

8 Debt Market

Contrary to the experience in advanced economies where market size and volumes in debt market are several times larger than those in equity markets, development of debt market in India has not been as noticeable as in the case of equity market. While the ratio of market capitalisation of the equity market to GDP is around 60%, the ratio of outstanding debt to GDP is estimated at about 30% during the 1990's. The turnover ratio in equity market is more than two as against less than one in debt market. Data covering various dimensions of debt market are even scanty for any meaningful comparison and analysis. Development of debt market has been engaging the minds of the policy makers and market participants alike for a long time. A host of reforms undertaken in this decade have resulted in a marked change in the nature of instruments offered, a wider investor base and in progressive movement towards market determined interest rates. The situation however, remains largely unchanged in terms of market design and liquidity.

The three main segments in the debt market in India are market for government securities, PSU bonds and corporate securities. Each of these segments has its own set of peculiarities in terms of procedure, practices and regulatory structure. The market for government securities is the oldest and most dominant in terms of market capitalisation, outstanding securities, trading volume and number of participants. It not only provides resources to the government for meeting its short term and long term needs, but also sets benchmark for pricing corporate paper of varying maturities and is used by RBI as an instrument of monetary policy. The instruments in this segment are fixed coupon bonds, commonly referred to as dated securities, treasury bills, floating rate bonds,

zero coupon bonds and inflation index bonds. Dated securities used to be of 2-30 years tenor, which got reduced over years with a maximum of 20 years now. The outstanding volumes in marketable Government securities (Central and State Government securities) as on March 31, 2000 is estimated at around Rs. 5,00,000 crore. 14-day, 91-day, 182-day and 364-day treasury bills (T-bills), which are the second largest component of sovereign debt, are issued regularly. Notwithstanding this, the market for government securities is mainly captive and wholesale in nature, with the banking system constituting the major investor segment. The major investors in sovereign papers are banks, insurance companies and financial institutions, who do so to meet statutory requirements and only a small part of the outstanding stock finds its way into the market for trading. A large number of banks and other institutions trade in these securities on the telephone and report trades on the Wholesale Debt Market (WDM) segment of NSE. Liquidity continues to be thin despite shift to screen based trading on NSE. The issues by government sponsored institutions like, Development Financial Institutions, as well as the infrastructure-related bodies and the PSUs, who make regular forays into the market to raise medium-term funds, constitute the second segment. The gradual withdrawal of budgetary support to PSUs by the government since 1991 has compelled them to look at the bond market for mobilising resources. The preferred mode of issue has been private placement, barring an occasional public issue. Banks, financial institutions and other corporates have been the major subscribers to these issues. The tax-free bonds, which constitute over 50% of the outstanding PSU bonds, have become extremely

popular with institutional players. The market for corporate debt securities has been in vogue since early 1980s. The major part of the corporate debt is privately placed with tenors of 1-12 years. The corporate debt securities are traded on the stock exchanges.

The market participants in the debt market are: the Government for financing its ever rising revenue deficit, the RBI for implementing its monetary policy and raising funds on behalf of the Government, the Industry for acquiring assets at minimal cost, the bank and institutions having responsibility to manage portfolio/comply with statutory requirements, and lastly, the individual investors wanting an investment outlet for savings offering a post tax rate of return greater than the inflation rate with easy liquidity and low risk. The matrix of issuers, investors and instruments in the debt market and their maturities is presented in Table 8-1.

Governments and corporates access the market through debt issues. During 1999-2000, they collectively raised a total of Rs. 1,72,735 crore from primary market, 14% higher than the resources mobilised in the preceding year. About 66% of these were raised by the governments, while the balance by the corporate sector through public

Table 8-2: Resources Mobilised from Debt Markets

(Rs. crore)			
Issuer	1998-99	1999-2000	April-Sept 2000
Corporate	46,155	59,399	22,853
Public Issues	7,407	4,698	505
Private Placement	38,748	54,701	22,348
Government	106,067	113,336	77,183
Total	152,222	172,735	100,036

Source: Prime Database & RBI.

and private issues, as may be seen from Table 8-2. The details in respect of corporate debt issues have already been discussed in Chapter 3.

The number of transactions in the secondary market continues to be small relative to the size of the outstanding debt and the size of the participants. The market is restricted to a limited number of participants like banks and financial institutions. There is a marked absence of the kind of participants who make for an active market by alternating between lending and borrowing or employing different trading strategies as a consequence of their often divergent views on the market. The market is a wholesale one and retail investors are almost absent in the market. Over 98% of trades are on account of government securities and T-bills and trades in corporate debt and PSU bonds are insignificant.

Table 8-1: Participants and Products in Debt Market

Issuer	Instruments	Maturity	Investors
Central Government	Dated Securities	2 - 20 years	RBI, Banks, Insurance companies, Provident Funds, Mutual Funds
Central Government	T-Bills	14/91/182/364 days	RBI, Banks, Insurance companies, Provident Funds, Mutual Funds, Individuals
State Government	Dated Securities	5 - 10 years	Banks, Insurance companies, Provident Funds
PSUs	Bonds/ Structured Obligations	5 - 10 years	Banks, Insurance companies, Mutual Funds, Corporate, Provident Funds, Individuals
Corporates	Debentures	1 - 12 years	Banks, Mutual Funds, Corporates, Individuals
Corporates	Commercial papers	3 months to 1 year	Banks, Mutual Funds, Financial Institutions, Corporates, Individuals
Banks	Certificates of Deposits	3 months to 1 year	Banks, Corporates

Policies and Programmes

This section discusses policy initiatives in the government securities market, both primary and secondary, and in the secondary corporate securities market. Policy initiatives in respect of primary corporate debt market have been dealt in Chapter 3. With a view to develop and deepen debt market, particularly government securities market, and optimising cost-maturity structure of government borrowings, a number of significant policy measures were undertaken during last few years. The developments during 1999-2000 include:

- i. The system for underwriting the T-bills was replaced by a system of minimum bidding commitment. Each PD is now required to make a minimum bidding commitment for auctions of T-bills so that they together absorb 100% of notified amount. Liquidity support against collateral of government securities, based on bidding commitment and other parameters, was extended to PDs. This was done with a view to increase depth and liquidity in government securities market.
- ii. RBI conducted first ever price-based auction (coupon is pre-determined, bidders quote the price) of government dated securities, resulting in more efficient pricing.
- iii. RBI continued to increase PD network by adding 6 more PDs during the year, taking the total number to 15.
- iv. With a view to imparting depth and liquidity to the T-bills market, it was decided to announce a calendar for issuance of T-bills for the entire year. 182-day T-bills were introduced in May 1999. RBI initiated two-way operations in T-bills in February 2000.
- v. To facilitate development of the government debt market, Union Budget 2000-2001 proposed to strengthen and modernise the legislative framework through Government Securities Act, which would replace Public Debt Act 1944.
- vi. To reduce the distortions arising out of the differing tax treatment for interest incomes from mutual funds and other instruments, like bank deposits and corporate deposits, the rate of tax on income distributed by debt oriented mutual funds and UTI was increased from 10% to 20%.
- vii. Transactions in debt securities attracted stamp duties at different rates in different states. Union Budget for 1999-2000 abolished stamp duty on transfer of dematerialised debt instruments to boost debt dematerialisation. This would standardise transfer system through a depository, and enhance levels of trading in corporate debt securities.
- viii. In order to promote an orderly development of the market, Government issued a notification on March 2, 2000 delineating the areas of responsibility between RBI and SEBI. In terms of this notification, the contracts for sale and purchase of government securities, gold related securities, money market securities and securities derived from these securities and ready forward contracts in debt securities shall be regulated by RBI. Such contracts, if executed on stock exchanges, shall, however, be regulated by SEBI in a manner that is consistent with the guidelines issued by RBI. Accordingly, RBI issued a notification permitting all non-bank entities, which are maintaining SGL account with RBI, Mumbai to undertake repos and reverse repos.
- ix. Listing of debt securities relating to infrastructure and municipal corporations

was allowed before equity, subject to the condition that the debt instrument is rated not below a minimum rating of 'A' or equivalent thereof.

- x. It was mandated that trades in corporate debt securities would be executed on the basis of price and order matching mechanism of the stock exchanges as in case of equities.

The policy initiatives during April-September 2000 include:

- A. RBI initiated gradual implementation of a full-fledged Liquidity Adjustment Facility (LAF) in three phases. First, the additional collateralised lending facility (ACLF) for banks and level II liquidity support to PDs would be replaced by variable reverse repo auctions and the fixed rate repo will be replaced by variable repo auctions. In the second phase, collateralised lending facility (CLF) for banks and level I support to PDs would be replaced by variable reverse repo rate auctions. With full computerisation of the Public Debt Office (PDO) and the introduction of Real Time Gross Settlement (RTGS), repo operations through electronic transfers will be introduced and in the final stage, it would operate the LAF at different timings of the same day, if necessary. RBI through this facility would meet primarily the day to day liquidity mismatches in the system and not the normal financing requirements of eligible institutions. LAF was introduced effective June 5, 2000.
- B. The entities have been allowed to sell government securities allotted to them in primary issues on the same day. The restriction that no sale deal should be entered into without actually having securities in the investment portfolio at the time of sale was withdrawn and entities were permitted to sell the securities after allotment, thus

enabling sale, settlement and transfer on the same day.

- C. RBI decided, in principle, to move over in due course to order driven screen-based trading in government securities on the stock exchange. RBI would specify the date of switch over to order-driven screen based system in consultation with SEBI.
- D. There have been instances of gridlock in the DvP system due to shortfall of funds on a gross basis in the current account of one or more SGL holders. To take care of such unusual occurrences, a scheme of special fund facility is introduced with effect from October 3, 2000 to provide intra-day funds to SGL holders for facilitating settlement of securities transactions in case of gridlock. The scheme provides for automatic invocation by the SGL account holder of undrawn refinance/liquidity support from RBI for facilitating smooth securities settlement. All transferable Government of India dated securities and T-bills (except 14-day T-bills) are eligible for automatic invocation of special intra-day fund facility from the RBI.
- E. Core Group set up by State Bank of India is working on a report for setting up a clearing corporation for money, debt and foreign exchange markets.
- F. SGL account holders are provided a facility to maintain a second SGL account called Constituents' SGL account in the books of RBI to enable them to hold government securities on behalf of their constituents. RBI issued guidelines governing maintenance of Constituents' SGL account to encourage investors to hold securities in scripless form and to ensure that entities holding securities in custody employ practices and procedures so that the constituents' securities are appropriately accounted and kept safe.

Table 8-3: Market Borrowings of Government

Security	(Rs. crore)								
	Gross			Repayment			Net		
	1998-1999	1999-2000	2000-2001*	1998-1999	1999-2000	2000-2001*	1998-1999	1999-2000	2000-2001*
1. Central Government Securities	93,953	99,630	117,704	31,050	26,553	41,321	62,903	73,077	76,383
a) Dated Securities	83,753	86,630	-	14,803	16,353	28,321	68,950	70,277	-
b) 364 day T-Bills	10,200	13,000	-	16,247	10,200	13,000	-6,047	2,800	-
2. State Government Securities	12,114	13,706	11,420	1,414	1,301	420	10,700	12,405	11,000
Total	106,067	113,336	129,124	32,464	27,854	41,741	73,603	85,482	87,383

* Budget Estimates.

Source: RBI.

Primary Market

The primary issues of the Central Government have increased ten-fold during the decade of 1990's from Rs. 8,989 crore in 1990-91 to Rs. 99,630 crore in 1999-2000. The issues by state governments increased by about five times from Rs. 2,569 crore to Rs. 13,706 crore during the same period. The gross borrowings of the Central Government and State Governments increased by about 7% during 1999-2000 (Table 8-3).

The primary debt market was active with RBI mopping up funds on behalf of the government during 1999-2000. The gross market borrowing amounted to Rs. 99,630 crore, including 364-day treasury bills of Rs. 13,000 crore. After meeting repayment liabilities of Rs. 16,353 crore, and redemption of 364-day T-bills of Rs. 10,200 crore, net market borrowing was Rs. 73,077 crore for the year 1999-2000, which exceeded the budgeted target by 27%. During April-September 2000,

Central Government made gross and net borrowings of Rs. 77,183 crore and Rs. 47,026 crore, respectively, against estimate of Rs. 1,17,704 crore and Rs. 78,383 crore for the full year. The state governments collectively raised Rs. 13,706 crore during 1999-2000 as against Rs. 12,114 crore in the preceding year. The net borrowings amounted to Rs. 12,405 crore after meeting repayment liabilities of Rs. 1,301 crore.

Coupon Rates

RBI initially absorbed private placement of government securities and released them in the market when interest rates softened. RBI's support to Central Government's borrowing programme by way of private placement and devolvement amounted to Rs. 29,267 crore, i.e., 29.4% of primary issues during 1999-2000. This resulted in fairly stable interest rates and issue of government securities at interest rates varying between 10.72% to 12.45% during 1999-2000 against the range of 11.1% to 12.6% during the preceding year despite huge borrowings (Table 8-4). The coupons across maturities went down signifying lower interest rates. The weighted average interest rate on government dated securities declined from 11.86% in 1998-99 to 11.77% during 1999-2000. The decline in weighted average interest rate by 9 basis points is quite modest despite a prevailing low level of inflation during 1999-2000. Chart 8-1

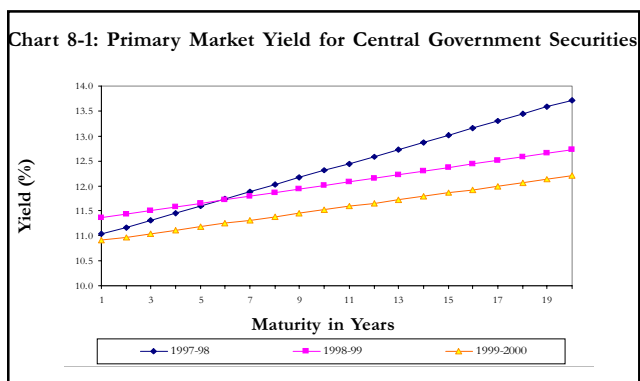


Table 8-4: Profile of Central Government Dated Securities

		(Amount in Rs. crore)		
Items	1997-98	1998-99	1999-2000	
1. Gross Borrowing	43,390	83,753	86,630	
2. Repayments	10,903	14,803	16,353	
3. Net Borrowings	32,487	68,950	70,277	
4. Weighted Average Maturity (year)	6.59	7.71	12.64	
5. Weighted Average Yield (per cent)	11.82	11.86	11.77	
6. A. Maturity Distribution – Amount				
a) Upto 5 Years	16,704	26,399	--	
b) Above 5 and upto 10 Years	26,686	46,030	30,000	
c) Above 10 Years	--	11,324	56,630	
Total	43,390	83,753	86,630	
B. Maturity Distribution - Per cent				
a) Upto 5 Years	36.87	31.52	--	
b) Above 5 and upto 10 Years	63.13	54.96	35.00	
c) Above 10 Years	--	13.52	65.00	
Total	100.00	100.00	100.00	
7. Yield - Per cent				
Minimum	10.85	11.10	10.72	
	(4 years)	(5 years)	(8 years, 3 months)	
Maximum	13.05	12.60	12.45	
	(10 years)	(20 years)	(19 years, 8 months)	
Average	12.07	11.94	11.75	
8. Yield - Maturity Distribution-wise				
A. Less than 10 years				
Minimum	10.85	11.10	10.72	
	(4 years)	(5 years)	(8 years, 3 months)	
Maximum	12.69	11.98	11.74	
	(5 years)	(6 years)	(7 years, 11 months)	
Average	11.84	11.63	11.30	
B. 10 years				
Minimum	12.15	11.70	11.48	
Maximum	13.05	12.25	11.99	
Average	12.75	12.14	11.69	
C. Above 10 years				
Minimum	--	12.25	10.76	
		(12 years)	(14 years, 9 months)	
Maximum	--	12.60	12.45	
		(12 years)	(19 years, 8 months)	
Average	--	12.41	11.92	

Source: RBI.

presents primary market yield of government dated securities in recent years. Though the weighted average interest rate on state government securities also declined from 12.35% to 11.89% during the year, it remained higher than that on central government securities. The cost of

borrowing to government has been declining over the years. The weighted average interest rate declined from a high of 13.75% in 1995-96 to 11.77% in 1999-2000 in respect of central government securities. The rate also reduced for state government securities from 14% to 11.89%

Table 8-5: Weighted Average Coupon Rates on Government Securities

(In per cent)

Year	Central Government Securities		State Government Securities	
	Range	Weighted Average	Range	Weighted Average
1995-96	13.25-14.00	13.75	14.00	14.00
1996-97	13.40-13.85	13.69	13.75-13.85	13.83
1997-98	10.85-13.05	12.01	12.30-13.05	12.82
1998-99	11.10-12.60	11.86	12.15-12.50	12.35
1999-2000	10.72-12.45	11.77	11.00-12.25	11.89

Source: RBI.

during the same period, as may be seen from Table 8-5.

