Role of Debt Market and its impact on Financial Stability: analysis of Indian Market

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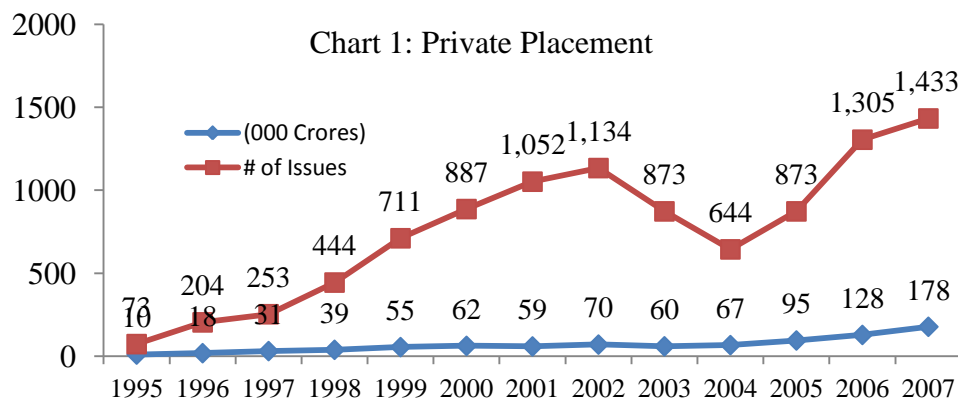Email: dinabandhu.bag@gmail.com,
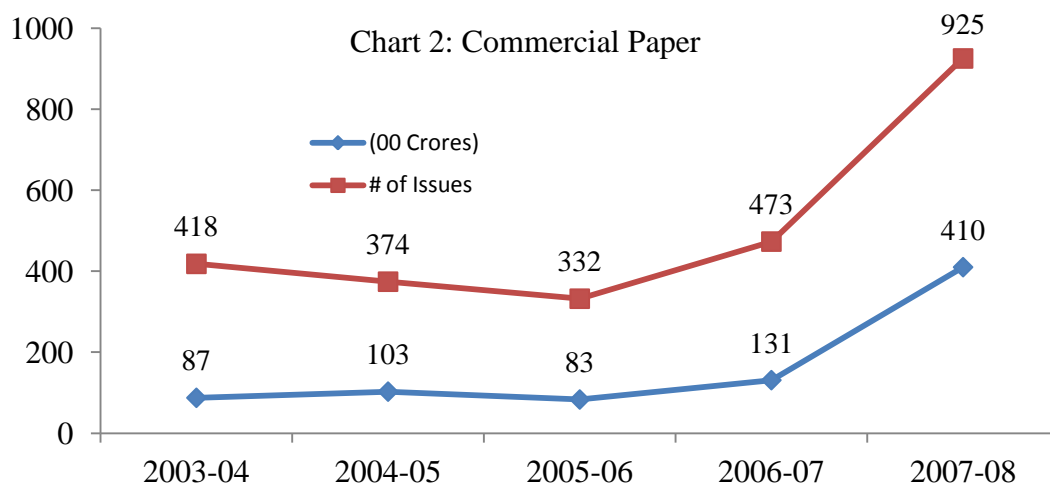Telephone: +919437490180

ABSTRACT

This study presents an empirical evidence of the primary debt market in India. Bond markets rarely fulfill the alternate role to bank financing in India. The benefits of bond markets include diversifying credit risks across the economy by providing an alternative to conventional bank lending. Bond markets supply long-term funds for the growth of the infrastructure or other sectors to fulfill long-term investment needs. It can also lower funding costs of the firm by liquidity premium on secondary market. They provide diversity in financial products with flexibility to meet the specific needs of investors and borrowers. These benefits in the form of financial instruments and efficiency of the financial system with allocation of capital in the economy (Dudley and Hubbard, 2004; Turner, 2002, and Lian, 2002), reduced exposure to foreign exchange risk and financial crises, and the facilitation of monetary policy. The corporate debt market in India basically comprises PSU bonds and private sector bonds. The corporate debt market in India has historically demonstrated poor participation from the corporate sector. Quality of issued papers, lower investor base, inadequate liquidity, etc, has been the hindrances. Based on an empirical analysis of the corporate debt market, this study attempts to analyze the corporate debt market in India and suggest policy measures to manage investor participation and activate the corporate debt market. Timing of an issue and the conditions of the economy including the triggers in other markets could impact the activity in the whole sale debt market. Issues that satisfy the needs of investor segments could improve participation. We attempt to test few hypotheses; whether bond issuance and factors in other markets could be positively correlated, whether the presence of good issuers (good papers) improve participation, etc using data from the whole sale debt market, whether the limits on government borrowings could improve the trades in the wholesale debt market, etc.

