The Secondary Market

The secondary market for equity

4.5 The trading intensity of Indian stock exchanges is impressive by world standards. Among the biggest exchanges, measured by the number of trades per calendar year, the National Stock Exchange (NSE) retained rank 3 in all the four years (Table 4.2). The Bombay Stock Exchange (BSE) climbed from rank 7 to rank 5 between 2002 and 2003, and has stayed at rank 5 ever since. The Shanghai exchange lost ground, going from rank 4 to rank 6 in the latest year.

Table 4.2 : Biggest exchanges by number of transactions in 2005

	Rank by number of transactions			
	2002	2003	2004	2005
NASDAQ	1	1	1	2
NYSE	2	2	2	1
NSE	3	3	3	3
Shanghai	5	4	4	6
BSE	7	5	5	5
Korea	4	7	6	4
Taiwan	6	6	7	8
Shenzhen	8	8	8	7
Deutsche Borse	9	9	9	9
London/Euronet	12	11	10	10

4.6 Both Nifty (index of the top 50 stocks of the country) and the Nifty Junior (the second-tier index of the next 50 stocks) have delivered strong positive returns in the recent four-year period (Tables 4.3 and 4.4). From January 2002 to December 2005, the Nifty index went from 1,075 to 2,837, giving compound returns of 27.45 per cent per year. From January 2002 to December 2005, the Nifty Junior index went from 1,349 to 5,541, giving compound returns of 42.36 per cent per year.

Table 4.3 : Movements of the index of the top 50 stocks (Nifty)

	2002	2003	2004	2005
January	1,075	1,042	1,810	2,058
February	1,142	1,063	1,800	2,103
March	1,130	978	1,772	2,036
April	1,085	934	1,796	1,903
May	1,029	1,007	1,484	2,088
June	1,058	1,134	1,506	2,221
July	959	1,186	1,632	2,312
August	1,011	1,357	1,632	2,385
September	963	1,417	1,746	2,601
October	951	1,556	1,787	2,371
November	1,050	1,615	1,959	2,652
December	1,094	1,880	2,081	2,837

Table 4.4 : Movements of the index of the next 50 stocks (Nifty Junior)

	2002	2003	2004	2005
January	1,349	1,377	3,368	4,248
February	1,496	1,387	3,331	4,388
March	1,567	1,260	3,392	4,275
April	1,608	1,340	3,640	4,024
May	1,497	1,664	2,847	4,365
June	1,617	1,784	2,905	4,393
July	1,456	2,012	3,082	4,919
August	1,453	2,275	3,199	5,053
September	1,258	2,457	3,504	5,304
October	1,255	2,657	3,482	4,714
November	1,337	2,801	3,885	5,242
December	1,413	3,406	4,453	5,541

4.7 These impressive returns were successfully replicated by passive managers who offered index funds on the two indexes, thus demonstrating the viability of index funds. A complete 'index ecosystem' is now vibrantly operating in India, comprising indexes, index funds, exchange traded funds (ETFs), index derivatives, and electronic index arbitrage. From 2004 onwards, Nifty has been the biggest underlying on the equity derivatives market on all days. The sophisticated inter-relationships between each of these elements constitute a key success of Indian financial infrastructure.

4.8 The impressive returns on indexes through the recent four years have been associated with fairly stable P/E ratios (Table 4.5). The bulk of the returns, hence, were obtained through growth in earnings of companies.

4.9 At the end of calendar 2005, the market capitalisation of Nifty at Rs.13.5 lakh crore and the Nifty Junior at Rs.2.2 lakh crore, added up to Rs.15.7 lakh crore or roughly two-

Table 4.5 : Equity returns, volatility, market capitalisation and Price Earnings (P/E) ratio				
	2002	**2003**	**2004**	**2005**
BSE Sensex:				
Returns (per cent)	**3.5**	**72.9**	**13.1**	**42.33**
End-year mkt.cap. *(Rs. crore)*	2,76,916	6,35,015	7,35,528	12,13,867
Daily Volatility	1.10	1.17	1.59	1.08
End-year P/E	14.64	18.86	17.07	18.61
Nifty :				
Returns (per cent)	**3.3**	**71.9**	**10.7**	**36.34**
End-year mkt.cap. *(Rs. crore)*	3,52,943	6,34,248	9,02,831	13,50,394
Daily Volatility	1.07	1.23	1.73	1.11
End-year P/E	14.83	20.73	15.32	17.07
Nifty Junior :				
Returns (per cent)	**8.8**	**141.0**	**30.8**	**24.43**
End-year mkt.cap. *(Rs. crore)*	35,668	1,32,409	1,65,444	2,18,575
Daily Volatility	1.34	1.37	1.94	1.22
End-year P/E	12.26	15.73	14.19	17.11
Source : BSE and NSE				

thirds of the broad Indian equity market (2,540 companies with Rs.24.7 lakh crore of market value). This implies that the available index funds now cover two-thirds of the Indian equity market.