Maturity Structure

In view of bunching of redemption liabilities in the medium term, no securities with maturities of less than 5 years were issued during 1999-2000. Over 65% of central government borrowing were effected through securities with maturities above 10 years. As a result the weighted average maturity of dated securities issued during the year increased to 11.77 years from 7.71 years in 1998-99 and 6.6 years in 1997-98. In view of increasing tenor of securities, the structure of outstanding debt has undergone change. The weighted average maturity of outstanding marketable debt increased to 7.75 years from 7.30 years in 1998-99.

Secondary Market

The transactions in debt securities almost doubled during 1999-2000 over 1998-99. The non-

government debt securities account for less than 2% of total turnover of debt securities. The government securities account for the balance 98%. NSE accounted for 55.4% of total turnover of debt securities during 1999-2000.

As usual, non-government securities were traded occasionally. These are traded on the BSE as well as on the WDM and CM segments of the NSE. The turnover of such securities is too insignificant to warrant any analysis, as may be seen from Table 8-6. The turnover on BSE was a negligible Rs. 86 crore during 1999-00. It has reduced further during the current year with trades of Rs. 21 crore during April-September 2000. NSE, with a turnover of Rs. 10,433 crore during 1999-2000, accounted for over 95% of trades in non-government securities.

The aggregate turnover in central and state government dated securities including T-bills

Table 8-6: Turnover of Debt Securities

Securities	(Rs. crore)		
	1998-99	1999-2000	April-Sept. 2000
Government Securities	227,228	539,232	250,467
WDM Segment of NSE	95,280	293,887	144,500
Rest of SGL	131,948	245,345	105,967
Non Government Securities	10,426	10,519	6,203
CM Segment of NSE	86	104	9
WDM Segment of NSE	10,189	10,329	6,173
'F' Category of BSE	151	86	21
Total	237,654	549,751	256,670

Table 8-7: Secondary Market Transactions in Government Securities

Year	Total SGL Turnover (Rs. crore)	Share in Turnover (%)		Share in Turnover(%)	
		Outright	Repo	Dated Securities	T-Bills
1995-96	127,179	23.20	76.80	87.20	12.80
1996-97	122,942	76.40	23.60	69.90	30.10
1997-98	185,708	86.74	13.26	75.76	24.24
1998-99	227,228	82.53	17.47	80.41	19.59
1999-2000	539,232	84.66	15.34	89.88	10.12
Apr-Sept 2000	250,467	83.08	16.92	88.38	11.62

Source : RBI.

through SGL transactions during 1999-2000 reached a level of Rs. 5,39,232 crore, recording 137% growth over Rs. 2,27,228 crore in the previous year. The volume of transactions in state government securities was marginal at Rs. 3,631 crore. Growing turnover of government securities, as presented in Table 8-7, reflects increasing depth of the market. The monthly turnover for the year 1999-2000 ranged between Rs. 28,943 crore and Rs. 73,895 crore, with a monthly average of Rs. 44,936 crore. During April-September 2000, the monthly turnover ranged between Rs.29,586 crore and Rs. 54,196 crore with an average of Rs. 45,644 crore. The bulk of transactions was on outright basis amounting to Rs. 4,56,491 crore (85%) in 1999-2000 and the balance was by way of repos. The share of outright transactions in government securities increased from 23% in 1995-96 to 85% in 1999-2000, but declined to 83% in April-September 2000. The share of repo transactions declined correspondingly from 76.8% in 1995-96 to 15% in 1999-2000, but increased to 17% in April-September 2000. The details of trades of government securities since April 1998 are presented in Annexure 8-1.

Government debt, which constitutes about three-fourth of the total outstanding debt, has the highest level of liquidity amongst the fixed income instruments in the secondary market. The share of dated securities in total turnover of government

securities has been increasing over the years. It was 76% during 1997-98, which increased to 80% in 1998-99 and further to 90% in 1999-2000. It, however, reduced marginally to 88.3% during April-September 2000. Two-way quotes are available for active gilt securities from the primary dealers. Though many trades in gilts take place through telephone, a larger chunk of trades gets routed through NSE brokers. T-bills account for about 10% of total SGL turnover.

The share of WDM segment of NSE in the turnover for dated securities and T-bills increased from 41.93% in 1998-99 to 54.5% in 1999-2000 and improved further to 57.7% during April-September 2000. This happened because the overall turnover of government securities registered a growth of 137% during 1999-2000, while the same on WDM registered 208% growth. WDM's share in transactions of dated securities increased from 46.3% in 1998-99 to 58.4% in 1999-2000 and further to 61.5% during April-September 2000. Its share in transactions of T-bills decreased from 41.92% in 1997-98 to 24.05% in 1998-99 and further declined to 20.16% in 1999-2000. It, however, increased to 28.8% during April-September 2000. The share of WDM in total SGL turnover is presented in Table 8-8 and Chart 8-2. Share of WDM in repo and outright transactions was 64% and 3% respectively during 1999-2000, and 69% and 2% during April-September 2000.

Table 8-8: Share of WDM in Transactions of Government Securities

(Amount in Rs. crore)

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	OnWDM	Share of WDM (%)
1995-96	127,179	9,988	7.85	110,852	7,728	6.97	16,327	2,260	13.84
1996-97	122,942	38,308	31.16	85,915	27,352	31.84	37,027	10,957	29.59
1997-98	185,708	103,585	55.78	140,700	84,720	60.21	45,008	18,866	41.92
1998-99	227,228	95,280	41.93	182,717	84,574	46.29	44,511	10,706	24.05
1999-2000	539,232	293,887	54.50	484,641	282,880	58.37	54,591	11,007	20.16
Apr-Sept 2000	250,467	144,500	57.69	221,354	136,112	61.49	29,115	8,388	28.81

Source: RBI & NSE.

Wholesale Debt Market Segment

Trading System

The WDM segment of NSE provides the only formal trading platform for trading of a wide range of debt securities. The WDM trading system, known as NEAT (National Exchange for Automated Trading), is a fully automated screen based trading system which enables members across the country to trade simultaneously with enormous ease and efficiency. The trading system is an order driven system which matches best buy and sell orders on a price/time priority.

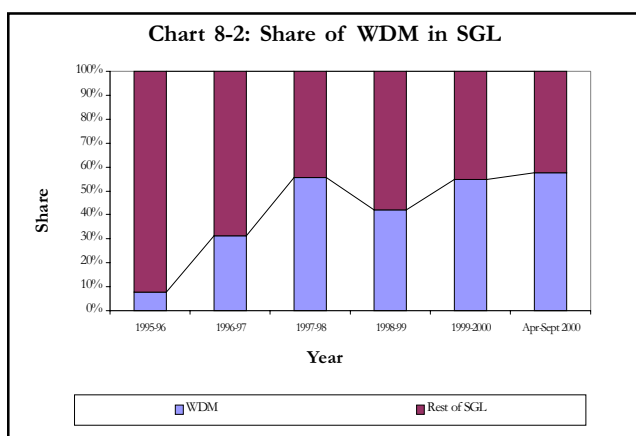
Trading system provides two market sub-types: continuous market and negotiated market. In continuous market, the buyer and seller do not know each other and they put their best buy/sell orders, which are stored in order book with price/time priority. If orders match, it results into a

trade. The trades in WDM segment are settled directly between the participants, who take an exposure to the settlement risk attached to any unknown counterparty. In the NEAT-WDM system, all participants can set up their counterparty exposure limits against all probable counterparties. This enables the trading member/participant to reduce/minimise the counterparty risk associated with the counterparty to trade. A trade does not take place if both the buy/sell participants do not invoke the counterparty exposure limit in the trading system.

In the negotiated market, the trades are normally decided by the seller and the buyer, and reported to the Exchange through the broker. Thus, deals negotiated or structured outside the exchange are disclosed to the market through NEAT-WDM system. In negotiated market, as buyers and sellers know each other and have agreed to trade, no counterparty exposure limit needs to be invoked.

The trades on the WDM segment could be either outright trades or repo transactions with flexibility for varying days of settlement (T+0 to T+5) and repo periods (3 to 14 days). For every trade, it is necessary to specify the number of settlement days and the trade type (repo or non-repo), and in the event of a repo trade, the repo term.

The Exchange facilitates trading members to report off-market deals in securities in cases where



the repo period is more than the permissible days in the trading system (14 days) or where the securities cannot be listed on the Exchange as they do not meet the listing requirements. These trades are required to be reported to the Exchange within 24 hours of the issuance of contract note.

Clearing and Settlement

Trades on WDM segment are settled gross, on a trade for trade basis, i.e., each transaction is settled individually and no netting of transactions is allowed. The Exchange monitors settlement of these trades on day to day basis, wherein participants confirm all trades and settlement thereof and also provide complete settlement details to the Exchange through an on-line, interactive data communication system and faxes. Each trade has a unique settlement date specified upfront at the time of order entry and is used as matching parameter. It allows settlement periods ranging from same day (T+0) to a maximum of six days (T+5).

The actual settlement of funds and securities are effected directly between participants. As the government securities are held in book entry form by the RBI, the latter effects the transfer of these securities through book entry adjustments. For other securities, funds are settled through exchange of physical instruments such as, pay-orders or cheques, for value on the settlement day in exchange for physical certificates.

Constituent SGL Facility

Subsidiary General Ledger (SGL) account is a facility provided by RBI to large banks and financial institutions to hold their investments in government securities and treasury bills in electronic book entry form. Such institutions can settle their trades for securities held in SGL through a delivery-versus-payment (DvP) mechanism, which ensures movement of funds

and securities simultaneously. As all investors in government securities do not have an access to the SGL accounting system, RBI has permitted such investors to hold their securities in physical stock certificate form. They may also open a constituent SGL account with any entity authorised by RBI for this purpose and thus avail of the DvP settlement. Such client accounts are referred to as constituent SGL accounts.

For retail participants in the market, who otherwise have to hold securities in physical form and settle their transactions on a bilateral basis, the NSCCL offers constituent SGL facility. RBI has allowed NSCCL to open SGL and current accounts for this purpose. NSCCL is taking steps to set up a common clearing and settlement framework for its SGL constituents.

Working of WDM

During the year 1999-2000, 910 more securities with a total outstanding debt of Rs. 86,003 crore were made available for trading. The number of securities available for trading increased during the year from 1,147 to 1,412, which included 843 under the listed and deemed listed category. A total of 1,057 securities were active during 1999-2000 as compared to 1,071 in the previous year.

The turnover on WDM segment has been growing rapidly. The turnover increased from Rs. 6,781 crore during 1994-95 (June-March) to Rs. 3,04,216 crore during 1999-2000. The average daily turnover increased from Rs. 35 crore to Rs. 1,035 crore during the same period. The turnover nearly trebled to Rs. 3,04,216 crore in 1999-2000 from Rs. 1,05,469 crore in 1998-99. The average number of trades per day increased from 56 in 1998-99 to 160 in 1999-2000. Similarly average daily turnover increased sharply from Rs. 365 crore in 1998-99 to Rs. 1,035 crore in 1999-2000. April-September 2000 witnessed a turnover Rs. 1,50,673 crore with an average daily

Table 8-9: Business Growth of WDM Segment

Parameter	Jun 94-Mar 95	1995-96	1996-97	1997-98	1998-99	1999-2000	Apr-Sep 2000
Number of Active Securities	183	304	524	719	1,071	1,057	618
Number of Trades	1,021	2,991	7,804	16,821	16,092	46,987	22,763
Number of Retail Trades	168	1,115	1,063	1,390	1,522	925	285
Share of Retail Trades (%)	16.45	37.28	13.62	8.26	9.46	1.97	1.25
Turnover (Rs. cr.)	6,781	11,868	42,278	111,263	105,469	304,216	150,673
Retail Turnover (Rs. cr.)	31	207	201	289	308	218	65
Share of Retail Trades (%)	0.45	1.74	0.47	0.26	0.29	0.07	0.04
Average Trade Size (Rs. cr.)	6.64	3.97	5.42	6.61	6.55	6.47	6.62
Average Size of Retail Trades (Rs. lakh)	18.21	18.58	18.91	20.79	20.23	23.56	23.22

turnover of Rs. 1,032 crore. The business growth of WDM segment is presented in Table 8-9, Chart 8-3 and Annexure 8-2.

The market remained highly active throughout the year. The turnover increased from Rs. 18,525 crore in April 1999 to Rs. 43,186 during February 2000. The average daily turnover, which was as low as Rs. 689 crore in September 1999 rose to Rs. 1,799 crore in February 2000. March 2000 witnessed drastic fall in turnover. During initial months of the current fiscal, the market looked up. However, the turnover fell sharply in the month of June 2000 to Rs. 17,445 crore recording an average daily turnover of Rs. 698 crore. The

number of trades displayed similar fluctuation. The average daily turnover decreased from Rs. 1,089 crore in July 2000 to Rs. 658 crore in August 2000 to increase to Rs. 857 crore in September 2000.

Retail Trades

The number of retail trades (trade value of less than Rs. 1 crore), which has been increasing continuously till 1998-99, decreased to 925 in 1999-2000. April-September 2000 reported only 285 trades. The share of retail trades in the total number of trades has, however, been decreasing continuously. It declined from 16.45% in

Chart 8-3: Business Growth of WDM Segment

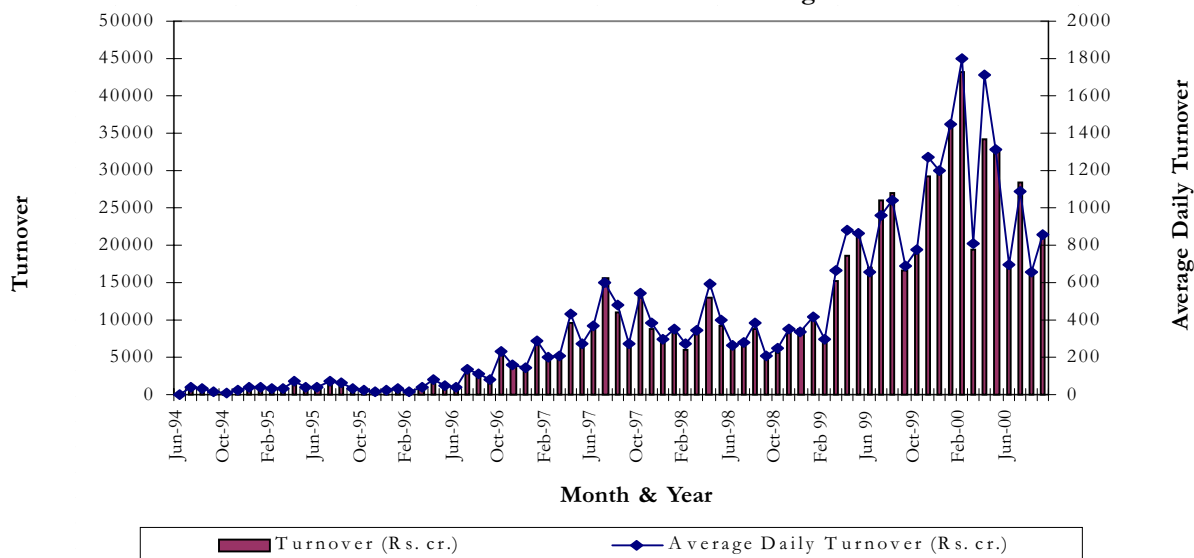


Table 8-10: Securitywise Distribution of Turnover

Securities	Turnover (Rs. crore)				% of Turnover			
	1997-98	1998-99	1999-2000	Apr-Sept	1997-98	1998-99	1999-2000	Apr-Sept
				2000				2000
Govt. Securities	84,720	84,574	282,880	136,112	76.14	80.19	92.99	90.34
PSU Bonds	2,522	1,729	1,528	1,696	2.27	1.64	0.50	1.13
Institutional Bonds	1,527	3,278	3,345	1,291	1.37	3.11	1.10	0.86
Treasury Bills	18,866	10,706	11,007	8,388	16.96	10.15	3.62	5.57
Bank Bonds & CDs	1,185	861	805	944	1.07	0.82	0.26	0.63
Corporate Bonds & CPs	2,428	4,228	4,615	2,196	2.18	4.01	1.52	1.46
Others	16	92	36	46	0.01	0.09	0.01	0.03
Total	111,264	105,468	304,216	150,673	100.00	100.00	100.00	100.00

1994-95 to 2% in 1999-2000 and further to 1.25% during April-September 2000. Its share in the turnover declined from 1.74% in 1995-96 to 0.07% in 1999-2000 and further to 0.04% during April-September 2000. The efforts made by policy makers to broaden the investor base by retailing government securities do not seem to be yielding desired result. The average size of a WDM trade, which had dropped to Rs. 3.97 crore in the year 1995-96 from Rs. 6.64 crore in the preceding year, climbed up to Rs. 5.42 crore in 1996-97. It has been nearly seven crore since 1997-98. Such large average size of trades only proves wholesale nature of the market.