Key Words: *Debt Issue, Maturity, Bond Quality, Market factors*

1. Introduction

Bond markets provide the benefits of diversifying credit risks across the economy as an alternative to conventional bank lending. Bond markets help supply long-term funds for the growth of the infrastructure or other sectors to fulfill long-term investment needs. Similarly as the costs of equity, it can also lower the funding costs of the firm due to a liquidity premium in the secondary market. Hence, bonds provide diversity in financial products with the flexibility to meet the specific needs of investors and borrowers. They also help wide range of financial instruments available in the system, an increase in the efficiency of the financial system as domestic bond markets allocate capital in the economy by reducing exposure to external foreign exchange risks and financial crises and the execution of monetary policy (Dudley and Hubbard, 2004; Turner, 2002, and Lian, 2002). This study investigates the whole sale debt market in India from the period 1999 to 2010 to evaluate their effectiveness in fulfilling the needs of the issuers and investors. The corporate debt market in India comprises Public Sector (PSU) bonds Public Sectors Bank (PSB) bonds private sector bonds. The Indian primary corporate debt market is basically a private placement market with most of the corporate bonds being privately placed among the wholesale investors, which include banks, financial Institutions, mutual funds, large corporate & other large investors. The participants in the debt market include mutual funds, provident funds, pension funds, private trusts, state-level and district-level co-operative banks, housing finance companies, NBFCs (Non Banking Financial Companies) and RNBCs (Residual Non Banking Financial Companies), corporate treasuries, Hindu Undivided Families (HUFs), and individual investors. Bond issues in the debt market have risen sharply during the last decade although there was a small decline in the amounts raised through the bond route during 2003-04 (see Chart 1 & Chart2 here). The corporate debt market in India has historically demonstrated poor investor participation unlike the Govt. Securities market. Despite a substantial increase in the secondary market turnover through issue of corporate debt from Rs.197, 287 million in 2001-02 to Rs.360, 388 million in 2002-03, it comprises a smaller fraction of the total turnover where the major share of trading belongs to government securities. Table 1 describes the broad segments of the corporate debt market in India.

Chart 1: Private Placement

Chart 2: Commercial Paper

	2003-04	2004-05	2005-06	2006-07	2007-08
(00 Crores)	87	103	83	131	410
# of Issues	418	374	332	473	925

Table 1: Corporate Debt Market in India

Market Segment	Issuer	Instrument
Public Sector Bonds	Government Agencies/ Statutory Bodies	Govt. Guaranteed Bonds, Debentures e.g.; State Electricity Boards
	Public Sector Units	PSU Bonds, Debentures, Commercial Paper e.g.; National Oil, Steel, Textile Bonds
Private Sector Bonds	Corporate	Debentures, Bonds, Commercial Paper, Floating Rate Bonds, Zero Coupon Bonds, Inter-Corporate Deposits e.g.; Tata Motors, Ashok Leyland
	Banks	Certificates of Deposits, Debentures, Bonds e.g.; Public Sector Banks Bank of India
	Financial Institutions	Certificates of Deposits, Bonds, Debentures, Secured Premium Notes, Deep Discount Bonds, PSU Bonds/Tax-Free Bonds e.g.; HDFC, ILFS

Source: NSE Debt Market Update (2010)

2. *Primary Corporate Debt Market*

Primary debt market in India includes Issuers such as large private sector corporate, public sector, financial institutions, banks and medium and small companies. Instruments include partly convertible debentures (PCDs), fully convertible debentures (FCDs), deep discount bonds (DDBs), zero coupon bonds (ZCBs), bonds with warrants, floating rate notes (FRNs) / bonds and secured premium notes (SPNs), where the coupon rates depend on tenure and credit rating. Table 2, 3, 4 and 5 provide the distribution of debt issues from 1999 to 2010 and provide a picture of the depth and quality of activity in the bond market. Table 2 provides the distribution of issues by rating such as Investment Grade, Speculative Grade and Default Grade, etc. A large share of issues (93%) are rated "A" and above. Across the issuer groups, the share of private corporate with rating "A" and above is lower and so also the state corporations. Table 2 provides the

