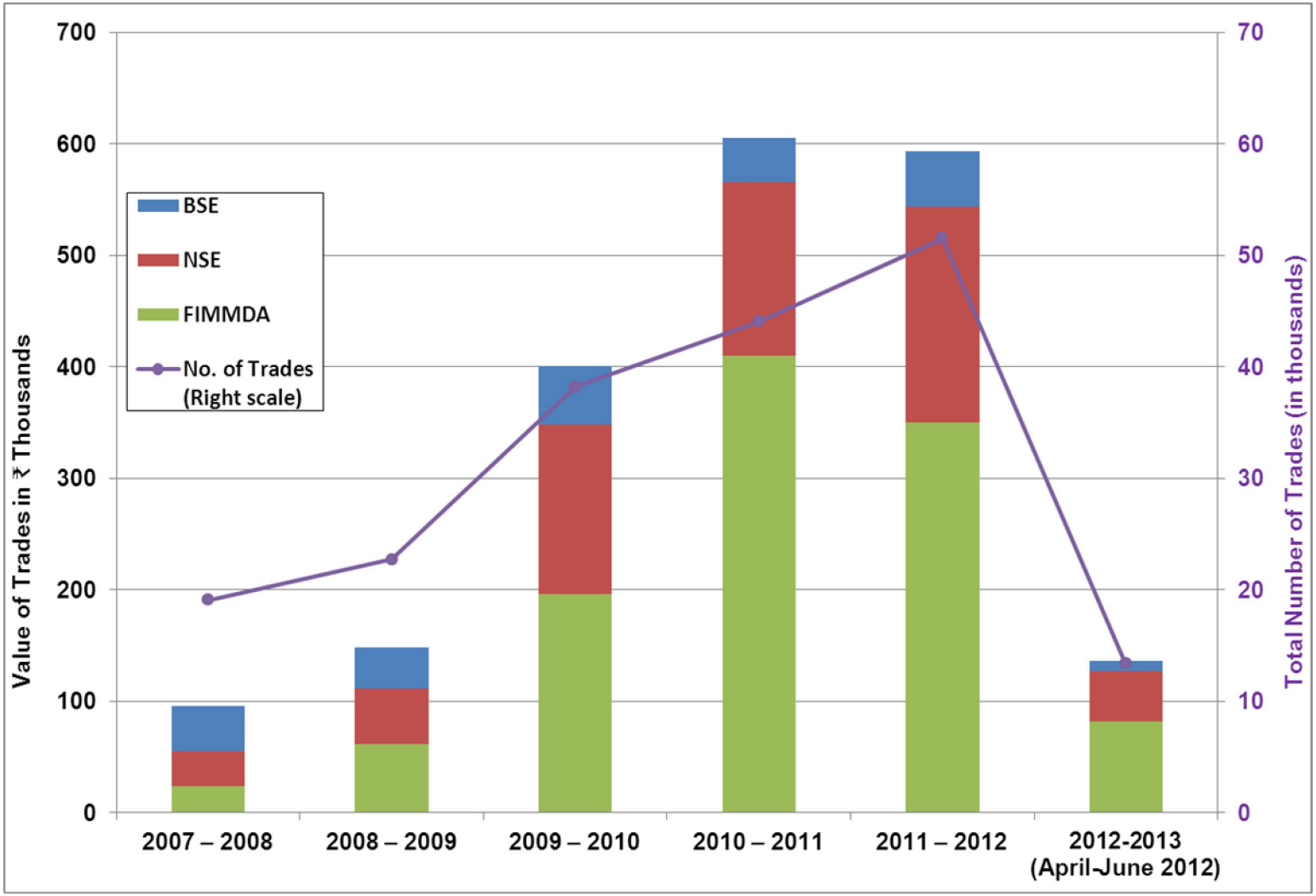
Source: Indian Securities Market Review (ISMR), NSE, Report from different years.

