INDIAN DEBT MARKET – REALITIES & ISSUES

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Background:

Traditionally Indian banking system provided the much-needed financial support to industry and commerce. Till the onset of financial sector reforms in early 1990s the Indian industry depended heavily on banks and development financial institutions for their working capital and long-term projects respectively. Capital was scarce and hence, needed rationing to areas and sectors where the government wanted and prioritized. The existence of Controller of Capital Issues was the guiding force behind investment where public support was needed. At the time of its liberation from the British in 1947 India had only the traditional commercial banks and these banks were small and owned by private companies who had other interests in business and promoted banks to channelize resources to their activities. It was no different from earlier fragmented banking system of the USA. These banks supplied shorter maturity credit for working capital needs of the industry and commerce as major infrastructure, manufacturing facilities, etc. were financed by the Government through priorities in Five Year Plans. Public sector undertakings were set up to achieve the industrial self reliance objective of the nation. The role of creating capital formation was shifted primarily to the PSUs. The banks were willing to fund basically the working capital requirements of the credit-worthy borrowers on the security of tangible assets. These PSUs were funded through budgetary support as well as support from the DFIs. Thus emerged a well-knit structure of national and state level development financial institutions (DFIs) for meeting requirements of medium and long-term finance of all range of industrial units, from the smallest to the very large ones. Government as well as Reserve Bank of India nurtured DFIs through various types of financial incentives and other supportive measures.

The Mahalanobis model implemented through the second five-year development plan envisaged rapid growth of domestic industry even in the private sector to support the self-reliance growth model adopted by the planners of the country. So a clear demarcation was laid out where commercial banks would provide working capital finance whereas the DFIs would

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provide medium and long-term finance. Rapid growth required subsidized lending rates for medium and long-term projects as these projects were having long gestation periods and high cost of funding would make these projects unviable. Government and RBI provided DFIs access to low cost funds from international organizations like World Bank to enable these term- lending institutions to finance industry at subsidized rates. These DFIs were also allowed to issue bonds with government guarantee and provided with funds through the budgetary support by Government and RBI allocated sizeable part of RBI's National Industrial Credit (Long Term Operations) funds to DBI, the largest DFI of the country. Other DFIs like IFCI, ICICI, SIDBI (another offshoot of IDBI) also played an important role in shaping up the industrialized India. The early RBI fiat allowed the DFIs to retain their own identity and they were not in competiting terms with the banking system. However, their role and the way they do business underwent dramatic change during the reforms saga as we moved to a more deregulated environment. For survival and growth in the new environment, one of the largest DFIs, ICICI did a reverse merger with its subsidiary bank. Similar strategy was also being thought of for IDBI.

Financial system in India was completely regulated by RBI and other market regulators like CCI, etc. as capital was rationed and it needed to be distributed tó the most deserving cases. Government took a lead role in allocating and rationing capital. Before 1994, the lending rates was administered and determined by RBI and banks as well as DFIs were only allowed to do their technical and financial appraisal. During the regulated environment, corporate sector was guided by Ministry of Finance fiat of fixing interest rate on their bonds. There was no concept of free pricing either for bonds or equities leave alone the modern concept of determining the spread over sovereign risk free rate. This made the Indian corporates to be completely bank/DFI oriented with regard to raising resources for operations and development. Till early 1990s, banking system as well as DFIs followed rigorous financial appraisal norms that put a lot of emphasis on leverage ratios and there was little incentive for the corporates to raise money from the market. They completely depended on DFIs and Banks for funding. Investors primarily depended on banking system to save, as there were few avenues available to them as alternatives.

In India large Government borrowings have provided the impetus for development of bond market. A system of the Reserve Bank of India (RBI) funding on an automatic basis, the Government's budget deficit at subsidized rates of interest was replaced in April 1997 by a system of RBI financing the temporary mismatches between expenditure and revenue of Government at market aligned interest rates. Consequent to the dismantling of the administered interest rate regime, the borrowing requirements of the Government are now largely raised from the market at market related rates. As India experienced capital inflows and considered intervention or addition to foreign exchange reserves, it used domestic eligible marketable bonds in its portfolio whenever it wanted to sterilize the money expansion. A deep and liquid debt market naturally facilitates this process and in this sense the linkage between capital inflows, sterilization and development of debt markets can also be considered to be an additional reason for development of debt market.

These reforms have resulted in a marked change in the nature of instruments offered, a wider investor base and a progressive movement towards market-determined interest rates. The market for government securities has, however, remained largely captive and wholesale in nature, with banks and institutions being the major investors in this segment. While the primary market for government securities witnessed huge activity due to increased borrowing needs of the government, only a small part of the outstanding stock finds its way into the secondary market. The number of transactions in the secondary market continues to be relatively small to the size of outstanding debt and the size of the participants, though the year 2001-2002 saw a phenomenal growth in trading volumes in the market. Banks and other institutions trade in these securities on the telephone and have been reporting the trades on the Wholesale Debt Market (WDM) segment of NSE if the trades are brokered thru brokers. The nature of the market has not changed even after introduction of Negotiated Dealing System in February 2002. The market participants like banks and institutions are connected to NDS of RBI to report their negotiated deals in government securities. The liquidity continues to be thin despite a shift to screen-based trading on NSE as well as NDS. Further reforms are, therefore, necessary for improving market design and liquidity. The activity in the secondary market could pick up, once bond yields are better aligned and retail investors, apart from institutional investors, start actively participating in the market.

The development of secondary debt market in India has considerably lagged behind the equity market. About 98% of activity in the secondary debt market are on account of transactions in government securities and T-bills, while trades in corporate debt paper and PSU bonds are insignificant. This is partly due to lack of sufficient number of securities and partly due to lack of interest by retail investors in those securities.

The year 2001-02 has been most eventful for debt markets in India, with implementation of several important decisions like setting up of a clearing corporation for government securities, a negotiated dealing system to facilitate transparent electronic bidding in auctions and secondary market transactions on a real time basis and dematerialisation of debt instruments. The year also witnessed unprecedented volumes both in primary market and secondary market. The trading volumes in debt papers in India far exceeded the trading volumes in equity segment of the exchange in 2001-02.

Financial Sector Liberalization and Change of Market Environment: India had to introduce large scale financial sector reforms process, now commonly known as New Economic Policy 1991, to open up the economy and make it more attractive for investment. The aim was also to create strong financial sector intermediaries with sound capital base and efficient operational capability. As we move towards better degree of integration with the global markets, survival for these protected organisations like PSU banks and DFIs become difficult if they do not bring efficiency into their operations. New private sector banks were set up to provide better competition to the PSU banks. But at the same time the PSU banks need to be protected to some extent, as they have been all these years operating in environments that had little operational flexibility. RBI introduced prudential BIS norms in a phased manner giving these organizations time to breathe.

But the deregulated environment stripped the line of budgetary support and cheaper source of funding to term lending institutions and the Govt. also reduced substantially the guarantee cover it used to provide earlier for this organization. These organizations were advised to move to a completely rating based environment for raising resources that required tuning their business operations. In the new environment without Government and budgetary support, DFIs found themselves competing with banks for the funds but due to the branch network of banks, the cost of raising resources for banks was far less than the DFIs. This created a major problem for these organisations.

In the deregulated environment, all organisations look forward to capital market as a source of funding to do their business and it should be no way different for banks and term lending institutions. In the new environment of free pricing, fundamental factors play a dominant role. Until recently their prime business motivation was to function as pure and simple financial intermediaries engaged in mobilising resources and lending them to the needy borrowers. But due to the onset of financial sector reforms, composition of their assets and liabilities is getting increasingly influenced by the market forces. In the past, while commercial banks used to mobilise resources mainly from the primary savers through various deposits and heavily depended on time deposits, the DFIs were relying on the captive sources of funds and only small amounts used to be raised from the primary savers through bond issuance. With financial sector deregulation both the DFIs and the banks are realising that they need to increasingly become market oriented in their intermediation activities. They have also recognised the need to increase the proportion of their non-business income, as such activities do not impair quality of their assets or lead to growth in their NPA levels. During the year 2001-02, we may not be surprised to see that banks have made substantial profit primarily due to their operations in the secondary bond market.

Financial sector also brought some problems for banks and DFIs in the form of rising NPAs as opening up economy and joining WTO is removing the protection provided to domestic industries and increasing imports is making many domestic units unviable and sick and thereby affecting the assets of the banking sector requiring more capital charge. However, over the years increasing emphasis on control over NPAs is also paying dividend in the sense that NPAs are coming down in percentage terms. But if we closely look into the numbers, we may realize that commercial lending has not significantly increased on year-to-year basis but the investment on sovereign bonds and other assets have significantly increased for the banking system. So, in a sense, banking system is also moving away from its primary objective and responsibility.