distribution of the rating of corporate debt issues in 2010 that includes over 340 unique issuers comprising across seven major groups of issuers such as Banks, Federal FIs, Private Banks, Statutory Corporation Bonds, State FIs, Private Corporate and Public Sector Corporates. Over 80% of the issues have been rated "AAA" and "AA" which portrays the presence of Investment Grade Issues in the market. However, the rating distribution may vary across the groups of issuers such as State FIs or Private Corporates, where the share of investment grade may be lower. In general, Federal corporations have been rated higher than state corporations. Table 3 provides the intensity of issues and the average maturity distribution within the period 1999 to 2010. It can be seen that both the number of issues and the average maturity (in months) does not follow an increasing trend over the period which depicts the lack of interest of issuers to rely on the debt market as an alternate channel to bank lending. This could also be due to a seasonal cap on the Money market imposed by the Reserve Bank of India which also manages the borrowings of the central government. Table 4 provides the composition of issues by issuer groups and it demonstrates that consistently Banks, FIs and public sector corporate have dominated the whole sale debt market within this period. This could mean few other groups of issuers such as Private Banks or Corporates may be accessing the external commercial borrowings (ECBs) to meet their funding needs. Poor Quality Papers and inadequate liquidity with little enthusiasm investors.

Table 2: Rating Distribution of Corporate Debt Issues (2010)

Current Rating	Frequency	Percent (%)
AAA	490	48.56
AA	394	39.05
A	99	9.81
B	3	0.3
BBB	25	2.48
Total	1011	100.00

Source: NSE Whole Sale Debt Market Archives (1999-2010)

Table 3: Intensity and Maturity of Corporate Dent Issues (1999-2010)

Year	Total Number of Issues	Average Maturity (Months)
1999	9,516	79.2
2000	7,168	65.0
2001	15,983	57.3
2002	24,082	66.4
2003	26,128	80.3
2004	13,274	89.0
2005	16,440	88.4
2006	20,758	108.8
2007	17,250	102.6

2008	17,275	83.9
2009	12,093	84.3
2010	13,136	83.4

Table 4: Intensity of Debt Issues by Issuer Groups

Year	Bank	FI	Pvte_Corporate	Pvte_FI	Public_Corporate	Pvt Bank	State_FI	Statutary	Total
1999	3,058	2,619	1,819	143	1,288	138		442	9,516
2000	1,613	1,254	971	358	1,049	198	736	701	7,168
2001	2,856	2,957	2,024	120	4,228	141	3,273	177	15,983
2002	2,521	8,604	3,642	675	6,509	445	1,540	116	24,082
2003	6,523	6,859	2,834	616	7,255	424	1,398	89	26,128
2004	3,502	2,428	1,391	508	4,389	661	66	329	13,274
2005	5,005	3,959	774	905	3,261	655	496	1,151	16,440
2006	7,345	4,170	521	2,578	4,706	1,071	160	207	20,758
2007	2,454	6,213	1,234	4,232	2,059	770		109	17,250
2008	2,264	5,170	1,791	2,727	1,675	86		638	17,275
2009	2,172	3,211	1,949	1,929	899	25	32	323	12,093
2010	651	3,778	2,135	2,143	1,977		60	214	13,136