Graph 2: Distribution of Equity and Debt Issues from Market Mobilisation



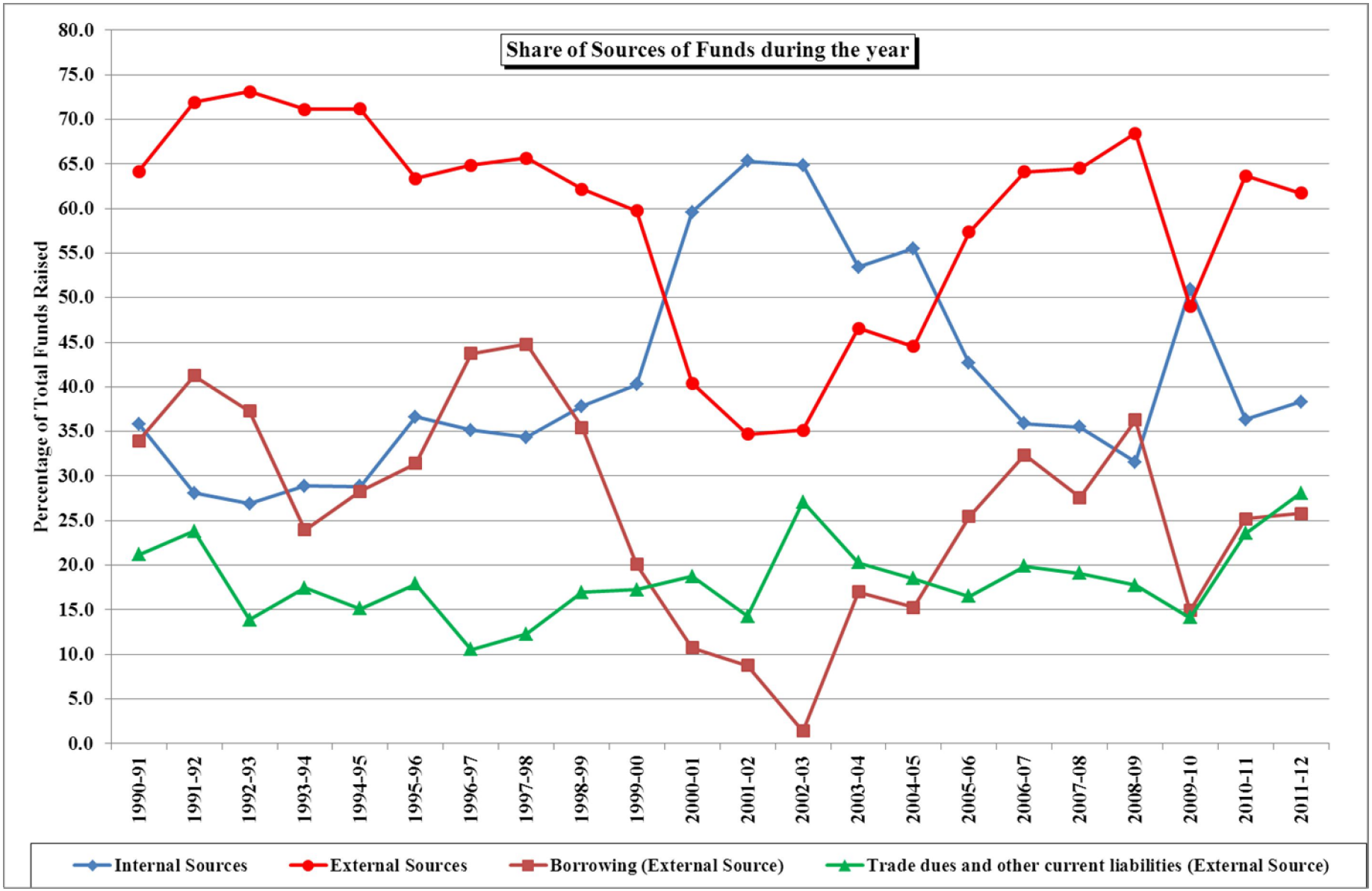
Source: ISMR, NSE, report from different years

Graph 3: Trading in Corporate Bonds (in ₹ crore)