Reforms in Debt Market:

Debt market in India is a relatively illiquid market though liquidity has increased substantially during the last three years or so. The major market participants in the market have been banks and institutions who were part of this market from one direction like investing in the sovereign bonds, but these institutions did not use the market for raising resources. Since PSU banks invested for statutory reasons as well as to bail out government borrowing programmes, there was little incentive for secondary market trading. Another reason for lack of secondary market trading was till RBI moved to a market-determined rate of borrowing for Government. The coupon paid on those borrowings were low and, hence if they were to be traded in the market in a transitional phase of high interest rate regime, banks have to provide huge depreciation on the values of bonds to give market determined yield to the investors in the secondary market. The bonds held by PSU banks were held till maturity, as RBI guidelines till recently did not enforce marking the investments to the market. The secondary market traditionally remained a telephone market or the OTC market as there was no settlement guarantee in operations till the CCIL entered the market on February 15, 2002. Banks invested in the sovereign bonds not with a trading focus, but for reserve compliance. The secondary bond market operated with narrow participants base and there was no need for new and innovative types of instruments. The financial markets operated in administrative interest rate structure. However, secondary bond market was totally dominated by the sovereign papers and there was hardly liquidity in non-govt. papers. The reforms process during the last one decade or so can be classified into the following broad areas:

- **Interest Rate reforms:** Narashimam Committee report put major emphasis on interest and exchange rate deregulations. If the banks were to be healthy, their investment and lending as well as borrowings should be market driven rather than administered. Till 1993, RBI managed government borrowings at the rates that it found to be proper. But finally we had to move to a market driven interest rate mechanism in which government need to borrow money at market driven rate. To take things further, RBI continuously brought in more and more dismantling of interest rate structure. Today, only few schemes like Savings Bank account, Provident Funds (which have also been brought down substantially), Priority sector loans upto Rs.2 lakhs, Small Savings schemes, etc. are still governed by administered interest rate, though the Union Budget of 2002-2003 indicated moving towards a sovereign-rate-linked interest rate structure for some of the administered rate schemes. Today we find substantial deregulation of interest rate structure in the economy. Another development during the last decade being the revival of 'Bank Rate' as a reference rate to signal the changes in the scenario and banks are supposed to realign their prime lending rate to the changes in the Bank rate. Re-emergence of the Bank rate as a reference rate has helped to create benchmarks and develop a proper yield curve by the market participants. The re-emergence of Banks rate also enthused independent organisations like NSEIL to develop reference rates for overnight call and term money market. Today FIMMDA-NSE MIBID/MIBOR is the most accepted benchmark in the industry. The most important development during the decade was the introduction of Liquidity Adjustment Facility. RBI introduced the daily LAF from June 5, 2000 to moderate money supply in the market. On daily basis, RBI conducted daily auction of Repo and Reverse Repo to take away excess liquidity and to inject liquidity in the times of shortages. Initially RBI used Repo window with fixed rate Repo which was discontinued from June 5, 2000 and moved to an auction based Repo market with a single cut-off rate and later it moved to multiple repo rates system and once the market stabilised, it moved to a fixed rate mechanism from March 5, 2002.

- **Linkages between Money, Debt & FX Markets** : To provide better linkages between money, debt and foreign exchange markets, the RBI took quite a few innovative steps. In the initial stage to provide much needed liquidity and to reduce the volatility in the overnight call market RBI allowed non-bank entities to enter the call market. But once market reached long-term stability, it planned to make the market as a pure inter-bank market allowing banks and PDs to participate in the same. First it set limits in percentage terms of their previous year's (2001-02) operations in the call market upto which the non-banks would be allowed to take part in the market. The RBI plans to remove non-bank participants from the call market in a time bound manner. RBI also introduced the discipline of levels of borrowing and lending in the call money market. In the first stage, with effect from the fortnight beginning October 5, 2002, lending of scheduled commercial banks in the call/notice money market, on a fortnightly average basis, should not exceed 50 per cent of their owned funds (paid-up capital plus reserves) as at the end of March of the previous financial year while borrowings by scheduled commercial banks in the call/notice money market, on a fortnightly average basis, should not exceed 150 per cent of their owned funds or 2 per cent of aggregate deposits as at the end of March of the previous financial year, whichever is higher. In the second stage, with effect from the fortnight beginning December 14, 2002, lending of scheduled commercial banks, on a fortnightly average basis, should not exceed 25 per cent of their owned funds while borrowings by scheduled commercial banks should not exceed 100 per cent of their owned funds or 2 per cent of aggregate deposits, whichever is higher. These non-banks would participate more in the repo market which is taking shape in India with increasing volumes. Initially, non-banks were allowed only to do Repo but today they are allowed to both Repo as well as Reverse repo. To provide debt to the market, RBI also allowed Money Market Mutual Funds to exclusively participate in the money market though the growth of this segment has been very impressive. Over the last one decade or so, RBI has been increasingly allowing banking system to have substantial flexibility in credit delivery including allowing them to invest overseas. To provide more impetus to the market, RBI wanted a term money market to develop but the market remained illiquid. In order to moderate liquidity in the market, RBI also aggressively conducts Open Market Operations.

- **Widening of Investor base:** During 1996 RBI introduced the system of primary dealers (PDs) and satellite dealers (SDs); introduced delivery versus payment (DvP) in securities settlement; expanded the number of players in the market with facility for non-competitive bidding in auctions; and allowed wider participation in constituent Subsidiary General Ledger (SGL) accounts. Primary Dealers were expected to share the underwriting obligations of RBI and to provide two-way quotes to the market for Gilts. They were provided concessional finance by RBI for liquidity support, allowed access to call and repo market to borrow, allowed to issue CPs to raise funds at cheaper rates. However, Satellite Dealers did not expand business as expected by RBI and were discontinued from May 2002 while PDs have played important role to provide depth to the Gilts market. During the period emergence of self regulatory bodies, such as, the Primary Dealers Association of India (PDAI) and the Fixed Income Money Markets and Derivatives Association (FIMMDA) also helped in changing the market design. RBI also allowed Foreign Institutional Investors to invest in Gilts and T-Bills. To improve retail base in Gilts, RBI put emphasis spreading of constituent SGL facility and allowed entities like NSCCL, NSDL, SCHIL, CDSL, etc. in addition to banks to offer CSGL services to retail clients all over the country. To improve retail participation in the market, RBI issued guidelines for non-competitive bidding and reserved 5% of the issues size for the said purpose.

- **Instruments related Developments**: RBI planned to move non-bank entities from call market and to manage the funds, these entities would move to repo market as it provides a safe short-term option to these investors. Hence, repo market would be more vibrant and the new fiat of RBI that all repo deals on Gilts to be settled through CCIL where CCIL will provide novation (settlement guarantee) would surely take this segment of the market to greater heights. In recent future, we may introduce Tripartite Repo. The repo will be more used as an instrument to manage the balance sheet rather than being used as a typical lending and borrowing mechanism. Securities lending and borrowing mechanism would surely provide greater depth to this market. During the last couple of years varieties of new instruments have been introduced and more focus has been on floating rate papers. RBI introduced auction of floating rate bonds on the variable base rate to be derived out of the implied yields at cut-off prices emerging in the immediate previous six 364-day T-bills auctions prior to the relative half-year coupon period. RBI also introduced market friendly guidelines for CPs/CDs to give impetus to the money market. To synchronise the T-Bills market, the RBI discontinued the issuance of 14-day and 182-day T-Bills while realigning the auctions of 91-day & 364-day T-Bills and increased the notified amount in respect of 91-day T-bills to Rs.2500 million and 364-day T-Bills to Rs.10000 million. This may increase the liquidity in those papers as for floating rate papers, more likely RBI is going to use the cut-off rates emerging out of T-Bills auctions.

- **Operational Flexibility:** During the last one decade, RBI has been issuing guidelines and making policy decisions to provide banking system more and more operational flexibility. Banks have been advised to operate with proper risk management system with regard to their investment and advances portfolio, putting more emphasis on prudential accounting norms and reduction of NPAs. Banks have been allowed to invest in debentures and other corporate and semi government papers. RBI has been gradually reducing CRR and also brought down SLR to 25% of NDTL to provide more flexibility to banks to lend and invest. Freeing of inter-bank liabilities from the purview of CRR calculation also helped banks to better manage their Assets and Liabilities. FIIs have been allowed to take forward cover for their investment in debt reducing their foreign exchange risk.

- **Settlement related developments:** There has been enough emphasis to move towards an electronic form of settlement in both government and non-government papers. RBI has been continuously issuing guidelines on investment and valuation norms and has made it mandatory for banks to move to dematerialised form of investment even for privately placed debt and corporate papers. Because of this fiat, almost all new issuances of corporate papers are in demat mode today. This will surely increase liquidity in the market. Till the CCIL became operational, RBI ensured settlement in Gilts and T-bills on delivery versus payment (DVP) mechanism. RBI issued guidelines to route all deals upto Rs.200 million through CCIL and all repo deals irrespective of its size need to be settled through CCIL. The market participant may also choose CCIL, if they desire, to settle deals beyond Rs.200 million. The provision of novation (settlement guarantee) by CCIL would surely change the very nature of doing business in the financial market by banks and institutions which is also likely to percolate down to retail level if retail investors deal thru any intermediary providing Constituent SGL service and has joined CCIL as a member.

- **Market Transparency:** Screen-based trading introduced by National Stock Exchange of India in June 1994 for debt securities has set the market to move towards improved transparency. It also encouraged direct deals among banks and institutions to be more transparent. The screen based trading was expected to improve market depth as brokers from different parts of the country can now do business. It also led to reduction in spread. To provide a trading platform among banks and institutions as well as connecting them directly to CCIL system for routing settlement, RBI operationalised Negotiated Dealing System (NDS) at PDO on February 15, 2002. RBI also made it mandatory for market participants to report the deals within 15 minutes of the transaction being completed. This has been a big step forward as previously there was no compulsion on market participants to report the negotiated deals within any time frame. A member could possibly do a deal at 10.00 AM and report the same to the Exchange at any time before the concerned market closes. The price in those cases could not be trusted to indicate and reflect the trend in the market and hence for such reasons, market participants would not be taking these prices for designing their trading strategies. In some of the international markets, such deals are required to be reported to the market within 30 seconds to give it a very close link to the real time price discovery mechanism. This setting of time frame would be very helpful for the market as market participants would know within a reasonable time the prices of various papers traded in the market.

- **Investment Guidelines for Banks and Institutions:** During the last one decade or so, RBI has issued extensive guidelines on investments and valuation for the banks and institutions in order to streamline the present environment. The thrust has been to move towards a paperless environment to reduce the opportunity cost for the market participants. For encouraging dematerialised holding of debt instruments, it was decided that with effect from June 30, 2001, financial institutions (FIs) and PDs will be permitted to make fresh investments and hold commercial paper (CP) only in dematerialised form. The outstanding investments in scrip form were to be converted into demat form by October 2001. From October 31, 2001, banks, FIs and PDs will be permitted to make fresh investments and hold bonds and debentures, privately placed or otherwise, only in dematerialised form. The outstanding investments in these instruments should also be converted into demat by June 2002. Fresh guidelines were issued to Banks with regard to investment in privately placed debt. Banks and FIs permitted to make fresh investment in bonds and debentures, privately placed or otherwise, only in dematerialized form from October 2001.

- **Consolidation of Issues:** RBI has been taking steps in consolidating Government stocks. This would help in creating high level of floating stocks of the securities and help in creating a good STRIPS market when introduced. As of March 2002, there are 23 securities with minimum outstanding amount of Rs.10,0000 millions, accounting for 50% of the total outstanding issues. This helps liquidity in the secondary market as the floating stocks increase. During the last three years, RBI has taken conscious efforts to increase re-issuance of papers rather than issuing new papers. In the year 2001-2002, there have been only 11 instances of new papers issued by Government while 18 instances of re-issuance.