Exhibit 1 and 2 plots the average maturity and average coupon rate over time to understand the changes in the term structure of the market. Banks are the issuers with shortest maturity where as Statutory Bonds are issued for highest maturity. Statutory Bonds are issued with Federal Guarantee and provide utmost safety to the Investors where the funds are intended for the purpose of infrastructure or development needs. Exhibit 2 provides the trend of average coupon rates for coupon bonds (zero coupon bonds are excluded) against the average repo rates within the same period. This summarizes the ability of issuers to raise funds against the repo rates. The average coupon rates for all issuers have been consistently below the average repo rate within the same period. Banks have had issues with the minimum coupon rates whereas Statutory Bonds
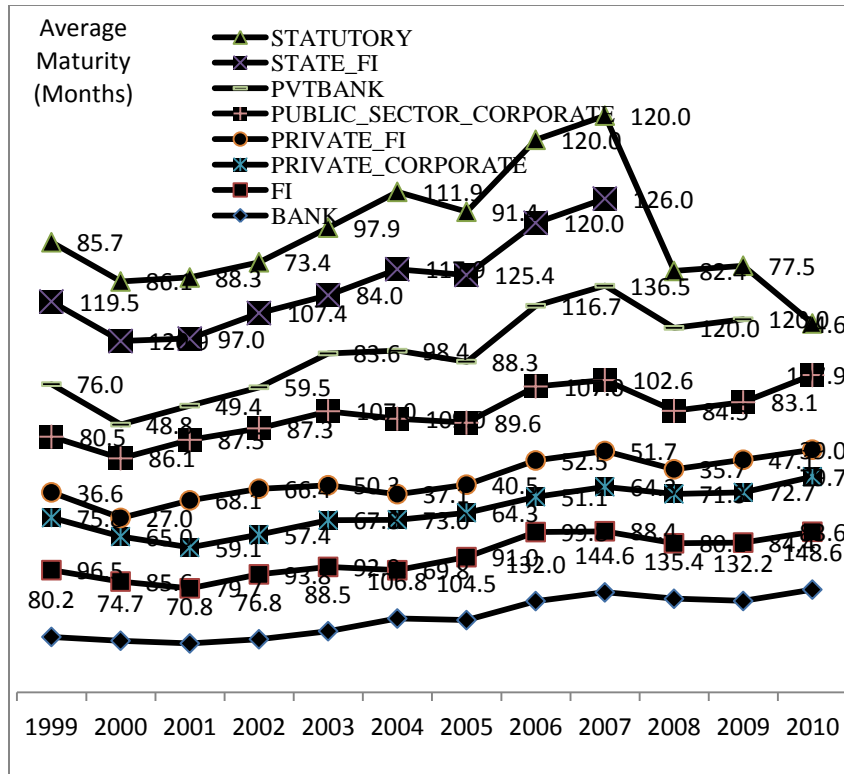
Exhibit 1 chart

Average Maturity (Months)

Legend:
- STATUTORY
- STATE_FI
- PVTBANK
- PUBLIC_SECTOR_CORPORATE
- PRIVATE_FI
- PRIVATE_CORPORATE
- FI
- BANK

Data labels: 85.7, 86.1, 88.3, 73.4, 97.9, 111.9, 120.0, 120.0, 91.4, 126.0, 82.4, 77.5, 119.5, 120.0, 97.0, 107.4, 84.0, 116.0, 125.4, 120.0, 136.5, 120.0, 120.6, 76.0, 80.5, 83.6, 98.4, 88.3, 116.7, 102.6, 84.5, 83.1, 111.9, 48.8, 49.4, 59.5, 105.0, 101.8, 89.6, 101.8, 102.6, 49.0, 36.6, 86.1, 87.5, 87.3, 50.3, 37.1, 40.5, 52.5, 51.7, 35.7, 47.3, 49.7, 75.2, 68.1, 66.4, 67.1, 73.6, 64.3, 51.1, 64.3, 71.2, 72.7, 27.0, 65.0, 57.4, 92.9, 99.1, 88.4, 80.5, 84.5, 48.6, 96.5, 85.6, 59.1, 93.8, 106.8, 104.5, 132.0, 144.6, 135.4, 132.2, 148.6, 80.2, 74.7, 70.8, 76.8, 88.5, 88.3

Years axis: 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010

Exhibit 1: Average Maturity of Debt Issues by Issuer Groups

Exhibit 2 chart

Average Coupon Rate

Legend:
- **AVERAGE REPO RATE**
- STATUTORY
- STATE_FI
- PVTBANK
- PUBLIC_SECTOR_CORPORATE
- PRIVATE_FI
- PRIVATE_CORPORATE
- FI
- BANK

Data labels: 8.0, 13.7, 7.5, 11.1, 8.8, 11.5, 11.5, 7.8, 6.9, 7.6, 7.9, 11.3, 9.9, 11.5, 9.5, 9.3, 7.9, 8.5, 10.7, 5.1, 13.1, 10.1, 10.8, 7.1, 6.0, 6.3, 8.4, 9.0, 10.7, 8.1, 5.6, 11.2, 11.8, 9.5, 8.4, 6.7, 7.2, 8.0, 9.5, 10.4, 8.0, 8.0, 12.9, 10.7, 9.3, 7.7, 7.5, 8.6, 9.4, 7.4, 11.0, 9.2, 9.6, 8.0, 6.8, 7.4, 8.8, 9.4, 12.1, 10.8, 8.6, 6.7, 6.6, 6.8, 10.8, 10.1, 11.5, 10.2, 9.5, 10.0, 10.0, 6.0, 6.4, 6.6, 7.9, 9.3, 9.3, 7.5, 7.5, 13.4, 11.4, 10.4, 7.0, 6.5, 7.4, 9.9, 10.0, 9.3, 9.0