Securities Profile

Long-term government securities dominated the market during 1999-2000 revealing the interest of investors to hold on to long-term assets. As presented in Table 8-10, government securities accounted for the bulk of trading. The turnover of government securities increased by 234% during 1999-2000, while its share in total turnover increased to 93% from 80% in the previous year. It accounted for about 97% of total turnover in October 1999. Its share, however, reduced to 90% during April-September 2000. The share of T-Bills reduced drastically from 10% in 1998-99 to 3.62% in 1999-2000 to increase to about 6% during April-September 2000.

The PSU bonds witnessed a turnover of Rs. 1,528 crore in 1999-2000 as against Rs. 1,729 crore in 1998-99. The share of PSU bonds in the total turnover decreased to 0.5% in 1999-2000 compared to 1.64% in 1998-99. The demand for institutional bonds and corporate bonds decreased as their share fell to 1.1% and 1.52% respectively in 1999-2000 from 3.11% and 4.01% in 1998-99. Chart 8-4 presents security-wise distribution of turnover in April-September 2000.

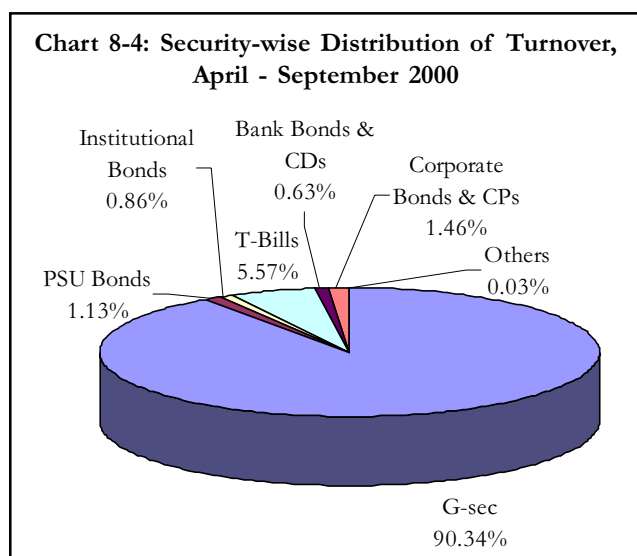


Table 8-11: Share of Top 'N' Securities in Turnover of WDM Segment

Year	In per cent				
	Top 5	Top 10	Top 25	Top 50	Top 100
1994-95	42.84	61.05	80.46	89.81	97.16
1995-96	57.59	69.46	79.60	86.58	93.24
1996-97	32.93	48.02	65.65	78.32	90.17
1997-98	30.65	46.92	71.25	85.00	92.15
1998-99	26.81	41.89	64.30	78.24	86.66
1999-2000	37.11	55.57	82.12	90.73	95.28
Apr – Sept 2000	35.16	52.77	80.41	90.01	95.24

Participants Profile

As revealed in Table 8-11 and Chart 8-5, the share of top 'N' securities in the total turnover witnessed a declining trend from 1995 to 1999. However, the year 1999-2000 witnessed a reversal of trend. The share of top '10' securities in turnover increased to 56% from 42% in 1998-99 indicating that trading is getting concentrated in fewer securities. Top '50' scrips accounted for over 90% of turnover in the year 1999-2000 and April-September 2000.

The major participants in the WDM are the Indian banks, foreign banks and primary dealers, who

together accounted for over 77% of turnover during 1999-2000, as may be seen from Table 8-12. The share of Indian banks, who continue to be market leader, in turnover has been steady at about 42% during 1992-2000, though it declined to 32.6% during April-September 2000. The share of foreign banks decreased to 15.05% in 1999-2000 from 22.83% in 1998-99. Primary dealers contributed 22.31% during April-September 2000 as against 19.42% in 1999-2000 and 14.64% in 1998-99. The share of trading members increased to 18.75% in 1999-2000 and further to 22.83% in April-September 2000. Financial institutions and mutual funds contribute about 4% of the turnover.

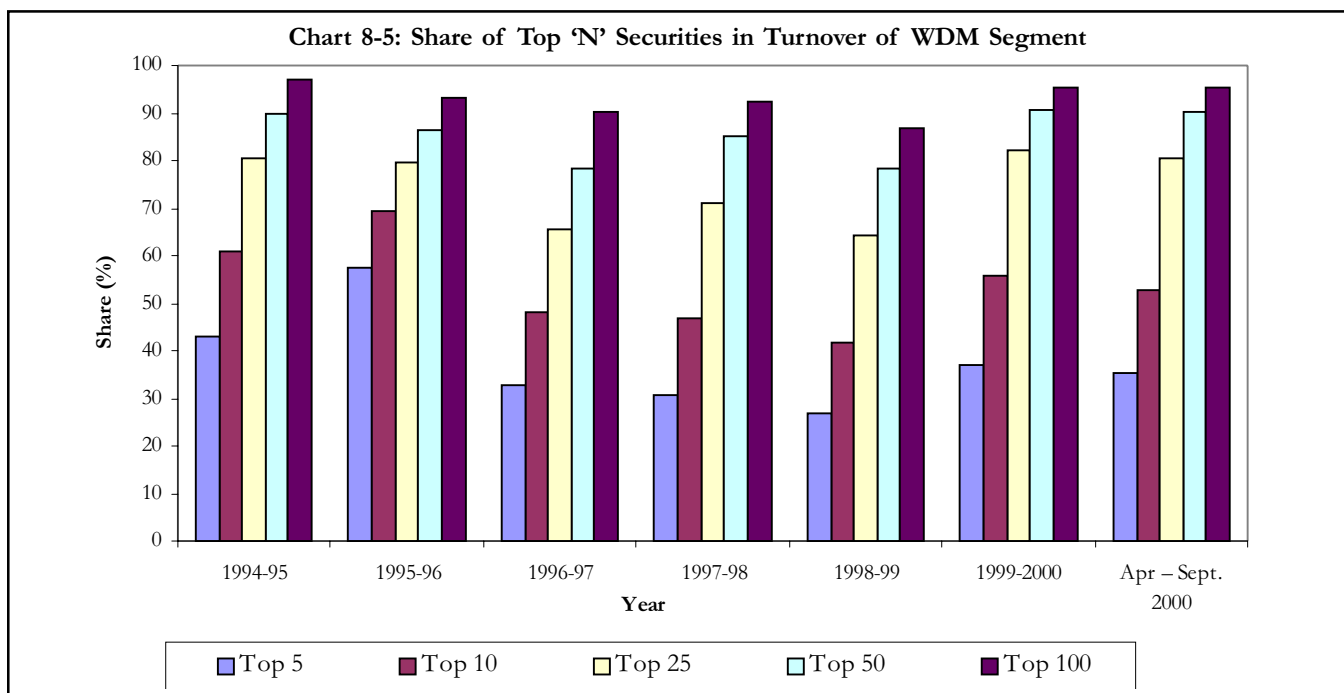


Table 8-12: Participant-wise Distribution of Turnover

Participants	Percentage Share in Turnover					
	1995-96	1996-97	1997-98	1998-99	1999-2000	Apr-Sept 2000
Foreign Banks	37.69	37.13	22.65	22.83	15.05	17.96
Indian Banks	30.07	30.01	41.24	42.12	42.72	32.59
Primary Dealers	1.16	16.00	12.06	14.64	19.42	22.31
FI, MFs & Corporates	5.41	3.01	3.84	4.57	4.06	4.31
Trading Members	25.67	13.85	20.21	15.84	18.75	22.83
Total	100.00	100.00	100.00	100.00	100.00	100.00

Participant-wise distribution of turnover during April-September 2000 in WDM is presented in Chart 8-6. Security wise and participant wise distribution of turnover in WDM is presented in Annexure 8-3.

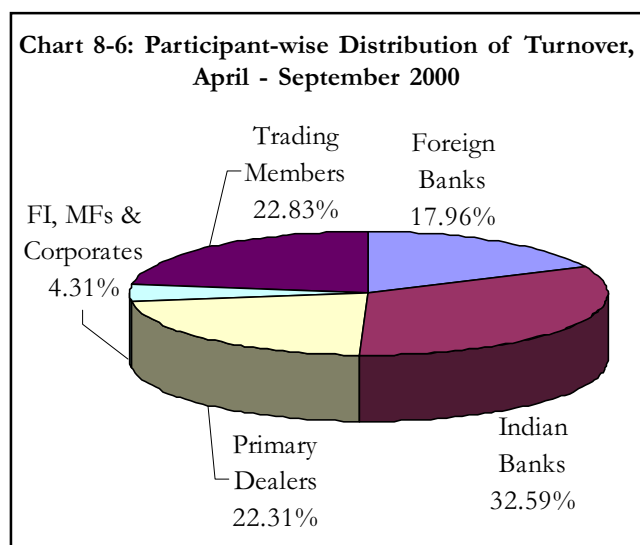
Chart 8-7 shows growth in number of active trading members and participants from September 1994 to September 2000. The number of active trading members increased from 18 in September 1994 to 55 in September 1997, but declined to 43 in September 2000. The number of active participants has been increasing continuously. It increased from 10 in September 1994 to 80 in September 2000.

Contributions of Top 'N' trading members/participants to total turnover are presented in Table 8-13. The share of top 'N' members/

participants has reduced over time indicating diffusion of trades among members/participants. Top '10' members/participants accounted for about 60% /29% of turnover respectively during April-September 2000.

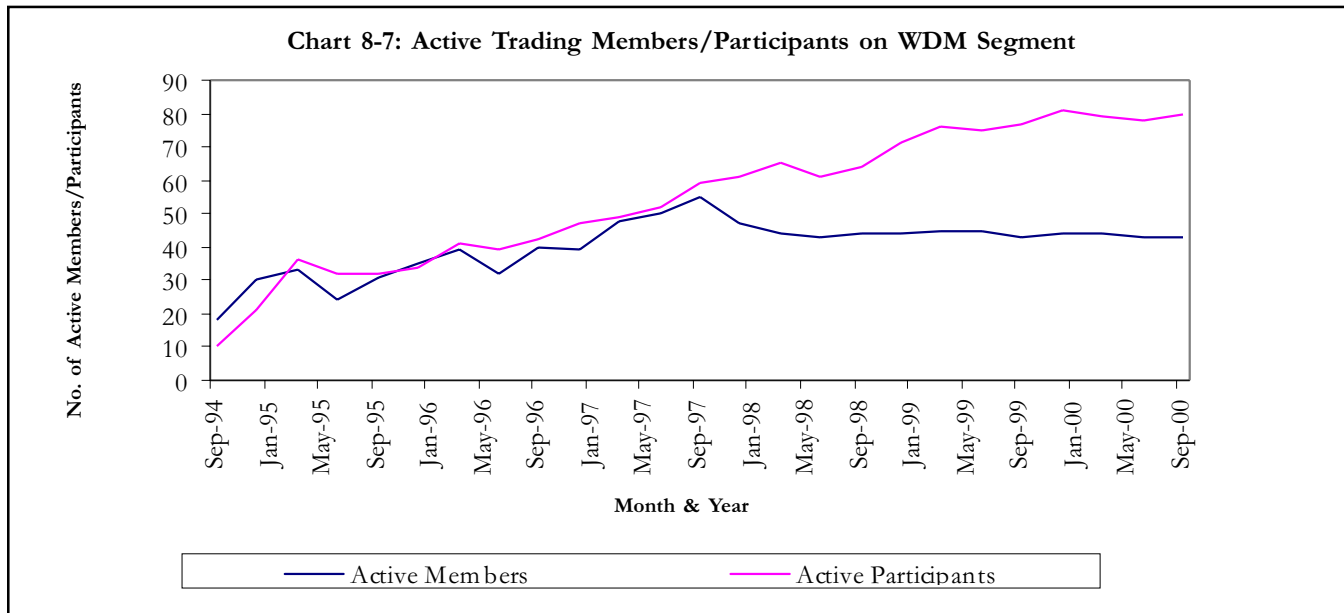
Market Capitalisation

Market capitalisation of the WDM segment has witnessed a constant increase indicating an increase in the number of securities available for trading on this segment. Total market capitalisation of the securities available for trading on WDM segment stood at Rs. 4,94,033 crore as at end March 2000, registering a growth of 20% over end March 1999 level. The relative shares of different securities in market capitalisation changed marginally during 1999-2000. As expected, government securities accounted for 64.8% of total market capitalisation at the end of March 2000. The composition of market capitalisation of various securities on WDM in the recent past is presented in Table 8-14. The market capitalisation of securities on WDM at the end of September 2000 is presented in Chart 8-8. The growth of market capitalisation of WDM is presented in Annexure 8-4.



MIBID/MIBOR

In its tradition of innovation, NSE developed and launched the NSE Mumbai Inter-bank Bid Rate (MIBID) and NSE Mumbai Inter-bank Offer Rate (MIBOR) for the overnight money market on June 15, 1998. The success of the overnight



MIBID/MIBOR encouraged the Exchange to develop benchmark rates for the term money market. NSE launched the 14-day MIBID/MIBOR on November 10, 1998 and the 1-month and 3 month MIBID/MIBOR on December 1, 1998.

NSE MIBID/MIBOR are based on rates polled by NSE from a representative panel of 31 banks/institutions/primary dealers. Currently, quotes

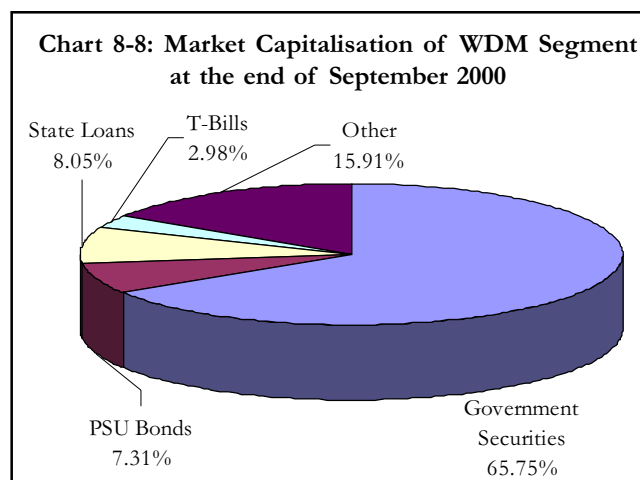
are polled and processed daily by the Exchange at 0940 (IST) for overnight rate and at 1130 (IST) for the 14 day, 1 month and 3 month rates. The rates polled are then processed using the bootstrap method to arrive at an efficient estimate of the reference rates. The overnight rates are disseminated daily to the market at 0955 (IST) and the 14 day, 1 month and 3 month rates at 1215 (IST).

Table 8-13: Share of Top 'N' Trading Members / Participants in Turnover

Year	In per cent				
	Top 5	Top 10	Top 25	Top 50	Top 100
Trading Members					
1994-95	51.99	73.05	95.37	100.00	-
1995-96	44.36	68.58	96.10	100.00	-
1996-97	30.02	51.27	91.57	99.96	100.00
1997-98	27.17	47.85	83.38	99.82	100.00
1998-99	29.87	50.45	86.55	99.98	100.00
1999-00	32.38	53.41	84.46	100.00	-
Apr – Sept 2000	38.20	59.91	89.96	100.00	-
Participants					
1994-95	18.37	27.38	38.40	42.20	-
1995-96	29.66	47.15	70.49	76.32	76.58
1996-97	25.27	44.92	67.00	76.33	77.10
1997-98	23.60	38.96	65.59	77.96	80.22
1998-99	22.47	37.39	62.79	79.27	84.51
1999-00	15.54	27.87	52.51	74.76	81.32
Apr – Sept 2000	17.03	29.42	53.98	70.70	77.14

The NSE MIBID/MIBOR is used as a benchmark rate for majority of deals struck for interest rate swaps, forward rate agreements, floating rate debentures and term deposits. Bankers, issuers and investors are using the NSE MIBID/MIBOR extensively. Banks have been active in devising tailor-made products to suit the customer needs and have also linked term deposit rates to the overnight MIBID/MIBOR. Issuers use these to price instruments on the basis of daily interest rate movement and hedge against adversities. These provide a comfort zone against any unexpected volatile market movements having an impact on the financial commitments of the issuer in respect of its debt. The transparency resulting from dissemination of MIBID/MIBOR has helped the issuers to obtain finer rates by issuing bonds linked to MIBOR. A number of organisations are benchmarking interest rate swaps to MIBID/MIBOR.