- **Streamlining Call /Notice Money Market:** As per the policy announced by RBI, it was decided to stipulate prudential limit on the exposure of commercial banks in call/notice money market in two stages as indicated below. In the first stage, with effect from the fortnight beginning October 5, 2002, lending of scheduled commercial banks in the call/notice money market, on a fortnightly average basis, should not exceed 50 per cent of their owned funds (paid-up capital plus reserves) as at the end of March of the previous financial year while borrowings by scheduled commercial banks in the call/notice money market, on a fortnightly average basis, should not exceed 150 per cent of their owned funds or 2 per cent of aggregate deposits as at the end of March of the previous financial year, whichever is higher. In the second stage, with effect from the fortnight beginning December 14, 2002, lending of scheduled commercial banks, on a fortnightly average basis, should not exceed 25 per cent of their owned funds while borrowings by scheduled commercial banks should not exceed 100 per cent of their owned funds or 2 per cent of aggregate deposits, whichever is higher. Reserve Bank of India has stipulated prudential limit on lending by primary dealers (PDs) in call/ notice money market with effect from October 5, 2002. It has also asked them to gradually reduce their borrowings in call/notice money market in two stages. As per the notification issued by RBI in July 2002, with effect from October 5, 2002, PDs are permitted to lend in call/ notice money market upto 25 per cent of their net owned funds (NOF). It has also been decided by RBI that access of PDs to borrow in call/notice money market would be gradually reduced in two stages: in Stage I, PDs would be allowed to borrow up to 200 per cent of their NOF as at end-March of the preceding financial year. However, this limit would not be applicable for the days on which government dated securities are issued to the market. Stage I would be operational upon the finalisation of uniform accounting and documentation procedures for repos, allowing rollover of repos, introduction of tripartite repos or collateralised borrowing and lending obligation (CBLO) to the satisfaction of RBI and permitting repos out of available for sale (AFS) category. In Stage II, PDs would be allowed to borrow upto 100 per cent of their NOF. Days on which government dated securities are issued to the market will continue to be exempted from this limit. The implementation of Stage II will commence from one month after permitting sale of repoed securities. It was also notified that on implementation of the real-time gross settlement (RTGS) system, the above exemptions would be reviewed. The process has been initiated to make the call market as a pure inter bank market and phase out non-bank participants from call market to repo market. It is expected that repo market is growing to be very big and liquid in near future.

Participants in the Debt Markets

Debt market in India has remained predominantly wholesale markets, with institutional investors and banks being major participants. Banks, financial institutions, mutual funds, provident funds, insurance companies and corporates are the largest investors in debt markets. Many of these participants are also issuers of debt instruments to raise capital from the market. The small number of large players has resulted in the debt markets being fairly concentrated, and evolving into a wholesale negotiated dealings market. Another factor which also made this market a wholesale one is the absence of settlement guarantee system till very recently. Due to settlement risk small investors have not ventured into this market while provision of settlement guarantee in equity market has helped in providing depth to the equity market. Most debt issues are privately placed or auctioned to the participants. Secondary market dealings are mostly done on telephone, through negotiations. In some segments, such as the government securities market, market makers in the form of primary dealers have emerged, which enable a broader holding of treasury securities. Debt funds of the mutual fund industry, comprising of liquid funds, bond funds and gilt funds, represent a recent mode of intermediation of retail investments into the debt markets.

The market participants in the debt market are described below:

- Central Government raises money through bond and T-bill issues to fund budgetary deficits and other short and long-term funding requirements.
- RBI, as investment banker to the government, raises funds for the government through issuance of dated securities and T-bill issues, and also participates in the market through open-market operations in the course of conduct of monetary policy. On many occasions Government privately places its bonds with RBI to raise funds and on occasions, RBI as underwriter of the Government securities has to share the devolvement with PDs in case of full or partial non-subscription of Gilts. RBI also conducts daily repo and reverse repo to moderate money supply in the economy. RBI also regulates the bank rates and repo rates, and uses these rates as tools of its monetary policy. Changes in these benchmark rates directly impact debt markets and all participants in the market as other interest rates realign themselves with these changes.
- Primary Dealers, who are market intermediaries appointed by RBI, underwrite and make market in government securities by providing two-way quotes, and have access to the call and repo markets for funds. PDs has to achieve the minimum success ratio in their participation in the auction of Gilts and T-Bills. However, the recent guidelines issued in July 2002 by RBI will restrict the participation of PDs in call market while their operations in repo and bond market is likely to increase.
- State governments raise money through issuance of State Development Loans. Other sub-national bodies like municipal corporations and other local bodies issue securities in the debt markets to fund their developmental projects as well as to finance their budgetary deficits. At times, these entities also invest their money in bond market.
- PSUs and their finance corporations are large issuers of debt securities. They raise funds to meet the long term and working capital needs. These corporations are also investors in bonds issued in the debt markets.
- Corporates issue short and long-term paper to meet their financial requirements. They are also investors in debt securities issued in the market.
- DFIs regularly issue bonds for funding their financing requirements and working capital needs. They also invest in bonds issued by other entities in the debt markets.

- Banks are the largest investors in the debt markets, particularly the government securities market due to SLR requirements. They are also the biggest participants in the call money and overnight markets. Banks arrange CP issues of corporates and are active in the inter-bank call and term markets and repo markets for their short term funding requirements. Banks also issue CDs and bonds in the debt markets. They also issue bonds to raise funds for their Tier-II capital requirement.

- Mutual funds have also emerged as important players in the debt market, owing to the growing number of debt funds that have mobilised significant amounts from the investors. Most mutual funds also have specialised debt funds such as gilt funds and liquid funds. Mutual funds are not permitted to borrow funds, except for meeting very short-term liquidity requirements. Therefore, they participate in the debt markets pre-dominantly as investors, and trade on their portfolios quite regularly.

- Foreign Institutional Investors (FIIs) are also permitted to invest in treasury and corporate bonds, within certain limits. They have also been permitted to take forward cover for their investment in the bond market.

- Provident and pension funds are large investors in the debt markets. The prudential regulations governing the deployment of the funds mobilised by them mandate investments pre-dominantly in treasury and PSU bonds. They are, however, not very active traders in their portfolio, as they are not permitted to sell their holdings, unless they have a funding requirement that cannot be met through regular accruals and contributions.

- Charitable institutions, trusts and societies are also large investors in the debt markets. They are, however, governed by their rules and bye-laws with respect to the kind of bonds they can buy and the manner in which they can trade on their debt portfolios.

- Co-operative Banks to invest their money in Government securities to meet the new SLR norms.

Secondary Market - Trading Infrastructure & Systems

The secondary markets for bonds are pre-dominantly wholesale markets, with trades done on telephone. The WDM segment of NSE as well as WDS of BSE provide trading platforms for government securities while PDO, RBI has installed the Negotiated Trading System connecting all banks and institutions but not connected through any intermediary.

Wholesale Debt Market of NSE

NSEIL provides a facility for screen based trading with order matching facility. The members are connected from their respective offices at dispersed locations to the main system at the NSE premises through a high-speed, efficient satellite tele-communication network. The trading front end works on Windows NT platform. The trading system is an order-driven, automated order matching system, which does not reveal the identity of parties to an order or a trade. The trading system operates on a price time priority. Orders are matched automatically by the computer keeping the system transparent, objective and fair. Where an order does not find a match it remains in the system and is displayed to the whole market, till a fresh order which matches, comes in or the earlier order is cancelled or modified.

The trading system provides flexibility to the users in terms of the type of orders that can be placed on the system. The trading system also provides complete on-line market information through various inquiry facilities. Detailed information on the total order depth in a security, the best buys and sells available in the market, the quantity traded in that security, the high, the low and last traded prices are available through various market screens at all points of time. The trades on the Wholesale Debt Market segment can be executed in the Continuous or Negotiated market. In the continuous market, orders entered by the trading members are matched by the trading system. For each order entering the trading system, the system scans for a probable match in the order books. On finding a match with price-time priority, a trade takes place. In case, the order does not find a counter order in the order books, it is added to the order books. This could later match with any future order entering the order book and upon match result into a trade. In the negotiated market deals are negotiated between the two counter parties and are reported on the trading system through the Trading Member. In a negotiated deal, identity of the counter broker as well as counter participant need to be incorporated in the orders for a possible match.

WDM trading system provides for trading in debt and other instruments either as outright purchase and sale as Non-Repo trades or as Repo. While entering the order, the trading member has to indicate the trade type (NR or RE), the desired settlement term (from T+0 to T+5) if their order is to result into a trade. Similarly Repo term also needs to be specified if the order is a repo order. Currently the Repo term varies from 1 to 14 days. In case of Continuous market, Orders are matched on the basis of price-time priority. For non-repo trades, the best buy order is the one with the highest buy price and the best sell order is the one with the lowest sell price. Orders are matched automatically by the trading system based on passive order price. In case of repo trades, the best buy order is one with the lowest buy rate and the best sell order is one with the highest sell rate. In case of Negotiated market, Orders are matched and results in a trade if counter parties of each order, security descriptor, order price, order volume matches with the counter order. Order matching is essentially on the basis of security descriptor, price/rate, volume, order type and conditions. The value of the order/trade is indicated in "Rs. Lakhs" (Rs.0.1 million) in the trading system. All orders are required to comply with the minimum order size and multiple size as specified by the Exchange. For trading in continuous market, every participant can set up counter party exposure limits to ensure that all his trades are within the exposure limits set up for the respective counter party. This provision enables the participants to minimise the counter party risk associated with any counter party.

Due to the high trade values and the market practice of settling deals bilaterally, participants generally set a maximum risk exposure vis-a-vis all potential counter parties in the market to ensure that they do not take any undue risk exposure against any particular counter party. Recognising this feature of the market, the WDM trading system provides for two kinds of entities on the segment. Accordingly this market segment has a two-tier system that recognizes Trading members and Participants. In WDM segment of the Exchange, there were 1825 securities available for trading as of June 2002 which included among others all Government securities, T-Bills and State Government securities. Government securities, T-Bills and State Development Loans are considered as deemed listed securities. The settlement in WDM segment is trade for trade and bilateral between buyers and sellers.