Years axis: 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010
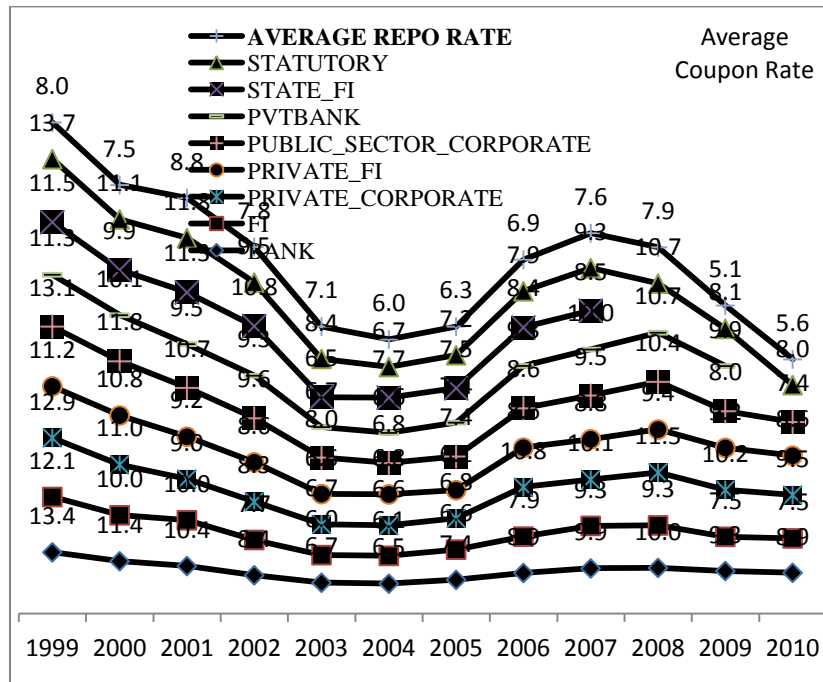
Exhibit 2: Average Coupon Rates by Issuer Groups

have been issued with maximum coupon rates. In general, coupon rates have fluctuated from a minimum of 5.1% to a maximum of 13.7% which is a variation over 600 basis points. However, they are much lower than the average PLR of major banks in India within the same period. This could have been due to multiplicity of factors such as timing of the issue, movements in LIBOR rates or Exchange rates or may be due to the internal need of the issuers to raise an issue with a given maturity that matches with the maturity of its own assets, etc. There may exist tradeoff between the quality of paper, maturity and the coupon rate. An attractive debt market is the one when the bond prices are low for the possible shortest maturity with larger choices of quality papers. The investor base in India includes about 37 mutual funds, 5 insurance companies and pension funds. Banks and financial institutions, by and large, do not take active interest in corporate debt Market. Secondary Market suffers from inadequate liquidity, where in India with fewer wholesale trades and also lower trading volume as compared to the listed volume. This paper intends to investigate the profile of the debt market over 1999 to 2010 and identify the conditions under which it is easier for bond issues to supply bonds and the conditions under which the issuers prefer raising capital through bank lending or bond issue and the factors that impact the maturity structure of issues. It also provides insight into issue level versus issuer level comparison to understand investor preferences. This paper is organized as follows; next section presents a review of literature. The section on methodology relates to the proposed models and results. The last section summarizes broad conclusions and implications for macro policy makers in emerging markets.

3. *Literature*

The research on debt market has focused more on pure government/public sector debt rather than private sector/corporate debt. The determinants of government debt market activity are macroeconomic stability and political factors (Persson and Tabellini 1999, Reinhart et al 2003, and Claessens et al 2007). The research on private sector/corporate debt usage have focused on the conditions in which firms prefer debt to bank financing versus equity and finally bankruptcy costs in presence of increasing levels of debt, lowering of their credit rating and rising coupon rates on new debt. It included identifying the determinants of a company's capital structure to understand companies' reluctance to issue debt and equity or mix. Aguilar et al (2006) found that firm size influenced its participation in the bond market and only large firms participate in the bond market, and that the debt market was concentrated with short term debt as compared to long term debt. Harris and Raviv (1991) provide evidence that leverage increased with fixed assets, non-debt tax shields, investment opportunities and firm size, and increases with volatility, the probability of bankruptcy, profitability and the uniqueness of the product (Leal and Carvalhal-da-Silva 2006). Fernández et al (2006) postulate that the value of a firm is not empirically independent of its financing policy and, therefore, the conditions for the Modigliani-Miller theorem were not satisfied. Capital structure for firms in general have been investigated by various authors (viz., Fisher et al, Bradley et al, Brennan et al, Ferri et al etc). The relationship of debt ratio was inversely related with past profitability is also confirmed by Rajan and Zingales (1995) and Titman and Wessels (1998). Shyam-Sunder and Myers (1999) tested the theory over the period 1971-1989 on a sample of 157 firms. and confirmed the time-series explanatory power. Bontempi (2002), based on a sample of Italian firms, divided companies into trade off and pecking order types; there is not a perfect model that can be used for all the firms. Similar conclusions are supported by Ghosh and Cai (1999), Franz and Goyal