The overnight MIBID/MIBOR rates ruled steady within a narrow range during the year 1999-2000 and also during the current fiscal except for bouts of volatility during mid-August 1999, mid-October 1999, mid-February 2000 and end-March 2000, which were primarily attributable to the unanticipated demand for reserves by banks. After ruling low at 8.01-8.03% in January 2000, call rates again shot up during mid-February 2000, primarily due to large positions taken by a few banks while participating in the RBI's open market sales. The liquidity eased from February 22, 2000 after some participants



liquidated their positions in the market, following the open market purchases of T-bills and dated securities by the RBI. In response to the monetary policy measures announced by RBI on April 1, 2000, NSE MIBID/MIBOR declined sharply to settle around the bank rate of 7%. In June 2000, the call money market tightened and MIBID/MIBOR firmed up to an average of 12.26%. MIBID/MIBOR further firmed up to an average of 13.71% in August 2000. Chart 8-9 presents overnight NSE MIBID/MIBOR from April 1999 to September 2000. The rates since their launch till December 1999 were presented in the last issue of this publication. The rates from January 2000 till end of September 2000 are presented in Annexure 8-5.

Zero Coupon Yield Curve (ZCYC)

In its strive to introduce innovative products and services and in line with its focus on development

Table 8-14: Market Capitalisation of WDM Segment

Security	Market Capitalisation (end of period)			% to Total		
	March-99	March-00	September-00	March-99	March-00	September-00
Government Securities	260,002	319,865	346,284	63.19	64.75	65.75
PSU Bonds	34,994	39,357	38,499	8.50	7.97	7.31
State Loans	30,516	39,477	42,411	7.42	7.99	8.05
T-Bills	11,292	15,345	15,710	2.74	3.11	2.98
Other	74,666	79,989	83,777	18.15	16.19	15.91
Total	411,470	494,033	526,681	100.00	100.00	100.00

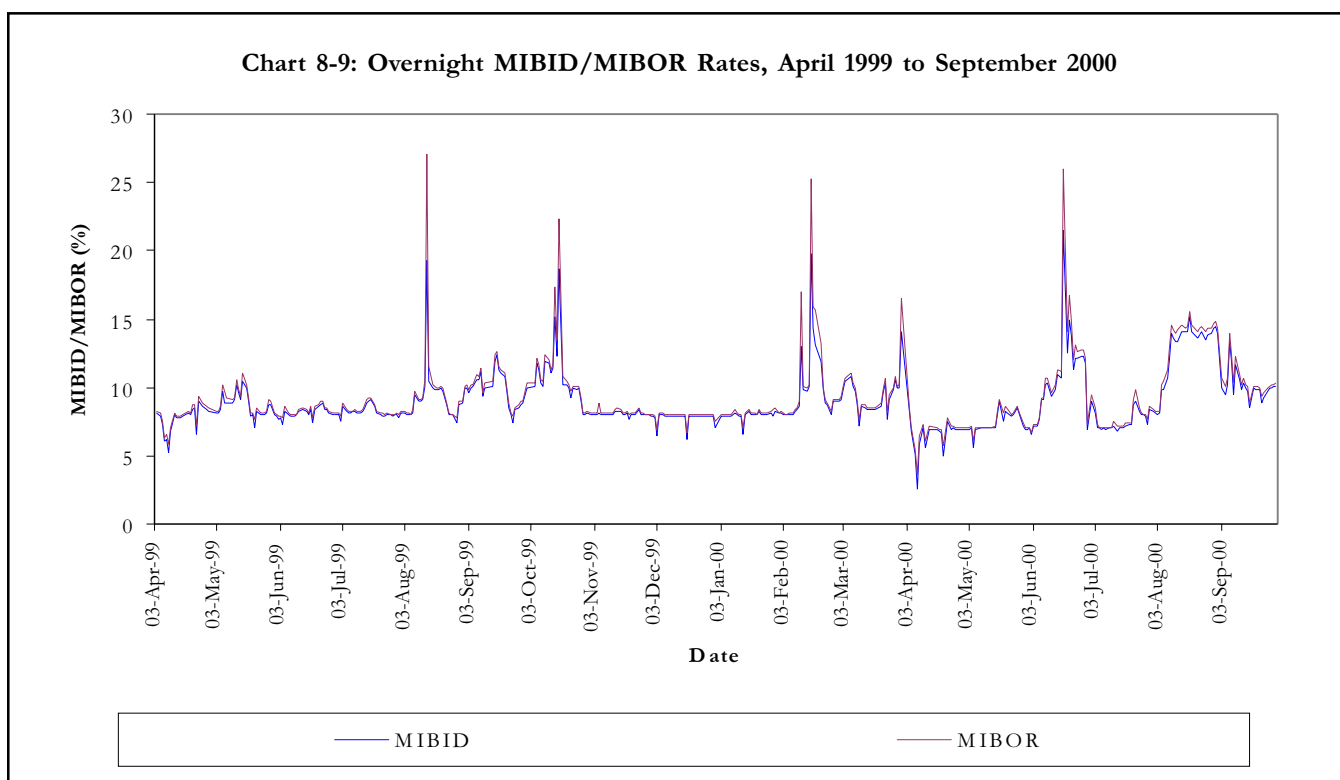
of debt market, NSE launched, on September 25, 2000, a 'Zero Coupon Yield Curve' to help in valuation of securities across all maturities irrespective of their liquidity in the market. This has been developed keeping in mind the requirement of the banking industry, financial institutions, mutual funds, insurance companies, etc., that have substantial investment in sovereign paper. 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 trade data. This is being disseminated everyday.

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 valuation of all fixed income instruments.

Modelled as a series of cash flows due at different points of time in the future, the underlying price of such an instrument is calculated as the net present value of the stream of cash flows. Each cash flow, 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 is used to track the value of portfolios of government securities on a day-to-day basis.

Issues in Debt Market

The Indian financial system is not yet fully diversified. One of the significantly important missing elements is the absence of an active and large secondary debt market. In terms of



outstanding issued amount, Indian debt market ranks as the third largest in Asia, next only to that of Japan and South Korea. A comparison of the size of GDP with the outstanding debts or with the volume of debt flotation indicates that the Indian debt market is fairly well developed. However, several objective indicators indicate that the secondary debt market is the least developed. In developed markets, the size of secondary debt market in terms of daily turnover is many times the size of the equity markets. In India, however, the size of the secondary market is a fraction of the size of the equity markets. There are several factors ranging from policy to procedural issues inhibiting the development of the debt market. Some of the important issues in this context are discussed below.

Issue of Securities

Retail participation

As mentioned earlier, the number of players in the government securities market is too less to take different views on the market. As capital adequacy, income recognition and provisioning norms guide investment decisions of the banking system, banks may not continue to support government borrowing programme in the times to come. These necessitate diversifying investor base by attracting yet untapped retail investors. A number of measures have been initiated to develop the retail markets for Government securities. These include: establishment of a system of satellite dealers, liquidity support and other facilities to Gilt funds, introduction of constituent SGL account facility, allowing banks to freely buy and sell government securities to non-bank clients without any restriction on the period between the sale and purchase and permitting National Securities Depository Ltd. (NSDL), Stock Holding Corporation of India Ltd., (SHCIL) and NSCCL to open SGL accounts with a view to enabling dematerialisation of securities of retail holders.

Despite these, the household investment in the government securities is negligible. This is on account of various factors. First, there is an absence of awareness amongst the common public as to merits of the investment in a credit-risk-free sovereign paper. Second, there are competing instruments, such as, small savings instruments, insurance schemes, equity and debentures, which either offer higher effective returns or other benefits, though the risk perceptions of some of these instruments do not appear to bother the small investor. Third, the cumbersome settlement procedures and the lack of reasonable exit route are not comforting the small investor. Fourth, institutional mechanism in terms of agency services is absent.

Unrealised Potential

The government and the corporate sector have unconsciously kept the common investor away from fixed income marketable instruments. It is in the interest of both Government and the corporate sector to entice the common investors into their fixed income marketable instruments. Government would be able to bring down its borrowing costs if it raises funds directly from the common investor. The existing tax sops given to bank deposits may be extended to investments in government securities. The level of mandatory SLR may be gradually brought down so as to make the financial system more market-oriented. A network of underwriters, brokers and sub-brokers to distribute government securities needs to be developed.

The supply of good corporate bonds is scarce especially for the common investor. Indian corporate entities have not yet shown enough interest to tap the retail markets through issue of bonds. They have been depending on conventional sources like, banks and financial institutions and the private placement market. The yields they offer to these sources would be equally attractive for common investors. Once the investment

activity picks in the economy, the costs of borrowing from these traditional sources will go up. They should try to tap the main source of supply viz., the household sector and benefit from the low cost disintermediated funds. Corporate entities with very good credit rating will be able to bring down their cost of borrowings if they tap the market directly. With the recent amendment in the Income Tax Act, expropriative stamp duty on transfer of ownership of debt instruments has been abolished. With the disappearance of physical securities, handling costs in depository mode has significantly reduced for the secondary market transactions. The process of ownership transfer is also much safer and cheaper. It does not require great deal of innovation to exploit the secondary market infrastructure for the distribution of any depository-based security instrument. The NSE's secondary market infrastructure, which has now spread to more than 360 cities, can be effectively used for distribution of corporate debt paper.

Investor Interest

RBI annual report clearly brings out the overriding importance of the fixed income assets in the savings pattern of households. Household sector, which accounts for nearly 80% of the aggregate savings in the Indian economy, has a great appetite for debt instruments provided they are packaged properly. During the year 1998-99, they invested 42% of their savings only in bank deposits, 22.7% in provident funds and 10.5% in insurance funds and only 2.5% in shares and debentures including units of mutual funds. They invested 1.7% of their savings in government securities as against 10.6% in small savings. Thus, the fixed income assets popular with investors are bank deposits, provident funds, and national savings scheme instruments and not debentures, bonds and government securities. The bonds issued by Government of India, the most lucrative marketable instrument, both from the safety and

return point of view, do not even attract household investor. Absence of an active secondary market in debt instruments explains lack of investor interest in tradable debt securities. It is typically a case of “chicken and egg problem”. Since there are not enough number of issues and the floating stock of secondary markets is miniscule, there is hardly any trading in them. But until an active secondary debt market develops, the issuers would not venture to issue tradable debt. Currently, almost 99% of the trading in debt instruments in our secondary markets relates to government securities, treasury bills, PSU bonds and commercial paper. The quality of trading is abysmally poor compared to trading in equity markets. Debt market lacks transparency, liquidity and depth.

Trading of Securities

Transparency

The markets world over are switching from telephone trading to screen-based technology, which brings in increased transparency, increased competition and efficient price discovery, improves efficiency of execution of trade and reduces costs for the players. The market would gain substantially in liquidity and efficiency if the trading framework of equity market is replicated in the debt market also, that is, four key principles - anonymity, price time priority, nation wide market and settlement guarantee – apply to trading of debt instruments. The players share a common platform to buy or sell securities. Absence of any requirement to go through a common platform like stock exchange induces some of the players to enter into non-transparent deals through the telephone market. If these participants are required to go through a screen based trading on stock exchanges where an efficient and transparent price discovery mechanism is available with complete audit trail of activities, a liquid and vibrant secondary market for debt will be a reality.

NSE's automated screen based trading is an anonymous order matching system that has put an effective end to the malpractices that were earlier noticed in the Indian equities markets. In this system, although the stockbroker places the order into the trading system, he has no control over the order-matching algorithm as the mainframe computer matches all the orders on a price-time priority basis. At a given price, the orders that get registered in the memory of the mainframe earlier get a priority in matching. As a result of this objective order matching system, stockbrokers cannot manipulate prices, nor can they overcharge their clients like the way they used to do earlier when the deals used to be concluded through either the telephonic negotiations or on the physical trading floor. Despite all the attempts made by NSE to encourage banks and institutions to use the anonymous order matching system for executing their debt securities transactions, they have shown little interest in the system.

One of the important goals that Mr. Arthur Levitt has placed before himself for his second term as Chairman of SEC is to enforce maximum possible transparency in the US bond market. In this context he observed, "Investors have a right to know the prices at which bonds are being bought and sold. This will help them to make better decisions, and it will increase confidence in the fairness of the markets...Technology is revolutionising how business is conducted. ...debt market still remains one of the last major markets in the United States to not have some type of electronic price disclosure system. I think it is fair to say that the recent volatility in the markets underscores the need for greater price transparency in this market...If we continue to be vigilant in the dissemination of market information to all investors, our nation will remain the envy of the world. You can be sure the SEC will do its part. I expect all our markets to do theirs." It is highly significant to note the great importance that

Mr. Levitt attaches to market transparency and disclosure of information to all the investors on as near real time basis as possible. If we want our debt markets also to become "envy of the world", we should, as in the case of the equity markets, introduce screen based anonymous limit order matching system that provides real time price and trade information to all the investors. Fully transparent trading systems would protect the markets from ethical lapses that the dealers in the banks or brokers are prone to commit.

In our country, regulatory fiat is needed to enforce transparency in financial deals so that the unfortunate events of the early 1990s, when the major scam hit the banks, do not recur. If all the deals, that took place in the early 1990s, had been brought on a transparent screen and settled the way NSE's clearing corporation settles all equity transactions by offering settlement guarantee, the scam would not have taken place and the banks would not have lost thousands of crore. It is strange that even today many active market players refuse to accept the proposition that modern financial markets with huge daily turnover should not be allowed to function in an organisational vacuum, but need to be closely monitored and effectively regulated. SEBI has taken the initiative in this regard by prohibiting 'negotiated deals' in respect of listed corporate debt securities and prescribing that all such trades would be executed on the basis of price and order matching mechanism of stock exchanges as in case of equities. RBI has also expressed its intention to move over in due course to order driven screen-based trading in government securities on the stock exchange.

Consolidated Order Book

Secondary debt market is highly fragmented. The ownership titles of government securities are fragmented city-wise. A buyer from Chennai or New Delhi can not trade in the Mumbai market

since securities held in his account with RBI books cannot be easily transferred to Mumbai and vice-versa. T-bills cannot be traded outside Mumbai. Since the order book is geographically fragmented, the quality of price discovery process is very poor. The settlement system is not efficient, unless the buyers and sellers have both SGL and cash accounts with RBI. Since RBI provides these account facilities to only a limited number of entities, non-transferable city-wise settlement facilities are available only to these entities. One just cannot dream of having nationwide trading and settlement facilities in government debt as one can do with tremendous ease in equities.

The retail and wholesale secondary markets in equities are tightly integrated as there is only one order book for both retail and large sized orders. With the depository facility accounting for nearly 98% of the settlements, a large sized buy order gets matched with innumerable small orders. The settlements are done through a process of netting and novation and the clearing corporation becomes counterparty for all settlement obligations. The clearing corporation also extends full financial guarantee for all settlements. Such an arrangement does not exist for settlement in government securities, which account for nearly 90% of country's secondary debt market. RTGS system, which RBI is in the process of implementing, will be able to resolve the settlement problems of only those who have a fund and a SGL account with RBI. But if we are keen to develop a nation-wide market for all debt securities, including government securities and T-bills, it may be necessary to have a trading, clearing and settlement infrastructure similar to what we have for the equity market. It is only through such a mechanism that it would be possible to do away with the fragmentation of the debt market, which is split city-wise and among various market participants.

Banks and institutions have failed to appreciate the power of a nation-wide trading system and a single order book, which will help in creating an efficient highly liquid debt market. Before NSE's nation-wide trading system was put in place, the aggregate trading on all the stock exchanges of the country averaged around Rs. 150-200 crore per day. Currently, even on some of the dull trading days, the trading volume logged by NSE alone is Rs.6,000 crore or more. This surge in volume has come about by the magic of nation-wide trading system that has aggregated the orders originating from over 360 cities and towns across the length and breadth of the country. Similar replication is a must for debt market.

Funding of Intermediaries

Traditionally, brokers are the main intermediary in the securities market. They trade for investors and on their own account. But in case of debt market, brokers provide only intermediation services and not trade in their own right. They do not provide continuous two-way positions in the market due to absence of any funding mechanism for them. PDs and SDs, who are the new entrants in the market with the responsibility of distribution and broad basing the investor base for debt securities, have recourse to the call money market as well as repo market to meet their temporary funds requirement. Brokers should, therefore, be provided financial support by encouraging banks to set up lines of credit in favour of them against their holding of government securities and other highly rated debt papers.

Clearing and Settlement

Nation-wide Clearing and Settlement

RBI provides a 'Statutory General Ledger' account facility to large banks and Financial Institutions to hold their investments in government securities and T-bills in book-entry form. As all investors

do not have access to the SGL facilities, they are allowed to hold securities in physical form or they may open an account with a constituent SGL with any entity authorised by the RBI for this purpose. The RBI operates these accounts through various PDOs in each city. As the PDOs in various locations are not linked, investors can only execute transaction with other investors holding accounts with the same PDO. Absence of a nation-wide clearing and settlement facility for investors has prevented the flow of orders from all regions into a single order book, thereby reducing liquidity. The buyer ends up paying a liquidity premium for each transaction. It is imperative that each investor can hold and settle transaction on a nation-wide basis irrespective of the location of its account. Nation-wide clearing and settlement is the primary requirement for creation of a retail order flow.