4.10 The volatility of the equity market in 2005 was at a low level. While this partly reflected the end of the uncertainty associated with the general elections of 2004, the volatility was also lower than that in the preceding two years.

4.11 Table 4.6 shows patterns of volatility over two recent two-year periods, for two Indian indexes (Nifty and Nifty Junior) and two indexes outside the country (the S&P 500 of the US and the Korean Seoul Composite Index). In the Indian case, the uncertainties associated with the general elections of 2004 resulted in elevated volatility in the January 2004 to December 2005 period when compared with the preceding two years. In contrast, equity volatility globally was reduced. In particular, the US S&P 500 was a remarkably low volatility asset in the recent two years, with a weekly volatility of just 1.41 per cent.

4.12 The best measure of liquidity is the 'impact cost' which is inherent when doing transactions on the secondary market. A liquid market is one where the cost of transactions is low. The impact cost for purchase or sale of Rs.50 lakh of the Nifty portfolio has dropped steadily and sharply through the recent four years, from a level of 0.12 per cent in 2002 to 0.08 per cent in 2005 (Table 4.7). Similarly,

Table 4.6 : Volatility of weekly returns on the equity market		
	Period	
Class of stocks	**Jan 2002 - Dec 2003**	**Jan '04 - Dec '05**
India		
Top 50 (Nifty)	2.59	2.85
Next 50 (Nifty Junior)	3.08	3.47
Outside India		
U.S. (S&P 500)	2.51	1.41
Korea (Kospi)	4.12	2.81

Table 4.7: Equity spot market liquidity				
	For calendar year			
	2002	**2003**	**2004**	**2005**
Nifty:				
NSE impact cost at Rs. 5 million (per cent)	0.12	0.10	0.09	0.08
Nifty Junior:				
NSE impact cost at Rs.2.5 million (per cent)	0.41	0.32	0.31	0.16

the impact cost for doing purchase or sale of Rs.25 lakh of the Nifty Junior index has dropped steadily and sharply through the recent four years, from a level of 0.41 per cent in 2002 to 0.16 per cent in 2005.

4.13 These improvements suggest a substantial gain in liquidity on the Indian equity market in recent years. In addition, the gap between the liquidity of Nifty and that of Nifty junior, as shown in this data, has dropped sharply. This shows the percolation of liquidity beyond the top 50 stocks. These improvements demonstrate the success of the reforms programme on the equity market which has been undertaken from 1993 onwards. In absolute terms, these values are impressive by world standards. As an example, the impact cost of 8 basis points that is faced in doing arbitrage with the Nifty futures with a basket of roughly US$100,000 is a level that is comparable with that found in many OECD countries. This implies that index arbitrage in India can deliver levels of market efficiency on the index futures market that is comparable to that in many OECD countries.

4.14 In addition to the impact cost, market participants also have to pay user charges to the stock broker and to the exchange, and transaction taxes such as the Securities Transaction Tax. In some of these respects also, India fares well. As an example, the per-transaction charges applied by National Securities Depository Limited (NSDL) and Central Depository Services Limited (CDSL) are amongst the lowest in the world. The statistics for impact cost shown above, however, focus on the transactions costs incurred on the electronic trading system alone, and ignore these in other than electronic trading system.

4.15 While impact cost is the best measure of liquidity, since liquidity is about being able to transact at minimal cost, stock market turnover is important to market intermediaries who have revenue streams in proportion to turnover. In addition, turnover is also useful as a proxy for liquidity, in facilitating comparisons across markets where impact cost is not measured. Table 4.8 shows the growth of "net" or "one-way" turnover on the Indian equity market. From 2003 onwards, derivatives turnover has exceeded spot market turnover, as is the case with all successful derivatives markets in the world. This underlines the importance of the derivatives market, which now dominates price discovery. The number of stocks on which individual stock derivatives are traded has gone up steadily, from 31 in 2001 to 117 today, which has helped in the percolation of liquidity and market efficiency into the second tier of firms.

4.16 NSE and BSE spot market turnovers added up to Rs.20.9 lakh crore in 2005, and NSE and BSE derivatives turnover added up to Rs.39.5 lakh crore in 2005. Both these values showed significant growth when compared with the previous year. The total equity market turnover went up from Rs.43 lakh crore in 2004 to Rs.60.2 lakh crore in 2005. This growth is partly mere arithmetic, for rupee turnover goes up commensurate with higher stock prices.