(2003). Ennis and Male (2005) suggest that company's size could be used as a negative indicator of probability of default and therefore as a proxy for risk. Rajang and Zingales (1995) firm size was positively correlated with leverage, Fama and French (2002) argue that, because of their level of diversification, larger firms were expected to have less volatile earnings induces a higher leverage ratio. Harris and Raviv (1991), discovered that leverage increases with firm size and also Dessi` and Robertson (2003) using both a static model and a dynamic model had similar results. As given by Capozza and Seguin (2001), the fact that liabilities were expensive to manage justifies a different degree of leverage. According to Panno (2003), the direct relationship between leverage and size reflected the better access of large firms to financial markets. The existence of a relationship among the use of debt and profitability have also been examined by Omet (2004), and Helwege and Liang (1996). Diamond (1991a), the non-monotonic relationship between a firm's liquidation risk and debt maturity should be captured by a positive coefficient on bond rating (RATE) and a negative coefficient on the square of bond rating (RATESQ). The literature on the impact of bond markets have examined their efficacy fulfill the needs of issuers, investors and regulators as compared to banks as financial intermediaries. An alternative view is that bond markets rarely fulfill this "spare tyre" role. When banks are reluctant to lend, it is usually a reflection of a general loss of confidence in the economy. At such times, it is also hard to place a corporate paper as bondholders generally have less information about the issuer than bankers. Jiang et al (2001) finds that bond issuance and bank lending are usually positively correlated, in both OECD and emerging economies. During periods of *weak* bank lending bond markets provide offset to cutbacks in bank lending. Bank loans and corporate bonds deal differently with financial crisis. Banks take the credit risks away from the depositors and manage their risks by monitoring borrowers. The development of debt markets could mitigate the adverse impact of financial crises or reduce the likelihood such a crisis will happen. Greenspan (2000) stressed the importance of having multiple avenues of financial intermediation, which served the United States during the credit crunch of the late 1980s. Hence bond markets may improve efficiency in an economy and reduce vulnerability to financial crises (see Herring and Chatusripitak, 2000). Most of the available empirical studies have focused on either the firm level determinants of bond financing and have provided evidence on the role played by debt markets as alternative sources of financing. The empirical literature on the corporate debt market in India is limited. For earlier work on the corporate debt market in India, see Mohan (2000), Thorat (2000, 2002), Leonardo (2000) and Patil (2004). Whether the debt market can function as source of financing needs to be examined. The question of classifying good papers has also not been examined in the literature. The next section proposes a method of analysis.

4. *Methodology & Results*

The framework of understanding the various components impacting the corporate debt market includes three principal issues such as the firm's willingness to supply bonds, the firm's willingness to invest in bonds and households willing to invest in bonds. There exists four building blocks of the bond market linkage highlighting the factors of bond attractiveness. Based on Stewart A. et al, (2009), the factors that influence firms' debt issues are given as ;

$$Bond = \beta_0 + \beta_1(\text{Firm's Characteristics}) + \beta_2 (\text{Market Characteristics}) + \varepsilon \qquad \text{Eqn 1}$$