RBI has just commenced a project for automation of the operations of its PDOs. It will provide connectivity between different PDOs, and facilitate on-line screen based execution for trades in government securities transactions. The first phase will cover the PDO computerisation at Mumbai and facilitate screen based negotiated dealings in government securities and money market instruments, tendering of screen based applications in auctions, full-fledged audit trail, debt servicing, information dissemination, etc. The second phase will facilitate active open market operations by RBI through all regional PDOs. This project is expected to be operational in about a year. RBI is also separately putting in place RTGS system, which is scheduled to be operational within the same time frame.

Clearing Agency

There is need for a clearing agency, which will co-ordinate with the different securities settlers for both securities as well as funds ensuring DvP. Euroclear and Cedel governed by BIS provide

settlement for over 14,000 odd market participants across Europe and also across other countries, even for the OTC trades. Similarly Government Securities Settlement Corporation of US provides for settlement of transactions in the US markets. This facility is necessary for growth of trading in debt securities.

Standardised clearing and settlement practices

Transparent and efficient clearing and settlement are pre-requisites for any securities market. In spite of nation-wide network of banks, there are several difficulties encountered by the participants in respect of inter-city trades and settlement in government papers. T-bills can be settled only at Mumbai, whereas in case of government securities, the requests from the seller to transfer his securities balance to buyer's account at other centres is not accepted. Transferring money between debt instruments is also difficult as different settlement periods and practices are followed for government securities, PSU bonds and corporate debt papers. A clearing corporation, which provides for nation-wide clearing and settlement of debt securities with standardised procedures, practices and settlement cycles is a must.

Management of Risk and Settlement Guarantee

The introduction of retail and wholesale players into a common market and the facility of repos for all players across various instruments would introduce an element of risk to the market. This risk can be best managed by a central entity, which undertakes the clearing and settlement of such transactions and is able to monitor the market and its participants. The clearing corporation can use various risk containment measures such as, capital adequacy, exposure monitoring, mark-to-market and other margins to manage the risk and thereby offer settlement guarantee. With a settlement guarantee mechanism in place, market participants

will be able to plan their fund flows and security requirements in a more efficient way.

Intra-day Netting

The method of settlement, i.e., trade for trade, stipulated by the RBI, forbids intra-day netting, yields enhanced transactions cost and restricts liquidity. The liquidity can be enhanced if the players are allowed to continuously take two-way positions, which can be squared off and settled net at the end of day. A market player would be able to provide a continuous two-way quote only if it were to be allowed to sell short and to cover it later.

Other Issues

Regulatory Clarity

The policy makers have demonstrated their seriousness to develop the debt market. Three major steps taken in this direction in the recent past, i.e., exemption of stamp duty on transfer of debt securities, mandating screen based trading of debt securities, and initiative to set up a clearing corporation for settlement of transactions in government securities, have raised hopes among market participants. It would take about a year for full realisation of the benefits from these measures. However, the debt market is currently regulated by a number of regulatory authorities, namely RBI, SEBI, Department of Economic Affairs and Department of company affairs. It is desirable that there is only one regulatory authority in the interest of effective regulation and development of the market.

Asset Based Securitisation

Securitisation of assets is a structured process, whereby designated pools of loans or other receivables are packaged, underwritten and sold in the form of financial instruments. A typical securitisation process involves sale/transfer of the receivables from an organisation (the owner of

assets) to an independent entity (trustee) or a special purpose vehicle (SPV), which, in turn, issues the financial instruments to investors. It offers an effective and relatively quick and less costly alternative funding source.

Narasimham Committee Report (II) has observed that there is scope to hive off NPA portfolio from FI books through securitisation. Securitisation would enable FIs facing resource constraints to focus on their core competencies of funding infrastructure products through gestation stage and subsequently securitising them, rather than funding them till maturity. FIs, who have reached prudential limits in various sectors, can continue to lend to these sectors if their portfolios can be securitised.

The market for securitisation has not appreciably developed in India because of lack of legal clarity and conducive regulatory environment. A RBI Working Group has recently identified various impediments, viz., lack of investor base, capital market infrastructure, regulatory framework, legal provisions, accounting and taxation issues and standardisation and recommended a number of measures for securitisation to take off in the country. The recommendations include rationalisation/reduction of stamp duties, inclusion of securitised instruments in the definition of “securities” under the SC(R)A, removal of prohibition on investment in mortgage backed securities by mutual fund schemes, tax neutrality of SPV, etc. The Group has suggested as medium-term measures increased flow of information through credit bureau, standardisation of documents, improvement in the quality of assets, upgradation of computer skills and exploring the possibilities of securitising non-performing assets. The need to develop some insurance/guarantee institutions to give comfort to investors, especially in infrastructure and mortgage sectors has been underscored by the Working Group as a long-term measure. These recommendations need to be quickly translated into policy and regulations.

Annexure 8-1: Secondary Market Transactions in Government Securities

(Rs. crore)

Month/ Year	SGL Transactions								WDM Transactions in Government Securities							Grand Total (13+16)
	Outright Transactions				Repo Transactions			Grand Total (5+8)	Outright Transactions				Repo Transactions			
	Dated Securities	State Govt Securities	Treasury Bills	Total (2+3+4)	Dated Securities	Treasury Bills	Total (6+7)		Dated Securities	State Govt. Securities	Treasury Bills	Total (10+11+12)	Dated Securities	Treasury Bills	Total (14+15)	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
1994-95	11,383	203	9,721	21,306	15,190	14,073	29,263	50,569	2,947	79	2,634	5,660	0	0	0	5,660
1995-96	17,553	464	11,513	29,531	92,834	4,814	97,648	127,179	6,813	176	2,255	9,243	739	5	744	9,988
1996-97	59,903	596	33,422	93,921	25,415	3,605	29,020	122,941	26,891	298	10,912	38,101	162	45	207	38,308
1997-98	118,541	1,348	41,201	161,090	20,811	3,807	24,619	185,708	79,564	931	17,021	97,515	4,225	1,845	6,070	103,585
Apr-98	15,186	45	3,065	18,296	1,807	70	1,877	20,173	11,289	35	1,183	12,507	60	0	60	12,567
May-98	10,913	290	1,847	13,050	1,969	303	2,272	15,322	7,179	153	503	7,835	301	10	311	8,146
Jun-98	6,196	94	2,046	8,336	2,256	176	2,432	10,767	5,141	50	698	5,889	529	10	539	6,428
Jul-98	10,058	8	4,041	14,107	1,495	220	1,715	15,823	4,884	12	1,085	5,982	398	50	448	6,430
Aug-98	16,757	125	3,492	20,374	3,215	85	3,300	23,674	6,630	79	527	7,237	463	0	463	7,699
Sep-98	6,677	147	2,041	8,865	2,379	55	2,434	11,299	3,732	42	274	4,048	696	15	711	4,759
Oct-98	4,790	165	4,438	9,393	1,923	35	1,958	11,350	3,133	61	1,097	4,291	466	0	466	4,757
Nov-98	12,229	174	7,903	20,306	1,797	20	1,817	22,123	5,038	138	1,483	6,659	305	0	305	6,964
Dec-98	10,210	94	3,940	14,245	3,207	78	3,285	17,529	6,027	73	1,040	7,140	320	0	320	7,460
Jan-99	17,745	136	2,931	20,812	5,881	93	5,974	26,786	7,987	57	916	8,959	408	0	408	9,367
Feb-99	10,890	149	3,329	14,369	5,188	79	5,267	19,635	5,186	119	816	6,121	328	5	333	6,454
Mar-99	21,447	116	3,816	25,379	6,960	408	7,368	32,747	12,745	41	964	13,751	467	30	497	14,248
1998-99	143,097	1,544	42,890	187,531	38,076	1,621	39,697	227,228	78,973	860	10,586	90,419	4,741	120	4,861	95,280
Apr-99	28,974	29	3,241	32,244	4,275	196	4,471	36,715	16,420	43	1,045	17,509	295	0	295	17,804
May-99	32,350	1,115	2,552	36,017	4,441	130	4,571	40,588	19,490	646	562	20,697	257	0	257	20,954
Jun-99	25,039	255	2,937	28,231	3,299	139	3,438	31,669	14,732	129	1,001	15,862	182	0	182	16,044
Jul-99	31,964	130	3,832	35,926	5,507	356	5,863	41,789	24,181	73	542	24,795	155	0	155	24,950
Aug-99	39,250	450	3,910	43,610	4,507	480	4,987	48,597	24,693	201	1,150	26,044	148	50	198	26,241
Sep-99	20,817	284	2,391	23,492	4,908	543	5,451	28,943	14,851	123	762	15,735	70	0	70	15,805
Oct-99	25,656	97	3,848	29,601	5,216	467	5,683	35,284	18,211	43	308	18,561	116	0	116	18,677
Nov-99	39,905	375	2,659	42,939	5,872	659	6,531	49,470	27,573	268	472	28,314	35	25	60	28,374
Dec-99	36,276	209	4,730	41,215	8,957	1,902	10,859	52,074	27,980	108	1,010	29,098	60	0	60	29,158
Jan-00	42,808	169	4,348	47,325	7,810	1,119	8,929	56,254	33,281	108	1,449	34,838	222	122	344	35,182
Feb-00	59,318	319	4,967	64,604	8,579	712	9,291	73,895	40,055	228	1,440	41,723	318	166	484	42,207
Mar-00	22,928	199	8,160	31,287	12,354	313	12,667	43,954	17,065	84	903	18,052	438	0	438	18,490
1999-2000	405,285	3,631	47,575	456,491	75,725	7,016	82,741	539,232	278,531	2,053	10,644	291,229	2,296	363	2,659	293,887
Apr-00	39,536	127	4,195	43,858	6,212	0	6,212	50,070	31,538	99	1,496	33,132	30	0	30	33,162
May-00	39,099	184	4,066	43,349	5,099	277	5,376	48,724	30,245	93	1,073	31,412	25	0	25	31,437
Jun-00	18,801	33	2,398	21,233	7,856	498	8,354	29,586	15,763	9	718	16,490	65	0	65	16,555
Jul-00	43,285	165	4,317	47,768	5,591	837	6,428	54,196	26,119	121	1,043	27,283	125	0	125	27,408
Aug-00	18,245	607	4,903	23,755	5,102	1,320	6,422	30,176	13,590	253	1,316	15,159	470	0	470	15,629
Sep-00	22,830	87	5,206	28,123	8,494	1,097	9,591	37,714	17,410	23	2,742	20,174	135	0	135	20,309
Apr- Sept. 2000	181,797	1,203	25,085	208,084	38,354	4,029	42,383	250,467	134,664	598	8,388	143,650	850	0	850	144,500

Annexure 8-2: Business Growth of WDM Segment

Month/Year	ALL TRADES					RETAIL TRADES		
	Number of Active Securities	Number of Trades	Average Daily Turnover (Rs. cr.)	Turnover (Rs. cr.)	Average Trade Size (Rs. cr.)	Number of Trades	Turnover (Rs. cr.)	Share in Total Turnover (%)
Jun 94 - Mar 95	183	1,021	35	6,781	6.64	168	31	0.45
1995-96	304	2,991	41	11,868	3.97	1,115	207	1.74
1996-97	524	7,804	145	42,278	5.42	1,063	201	0.47
1997-98	719	16,821	385	111,263	6.61	1,390	289	0.26
Apr-98	178	1,935	593	13,036	6.74	122	26	0.20
May-98	164	1,350	397	9,132	6.76	87	19	0.21
Jun-98	149	1,081	261	6,788	6.28	75	20	0.30
Jul-98	194	1,101	280	7,287	6.62	118	24	0.33
Aug-98	197	1,371	381	8,752	6.38	104	24	0.27
Sep-98	192	835	211	5,475	6.56	135	27	0.49
Oct-98	182	820	250	5,501	6.71	144	28	0.51
Nov-98	249	1,315	352	8,454	6.43	148	29	0.34
Dec-98	238	1,310	335	8,705	6.64	171	33	0.37
Jan-99	199	1,589	418	10,023	6.31	151	27	0.27
Feb-99	216	1,167	296	7,110	6.09	117	24	0.33
Mar-99	215	2,218	661	15,206	6.86	150	27	0.18
1998-99	1,071	16,092	365	105,469	6.55	1,522	308	0.29
Apr-99	182	2,595	882	18,525	7.14	77	16	0.08
May-99	213	3,356	867	21,681	6.46	81	22	0.10
Jun-99	206	2,478	655	17,026	6.87	84	22	0.13
Jul-99	241	4,072	961	25,944	6.37	111	24	0.09
Aug-99	198	4,188	1,037	26,957	6.44	72	16	0.06
Sep-99	180	2,545	689	16,524	6.49	78	21	0.13
Oct-99	184	2,985	805	19,321	6.47	101	22	0.11
Nov-99	220	4,665	1,273	29,285	6.28	87	17	0.06
Dec-99	208	4,797	1,201	30,024	6.26	61	15	0.05
Jan-00	225	5,685	1,452	36,294	6.38	37	12	0.03
Feb-00	229	6,661	1,799	43,186	6.48	46	10	0.02
Mar-00	192	2,960	810	19,449	6.57	90	22	0.11
1999-2000	1,057	46,987	1,035	304,216	6.47	925	218	0.07
Apr-00	207	4,978	1,709	34,183	6.87	35	8	0.02
May-00	236	4,653	1,315	32,875	7.07	20	7	0.02
Jun-00	158	2,771	698	17,445	6.30	31	10	0.06
Jul-00	176	4,275	1,089	28,311	6.62	18	6	0.02
Aug-00	175	2,682	658	16,440	6.13	112	21	0.13
Sep-00	175	3,404	857	21,419	6.29	69	13	0.06
Apr-Sept. 2000	618	22,763	1,032	150,673	6.62	285	65	0.04

Annexure 8-3: Security-wise and Participant-wise Distribution of WDM Trades

(In per cent)

Month/Year	Security-wise Distribution				Participant-wise Distribution				
	Government Securities	T-Bills	PSU Bonds	Others	Trading Members	FIs/MFs/ Corporates	Primary Dealers	Indian Banks	Foreign Banks
1994-95 (June-March)	44.63	38.84	11.17	5.36	59.67	4.58	0.02	14.16	21.57
1995-96	65.12	19.04	8.39	7.45	25.67	5.41	1.16	30.07	37.69
1996-97	64.70	25.92	4.66	4.73	23.85	2.91	6.10	30.01	37.13
1997-98	76.14	16.96	2.27	4.63	20.21	3.84	12.06	41.24	22.65
Apr-98	88.00	9.00	1.00	2.00	16.00	3.00	15.00	40.00	26.00
May-98	83.00	6.00	1.00	10.00	19.00	4.00	11.00	42.00	24.00
Jun-98	84.00	11.00	1.00	4.00	15.00	3.00	21.00	41.00	20.00
Jul-98	72.65	15.58	2.19	9.58	17.00	2.00	17.00	41.00	23.00
Aug-98	82.00	6.00	2.00	10.00	16.00	4.00	14.00	45.00	21.00
Sep-98	82.00	5.00	3.00	10.00	19.00	4.00	16.00	37.00	24.00
Oct-98	67.00	20.00	2.00	11.00	12.00	3.00	23.00	40.00	22.00
Nov-98	64.83	17.54	0.88	16.75	12.47	6.11	15.62	41.02	24.78
Dec-98	74.00	12.00	3.00	11.00	13.83	7.68	16.06	42.01	20.42
Jan-99	84.00	9.00	2.00	5.00	12.00	7.00	14.00	46.00	21.00
Feb-99	77.55	11.55	1.95	8.95	16.00	7.00	10.00	43.00	24.00
Mar-99	87.16	6.54	1.04	5.27	18.00	5.00	11.00	44.00	22.00
1998-99	80.19	10.15	1.64	8.02	15.84	4.57	14.64	42.12	22.83
Apr-99	90.47	5.64	0.26	3.63	15.00	7.00	11.00	49.00	18.00
May-99	94.06	2.59	0.41	2.94	19.00	4.00	15.00	48.00	14.00
Jun-99	88.35	5.88	0.77	4.99	21.00	5.00	16.00	45.00	13.00
Jul-99	94.08	2.09	0.55	3.28	21.00	3.00	18.00	42.00	16.00
Aug-99	92.89	4.45	0.67	1.99	18.00	1.00	18.00	48.00	15.00
Sep-99	90.28	4.55	0.78	4.39	15.00	5.00	19.00	44.00	17.00
Oct-99	96.67	1.59	0.39	1.35	13.00	5.00	23.00	42.00	17.00
Nov-99	95.19	1.70	0.34	2.78	18.00	3.00	24.00	43.00	12.00
Dec-99	93.75	3.37	0.29	2.59	22.51	4.69	19.70	41.40	11.70
Jan-00	92.61	4.33	0.23	2.38	19.98	4.52	20.04	41.21	14.25
Feb-00	94.01	3.72	0.53	1.29	15.82	3.31	22.93	40.77	17.17
Mar-00	90.42	4.65	1.21	2.37	26.75	4.64	19.78	31.98	16.85
1999-2000	92.99	3.62	0.50	2.89	18.75	4.06	19.42	42.72	15.05
Apr-00	92.64	4.38	0.50	2.48	20.25	3.82	23.14	38.68	14.11
May-00	92.36	3.27	1.42	2.95	22.21	4.41	22.41	35.84	15.13
Jun-00	90.78	4.12	2.43	2.67	24.90	5.23	22.28	29.94	17.65
Jul-00	93.13	3.68	0.44	2.75	23.38	4.73	21.23	31.71	18.95
Aug-00	87.06	8.01	1.37	3.56	23.85	4.35	22.27	26.96	22.57
Sep-00	82.02	12.80	1.33	3.85	24.68	3.66	22.32	25.52	23.82
April-September 2000	90.34	5.57	1.13	2.96	22.83	4.31	22.31	32.59	17.96