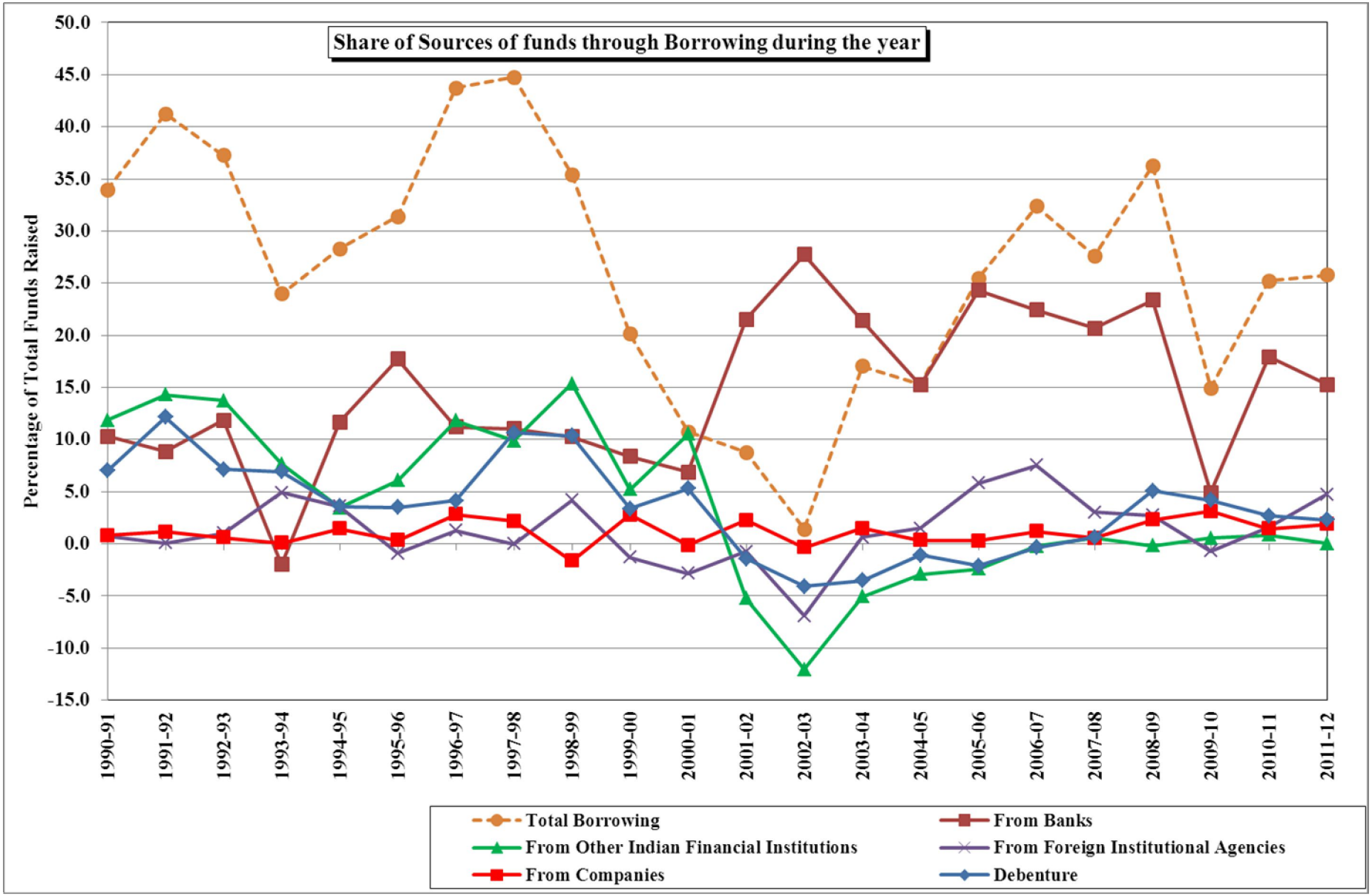
Source: Stock Exchange Board of India (SEBI)

Graph 4: Sources of Funds of Non-Government Non-Financial Public Ltd companies: 1990-91 to 2011-12