The wholesale debt market (WDM) segment of NSE has been providing the formal trading platform for trading of a wide range of debt securities since June 30, 1994. Initially, it started with government securities, T-bills and bonds issued by PSUs which has been widened to include non-traditional instruments like floating rate bonds, zero coupon bonds, index bonds, CPs, CDs, corporate debentures, state government loans, SLR and non-SLR bonds issued by financial institutions, units of mutual funds. All eligible securities, whether publicly issued or privately placed, can be made available for trading in the WDM segment.

Negotiated Dealing System

As part of the ongoing efforts to build debt market infrastructure and in pursuance to announcements in the Budget for 2001-2002, two new systems, the Negotiated Dealing System (NDS) and the Clearing Corporation of India Limited (CCIL) commenced operations in February 2002.

NDS facilitates screen based negotiated dealing for secondary market transactions in government securities and money market instruments, online reporting of transactions in the instruments available on the NDS and dissemination of trade information to the market. Government Securities (including T-bills), call money, notice/term money, repos in eligible securities, Commercial Papers and Certificate of Deposits are available for negotiated dealing through NDS among the members. NDS members concluding deals outside NDS system, in instruments available on NDS, are required to report the deal on NDS system within 15 minutes of concluding the deal. NDS interfaces with CCIL for settlement of government securities transactions for both outright and repo trades done/reported by NDS members. Other instruments viz, call money, notice/term money, commercial paper and certificate of deposits settle as per existing settlement procedure. Recognizing the need for introducing transparency and with a view to reforming the secondary markets in Gilts and money market instruments RBI has commenced the integrated project on Negotiated Dealing System. The system commenced operation from February 15, 2002 and it is expected to electronic dealing platform for trading in government securities and money market instruments and computerization of its Public Debt Offices for complete automation of the operations. The system facilitates electronic bidding in auctions and transparency of trades in secondary market transactions in Government securities on a real time basis. At a later stage, this system is expected to be integrated with the Structured Financial Messaging System and Real Time Gross Settlement (RTGS) System.

The PDO-NDS system is designed to:

- provide transparency on prices and volumes traded on real time basis to the market in the government securities;
- provide screen-based trading in government paper which will facilitate larger participation in the government auction system;
- facilitate on-line trade information dissemination to the market;
- put a centralised Subsidiary General Ledger and database system in place;
- provide inter-regional PDO connectivity;
- provide connectivity to participants;
- facilitate speedier reporting mechanism
- facilitate information access to supervisory and regulatory authorities and
- provide a scalable architecture.

The objective of the project is to help create a broad-based and transparent market in government securities, thereby enhancing liquidity in the system.

The first phase would cover the Call money, notice/term money, government securities including Treasury Bills, Repos, Certificates of Deposit, and Commercial Paper markets, while derivative products (Interest Rate Swaps and Forward Rate Agreements markets) would be covered in the second phase. The system will also be used for daily Liquidity Adjustment Facility (LAF) auctions. NDS will facilitate screen-based trading in call money, notice/term money, government securities, including T-bills, repos, CDs and CPs in the first phase. In the second phase, Interest Rate Swap (IRS) and Forward Rate Agreements (FRAs) will be covered. The system can also be used for daily repo and reverse repo auctions under LAF.

The functional scope of the NDS would be giving/receiving a quote, placing a call and negotiation in respect of quotes (or without a reference to quote), and entering the deals successfully negotiated. The system would enable members to set up preferred counter-party list and exposure limits. The system would also facilitate reporting of trades executed through exchanges for information dissemination and settlement in addition to deals done through the system. The system would facilitate submission of bids/applications for auctions/floatation of government securities through member terminals and pooled terminal facility. On-line market information like last traded price, volume of transactions, yield curve, quote information on live quotes, etc. would be disseminated to participants. The participants in the PDO-NDS system are Banks, Primary Dealers, Financial Institutions, Insurance Companies, Mutual Funds, Depositories and Clearing Corporations. Membership of Indian Financial Network (INFINET), a Closed User Group (CUG) network, that will provide secured communication to NDS members, is the eligibility criteria for becoming members of NDS-PDO system. Membership of INFINET requires Subsidiary General Ledger account and /or Current Account with RBI or as may be prescribed from time to time.

The NDS integrated with Securities Settlement System through Clearing Corporation of India Ltd. Is expected to improve efficiency in trading, settlement as the members are required to put their deals in the system within 15 minutes of the deal, interest payments and other improvements in services to investors in government securities as the automated system will have very minimum response time. Market will have the advantage of up-to-date information. The trade information will be available on-line to the market participants.

The functional scope of the NDS System includes:

- giving/receiving a Quote,
- placing a call and negotiation (with or without a reference to the quote),
- entering the deals successfully negotiated,
- setting up preferred counterparty list and exposure limits to the counterparties,
- dissemination of on-line market information such as the last traded prices of securities, volume of transactions, yield curve and information on live quotes,
- interface with Securities Settlement System for facilitating settlement of deals done in government securities and treasury bills,
- facility for reporting on trades executed through the exchanges for information dissemination and settlement in addition to deals done through NDS.

The system is designed to maintain anonymity of buyers and sellers but only the vital information of a transaction viz., ISIN of the security, nomenclature, amount (face value), price/rate and/ or indicative yield, in case applicable, will be disseminated to the market, through Market and Trade Watch.

Settlement System

The settlement of transactions in the government securities market is pre-dominantly done in Delivery-versus-Payment mode, where funds and securities are transferred simultaneously. Central government securities and T-bills are held as dematerialised entries in the SGL at PDO, RBI. The market participants need to have SGL account and Current account with RBI for settlement in Government papers. For a direct settlement between parties the SGL Form is filled by the seller, countersigned by the buyer, and sent to the RBI. The buyer transfers funds towards payment. The SGL form contains transfer instruction for funds and securities, signed by both counter-parties, and has to be submitted to RBI for the settlement to be effected.

Dematerialisation of Debt Instruments

Dematerialization of debt papers received momentum after the stamp duty payable on transfer of debt instruments was waived for transfers taking place in the depository mode. In order to promote dematerialization, RBI specified that repos in PSU bonds would be permitted only in demat form. Further, with effect from June 30, 2001, banks, FIs, PDs and SDs will be permitted to make fresh investments in and hold CPs only in dematerialised form and outstanding investments should be converted into demat form by October, 2001. With effect from October 31, 2001, banks, FIs, PDs and SDs will be permitted to make fresh investments in and hold bonds and debentures, privately placed or otherwise, only in dematerialised form and outstanding investments should be converted into demat form by June, 2002. With these developments, NSDL and CDSL commenced admitting debt instruments such as debentures, bonds, CPs, CDs etc., irrespective of whether these debt instruments are listed, unlisted or privately placed.

Holding and trading in dematerialised form provides a number of benefits to the investors. The dematerialisation of debt securities also opens up further opportunities. As securities in demat form can be held and transferred in any denomination, it is possible for the participant banks to sell securities to corporate clients, provident funds, trusts in smaller lots. This was not possible in the physical environment, as splitting of securities involved considerable amount of time. In the demat form, it is possible for the participant banks to STRIP these securities and create a retail market for the same.

By March 2002, the number of investor accounts for debt dematerialisation with NSDL stood at around 1,41,785. On the same date, debt securities for Rs. 1,09,464 crore are available in demat form.262 issuers have issued 3,443 debentures/bonds worth Rs. 77,531 crore in demat form. 253 issuers have issued 1,709 commercial papers worth Rs. 28,355 crore in demat form. Pass through certificates (PTCs) are also being issued in demat form; PTCs worth Rs. 3576 crore have been issued in demat form.

Constituent SGL Accounts

In order to promote retail holding in Government securities in electronic form RBI allowed banks and other entities to offer Constituent Subsidiary General Ledger (SGL) account to entities who are not eligible to have direct SGL and current account with RBI. This helps the account holders to participate in the market through DvP mechanism, which ensures movement of funds and securities simultaneously and removes counter party risk. RBI has permitted NSCCL, NSDL, CDSL, SCHIL, banks, and PDs to offer constituent SGL account facility to an investor who is interested in participating in the government securities market. All entities regulated by RBI [including financial institutions (FIs), primary dealers (PDs), cooperative banks, RRBs, local area banks (LABs), non banking financial companies (NBFCs)] should necessarily hold their investments in Government securities portfolio in either SGL (with RBI) or CSGL account. No further transactions by a regulated entity should be undertaken in physical form with any broker.

Clearing Corporation of India Limited

The Clearing Corporation of India Limited (CCIL), promoted by the banks and financial institutions, was incorporated in April 2001 to support and facilitate clearing and settlement of trades in government securities (and also trades in forex and money markets). It facilitates settlement of transactions in government securities (both outright and repo) on Delivery versus Payment (DVP-II) basis which provides for settlement of securities on gross basis and settlement of funds on net basis simultaneously. It acts as a central counterparty for clearing and settlement of government securities transactions done on NDS. It provides guaranteed settlement for transactions in government securities including repos through improved risk management practices viz, daily mark to market margin and maintenance of settlement guarantee fund.

Only a Bank/Financial Institution/Primary Dealer/Mutual Fund or a Statutory Corporation or body corporate that is a member of NDS and has opened an SGL Account and a Current Account with the Reserve Bank of India can apply for CCIL's membership for the Securities segment. Members conclude trades, on-line, on the NDS platform, via the INFINET network, a secure closed-user group (CUG) hybrid network consisting of VSATs and leased lines. After trades have been concluded on the NDS, details are forwarded to the CCIL system, via INFINET, for settlement. CCIL generates pay-in and pay-out file for securities and funds and transmits the same to RBI for settlement. CCIL has in place a comprehensive risk management system. It encompasses strict admission norms, measures for risk mitigation (in the form of exposure limit, settlement Guarantee Fund, liquidity arrangements, continuous position monitoring and loss allocation procedure) penalties in case of default etc. Each member contributes collaterals (partly in cash and partly in acceptable securities) to a Settlement Guarantee Fund (SGF), against which CCIL avails of a line of credit from a bank(s) so as to be able to complete settlement in case a situation of shortage resulting from a member's default is experienced. The price risk (on account of securities held by CCIL pending settlement of trades and transfer of ownership to the respective members) is mitigated by stipulating that members contribute additional collaterals in the form of Initial and Mark-to-Market (MTM) Margins. Securities contributed by, and standing to the credit of, members (their "SGF Contribution") are marked to market at fortnightly intervals, and calls for additional collateral made if needed. In case of funds shortages, CCIL completes settlement by utilizing the cash component of the concerned member's contribution to SGF and/or the lines of credit available to CCIL from banks and/or by entering into a reverse repo transaction with market participants. In case of securities shortages, CCIL arranges to complete settlement by transferring the security/ securities to the member concerned, either from its Settlement Guarantee Fund SGL Account or from its own Proprietary SGL Account at RBI, or by paying a cash compensation in lieu thereof, to the member to whom the security was to be delivered. The rupee funds payable to the defaulting member are withheld, and the securities utilised in completing settlement replenished the next day. The defaulting member has to pay a penalty for defaulting on its obligations and bear any other costs incurred by CCIL in meeting the default situation.