Annexure 8-4: Market Capitalisation of WDM Securities

End of Period	(Rs. crore)						(In per cent)				
	Govt. securities	PSU bonds	State loans	T-bills	Others	Total	Govt. securities	PSU bonds	State loans	T-bills	Others
Mar-95	86,175	25,675	5,867	17,129	23,334	158,181	54.48	16.23	3.71	10.83	14.75
Mar-96	125,492	30,074	13,850	8,452	29,915	207,783	60.40	14.47	6.67	4.07	14.40
Mar-97	169,830	36,211	18,891	13,460	54,380	292,772	58.01	12.37	6.45	4.60	18.57
Mar-98	196,290	35,323	23,989	17,497	70,091	343,191	57.20	10.29	6.99	5.10	20.42
Apr-98	202,006	36,033	25,952	12,686	72,223	348,900	57.90	10.33	7.44	3.64	20.70
May-98	213,118	36,027	26,402	13,476	71,495	360,518	59.11	9.99	7.32	3.74	19.83
Jun-98	216,758	36,442	26,362	12,832	63,143	355,536	60.97	10.25	7.41	3.61	17.76
Jul-98	225,689	38,447	26,385	11,233	62,082	363,835	62.03	10.57	7.25	3.09	17.06
Aug-98	233,093	37,589	26,390	13,327	64,098	374,497	62.24	10.04	7.05	3.56	17.12
Sep-98	240,747	38,260	26,075	13,431	64,645	383,159	62.83	9.99	6.81	3.51	16.87
Oct-98	240,454	38,532	26,348	11,747	65,318	382,399	62.88	10.08	6.89	3.07	17.08
Nov-98	250,162	40,334	27,931	12,853	62,925	394,206	63.46	10.23	7.09	3.26	15.96
Dec-98	253,491	39,102	28,181	10,972	70,280	402,026	63.05	9.73	7.01	2.73	17.48
Jan-99	252,452	38,780	29,313	11,619	73,577	405,741	62.22	9.56	7.22	2.86	18.13
Feb-99	258,295	38,287	30,491	10,447	74,823	412,343	62.64	9.29	7.39	2.53	18.15
Mar-99	260,002	34,994	30,516	11,292	74,666	411,470	63.19	8.50	7.42	2.74	18.15
Apr-99	262,737	35,709	32,173	11,933	77,493	420,045	62.55	8.50	7.66	2.84	18.45
May-99	268,413	36,003	33,797	13,801	78,705	430,720	62.32	8.36	7.85	3.20	18.27
Jun-99	271,356	36,267	33,903	16,763	78,928	437,217	62.06	8.30	7.75	3.83	18.05
Jul-99	281,777	36,764	34,039	17,517	79,118	449,215	62.73	8.18	7.58	3.90	17.61
Aug-99	290,785	38,114	34,901	17,749	78,376	459,925	63.22	8.29	7.59	3.86	17.04
Sep-99	286,548	38,268	36,464	18,457	78,804	458,541	62.49	8.35	7.95	4.03	17.19
Oct-99	294,492	39,785	36,800	18,167	79,044	468,289	62.89	8.50	7.86	3.88	16.88
Nov-99	304,017	39,740	36,930	17,316	82,084	480,088	63.33	8.28	7.69	3.61	17.10
Dec-99	303,635	39,462	37,132	17,676	82,117	480,023	63.25	8.22	7.74	3.68	17.11
Jan-00	315,600	38,984	37,877	16,830	79,158	488,448	64.61	7.98	7.75	3.45	16.21
Feb-00	324,173	39,374	38,097	16,392	79,569	497,605	65.15	7.91	7.66	3.29	15.99
Mar-00	319,865	39,357	39,477	15,345	79,989	494,033	64.75	7.97	7.99	3.11	16.19
Apr-00	334,429	39,153	40,111	15,249	81,409	510,351	65.53	7.67	7.86	2.99	15.95
May-00	345,393	38,591	40,411	15,562	81,935	521,892	66.18	7.39	7.74	2.98	15.70
Jun-00	349,027	38,815	41,203	15,641	81,690	526,376	66.31	7.37	7.83	2.97	15.52
Jul-00	350,380	39,729	41,261	15,661	82,061	529,092	66.22	7.51	7.80	2.96	15.51
Aug-00	349,544	38,975	42,241	15,681	83,586	530,027	65.95	7.35	7.97	2.96	15.77
Sep-00	346,284	38,499	42,411	15,710	83,777	526,681	65.75	7.31	8.05	2.98	15.91

Annexure 8-5: NSE MIBID/MIBOR Rates for January 2000 to September 2000

Date	OVERNIGHT AT 9.40 a.m.				14 DAY AT 11.30 a.m.				1 MONTH RATE AT 11.30 a.m.				3 MONTH RATE AT 11.30 a.m.			
	MIBID		MIBOR		MIBID		MIBOR		MIBID		MIBOR		MIBID		MIBOR	
	RATE	STD. DEV.	RATE	STD. DEV.	RATE	STD. DEV.	RATE	STD. DEV.	RATE	STD. DEV.	RATE	STD. DEV.	RATE	STD. DEV.	RATE	STD. DEV.
3-Jan-00	7.91	0.0105	8.02	0.0066	8.32	0.0637	8.81	0.0730	8.82	0.0920	9.46	0.0822	9.75	0.0856	10.41	0.0826
4-Jan-00	7.94	0.0066	8.02	0.0055	8.30	0.0709	8.84	0.0619	8.82	0.0819	9.50	0.0817	9.75	0.0802	10.46	0.0738
5-Jan-00	7.93	0.0067	8.02	0.0045	8.31	0.0677	8.81	0.0576	8.88	0.0779	9.52	0.0828	9.83	0.0683	10.46	0.0739
6-Jan-00	7.94	0.0084	8.03	0.0062	8.32	0.0600	8.81	0.0585	8.79	0.0801	9.36	0.0732	9.68	0.0707	10.40	0.0603
7-Jan-00	7.95	0.0078	8.02	0.0066	8.27	0.0435	8.79	0.0639	8.78	0.0740	9.33	0.0840	9.65	0.0638	10.38	0.0699
8-Jan-00	7.93	0.0067	8.02	0.0047	8.30	0.0555	8.83	0.0725	8.80	0.0766	9.37	0.0919	9.68	0.0565	10.43	0.0615
10-Jan-00	8.18	0.0264	8.35	0.0194	8.33	0.0413	8.87	0.0575	8.81	0.0628	9.42	0.0757	9.65	0.0659	10.45	0.0681
11-Jan-00	8.01	0.0092	8.12	0.0097	8.31	0.0400	8.82	0.0502	8.82	0.0887	9.39	0.0725	9.58	0.0721	10.33	0.0605
12-Jan-00	7.95	0.0081	8.04	0.0055	8.29	0.0463	8.79	0.0567	8.86	0.0759	9.40	0.0719	9.60	0.0769	10.35	0.0809
13-Jan-00	7.93	0.0067	8.01	0.0044	8.27	0.0413	8.79	0.0504	8.78	0.0730	9.33	0.0564	9.58	0.0908	10.26	0.0688
14-Jan-00	6.56	0.1313	7.09	0.0879	8.27	0.0388	8.79	0.0547	8.82	0.0753	9.43	0.0779	9.65	0.0686	10.38	0.0712
15-Jan-00	8.02	0.0119	8.14	0.0153	8.30	0.0354	8.80	0.0621	8.81	0.0812	9.42	0.0729	9.55	0.0915	10.32	0.0847
17-Jan-00	8.26	0.0161	8.39	0.0146	8.28	0.0360	8.78	0.0539	8.82	0.0740	9.38	0.0714	9.58	0.0811	10.32	0.0797
18-Jan-00	8.04	0.0146	8.14	0.0116	8.28	0.0404	8.73	0.0511	8.82	0.0740	9.38	0.0714	9.64	0.0822	10.38	0.0808
19-Jan-00	8.02	0.0101	8.11	0.0111	8.28	0.0337	8.81	0.0600	8.75	0.0839	9.38	0.0900	9.56	0.0900	10.29	0.1091
20-Jan-00	8.01	0.0085	8.07	0.0068	8.26	0.0380	8.78	0.0537	8.73	0.0838	9.32	0.0804	9.51	0.1023	10.23	0.1003
21-Jan-00	8.24	0.0167	8.40	0.0079	8.25	0.0313	8.78	0.0552	8.71	0.0829	9.30	0.0913	9.51	0.0992	10.25	0.0973
22-Jan-00	8.07	0.0138	8.18	0.0099	8.23	0.0358	8.74	0.0454	8.66	0.0941	9.23	0.0889	9.55	0.1529	10.20	0.1033
24-Jan-00	8.03	0.0067	8.11	0.0079	8.28	0.0358	8.75	0.0513	8.73	0.0917	9.25	0.0837	9.55	0.1190	10.28	0.1048
25-Jan-00	8.03	0.0091	8.11	0.0084	8.27	0.0372	8.82	0.0493	8.74	0.0842	9.31	0.0814	9.54	0.1144	10.29	0.1063
27-Jan-00	8.11	0.0194	8.23	0.0222	8.32	0.0407	8.85	0.0501	8.70	0.0642	9.34	0.0826	9.60	0.1172	10.24	0.0937
28-Jan-00	7.95	0.0759	8.37	0.0559	8.31	0.0439	8.86	0.0473	8.66	0.0665	9.29	0.0690	9.56	0.1080	10.28	0.0810
29-Jan-00	8.24	0.0159	8.47	0.0226	8.35	0.0457	8.86	0.0456	8.75	0.0718	9.29	0.0737	9.57	0.1047	10.27	0.0916
31-Jan-00	8.09	0.0176	8.19	0.0106	8.33	0.0412	8.85	0.0392	8.78	0.0616	9.32	0.0600	9.60	0.0895	10.31	0.0818
1-Feb-00	8.16	0.0191	8.31	0.0152	8.28	0.0359	8.79	0.0347	8.67	0.0701	9.25	0.0659	9.46	0.1160	10.19	0.1054
2-Feb-00	8.05	0.0115	8.12	0.0069	8.29	0.0365	8.77	0.0346	8.67	0.0625	9.26	0.0716	9.54	0.1047	10.28	0.1056
3-Feb-00	7.97	0.0123	8.06	0.0046	8.28	0.0416	8.78	0.0486	8.68	0.0710	9.27	0.0712	9.53	0.1213	10.25	0.1062
4-Feb-00	7.97	0.0088	8.05	0.0066	8.26	0.0402	8.71	0.0416	8.66	0.0634	9.23	0.0668	9.50	0.1173	10.20	0.1040
5-Feb-00	8.01	0.0058	8.08	0.0060	8.26	0.0366	8.71	0.0502	8.61	0.0685	9.19	0.0905	9.51	0.1206	10.23	0.1373
7-Feb-00	8.02	0.0098	8.11	0.0098	8.22	0.0354	8.69	0.0434	8.56	0.0720	9.13	0.0850	9.46	0.1308	10.17	0.1245
8-Feb-00	8.27	0.0189	8.40	0.0176	8.29	0.0274	8.74	0.0308	8.63	0.0649	9.19	0.0658	9.45	0.1258	10.19	0.1044
9-Feb-00	8.37	0.0168	8.55	0.0137	8.32	0.0373	8.78	0.0596	8.66	0.0873	9.27	0.0910	9.52	0.1610	10.30	0.1247
10-Feb-00	8.68	0.0349	8.93	0.0389	8.40	0.0481	8.87	0.0578	8.68	0.0822	9.24	0.0718	9.45	0.1409	10.15	0.1104
11-Feb-00	13.03	0.4502	16.97	0.5955	8.48	0.0719	9.04	0.0988	8.73	0.0829	9.36	0.0827	9.35	0.1475	10.11	0.1139
12-Feb-00	9.81	0.0412	10.14	0.0358	8.75	0.1072	9.38	0.1182	8.86	0.0839	9.51	0.0891	9.46	0.1192	10.18	0.1168
14-Feb-00	9.68	0.0304	9.93	0.0192	8.68	0.1179	9.41	0.1168	8.82	0.0860	9.47	0.0838	9.38	0.1281	10.13	0.0995
15-Feb-00	10.03	0.0263	10.19	0.0250	8.72	0.1527	9.40	0.1353	8.81	0.1273	9.51	0.0974	9.36	0.1302	10.15	0.1054
16-Feb-00	19.76	0.6497	25.22	0.6845	9.13	0.2869	10.28	0.3739	9.13	0.1640	10.09	0.2133	9.55	0.1267	10.40	0.0883
17-Feb-00	14.39	0.2393	15.93	0.3095	9.12	0.2789	10.28	0.3872	9.14	0.1882	9.97	0.1876	9.38	0.1770	10.27	0.1389
18-Feb-00	13.09	0.2418	15.67	0.3380	9.30	0.2600	10.86	0.4121	9.30	0.1586	10.27	0.2024	9.54	0.1730	10.45	0.1489
21-Feb-00	11.93	0.1926	13.23	0.1622	9.45	0.2638	10.63	0.3650	9.34	0.1612	10.10	0.1756	9.56	0.1656	10.38	0.1538
22-Feb-00	9.80	0.0436	10.02	0.0333	9.48	0.2536	10.60	0.3610	9.36	0.1409	10.13	0.1470	9.58	0.1570	10.40	0.1448
23-Feb-00	8.88	0.0310	9.14	0.0205	9.23	0.1918	10.06	0.2389	9.24	0.1248	10.01	0.1126	9.41	0.1324	10.26	0.1061
24-Feb-00	8.71	0.0282	8.89	0.0160	9.17	0.1879	10.02	0.2289	9.24	0.1353	10.03	0.1182	9.42	0.1380	10.26	0.0975

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Annexure 8-5: NSE MIBID/MIBOR Rates for January 2000 to September 2000