The dependent variable, is the total amount of bonds issued by the firm. The possible determinants of the dependent variable used in (Stewart A. et al, ,2009) model include; Firm characteristics such as , fixed assets to total assets, leverage Size, Tobin's Q (indicator of firms' investment opportunities), Growth and ROA, (operating income to total assets). The market characteristics such as volatility in stock prices, DebtSize (corporate bond market as the share of public debt market), Equity Ratio, CapGDP (Market capitalization to the GDP), etc. We propose to include the following issue characteristics to the Model in Equation 1 such as Coupon rate, Maturity, Rating, Issuer Group, Interest rates in other markets, etc. The other operational variables included in the model which are used to assess the conditions of the bond market are, Total Bonds (Rupees crore),Rs/US Dollar Average, FDI (Rs Crore), FPI (Rs Crore), GDP at Factor Cost (Rupees crore), GDP growth, Per Capita GNP at factor cost (Rupees), Per Capita GNP Growth, Splashed Growth rate of Industrial Production, Annual Average of BSE, Annual Average of NIFTY, Average Gold Price Mumbai (Rupees per 10gms), Average Repo Rate, Inflation, etc. The money market limits are included in the form of Combined Total Liabilities of the Centre & States (Rs Crores) and Total Liquidity (Rs Crore). In this analysis we assume that the firm's financials are given and hence we estimate the intensity of bond issues, average coupon rate and the average maturity in three independent regression models. The data used in this study included monthly debt updates archive files of the WDM segment of NSE for the period A January 1999 to December 2010. Table 5 provides the sample profile of the data used in the model.

Table 5: Descriptive Statistics of the Whole Sale Debt Market (1999-2010)

Variable	Mean	Std	Minimum	Maximum
No of Times Issued	191.3	407.3	1.0	5376.0
Avg_Coupon	8.5	3.5	0.0	16.0
Avg_Maturity	79.4	42.6	2.0	240.0
Total_Bonds__Rupees_crore_	19928.1	16991.6	4845.5	53608.0
Rs_US_Dollar_Average	45.8	1.9	40.2	48.4
FDI__Rs_Crore_	75382.0	65142.7	9338.0	179059.0
FPI__Rs_Crore_	47568.8	63335.0	-63618.0	153516.0
GDP_at_Factor_Cost__Rupees_crore	3297899.8	932880.0	2222314.9	4877842.0
GDP_growth	7.0	1.9	3.8	9.6
Per_Capita_GNP_at_factor_cost__R	29520.3	6713.7	22038.0	40765.0
Per_Capita_GNP_Growth	5.3	2.0	2.2	8.2
Splashed_Growth_rate_of_Industri	6.8	3.4	2.5	15.2
Annual_Avg_of_BSE	4651.7	3044.3	1587.7	9840.2
Annual_Avg_of_NIFTY	2711.4	1675.8	1036.1	5583.5
Gold_price_Mumbai_Rupees_per_10g	8993.2	5183.9	4393.6	19227.1
_Combined_Total_Liabilities_of_t	73.2	5.3	64.9	81.1
WPI_Inflation_	0.0	0.1	-0.5	0.1
Total_Liquidity_Rs_Crore__	11947053.0	7137789.7	4284638.0	24790612.0
Avg_Repo_rate	7.1	1.1	5.1	8.8
Indices_of_Real_Effective_Exchan	100.0	3.1	95.3	108.6

The results of the regression model are given in Table 6 and Table 7, below. We present three regression models that estimate Intensity of Issue and Average Coupon rates for only coupon Bonds (excluding zero coupon bonds) and the average maturity for all bonds (including zero coupon bonds). Table 6 gives the estimates for coupon bonds and Table7 gives the estimates for all bonds.

Table 6: Regression Model Results (Coupon Bonds)

Model Variables	Dependent Variable = No of Times Issued		Dependent Variable = Average Coupon Rate	
	Estimate	Prob	Estimate	Prob
Intercept	-564.4	0.023	40.9	<.0001
Discount= (Avg_Repo_Rate- Average Coupon Rate)	16.1	0.035		
Average_Maturity	1.3	0.000		
Combined_Total_Liabiliti es_of_the Federal & States	9.0	0.005	-0.2	<.0001
FI_Indicator	333.8	<.0001	-0.6	0.0012
STATE_FI_Indicator	391.4	0.001		
Average_Repo_rate			0.9	<.0001
Issuer_Rating			-0.3	<.0001
REER			-0.2	<.0001
Average_Libor (USD)			0.2	<.0001
PRIVATE_FI_Indicator			-0.8	<.0001
R^2= 0.1233	$R^2_{Adjusted}$ = 0.1184		R^2 = 0.5848	$R^2_{Adjusted}$ = 0.5816
No. of Observations = 899	Degree of Freedom= 894		No. of Observations = 899	Degree of Freedom = 892
F-Value = 25.16	Degree of Freedom= 894		F-Value = 179.49	Degree of Freedom=892