Market Structure:

The debt market in India is heavily biased in favour of Gilts in so far as the market capitalization as well as the secondary market trading is concerned. The government is borrowing increasingly from the market and the level of borrowing has been steadily growing. During 2001-02, the gross and net borrowings of Central Government amounted to Rs. 1,32,979 crores and Rs.92,302 crores respectively. The gross borrowings of Central Government increased by 11.9% during the year 2001-02. The primary issuance of State Government securities increased from Rs. 13,300 crore in 2000-2001 to Rs.19,030 crore in 2001-02. The gross borrowings of the Central and State Governments increased by 11.9% and 43.1% respectively. Banks and institutions like LIC invest heavily in Gilts. The table-1 gives the holding of Gilts by various entities:

Table -1

Ownership pattern of Government Securities in India			(in %)	
End-March	RBI	Banks	LIC	Others
1996	7.3	64.9	16.8	11.0
1997	2.8	63.0	18.7	15.5
1998	10.7	58.9	18.0	12.4
1999	9.1	59.5	17.9	13.5
Source: Report on Currency and Finance 1999-2000, RBI				

The total resources raised from the debt market has been increasing over the years. The table-1A gives the funds raised from the market during the last two years:

Table - 1A

Resources Raised from Debt Markets		
	(Rs. million)	
Issuer	**2000-01**	**2001-02**
Corporate	56,5780	51,5610
Public Issues	4,1390	5,3410
Private Placement	52,4340	46,2200
Government	128,4830	153,4200
Total	**185,0610**	**204,9810**
Source: Prime Database & RBI		

The data above shows that private placement has been the most preferred route as the same is least regulated and corporate sector has been comfortable with the same. The private placement market has been increasingly used by Financial Institutions as well as private corporate sector (Table 1-B).

Table -1B

Issuer-wise Distribution of Private Placement of Debt					
Issuer	**Issue Amount (Rs. million)**			**% of Issue Amount**	
	2000-01	**2001-02**		**2000-01**	**2001-02**
All India Financial Institutions/Banks	21,6730	18,6030		41.33	40.25
State Financial Institutions	2,28600	1,7090		4.36	3.70
Public Sector Undertakings	7,8390	8,3750		14.95	18.12
State Level Undertakings	11,4660	6,3340		21.87	13.70
Private Sector	9,1690	11,2000		17.49	24.23
Total	**52,4340**	**46,2200**		**100.00**	**100.00**
Source: Prime Database					

The table-1C shows the increasing reliance of the corporate sector on private placement route over the last few years:

Table 1-C

Resources Raised in the Corporate Debt Market						
(Amount in Rs. million)						
Year	Debt Issues			Private Placement (%) (3/4*100)	Total Resource Mobilisation in the Primary Market	Share of Debt in Total Resource Mobilisation (4/6*100) (%)
	Public Issues	Private Placements	Total (2+3)			
1995-96	2,9400	10,0350	12,9750	77.34	21,857	59.36
1996-97	6,9770	18,3910	25,3680	72.50	30,039	84.45
1997-98	1,9290	30,9830	32,9120	94.14	34,045	96.67
1998-99	7,4070	38,7480	46,1550	83.95	46,658	98.92
1999-00	4,6980	54,7010	59,3990	92.09	62,374	95.23
2000-01	4,1390	52,4340	56,5780	92.67	59,057	95.80
2001-02	5,3410	46,2200	51,5610	89.64	52,643	97.94
Source: Prime Database						

Turnover

The secondary transactions market in debt securities (including government and non-government securities) increased by 121% to Rs. 15,75,1080 million in 2001-02 from Rs.7126060 million in 2000-01. The table-2 gives the statistics of turnover in debt securities in the market.

Non-government securities accounted for a less than 2% of total turnover in debt market. NSE accounted for nearly 60% of the total market and has established itself a formidable trading platform for the market.

Table - 2

Turnover of Debt Securities		
		(Rs. million)
Securities	**2000-2001**	**2001-2002**
Government Securities	**6981210**	**15553840**
WDM Segment of NSE	4140960	9276040
Rest of SGL	284,0250	6277800
Non Government Securities	**144850**	**197240**
CM Segment of NSE	120	590
WDM Segment of NSE	144300	195820
'F' Category of BSE	430	830
Total	**7126060**	**15751080**
Source: RBI, BSE and NSE		

The non-government securities are traded on the WDM and CM segments of the NSE and on the WDS segment of the BSE. The secondary market for corporate debt is not yet fully developed in India. The volumes thus continue to remain low. The turnover in non-government securities in NSE was Rs.195860 million in 2001-02, increasing by 34.70% during the year. The turnover on BSE was a negligible Rs.830 million during 2001-02. NSE accounted for over 99% of total turnover in non-government securities during the year.

The aggregate turnover in (Central and State Government dated securities and T-bills through SGL (including outright and repo transaction) touched a level of Rs.15553840 million, recording an increase of 123% over Rs.6981210 million in the previous year. The volume of transactions in State Government securities increased by 119% at Rs. 65290 million. The growing turnover of government securities reflects increasing depth of the market. The monthly turnover in outright transactions for the year 2001-02 ranged between Rs.604910 million and Rs.1341620 million, with a monthly average of Rs. 999080 million. Such high volumes is attributed to the fact that the commercial banks are flushed with funds while the recent past has witnessed several cuts in bank rates and low credit offtake due to continuing recession in the industry. The improvement in trading of corporate debt paper market is attributed to RBI prescription of demat debt issues, which removes settlement risk.

The bulk of transactions during 2001-02 were on outright basis. The outright transactions amounted to Rs.11988970 million, accounting for 77% of total turnover. The share of outright transactions in government securities increased from 23.2% in 1995-96 to 94% in 2001-02. The share of repo transactions declined correspondingly from 76.8% in 1995-96 to 23% in 2001-02. Government debt, which constitutes about three-fourth of the total outstanding debt, has the highest level of liquidity amongst fixed income instruments in the secondary market. Table 3 gives the secondary market transaction in Gilts.

Table - 3

Secondary Market Transactions in Government Securities

Year	Total SGL Turnover (Rs. mn.)	Share in Turnover (%)		Share in Turnover %	
		Outright	Repo	Dated Securities	T-Bills
1995-96	127,1790	23.20	76.80	86.80	12.84
1996-97	122,9410	76.40	23.60	69.40	30.12
1997-98	185,7080	86.74	13.26	75.04	24.24
1998-99	227,2280	82.53	17.47	79.73	19.59
1999-00	539,2320	84.66	15.34	89.20	10.12
2000-01	698,1210	81.95	18.05	88.98	11.02
2001-02	1,555,3840	77.08	22.92	94.01	5.99

Source: RBI

The share of dated securities in total turnover of government securities increased from 69.4% in 1996-97 to 93.60% in 2001-02. T-bills accounted for 5.99% of total SGL turnover during 2001-02. Two-way quotes are available for active government securities from the PDs. Though many trades in government securities take place through telephone, a larger chunk of trades gets routed through NSE brokers. As compared to the increase in overall turnover of government securities by 123% the same on WDM grew by 121% during 2001-02. The share of WDM in total SGL turnover is presented in the following Table 4.

Table – 4

WDM share in SGL deals

(Amt in Rs. million)

Year	Turnover of Government Securities			Turnover of Dated Securities			Turnover of T-Bills		
	On SGL	On WDM	Share of WDM (%)	On SGL	On WDM	Share of WDM (%)	On SGL	On WDM	Share of WDM (%)
1995-96	127,1790	9,9880	7.85	110,3870	7,5520	6.84	16,3270	2,260	13.84
1996-97	122,9410	38,3080	31.16	85,3180	27,0530	31.71	37,0270	10,957	29.59
1997-98	185,7080	103,5850	55.78	139,3520	83,7890	60.13	45,0080	18,866	41.92
1998-99	227,2280	95,2800	41.93	181,1730	83,7140	46.21	44,5110	10,706	24.05
1999-2000	539,2320	293,8870	54.50	481,0100	280,8270	58.38	54,5910	11,007	20.16
2000-2001	698,1210	414,0950	59.32	618,1850	389,6980	63.04	76,9500	23,142	30.07
2001-02	15553840	927,6040	59.63	1,455,7130	900,6490	61.87	93,1420	25,543	27.42

Source: RBI & NSE

Settlement in CCIL

The details of trades settled by CCIL during 2001-2002 are given below:

Month	Outright Transactions		Repo Transactions		Total (Amount in Rs. million)	
	No. of Trades	Amount (Face Value)	No. of Trades	Amount (Face Value)	No. of Trades	Amount (Face Value)
Feb 2002	1936	108270	171	52590	2107	160860
Mar 2002	5195	280910	353	106710	5548	387620
Total	7131	389190	524	159300	7655	548480

Activities of WDM segment of NSE

The turnover in WDM segment registered an increase of 121% from Rs.4285820 million during 2000-01 to Rs.9471900 million during 2001-02. The average daily turnover increased from Rs.14830 million to Rs.32770 million during the same period. The average number of trades per day increased from 223 in 2000-01 to 503 in 2001-02. The business growth of WDM segment is presented in following Table 5:

Table - 5

Business Growth of WDM Segment of NSE

Parameter	94-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-2002
No. of Active Securities	183	304	524	719	1,071	1,057	1,038	979
No. of Trades	1,021	2,991	7,804	16,821	16,092	46,987	64,470	144,851
No. of Retail Trades	168	1,115	1,063	1,390	1,522	925	498	378
Turnover (Rs. mn.)	6,7810	11,8680	42,2780	111,2630	105,4690	304,2160	428,5820	947,1900
Average Daily Turnover (Rs. mn.)	350	410	1450	3850	3650	1,0350	1,4830	3,2770
Retail Turnover (Rs. mn.)	310	2070	2010	2890	3080	2180	1310	1100
Share of Retail Trades (%)	·0.45	1.74	0.47	0.26	0.29	0.07	0.03	0.01
Average Trade Size (Rs. mn.)	66.4	39.7	54.2	66.1	65.5	64.7	66.5	65.4

Source: NSE

The market remained highly active throughout the year. The highest turnover of Rs.1117360 million was witnessed in January 2002. The average daily turnover, which was as low as Rs.23140 million in April 2001, touched the high of Rs.42980 million in January 2002. The average size of a WDM trade, marginally decreased from Rs.66.5 million in 2000-01 to Rs.65.4 million in 2001-02.