Date	OVERNIGHT AT 9.40 a.m.				14 DAY AT 11.30 a.m.				1 MONTH RATE AT 11.30 a.m.				3 MONTH RATE AT 11.30 a.m.			
	MIBID		MIBOR		MIBID		MIBOR		MIBID		MIBOR		MIBID		MIBOR	
	RATE	STD. DEV.	RATE	STD. DEV.	RATE	STD. DEV.	RATE	STD. DEV.	RATE	STD. DEV.	RATE	STD. DEV.	RATE	STD. DEV.	RATE	STD. DEV.
25-Feb-00	8.02	0.0228	8.20	0.0254	8.87	0.1270	9.82	0.1611	8.99	0.1285	9.84	0.1375	9.40	0.1588	10.31	0.1429
26-Feb-00	8.97	0.0246	9.12	0.0176	8.95	0.0769	9.78	0.1328	9.12	0.1103	9.90	0.1203	9.51	0.1341	10.24	0.1296
28-Feb-00	8.98	0.0188	9.15	0.0169	8.85	0.0960	9.73	0.1288	8.99	0.1165	9.88	0.1094	9.44	0.1433	10.31	0.1083
29-Feb-00	8.99	0.0112	9.10	0.0082	8.76	0.1017	9.66	0.1359	8.98	0.1138	9.80	0.1278	9.38	0.1205	10.24	0.0965
1-Mar-00	9.16	0.0323	9.31	0.0349	8.81	0.1047	9.71	0.1352	8.97	0.1202	9.85	0.1154	9.37	0.1472	10.21	0.1207
2-Mar-00	9.89	0.0312	10.10	0.0227	9.00	0.1251	9.99	0.1414	9.11	0.1262	10.13	0.1090	9.54	0.1277	10.53	0.0897
3-Mar-00	10.42	0.0551	10.66	0.0437	9.04	0.1258	9.96	0.1656	9.08	0.1409	10.09	0.1450	9.50	0.1385	10.52	0.1144
6-Mar-00	10.77	0.0394	11.02	0.0359	9.33	0.1626	10.36	0.1485	9.31	0.1463	10.53	0.1598	9.68	0.1521	10.64	0.1185
7-Mar-00	10.05	0.0264	10.28	0.0225	9.34	0.1922	10.36	0.1872	9.21	0.1314	10.32	0.1289	9.59	0.1429	10.60	0.1068
8-Mar-00	9.76	0.0275	9.96	0.0221	9.31	0.1586	10.25	0.1372	9.30	0.1201	10.36	0.1186	9.58	0.1292	10.57	0.1082
9-Mar-00	8.76	0.0291	8.97	0.0220	9.28	0.1754	10.15	0.1549	9.32	0.1247	10.18	0.0991	9.65	0.1297	10.46	0.1013
10-Mar-00	7.20	0.0812	7.67	0.0574	9.04	0.1506	10.08	0.1448	9.14	0.1211	10.25	0.1270	9.51	0.1359	10.51	0.1127
11-Mar-00	8.58	0.0330	8.80	0.0582	9.35	0.1878	10.17	0.1677	9.40	0.1872	10.24	0.1915	9.71	0.1902	10.68	0.1541
13-Mar-00	8.55	0.0181	8.72	0.0178	9.22	0.1513	10.17	0.1381	9.33	0.1539	10.30	0.1136	9.63	0.1458	10.60	0.1139
14-Mar-00	8.37	0.0165	8.52	0.0174	9.06	0.1363	10.12	0.149	9.23	0.1354	10.19	0.1143	9.48	0.0943	10.48	0.0829
15-Mar-00	8.37	0.0191	8.53	0.0134	9.21	0.1928	10.16	0.2020	9.53	0.1450	10.47	0.1240	9.64	0.1150	10.57	0.0977
16-Mar-00	8.40	0.0168	8.52	0.0168	9.31	0.1392	10.16	0.1561	9.74	0.1536	10.50	0.0873	9.76	0.1316	10.64	0.0925
18-Mar-00	8.38	0.0164	8.52	0.0100	9.32	0.1371	10.00	0.1482	9.77	0.1771	10.45	0.1010	9.90	0.1151	10.61	0.0871
21-Mar-00	8.67	0.0204	8.85	0.0202	9.21	0.1658	10.11	0.1480	9.60	0.1783	10.58	0.1376	9.85	0.1491	10.78	0.1223
22-Mar-00	9.64	0.0272	9.83	0.0203	9.57	0.1992	10.44	0.1861	9.69	0.1582	10.56	0.1398	9.94	0.1748	10.74	0.1474
23-Mar-00	10.38	0.0243	10.63	0.0303	9.78	0.1959	10.69	0.1544	9.78	0.1795	10.61	0.1236	9.87	0.1825	10.76	0.1319
24-Mar-00	7.69	0.0688	8.12	0.0320	9.69	0.2493	10.63	0.1791	9.58	0.2118	10.45	0.1407	9.64	0.2147	10.59	0.1432
25-Mar-00	9.15	0.0354	9.44	0.0397	9.80	0.2114	10.73	0.1574	9.70	0.1951	10.59	0.1312	9.84	0.1932	10.76	0.1404
27-Mar-00	9.83	0.0252	10.01	0.0199	9.96	0.1886	10.94	0.1767	9.77	0.1595	10.63	0.1135	9.85	0.1744	10.87	0.1469
28-Mar-00	10.51	0.0240	10.79	0.0253	10.00	0.2362	11.00	0.2183	9.82	0.2162	10.78	0.1652	9.85	0.2056	10.81	0.1371
29-Mar-00	9.94	0.0198	10.11	0.0291	9.93	0.2138	10.90	0.1897	9.86	0.2116	10.85	0.1580	9.92	0.1896	10.90	0.1318
30-Mar-00	10.01	0.0208	10.18	0.0186	10.02	0.2122	11.02	0.2008	9.84	0.2288	10.88	0.1764	9.87	0.2076	10.93	0.1629
31-Mar-00	14.10	0.4576	16.52	0.3812	9.98	0.2276	10.93	0.2020	9.90	0.2224	10.82	0.1591	9.96	0.1977	10.96	0.1432
3-Apr-00	8.28	0.0536	8.50	0.0347	8.63	0.3595	9.43	0.2979	9.00	0.2735	9.76	0.1778	9.20	0.2151	10.13	0.1253
4-Apr-00	6.86	0.0336	7.04	0.0116	7.84	0.2678	8.64	0.2537	8.36	0.2161	9.12	0.1959	8.93	0.1999	9.83	0.1233
6-Apr-00	5.13	0.0261	5.41	0.0276	7.49	0.2792	8.38	0.2167	8.10	0.2338	8.96	0.1857	8.74	0.2169	9.75	0.1084
7-Apr-00	2.60	0.2007	3.60	0.1673	7.08	0.2715	7.98	0.2014	7.84	0.2549	8.73	0.1450	8.72	0.1815	9.60	0.0748
8-Apr-00	5.84	0.1018	6.43	0.1026	7.09	0.2229	8.06	0.1964	7.66	0.2154	8.81	0.1719	8.34	0.1761	9.57	0.1101
10-Apr-00	7.05	0.0215	7.27	0.0401	7.32	0.1435	8.23	0.1170	7.93	0.1583	8.82	0.1401	8.61	0.1534	9.49	0.0811
11-Apr-00	5.64	0.0630	6.03	0.0481	7.32	0.1511	8.16	0.0943	8.23	0.1657	8.88	0.0928	8.72	0.1627	9.50	0.0738
13-Apr-00	6.98	0.0151	7.15	0.0182	7.30	0.1024	8.18	0.1380	8.08	0.1511	8.93	0.1293	8.63	0.1556	9.53	0.0859
17-Apr-00	6.98	0.0100	7.09	0.0089	7.38	0.1457	8.26	0.1266	7.92	0.1745	8.83	0.1416	8.64	0.1681	9.64	0.1008
18-Apr-00	6.78	0.0244	6.93	0.0162	7.40	0.1265	8.32	0.0954	7.92	0.1447	8.79	0.1120	8.56	0.1593	9.57	0.0830
19-Apr-00	6.71	0.0256	6.90	0.0159	7.38	0.1077	8.31	0.0881	7.96	0.1432	8.80	0.1051	8.62	0.1511	9.54	0.0902
20-Apr-00	5.03	0.0899	5.66	0.0930	7.54	0.1280	8.36	0.0735	8.11	0.1610	8.90	0.1053	8.72	0.1585	9.66	0.0844
22-Apr-00	7.48	0.0529	7.80	0.0344	7.63	0.1154	8.29	0.0896	8.26	0.1575	8.88	0.1053	8.96	0.1305	9.68	0.0833
24-Apr-00	6.98	0.0188	7.13	0.0135	7.50	0.1074	8.25	0.1094	8.05	0.1498	8.82	0.1106	8.83	0.1645	9.65	0.0785
25-Apr-00	7.02	0.0129	7.17	0.0200	7.47	0.1083	8.24	0.0827	8.06	0.1493	8.79	0.0878	8.86	0.1394	9.67	0.0758
26-Apr-00	6.98	0.0091	7.08	0.0082	7.42	0.0816	8.19	0.0777	7.99	0.1333	8.72	0.0837	8.81	0.1254	9.52	0.0910

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Annexure 8-5: NSE MIBID/MIBOR Rates for January 2000 to September 2000

Date	OVERNIGHT AT 9.40 a.m.				14 DAY AT 11.30 a.m.				1 MONTH RATE AT 11.30 a.m.				3 MONTH RATE AT 11.30 a.m.			
	MIBID		MIBOR		MIBID		MIBOR		MIBID		MIBOR		MIBID		MIBOR	
	RATE	STD. DEV	RATE	STD. DEV	RATE	STD. DEV	RATE	STD. DEV	RATE	STD. DEV	RATE	STD. DEV	RATE	STD. DEV	RATE	STD. DEV
27-Apr-00	6.93	0.0127	7.03	0.0104	7.37	0.0890	8.20	0.0682	7.99	0.1177	8.73	0.0654	8.75	0.1214	9.57	0.0771
28-Apr-00	6.94	0.0135	7.04	0.0084	7.35	0.1075	8.19	0.1050	7.96	0.1404	8.70	0.0806	8.76	0.1396	9.50	0.0954
29-Apr-00	6.96	0.0133	7.06	0.0068	7.35	0.0886	8.11	0.1048	8.03	0.1274	8.68	0.0763	8.78	0.1346	9.47	0.0930
2-May-00	6.96	0.0081	7.05	0.0072	7.39	0.0629	8.13	0.0653	7.94	0.1162	8.65	0.076	8.73	0.1356	9.51	0.0875
3-May-00	6.95	0.0109	7.03	0.0072	7.36	0.0696	8.08	0.0603	7.92	0.1004	8.59	0.0672	8.68	0.1364	9.42	0.1030
4-May-00	7.03	0.0123	7.19	0.0150	7.31	0.0647	8.04	0.0588	7.95	0.0968	8.62	0.0570	8.82	0.1131	9.54	0.0638
5-May-00	5.56	0.1262	6.08	0.1130	7.35	0.0708	8.08	0.0850	7.90	0.1163	8.54	0.0763	8.71	0.1423	9.40	0.0946
6-May-00	6.98	0.0081	7.09	0.0076	7.30	0.0807	8.02	0.0917	7.91	0.1224	8.57	0.0951	8.80	0.1242	9.47	0.0814
8-May-00	7.00	0.0046	7.08	0.0053	7.35	0.0716	8.07	0.0570	7.94	0.1144	8.64	0.0699	8.75	0.1217	9.48	0.0689
9-May-00	6.99	0.0075	7.08	0.0060	7.37	0.0687	8.12	0.0509	7.92	0.1111	8.64	0.0757	8.71	0.1277	9.45	0.0870
10-May-00	6.99	0.0091	7.07	0.0056	7.35	0.0660	8.12	0.0608	7.90	0.0824	8.65	0.0590	8.67	0.1058	9.41	0.0998
12-May-00	7.01	0.0072	7.10	0.0087	7.33	0.0691	8.07	0.0630	7.98	0.1264	8.64	0.0765	8.68	0.1506	9.36	0.1126
13-May-00	7.02	0.0107	7.08	0.0088	7.39	0.0821	8.12	0.0608	7.97	0.1379	8.64	0.0864	8.74	0.1553	9.41	0.1176
15-May-00	7.05	0.0166	7.15	0.0123	7.47	0.0910	8.20	0.0570	8.05	0.1276	8.68	0.0710	8.72	0.1535	9.45	0.0973
16-May-00	7.96	0.0519	8.23	0.0378	7.50	0.0949	8.32	0.1062	8.06	0.1238	8.78	0.0874	8.73	0.1481	9.46	0.1065
17-May-00	8.97	0.0260	9.16	0.0263	7.98	0.1378	8.72	0.1257	8.29	0.1234	9.01	0.0965	8.87	0.1252	9.57	0.0700
19-May-00	7.52	0.1087	8.10	0.1082	7.90	0.1294	8.67	0.1259	8.31	0.1409	9.01	0.1112	8.84	0.1240	9.57	0.0868
20-May-00	8.30	0.0311	8.61	0.0213	7.98	0.1666	8.64	0.1465	8.30	0.1475	8.99	0.1306	8.83	0.1105	9.54	0.0997
22-May-00	8.04	0.0157	8.22	0.0121	7.90	0.1160	8.74	0.1155	8.28	0.1173	8.99	0.0819	8.90	0.1072	9.60	0.0829
23-May-00	7.91	0.0160	8.07	0.0088	7.83	0.1094	8.64	0.0900	8.18	0.1026	8.97	0.0799	8.83	0.0913	9.48	0.0515
24-May-00	8.00	0.0143	8.12	0.0123	7.90	0.1175	8.65	0.1112	8.19	0.1090	8.94	0.0928	8.81	0.0878	9.51	0.0588
25-May-00	8.21	0.0257	8.42	0.0210	8.30	0.1968	9.22	0.1987	8.58	0.1526	9.38	0.1419	8.98	0.1179	9.83	0.0930
26-May-00	8.46	0.0198	8.63	0.0176	8.17	0.1467	9.11	0.1335	8.47	0.1355	9.37	0.1266	9.01	0.1295	9.87	0.0976
27-May-00	8.00	0.0179	8.19	0.0149	8.29	0.1745	8.95	0.1445	8.60	0.1664	9.32	0.1363	9.17	0.1423	9.90	0.1005
29-May-00	7.19	0.0310	7.38	0.0220	7.94	0.1475	8.83	0.1379	8.44	0.1265	9.27	0.1180	8.99	0.1260	9.74	0.0869
30-May-00	6.93	0.0168	7.07	0.0117	7.83	0.1470	8.65	0.1492	8.37	0.1339	9.21	0.1241	9.02	0.1058	9.81	0.0715
31-May-00	6.92	0.0124	7.02	0.0111	7.76	0.1481	8.66	0.1510	8.25	0.1405	9.12	1.1243	8.92	0.1155	9.64	0.0714
1-Jun-00	6.99	0.0108	7.09	0.0096	7.78	0.1490	8.62	0.1542	8.29	0.1378	9.11	0.1232	8.99	0.1119	9.76	0.0678
2-Jun-00	6.57	0.0628	6.74	0.0656	7.78	0.1293	8.61	0.1025	8.26	0.1253	9.05	0.1024	8.88	0.1245	9.61	0.0828
3-Jun-00	7.14	0.0187	7.28	0.0147	7.82	0.1184	8.61	0.1059	8.27	0.1222	9.08	0.1020	8.94	0.1048	9.68	0.0722
5-Jun-00	7.15	0.0117	7.28	0.0098	7.87	0.1193	8.62	0.1011	8.29	0.1248	9.03	0.1031	8.94	0.1184	9.66	0.0706
6-Jun-00	7.63	0.0340	7.81	0.0285	8.06	0.1189	8.89	0.1045	8.39	0.1179	9.18	0.0974	9.03	0.1083	9.79	0.0600
7-Jun-00	9.08	0.0243	9.26	0.0215	8.75	0.1862	9.55	0.1179	8.96	0.1582	9.74	0.0809	9.27	0.1292	10.04	0.0865
8-Jun-00	9.08	0.0243	9.26	0.0215	8.75	0.1862	9.55	0.1179	8.96	0.1582	9.74	0.0809	9.27	0.1292	10.04	0.0865
9-Jun-00	10.21	0.0482	10.65	0.0351	8.84	0.1802	9.72	0.1442	8.91	0.1247	9.81	0.0915	9.35	0.1138	10.16	0.0920
10-Jun-00	10.33	0.0420	10.73	0.0396	9.00	0.1949	9.73	0.1652	9.15	0.1624	9.89	0.1161	9.56	0.1184	10.28	0.1108
12-Jun-00	9.31	0.0396	9.61	0.0446	8.95	0.1788	9.76	0.1576	9.09	0.1368	9.89	0.1012	9.44	0.1050	10.32	0.1058
13-Jun-00	9.88	0.0335	10.18	0.0276	9.02	0.1744	9.95	0.1296	9.19	0.1249	9.94	0.0973	9.44	0.1350	10.24	0.0995
14-Jun-00	10.90	0.0535	11.25	0.0482	9.29	0.2349	10.11	0.2146	9.27	0.1573	10.06	0.1294	9.38	0.1417	10.23	0.1102
16-Jun-00	10.70	0.0467	11.12	0.0514	9.55	0.2195	10.47	0.2210	9.43	0.1386	10.33	0.1326	9.62	0.1092	10.46	0.1002
17-Jun-00	21.55	0.7059	25.94	0.5221	10.40	0.5542	12.15	0.9695	9.61	0.1584	10.97	0.4728	9.60	0.1393	10.80	0.3320
19-Jun-00	12.48	0.1907	14.13	0.1709	10.32	0.3257	12.00	0.4487	9.92	0.2111	11.05	0.2707	9.82	0.1752	10.79	0.1807
20-Jun-00	14.90	0.2412	16.78	0.2067	10.97	0.5414	13.17	0.8061	10.01	0.2337	11.49	0.3619	9.79	0.1904	10.86	0.2643

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Annexure 8-5: NSE MIBID/MIBOR Rates for January 2000 to September 2000