Intensity is explained by Discount (difference between Avg_Repo_Rate and Average Coupon Rate), Average_Maturity, Combined_Total_Liabilities_of_the Federal & States, FI_Indicator and STATE_FI_Indicator. Except for the indicators of FIs and State FIs, a larger difference between the average repo rate and the issue coupon rate implies that the ability of issuer to raise funds at lower funding costs will attract them to the debt market. Similarly, a rising maturity need of funds is more likely to increase intensity of issues. Finally, the rising total liabilities of Centre and the States (mounting public debt) are also positively related with intensity. These findings are in consonance with previous findings. The model on average coupon rates identiy, Combined_Total_Liabilities_of_the Federal & States, Average_Repo_rate, Issuer_Rating, REER, Average_Libor (USD), FI_Indicator, STATE_FI_Indicator, Private_FI_Indicator, etc. Except for the indicators of FIs, State or Private FIs, the three determinants of interest rates such as Average_Repo_rate and Average_Libor (USD) explain relationship with coupon rates. Further, Issuer_Rating and REER (Real Effective Exchange Rates) are negatively related which depicts the fact that credit worthy firms would have an opportunity to raise funds cheaper than les credit worthy firms, and, a rising foreign currency rates help domestic issuers to raise funds at cheaper rates, which means stronger foreign currency prevents firms from availing the external commercial borrowing market and cannot act as substitute for the bond market. Finally, the rising total liabilities of Centre and the States (mounting public debt) are also negatively related with coupon rates meaning that public debt may entice firms to raise more debt but at a rising cost.

Table 7: Regression Model Results (Coupon Bonds)

Model Variables	Dependent Variable = Average Maturity			
	Estimate	Std Error	Prob	VIF
Intercept	-136.20	-3.12	0.0019	1
Discount= (Avg_Repo_Rate- Average Coupon Rate)	-4.70	-13.42	<.0001	1.258
GDP_Growth (%)	5.48	7.96	<.0001	1.33
REER	1.10	2.66	0.0079	1.31
Combined_Total_Liabilities_of_the Federal & States	0.88	3.79	0.0002	1.22
$R^{2=}$	0.3192		$R^2_{Adjusted}$	0.3158
No. of Observations	1010		Degree of Freedom	1005
F- Value	94.23		Degree of Freedom	1005

The rising maturity of Bonds is explained by rising borrowing costs in the market (Discount as the difference between Average_Repo_Rate and Average Coupon Rate). GDP_Growth (%), REER and the Combined_Total_Liabilities_of_the Federal & States, are positively related with Maturity. This could refer to the asset liability structure of issuers in order to fulfill the need to match the structure of their existing or potential assets with a planned liability from the debt market.

5. *Conclusion & Policy Implications*

This paper assessed the bond market in India by briefly describing its structure and functioning, as well as employing to identify factors that influence the demand and supply of bonds actually influence firms' demand and supply of bonds. This study intended to explain the intensity of debt issues for Indian firms given the conditions of the economy and also identified the capacity of the firms to raise cheaper funds or to lengthen the maturity of their bond issues for given financials. We tested the hypotheses of whether funding costs, maturity structure, intensity of activity vary across issuer groups, whether effective exchanges rates impact domestic issues, whether existing debt impact the future debt issues, etc. Bonds offered by the issuers in the primary market must have favorable features in order to attract investors and improve the overall participation to remain liquid in the secondary market. WE estimated regression models to investigate the relationship between the market characteristics that also included the external sector to signify the major determinants of activity, maturity and coupon rates, etc. Our findings have been in consonance with previous finding in the literature. The credit rating is the most significant factor to the investors when they select bond investment. It helps the investors assess the credit risk of the bond and thus require an appropriate risk premium. The bond market is affected by the movement in other security markets. To compete for the limited funds of the institutional investors, bond markets must be able to provide investors certain facilities to promote higher investments in bonds. RBI Credit Policy 2009 confirmed that the government borrowing programs could crowd out the opportunity of investment in debt markets in 2009. Questions such as do macroeconomic variables impact firms' use of bond financing versus bank financing, and why do firms use bank financing over bond financing could also be answered. Similarly, we also provided insights on the interaction between the domestic bond market and the external bond market via stronger currency. The development of a bond market can take an economy one step closer to enjoying the vast benefits that accrue to countries with developed bond markets. Investors with diverse expectations are a pre condition for the debt market.

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