Securities Profile

Dated government securities dominated the market during 2001-02, accounting for the bulk of trading. The turnover in government securities increased by 131.91% during 2001-02. Its share in total turnover, however, increased marginally to 95.03% from 91.2%in the previous year. The share of T-Bills in WDM turnover has been declining over time. During 2001-02, the share of T-bills in total volume declined to 2.70% from 5.4% in 2000-01. Table 6 gives the security wise distribution of turnover.

Table – 6

Security wise Distribution of Turnover (Rs. Million)				
	2000-2001	2001-2002	2000-01	2001-2002
Government Securities	390,9520	902,0610	91.22	95.24
T-Bills	23,1430	25,5430	5.40	2.70
PSU Bonds	3,6170	6,2380	0.84	0.66
Institutional Bonds	4,2700	4,7150	1.00	0.50
Bank Bonds & CDs	2,0270	2,5210	0.47	0.27
Corporate Papers	4,5160	6,1070	1.05	0.64
Others	570	50	0.01	0.00
Total	**428,5820**	**947,1910**	**100.00**	**100.00**
Source: NSE				

Participant Profile

Indian banks, foreign banks and PDs, together accounted for over 72.32% of WDM turnover during 2001-02. The share of Indian banks in turnover marginally increased from 33.54% in 2000-01 to 36.60% in 2001-02 while the share of foreign banks marginally declined to 13.22% in 2001-02 from 16.90% in 2000-01. PDs contributed 22.5% of turnover during 2001-02 as against 20.14% in 2000-01. Table 7 gives the participant wise distribution of turnover.

Table - 7

Participant-wise Distribution of Turnover			
Participants	**Percentage Share in Turnover**		
	1999-2000	2000-2001	2001-2002
Indian Banks	42.72	33.54	36.6
Foreign Banks	15.05	16.90	13.22
Primary Dealers	19.42	22.14	22.5
Trading Members	18.75	23.24	23.52
FI, MFs & Corporates	4.06	4.18	4.16
Total	**100.00**	**100.00**	**100.00**
Source: NSE			

Market Capitalisation

Market capitalisation of the WDM segment has witnessed a constant increase, reflecting an increase in the number of securities available for trading on this segment. Total market capitalisation of securities available for trading on WDM segment stood at Rs7567940 million as at end-March 2002, registering a growth of 30.29% over end-March 2001. The relative shares of different securities in market capitalisation changed marginally during 2001-02. Government securities accounted for 71.70% of total market capitalisation at the end of March 2002. The composition of market capitalisation of various securities on WDM in the recent past is presented in the following Table – 8.

Primary & Secondary Market Yield Movement: The decade has seen the slow but steady downward movement of interest rate which has been a result of sound fundamentals of the economy, good monsoon over last one decade, falling inflation rate, etc. This has helped the corporate sector as well as Government as borrowing cost has come down. However, the fall has been substantial during the year 2001-02 and in April 2002. The Government could issue a 10-year paper at 6.85% in April 2002 and the yields started to move up marginally from mid-April 2002. The following charts show the trend of primary market yields during 2002.

Table - 8

Market Capitalisation of WDM Segment

(Amount in Rs. million)

Security	Market Capitalisation (end of period)			% to Total		
	March-00	March-01	March-02	March-00	March-01	March-02
Government Securities	319,8650	397,2280	542,6010	64.75	68.39	71.70
PSU Bonds	39,3570	36,3650	39,9440	7.97	6.26	5.28
State Loans	39,4770	44,6240	61,3850	7.99	7.68	8.11
T-bills	15,3450	17,7250	23,8490	3.11	3.05	3.15
Other	79,9890	84,8940	89,0160	16.19	14.62	11.76
Total	**494,0330**	**580,83600**	**756,79500**	**100.00**	**100.00**	**100.00**

Source: NSE

Chart - 1

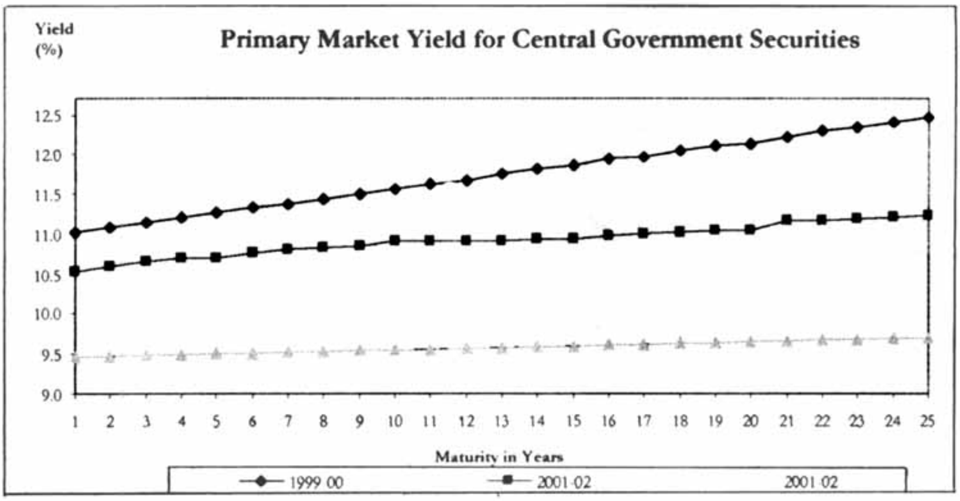


Chart - 2

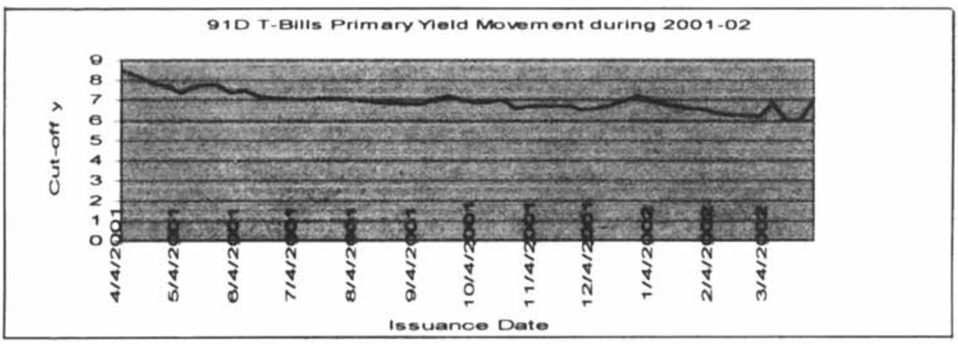
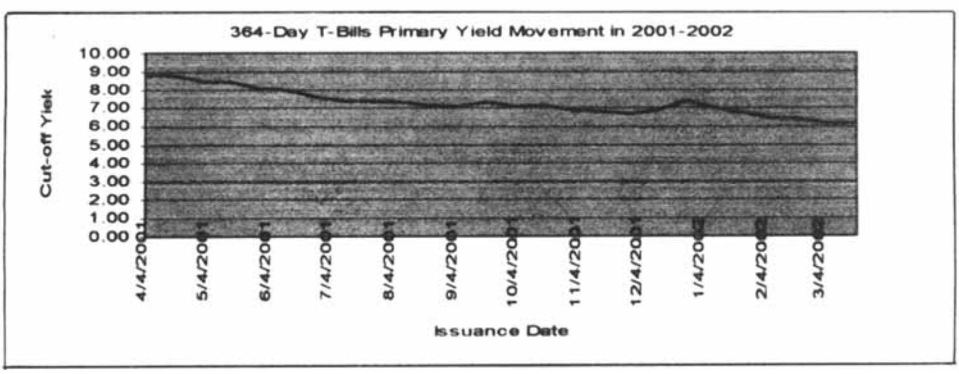
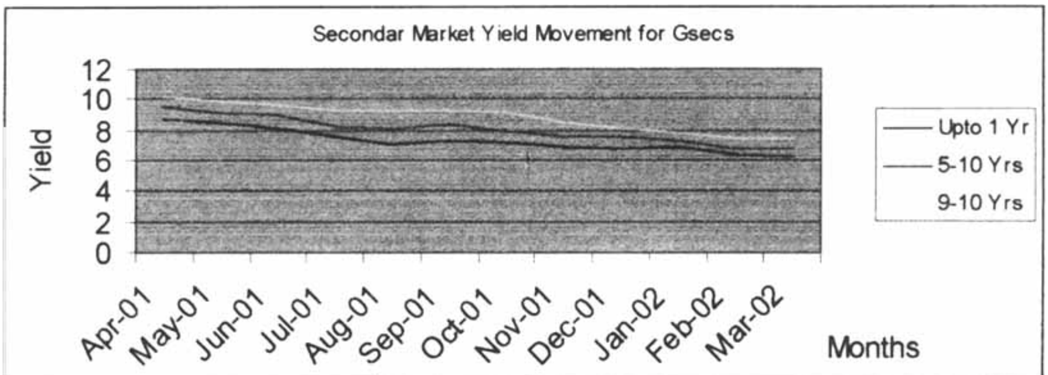


Chart - 3



The secondary market yield also moved downward over the last one decade in line with the primary yield. The following table gives the secondary market yield movement of the government as well as corporate papers during 2001-2002. The chart – 4 gives the secondary yield movement of Gilts in the market.