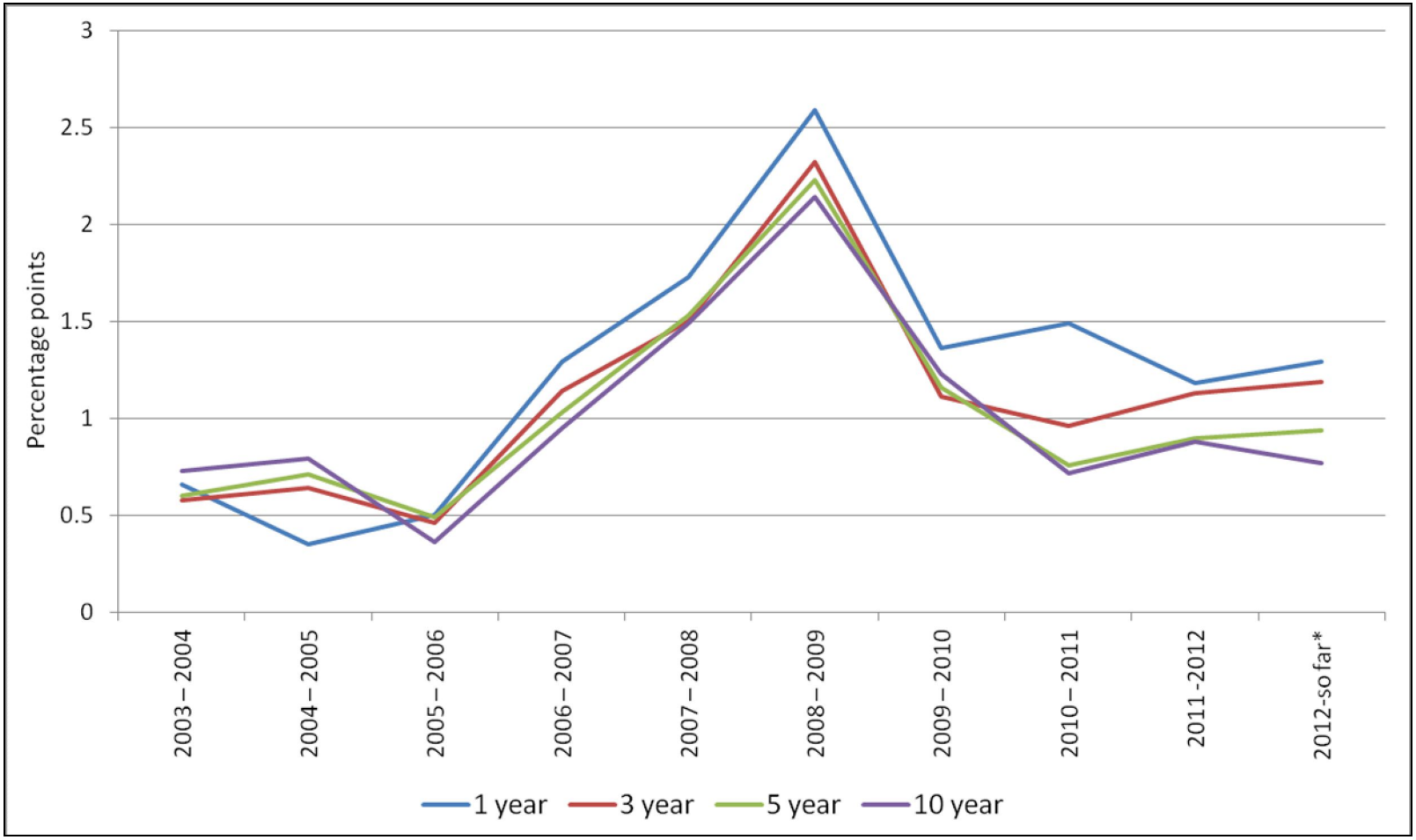
Source: RBI, Company Finances Studies, Sources and Uses of Funds, Various Issues

Graph 5: Sources of Funds through Borrowings for Non-Government Non-Financial Public Ltd Companies: 1990-91 to 2011-12



Source: RBI, Company Finances Studies, Sources and Uses of Funds, Various Issues

Graph 6: AAA Rated Corporate Bond Spread



Sources: Reuters, IDBI Research

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