Date	OVERNIGHT AT 9.40 a.m.				14 DAY AT 11.30 a.m.				1 MONTH RATE AT 11.30 a.m.				3 MONTH RATE AT 11.30 a.m.			
	MIBID		MIBOR		MIBID		MIBOR		MIBID		MIBOR		MIBID		MIBOR	
	RATE	STD. DEV.	RATE	STD. DEV.	RATE	STD. DEV.	RATE	STD. DEV.	RATE	STD. DEV.	RATE	STD. DEV.	RATE	STD. DEV.	RATE	STD. DEV.
21-Jun-00	13.84	0.1516	14.93	0.0739	10.71	0.3819	12.54	0.5114	9.92	0.1903	11.35	0.3317	9.71	0.1804	10.85	0.2554
22-Jun-00	11.24	0.0689	11.99	0.0452	9.89	0.2756	11.50	0.4013	9.64	0.1492	11.01	0.2651	9.66	0.1352	10.91	0.2039
23-Jun-00	12.19	0.0862	13.07	0.0555	10.56	0.1823	12.30	0.2472	10.08	0.0932	11.48	0.1823	9.82	0.1327	11.06	0.1276
24-Jun-00	12.20	0.0571	12.67	0.0532	10.78	0.2364	12.64	0.3058	10.17	0.1256	11.47	0.2158	9.95	0.1708	11.18	0.1571
26-Jun-00	12.25	0.0560	12.77	0.0429	10.63	0.1812	12.32	0.2548	10.27	0.1191	11.49	0.1818	9.92	0.1347	11.07	0.1022
27-Jun-00	12.28	0.0433	12.70	0.0239	10.72	0.1791	12.50	0.1952	10.30	0.1151	11.64	0.1348	9.98	0.1354	11.17	0.0960
28-Jun-00	11.84	0.0351	12.19	0.0284	10.52	0.1643	12.25	0.2358	10.23	0.1312	11.72	0.2163	10.00	0.1293	11.31	0.1487
29-Jun-00	6.87	0.0689	7.32	0.0318	10.09	0.2752	11.52	0.2914	9.95	0.1919	11.20	0.2137	9.94	0.1326	11.23	0.1315
30-Jun-00	-	-	-	-	9.80	0.2683	11.25	0.3795	9.71	0.2151	10.92	0.2772	9.78	0.1786	11.13	0.2088
1-Jul-00	9.01	0.0543	9.48	0.0569	9.73	0.2325	10.90	0.3241	9.73	0.1800	10.76	0.2516	9.87	0.1441	10.99	0.1666
3-Jul-00	8.17	0.0321	8.48	0.0255	9.41	0.2406	10.35	0.3543	9.48	0.1792	10.33	0.2478	9.75	0.1491	10.95	0.1441
4-Jul-00	7.04	0.0244	7.29	0.0231	9.28	0.3011	10.21	0.4156	9.39	0.2128	10.13	0.2920	9.73	0.1640	10.58	0.1475
5-Jul-00	7.00	0.0107	7.10	0.0123	8.80	0.2905	9.85	0.4412	9.11	0.2208	10.04	0.3001	9.59	0.1543	10.64	0.1907
6-Jul-00	6.98	0.0107	7.08	0.0073	8.59	0.3166	9.44	0.2979	8.94	0.2388	9.75	0.1888	9.54	0.1562	10.53	0.1246
7-Jul-00	6.99	0.0061	7.07	0.0112	8.77	0.2985	9.56	0.2853	8.97	0.2490	9.83	0.2057	9.61	0.1429	10.53	0.1133
8-Jul-00	6.97	0.0068	7.06	0.0079	8.46	0.3159	9.34	0.3067	8.99	0.2291	9.82	0.2095	9.45	0.1759	10.31	0.1496
10-Jul-00	6.99	0.0047	7.09	0.0070	8.56	0.3085	9.38	0.2809	8.99	0.2345	9.74	0.1922	9.61	0.1367	10.43	0.076
11-Jul-00	7.00	0.0060	7.07	0.0068	8.57	0.3307	9.30	0.3490	9.00	0.2529	9.72	0.2377	9.76	0.1224	10.54	0.1066
12-Jul-00	7.17	0.0254	7.50	0.0364	8.12	0.2496	9.06	0.2383	8.88	0.2450	9.76	0.2127	9.52	0.1638	10.47	0.1661
14-Jul-00	6.81	0.0621	7.13	0.0287	8.29	0.2966	9.12	0.2350	8.94	0.2548	9.84	0.1965	9.42	0.1572	10.40	0.1444
15-Jul-00	7.05	0.0116	7.19	0.0162	8.27	0.2973	9.04	0.2341	8.85	0.2362	9.74	0.1664	9.57	0.1526	10.46	0.1384
17-Jul-00	7.04	0.0097	7.16	0.0097	8.24	0.2181	9.27	0.2664	8.90	0.2254	9.45	0.3781	9.48	0.1282	10.25	0.2315
18-Jul-00	7.21	0.0125	7.35	0.0137	7.97	0.1629	8.79	0.1621	8.75	0.1993	9.40	0.2282	9.40	0.1024	10.22	0.1350
19-Jul-00	7.27	0.0141	7.44	0.0169	8.04	0.2109	8.77	0.1897	8.73	0.1956	9.38	0.2040	9.48	0.0893	10.31	0.0914
20-Jul-00	7.24	0.0148	7.39	0.0163	8.11	0.1917	8.83	0.2060	8.80	0.1728	9.54	0.1436	9.42	0.1079	10.27	0.0818
21-Jul-00	8.75	0.0119	9.07	0.0255	8.97	0.1888	9.67	0.2342	9.25	0.1718	10.03	0.1772	9.80	0.1072	10.70	0.1154
22-Jul-00	9.01	0.0701	9.85	0.1061	9.04	0.2152	9.96	0.2805	9.33	0.1909	10.33	0.2360	9.84	0.1603	10.80	0.1855
24-Jul-00	8.21	0.0531	8.51	0.0386	9.24	0.1986	10.39	0.2973	9.72	0.2323	10.61	0.2515	10.10	0.1367	10.98	0.1478
25-Jul-00	7.99	0.0158	8.13	0.0149	-	-	-	-	-	-	-	-	-	-	-	-
26-Jul-00	7.96	0.0111	8.06	0.0106	9.59	0.2413	10.60	0.3582	9.87	0.1954	10.75	0.2668	10.25	0.1542	11.15	0.1594
27-Jul-00	7.90	0.0179	8.00	0.0141	9.39	0.2478	10.69	0.2602	10.10	0.2510	10.95	0.2145	10.29	0.1452	11.24	0.1236
28-Jul-00	7.27	0.0923	7.64	0.0530	9.22	0.2558	10.31	0.2865	9.88	0.2188	10.70	0.2313	10.25	0.1609	11.15	0.1205
29-Jul-00	8.33	0.0224	8.67	0.0308	9.16	0.2575	10.23	0.2958	9.88	0.2275	10.81	0.2328	10.20	0.1681	11.23	0.1265
31-Jul-00	8.20	0.0367	8.33	0.0493	9.14	0.1231	10.11	0.2320	9.62	0.1492	10.49	0.1790	10.28	0.1261	11.11	0.0900
1-Aug-00	8.09	0.0129	8.24	0.0082	9.09	0.1410	10.30	0.2480	9.83	0.1608	10.69	0.1614	10.30	0.1028	11.27	0.0764
2-Aug-00	8.06	0.0111	8.21	0.0098	9.44	0.1742	10.49	0.2026	9.89	0.1423	10.72	0.1648	10.22	0.1197	11.31	0.1175
3-Aug-00	8.11	0.0125	8.28	0.0116	9.44	0.1433	10.50	0.2284	9.88	0.1201	10.78	0.1757	10.34	0.1205	11.38	0.1034
4-Aug-00	9.78	0.0562	10.18	0.0496	9.68	0.1274	10.98	0.2166	10.16	0.1568	11.28	0.2233	10.47	0.1080	11.43	0.0826
5-Aug-00	9.84	0.1139	10.43	0.1059	10.34	0.2785	11.46	0.3578	10.22	0.1192	11.34	0.2007	10.49	0.0772	11.47	0.0669
7-Aug-00	10.69	0.0526	11.34	0.0567	10.30	0.2040	12.29	0.7119	10.31	0.1756	11.58	0.3092	10.56	0.1365	11.65	0.1064
8-Aug-00	12.19	0.1144	13.05	0.1420	10.93	0.3223	12.60	0.3369	10.94	0.3117	12.19	0.3514	10.70	0.1314	11.87	0.1211
9-Aug-00	13.93	0.0867	14.59	0.1084	12.42	0.4077	13.75	0.4368	11.66	0.3542	12.88	0.3956	10.89	0.1229	12.05	0.1081
10-Aug-00	13.60	0.0494	14.18	0.0651	12.16	0.3052	13.54	0.2318	11.38	0.2405	12.67	0.2921	10.96	0.1154	12.19	0.1201

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Annexure 8-5: NSE MIBID/MIBOR Rates for January 2000 to September 2000 (Concluded)

Date	OVERNIGHT AT 9.40 a.m.				14 DAY AT 11.30 a.m.				1 MONTH RATE AT 11.30 a.m.				3 MONTH RATE AT 11.30 a.m.			
	MIBID		MIBOR		MIBID		MIBOR		MIBID		MIBOR		MIBID		MIBOR	
	RATE	STD. DEV.	RATE	STD. DEV.	RATE	STD. DEV.	RATE	STD. DEV.	RATE	STD. DEV.	RATE	STD. DEV.	RATE	STD. DEV.	RATE	STD. DEV.
11-Aug-00	13.33	0.0913	13.95	0.0755	12.35	0.3663	13.85	0.3371	11.98	0.2542	13.27	0.3183	11.45	0.1966	12.51	0.1319
12-Aug-00	13.35	0.1440	14.15	0.0836	12.34	0.3288	13.87	0.2948	12.29	0.2390	13.26	0.3246	11.10	0.1250	12.38	0.1302
14-Aug-00	14.06	0.0983	14.57	0.0797	12.35	0.3507	14.23	0.4285	11.95	0.2661	13.06	0.3246	11.12	0.1023	12.31	0.1348
16-Aug-00	14.05	0.0388	14.37	0.0432	12.38	0.2617	13.85	0.1879	11.87	0.1618	12.94	0.2130	11.00	0.0999	12.28	0.1215
17-Aug-00	14.04	0.0524	14.49	0.0246	12.55	0.2756	14.08	0.1983	11.89	0.1570	12.93	0.2357	11.06	0.0873	12.33	0.1144
18-Aug-00	15.15	0.0542	15.57	0.0611	12.88	0.3025	14.54	0.3043	12.10	0.1400	13.25	0.2566	11.18	0.1052	12.43	0.1164
19-Aug-00	14.07	0.0370	14.60	0.0380	12.25	0.2836	13.73	0.2546	11.88	0.1111	12.72	0.2296	11.25	0.0893	12.43	0.1343
22-Aug-00	13.57	0.0671	14.11	0.0474	12.41	0.2811	14.02	0.2374	11.86	0.1026	12.91	0.1828	11.12	0.0982	12.40	0.1218
23-Aug-00	13.87	0.0494	14.30	0.0462	12.61	0.2352	14.13	0.1508	12.05	0.1107	13.10	0.1711	11.12	0.1122	12.49	0.1214
24-Aug-00	14.06	0.0379	14.49	0.0314	12.80	0.2022	14.31	0.1381	12.35	0.1343	13.46	0.1864	11.32	0.1036	12.59	0.0963
25-Aug-00	13.51	0.0841	14.03	0.0400	12.92	0.2005	14.38	0.1095	12.53	0.1568	13.48	0.2146	11.52	0.1496	12.70	0.1227
26-Aug-00	13.85	0.0525	14.32	0.0333	12.85	0.2240	14.31	0.1413	12.50	0.2052	13.55	0.1876	11.57	0.1288	12.71	0.1081
28-Aug-00	14.02	0.0257	14.38	0.0300	13.08	0.1647	14.35	0.0932	12.23	0.1393	13.31	0.1961	11.46	0.0998	12.68	0.0892
29-Aug-00	14.37	0.0339	14.74	0.0346	12.73	0.2331	14.21	0.1364	12.21	0.1353	13.20	0.1891	11.47	0.1137	12.62	0.1213
30-Aug-00	14.48	0.0324	14.82	0.0284	13.14	0.1817	14.44	0.1431	12.58	0.1763	13.56	0.2691	11.51	0.1159	12.70	0.0983
31-Aug-00	13.94	0.0348	14.31	0.0273	13.02	0.1230	14.33	0.0813	12.54	0.1209	13.61	0.2547	11.58	0.1338	12.67	0.1278
2-Sep-00	9.98	0.1067	10.71	0.1351	11.08	0.3967	12.40	0.4532	10.98	0.3247	12.06	0.3596	10.60	0.2072	11.97	0.1604
4-Sep-00	9.43	0.0711	10.05	0.0936	10.53	0.2585	11.73	0.2761	10.68	0.2140	11.67	0.2298	10.72	0.1600	11.88	0.1143
5-Sep-00	10.16	0.0444	10.64	0.0941	10.69	0.2947	11.86	0.3098	10.92	0.2261	11.89	0.2074	10.88	0.1369	11.92	0.1368
6-Sep-00	13.33	0.0842	14.02	0.0769	11.48	0.2430	12.66	0.2654	11.31	0.1604	12.26	0.1970	10.94	0.1151	12.03	0.1045
7-Sep-00	11.81	0.0515	12.22	0.0395	11.55	0.1844	12.66	0.2015	11.27	0.1835	12.24	0.2074	10.92	0.1218	12.13	0.0883
8-Sep-00	9.46	0.1477	10.32	0.0836	11.22	0.2541	12.38	0.2724	11.13	0.1939	12.11	0.2012	11.03	0.0939	12.14	0.1348
9-Sep-00	11.60	0.0649	12.25	0.0628	11.13	0.2108	12.28	0.2198	11.00	0.1649	12.03	0.1902	11.02	0.0989	12.18	0.1334
11-Sep-00	10.55	0.0466	10.97	0.0430	10.78	0.2241	12.03	0.2466	10.74	0.1703	11.82	0.2033	10.92	0.1114	12.10	0.1262
12-Sep-00	9.83	0.0376	10.19	0.0432	10.41	0.1602	11.48	0.2284	10.48	0.1159	11.60	0.1505	10.92	0.0954	12.00	0.1345
13-Sep-00	10.27	0.0360	10.68	0.0365	10.42	0.1209	11.27	0.1692	10.63	0.1606	11.58	0.1404	10.73	0.1744	11.62	0.1725
14-Sep-00	9.93	0.0342	10.20	0.0336	10.52	0.1143	11.53	0.1828	10.63	0.1514	11.70	0.1805	10.75	0.1548	11.77	0.1614
15-Sep-00	9.77	0.0327	10.05	0.0280	10.54	0.1278	11.53	0.2086	10.91	0.1297	11.81	0.1495	10.91	0.0866	11.78	0.1179
16-Sep-00	8.51	0.0551	8.89	0.0439	10.35	0.1582	11.27	0.2872	10.79	0.1267	11.59	0.1820	10.77	0.1385	11.48	0.1794
18-Sep-00	9.92	0.3512	10.06	0.2657	10.52	0.1578	11.57	0.1854	10.94	0.1072	11.90	0.1360	11.07	0.0940	12.01	0.0971
19-Sep-00	9.79	0.0293	10.12	0.0282	10.65	0.1531	11.73	0.2278	11.12	0.1598	12.13	0.1892	11.18	0.1075	12.21	0.1321
20-Sep-00	9.88	0.0291	10.12	0.0185	10.42	0.0894	11.54	0.1241	10.86	0.0814	11.99	0.0895	11.01	0.0857	12.17	0.1094
21-Sep-00	9.78	0.0280	10.01	0.0160	10.48	0.1231	11.50	0.1410	10.82	0.1244	11.88	0.1156	11.03	0.1123	12.03	0.1116
22-Sep-00	8.81	0.0930	9.34	0.0812	10.13	0.1165	11.23	0.1396	10.64	0.1109	11.66	0.1330	10.95	0.0706	11.94	0.1057
23-Sep-00	9.26	0.0546	9.62	0.0459	10.19	0.1302	11.29	0.1237	10.64	0.1172	11.68	0.1236	10.90	0.1188	11.86	0.1299
25-Sep-00	9.74	0.0239	9.99	0.0183	10.31	0.0778	11.25	0.1169	10.50	0.1179	11.55	0.1193	10.82	0.0889	11.82	0.0917
26-Sep-00	9.90	0.0176	10.09	0.0171	10.33	0.0721	11.32	0.1013	10.54	0.1006	11.57	0.1136	10.79	0.1166	11.77	0.1148
27-Sep-00	10.01	0.0146	10.21	0.0170	10.29	0.1050	11.23	0.1040	10.47	0.1139	11.51	0.1140	10.77	0.1391	11.86	0.1143
28-Sep-00	10.05	0.0181	10.24	0.0138	10.20	0.1181	11.17	0.1019	10.49	0.1165	11.45	0.1264	10.79	0.1143	11.73	0.1331
29-Sep-00	10.10	0.0222	10.28	0.0130	10.29	0.0856	11.23	0.1091	10.55	0.0939	11.49	0.1128	10.75	0.0935	11.76	0.1039

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