Chart - 4



Benchmarks

(a) FIMMDA-NSE MIBID/MIBOR: For development of any market segment, benchmarks are required. Benchmarks are something which the market participants look up to be guided. A reliable reference rate was absent in Indian market till NSE launched its MIBID/MIBOR to provide reference rates to the call market participants. Once the rate was accepted as a benchmark rate, various floating rate products were developed on the basis of MIBID/MIBOR. A reference rate must have the following attributes: unbiased, transparent, representative, reliable, scientifically computed and accessible. Given the realities of the Indian call and term money markets, which is characterized by a few active players and a largely unidirectional nature, it was necessary to come up with a methodology which could remove the sampling noise (invariably caused due to the relative illiquidity) and significantly lower any tendency among the respondents to skew the reported rates (market manipulation). NSE has adopted the technique of "Polling with Bootstrapping" to compute the reference rates. The method involves polling market participants (a carefully selected panel which is subject to periodic review) for their estimate of the reference rate (in terms of rate of borrowing - the Bid, and the rate of lending - the Offer) for a standard transaction size. Then the polled sample is subjected to "bootstrapping with adaptive trimming" in order to arrive at reference rate. The method as such and the motivation behind the method is discussed in detail as under. Bootstrap method is a computational device to find approximation of quantities that are very hard, or even impossible to compute analytically. The basic idea is to take the sample that we are interested in and think of it as if it was a population and then by replacement sampling create a new sample, a bootstrap sample. If we repeat this several times, obtaining lots of bootstrap sample, we can use the mean of the computed quantities as an estimate of the expected value of this bootstrapped quantity. Today we have a well accepted Overnight MIBOR that is increasingly been used as a bench-mark for very short period. But there is no term money market as such and hence the reference rates for 14-day, 1-month and 3-month MIBOR may not really serve the purpose of an acceptable benchmark rate. If the term money market has liquidity, more acceptable benchmark rates like 3-month MIBOR and 6-month MIBOR would evolve and be widely accepted.

(b) ZCYC: In its strive to introduce innovative products and services and on line with its focus on development of debt market, NSE launched a 'Zero Coupon Yield Curve' (ZCYC) to help in valuation of securities across all maturities irrespective of its liquidity in the market. This has been developed keeping in mind the requirements of the banking industry, financial institutions, mutual funds, insurance companies, etc. that have substantial investment in sovereign papers. The product has been developed by using Nelson-Siegel model to estimate the term structure of interest rate at any given point of time and been successfully tested by using daily WDM trades data. This is being disseminated daily. The ZCYC depicts the relationship between interest rates in the economy and the associated term to maturity. It provides daily estimates of the term structure of interest rates using information on secondary market trades in government securities from the WDM segment of the NSE. The term structure forms the basis for the valuation of all fixed income instruments. Modelled as a series of cashflows due at different points of time in the future, the underlying price of such an instrument can be calculated as the net present value of the stream of cashflows. Each cashflow, in such a formulation, is discounted using the interest rate for the associated term to maturity; the appropriate rates are read off the estimated ZCYC. Once estimated, the interest rate-maturity mapping is used to compute underlying valuations even for securities that do not trade on a given day. Changes in the economy cause shifts in the term structure, changing the underlying valuations of fixed income instruments. The daily ZCYC captures these changes, and can be used to track the value of portfolios of government securities a day-to-day basis.

Interest Rate Derivatives in India

The RBI Governor's Statement on 'Mid-Term Review of Monetary and Credit Policy for 1998-99' announced on October 30, 1998, indicated that to further deepening the money market and to enable banks, primary dealers (PDs) and all-India financial institutions (FIs) to hedge interest risks, the RBI had decided to create an environment that would favour the introduction of hedging products on interest rate. Accordingly, on July 7,1999 RBI issued final guidelines to introduce IRS and Forward Rate Agreements (FRAs). The players are allowed to use IRS/FRAs as a product for their own balance sheet management. RBI gave approval to use local currency IRSs and FRA for hedging purposes only. Financial institutions, in turn, were permitted to market and manage the risk positions created by the new derivative instruments. Initially, the RBI prohibited the use of money market rates as benchmarks for FRAs and swaps. Hence, the original benchmark was MIBOR. Nevertheless, in October 2000, a new policy was implemented that reversed the said decision. This led to the creation of two new indices: the Mumbai interbank forward offer rate (MIFOR) and the Mumbai interbank over tomorrow offer rate (MITOR). MIFOR, an implied yield generated from the USD/INR forward market, was similar to that of other Asian domestic markets' floating index. The derivatives market in India for IRSs and FRAs extends to five years and liquidity conditions being moderate and players are increasing slowly. The majority of market participants, excluding financial institutions, use the derivatives market for hedging purposes only. Unfortunately, there is no market for INR interest rate options such as, caps, floors, or swaptions which is prevalent in major market in the world and increasingly used by the Banks, institutions, corporates, etc. as a better risk management product over and above the IRS/ FRA.

Moreover, as we move towards capital account convertibility and more deregulation we shall observe a better integration of the money market, the forex market and the capital markets in India. This will result into more competitive markets and emergence of benchmark rates. Yield curve calculations and acceptability will also increase as we move increasingly to market driven interest rate regime and volatility in the interest rate is bound to increase. This implies greater use of risk hedging mechanism like IRS/ FRAs and other interest rate products. The major concern, of course, will be the emergence of a floating rate loan market, as at least one leg of the IRS has necessarily to be a floating rate. This is the single major reason why there are not only many IRS deals. Another reason for the slow growth of IRS and hence absence of an interest rate options market has been the illiquidity in the domestic bond market. Looking at the bond market we see major papers are illiquid, though situation has dramatically changed over the last few years. However, the average traded value remains at a low level of about 1% of the total outstanding value of sovereign papers in the market. An IRS market and (as well as interest rate options market) in India has the following:

Scheduled commercial banks (excluding Regional Rural Banks), primary dealers (PDs) and all-India financial institutions (FIs) undertake FRAs/ IRSs as a product for their own balance sheet management or for market making. Banks/FIs/PDS offer these products to corporates for hedging their (corporates) own balance sheet exposures. Banks / PDs/ FIs can undertake different types of plain vanilla FRAs/ IRS. Swaps having explicit/ implicit option features such as caps/floors/collars are not permitted. The parties are free to use any domestic money or debt market rate as benchmark rate for entering into FRAs/ IRS, provided methodology of computing the rate is objective, transparent and mutually acceptable to counterparties. The interest rates implied in the foreign exchange forward market can also be used as a benchmark for undertaking FRAs/ IRSs. There are no restrictions on the minimum or maximum size of 'notional principal' amounts of FRAs/ IRSs. There are also no restrictions on the minimum or maximum tenor of the FRAs/ IRSs.

An interest rate derivatives market in India has the following obstacles:

- *IRS for trading:* RBI restricts use of these derivative contracts by market participants to hedging the risk in their respective balance sheets only. To come out of the contract, reverse contracts need to be executed by the same parties or they have to wait till the expiry date. Therefore, the participants can not trade in these contracts. On the contrary, in an exchange traded contract, counterparties can come out of the contract by entering into reverse trades with any counter party at any point of time before the life of the contract. This facility increases the liquidity of the contracts and thereby reduces impact cost of trading and hence serves the purpose of risk management better. To provide depth to this market, market participants may be allowed to trade in these contracts.
- *Acceptable benchmark rate:* We have a well accepted Overnight MIBOR that can be used as a bench-mark for a very short period. But there is no term money market as such and hence, the reference rates for 14-day, 1-month and 3-month MIBOR may not really serve the purpose of an acceptable benchmark rate. If the term money market has liquidity, more acceptable benchmark rates like 3-month MIBOR and 6-month MIBOR would evolve and be widely accepted. The present structure of the money market is also another cause. Two-way quotes are a fundamental necessity for a proper reference rate to be established. Banks can't offer two-way quotes in a call money market since the borrowing in the call is primarily driven by requirements of meeting CRR. Another problem is that while foreign banks and some of the new banks are perennial borrowers in the interbank market, several nationalised banks and institutions are perennial lenders. This gives rise to uni-directional players who are averse to two-way quotes. This polarisation impedes the development of a benchmark rate around which a term-money market can evolve.
- *Floating rate loans:* At least one leg of IRS has to be a floating rate, development of floating rate loan market is essential. A primary reason for non-evolution of floating rate loans is the common perception of the interest rate movements in India. Over the years, RBI has played a dominant role to moderate interest rate. Till recently, as the RBI had a major role in determining interest rates on the sovereign papers, there was very little volatility in the credit market. Floating rate loans would become popular when diverse views emerge among different players in the market for these rates. As lending rates for the companies are built on the bond yields of the similar tenors, the floating rates were not very different from the fixed rate loans, and not considered to be worth the risk. However, today bond yields are increasingly

determined by market participants. And hence the consequent likely volatility in lending rates would help create market for floating rate loans and consequently, interest rate swaps and options.

- *Acceptable yield curves:* The yield curve is required for effectively pricing any derivative contract and therefore, the lack of a reliable one hinders the development of derivatives. However, NSEIL has taken initiative to provide a reliable spot curve (ZCYC) to the market participants. Emergence of a proper yield curve would correctly reflect the spread between retail deposit and interbank rates or the credit spread for prime borrowers over the interbank rate. Moreover forward interest rates can be derived from such a yield curve. Developing a model to estimate the credit spread would go a long way to providing the required benchmarks.
- *Liquidity in bond market:* Another reason for absence of an interest rate options market has been the illiquidity in the domestic bond market. Looking at the bond market we see major papers are illiquid, though situation has dramatically changed over last few years. However the average daily traded value remains at a low level of about 1% of the total outstanding value of sovereign papers in the market.
- *Awareness:* The very concept of swaps is new to India. There is very limited knowledge about these instruments even among the active participants in Indian markets specifically the PSU banks. Moreover, the institutions which carry out the swaps on daily basis do not publish these data through any media and hence it is extremely difficult to develop a swap curve which will be used for the options as well as by other market participants.
- *Other reasons:* During last one year or so (at least upto April 2002), we have seen a southward movement of interest rate and hence in this circumstances there would be few deals on interest rate products as there will be very few who would possibly take opposite view. But today the market is little different and interest rate has become a bit volatile over last 3 months or so giving rise to the justification of higher volumes in IRS market as well as introduction of options on interest rate.

Sub-national Issuers

In developed markets, sub-national issuers like Municipal corporations raise funds from the market for their operations and development. There is a sound primary and secondary market for Municipal securities in USA. However, in India, this segment has hardly any presence in the market. Traditionally, the municipalities and local government bodies in India depend on Government support for their sustenance. They have never been serious on their financial efficiency and heavily relied on Government guarantee in few cases when they came to borrow money from the market. Their balance sheets are not available and even if available; they do not contain enough information for an investor to take a decision on investment. But for the development of any country, these bodies require funding and should be in a position to raise funds from the market on their own strengths, than depending on budgetary support. The legal provisions also put some hindrance for an investor because a lender can not proceed legally against these bodies for default of payment of interest and the principal. These issues need to be sorted out by providing clear legal reforms.

So far there have been 3 issuers in this category to tap the market for funds: Ahmedabad Municipal Corporation, Nashik Municipal Corporation and National Capital Region Planning Board. Out of the above, first two have just issued one bond each in February 1998 and July 1999 respectively, while National Capital Region Planning Board has issued 8 bonds including some tax-free bonds. With regard to liquidity in the secondary market, we hardly see any trading. The trading volume in these bonds is given below:

Year	Amount (Rs. million)
1998	15
1999	160.5
2000	556.5
2001	50
2002	50

However, the major portion of the above trades pertain to National Capital Region Planning Board.

In India, there is immense potential for these sub-national bodies to raise funds from the market to run their operations efficiently. For doing so, there is need to make changes in the statutory provisions. And these bodies need to put their own house in order like bringing out their balance sheets in time duly incorporating enough investor friendly information. Disclosure level needs to be standardized. Another option may be to to create corporate bodies to run the operations and these bodies may raise funds from the market through SPV mechanism.

Corporate Bond Market

To develop corporate bond marketing India, it is imperative to have substantial floating stock of good quality papers along with adequate institutional investor base, a variety of instruments of differing maturities, etc. Emphasis also needs to be placed on efficient legal systems as important infrastructure for deep and liquid bond markets. Among legal reforms, bankruptcy laws or capacity to seize collaterals are particularly important. The new Securitisation and Reconstruction of Financial assets and Enforcement of Security Interest Ordinance 2002 ordinance promulgated in June 2002 would be giving wide ranging powers to banks and other lenders in the market to assert their right to liquidate the assets of a defaulting borrower. This would save substantial depreciation of asset value as litigation proceedings in India is longer and it affects the marketable title of the assets. In many emerging economies, the corporate bond markets are fragmented and India is also going through the same phase. The present market is characterized by private placement and cross holdings. To have a developed bond market, we need to develop the securitization market and allow the securities papers to be traded as securities. Securitization as an instrument acts as a risk transfer mechanism that could work to the advantage of both banks and investors. The recent ordinance would also help this market to grow substantially in the near future.

The corporate bond market got a moderate boost in India with Public Sector Undertakings being encouraged to take recourse to financial markets for funding requirements in late eighties. However, the private corporate sector's debt requirements were met largely by development financial institutions and banks, but with developments in capital market and establishment of rating agencies, corporates and development financial institutions themselves started taking recourse to debt market. Corporate debt market in the sense of private corporate sector raising debt through public issuance in capital markets is only an insignificant part of Indian debt market. The Table 9 will show the trend in the secondary market:

Table - 9

Table:	Distribution of Trades (Rs. in million)			
	1998-99	**1999-2000**	**2000-2001**	**2001-2002**
Gsecs	845740.5	2828802.5	3909522.8	9020608
T-bills	107063.4	110069.5	231435.28	255433
PSU Bonds	17291.8	15277.6	36165.5	62383.4
INST Bonds	32784.4	33451.3	42704.4	47152.8
Bank Bonds	8613.8	8048.9	20268.9	25210.9
Corporates	42277.5	46152.3	45159.01	61074
Others	920.4	360.5	559.5	50
Total	1054691.8	3042162.6	4285815.39	9471912.1
Source: NSE				

Hence when we talk of debt markets in India, we are really referring to the Government Securities market, which accounts for 75 per cent of the outstanding stock and more than 95 per cent of the volumes traded in the secondary market. About 90 per cent of the corporate debt market is privately placed. In the privately placed market, 58 per cent of the issuances are by financial institutions and banks, both in the public and private sector and about 26 per cent represents issues of public sector undertakings and central/state government guaranteed bonds. The investors in corporate bond market are mostly institutions and banks with very few retail investors. The recent guidelines issued to banks by RBI on valuation and investment norms on privately placed bonds have marginally reduced the banking sectors appetite for the privately placed papers in the market. Another issue that plagues the corporate bond market is the level of transparency. Transparency is limited both in the primary and the secondary markets, liquidity is poor and many bonds are held till redemption. The legal recourse in case of non-payment of interest and principal is complicated and bankruptcy laws afford little comfort. These issues will be hopefully addressed by the new ordinance.

Issues before us

The Government Securities market provides the backbone of most fixed income markets across the world since it helps pricing of various debt instruments through creation of a benchmark, enables a proper evaluation of risk and acts a conduit for convergence of interest rates in other markets. The market participants view Gilts market as the starting point to price their assets. In addition, the gilts market acts as the channel for the integration of various segments of the domestic financial market and help establish inter-linkages between internal and external financial markets. It also helps in developing a robust repo market which is necessary for a sound financial system. The Government Securities market is the predominant part of the overall debt market and interest rates in this market provide benchmarks for the system as a whole. In India, the RBI considers that well functioning markets for Government Securities are necessary for both effective Government debt management and monetary management, while serving the broader interest of development of financial markets in general and debt markets in particular.

Development of repo markets, short selling, the role of benchmarks and marked to market valuation, etc., do contribute to boosting of secondary market liquidity. The practice of short selling securities facilitated by securities lending and borrowing has been prohibited in India as short sales have the potential to increase market volatility and risks especially if the market assumes larger position than what it is capable of handling. The RBI is very much concerned about this issue for which it follows a clear DVP mechanism for settlement of Gilts and encourages the same mechanism for other debt papers traded in the market.

Self-regulation is fast emerging as a viable co-operative framework for both the regulator and market participants to come together towards the fulfillment of common goals and objectives. SROs have emerged as an effective and efficient form of regulation for the complex and dynamic financial services industry. In India, FEDAI has been found to be highly successful which has given rise to create more of such organizations for effective management of financial markets. It is necessary to recognise that exercise of authority in any form by SRO does raise some fundamental issues such as their accountability and monopoly status. In the context of Indian debt market, self-regulatory bodies like the Fixed Income Money Market and Derivatives Association of India (FIMMDA) and the Primary Dealers Association of India (PDAI) have been encouraged in the recent past, as part of reform process to give an impetus to the development of the bond and money markets in India. These bodies have served as crucial layers between the regulator and market and have contributed to developing new benchmarks and products besides providing training and development support to participants. They have formulated guidelines for dispute resolution mechanisms and are also involved in the process of developing standard practices and codes of conduct. In India the activities of both SROs are closely co-ordinated with policies of RBI while their functioning is also carefully and constantly observed by RBI.

Banks do possess intimate and specialised knowledge of the borrowers and are thus in a unique position to assess the risks in advances, while in the case of large number of investors in debt markets, such knowledge and skill are usually lacking. Credit Rating Agencies (CRAs) help mitigate this problem of asymmetric information and the dissemination of information by the CRA incidentally makes the regulator's task less onerous. In India, there are four CRAs and each of them has collaboration with internationally renowned CRAs to supplement the local knowledge and skills. The RBI prescribes a number of regulatory uses of ratings. Of those related to the money and debt markets, a corporate must get an issue of Commercial Paper rated and may issue such paper subject to a minimum rating. SEBI, which incidentally is the regulator of CRAs has stipulated that ratings are compulsory on all public issues of debentures with maturity exceeding 18 months. Pension funds can only invest in debt securities that have high ratings, as per the stipulations of Government.

A trend over the last few years in India is the preference for CRAs to extensively rate private placement resulting in financial institutions' distinct preference for investment in rated paper often through private placement and sometime over normal credit. Such a trend of abdicating the responsibility for assessment of risk is not desirable from the point of view of banks. RBI has been issuing detailed guidelines to banks and financial institutions in regard to exercising their judgement and risk assessment while taking into account the CRAs ratings. While CRAs are necessary, their presence is not a sufficient condition for development of sound debt markets.

A new Government Securities Bill, which has since received the concurrence of all the State legislators, replacing the existing Public Debt Act of 1944, needs to gather momentum. The new Act is expected to facilitate wider participation in Government Securities markets as it will provide necessary protection to the beneficial owners through Constituent Subsidiary General Ledger (SGL) accounts, enable lien marking and pledge of securities for raising loans against Government securities, recognition of electronic form of record maintenance, enlargement of dematerialization facility through Bond Ledger Accounts, liberalisation of norms relating to nomination and legal representation, facilitate easier transfer and allow for stripping of securities. And the Fiscal Responsibility and Budget Management Bill which has already been considered by the Parliamentary Standing Committee on Finance is also expected to limit the fiscal deficit, place limits on public debt and eliminate RBI's participation in the primary market issue of dated Government Securities, thereby paving the way for separation of debt management from monetary management. The amendments to the RBI Act, which are under consideration of the Government, would take away the mandatory responsibility of RBI to act as debt manager to Government of India and thereby facilitate such separation.

Another development which needs immediate attention is the introduction of STRIPS. With clarifications issued by Government of India recently in the tax treatment of zero coupon bonds, decks have been cleared to introduce STRIPS which would satisfy the segmental needs of the market. Once the STRIPS are introduced, it would help market participants to manage their portfolio more effectively.

To facilitate faster funds transfer for debt market settlements, Electronic Fund Transfer (EFT) facility, which is now available at 13 centers in India covering more than 8,000 branches, should be extended to other major centers for speedier transfer of funds if we want to have a smooth transition to RTGS.

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