4.17 In terms of the composition of market participants, the equity market continued to

Table 4.8 : Growth of turnover

(Turnover in Rs. Crore)

	For calendar year			
	2002	**2003**	**2004**	**2005**
NSE spot	6,24,322	9,07,882	11,70,298	13,88,112
BSE spot	3,32,913	409,373	5,29,704	7,01,024
NSE derivatives	3,45,443	13,50,610	25,86,738	39,26,843
BSE derivatives	928	9103	19,173	19,652
Indian equity turnover	13,03,508	27,57,287	43,14,322	60,17,944

Table 4.9 : A predominantly retail market				
	As of year-end			
	2002	2003	2004	2005
Number of NSDL accounts	38,13,336	46,12,884	59,69,000	72,76,300
Average trade size (rupees):				
NSE spot	26,703	26,993	27,716	24,293
BSE spot	22,485	22,782	25,610	13,689
NSE derivatives	3,00,334	4,25,077	4,88,790	5,01,946
Source : SEBI				

be dominated by retail investors. The average transaction size on the spot market dropped in 2005 on both NSE and BSE (Table 4.9). Across both the derivatives market and the spot market, the average transaction is one which is accessible to a very large number of households in the country. The number of depository accounts at NSDL continued to grow rapidly, with a rise of 21.9 per cent in 2005, which corresponds to over 5,000 accounts being opened per working day. In addition to NSDL, CDSL had 1,270,071 accounts as of 2005. The sum of NSDL and CDSL accounts stood at 85 lakh.

4.18 Mutual funds are an important avenue through which households participate in the securities market. Intermediation through mutual funds is particularly attractive from the viewpoint of systemic stability, because mutual funds only hold transparent assets, do daily marking to market, have no leverage, and all losses are instantly passed on to the balance sheets of households. While assets under management of all mutual funds had stagnated at roughly Rs.1.5 lakh crore between 2003 and 2004, there was a significant rise to a level of roughly Rs.2 lakh crore in 2005.

4.19 From the early 1990s, India has developed a framework through which foreign investors participate in the Indian securities markets. A foreign investor can either come into India as a foreign institutional investor (FII) or as a sub-account. In December 2005, the number of FIIs stood at 823 and the number of sub-accounts stood at 2,273.

4.20 The net investment from FIIs on the equity spot market rose from Rs.38,965 crore in 2004 to Rs.47,182 crore in 2005.

Table 4.10 : Assets under management of mutual funds *(Rs. Crore)*				
	At end of year			
	2002	2003	2004	2005
Money market	10,801	32,424	59,447	64,711
Gilt	4,316	6,917	4,876	3,730
Income	77,469	71,258	47,451	52,903
Growth	14,371	22,938	31,551	67,144
Balanced	14,164	4,663	5,472	6,833
ELSS	1,479	1,893	1,740	3,927
Total	**1,22,600**	**1,40,093**	**1,50,537**	**1,99,248**
Source : SEBI				

Table 4.11 : Foreign institutional investors

(*Rs. Crore*)

	For calendar year			
	2002	**2003**	**2004**	**2005**
End-year number of FIIs	489	517	637	823
End-year number of sub-accounts	1,372*	1,361*	1,785	2,273
Equity market activity :				
Gross buy	48,876	94,412	1,85,672	2,86,021
Gross sell	45,311	63,954	1,46,706	2,38,839
Net (Gross Buy –Gross Sell)	3,566	30,458	38,965	47,182
Derivatives activity :				
Gross buy			84,205	2,54,322
Gross sell			86,133	2,49,875
Net (Gross Buy –Gross Sell)			-1,928	4,447

* as on March, 31.
Source : SEBI.

4.21 Information about the transactions of investors – such as FIIs or institutional investors – is reported from the viewpoint of only one side of the transaction. In order to compare this against the market size, total turnover is expressed as "gross turnover" or "two-way turnover". Summing across spot and derivatives markets, the share of all institutional investors was 10.3 per cent. The share of FIIs was 8.1 per cent. These facts underline the domination of Indian retail in turnover. In particular, on the derivatives markets, which now dominate price discovery, Indian retail accounts for a substantial share of the turnover.

4.22 The growth of international trade, and India's financial market integration through the convertibility which FIIs have, is expected to lead to greater correlations between India and the global economy. This would be revealed in correlations of weekly returns of stock

Table 4.12 : Gross turnover from institutional investors

(*Rs. Crore*)

	For calendar year			
	2002	**2003**	**2004**	**2005**
Spot market:				
NSE+BSE gross turnover	19,14,273	26,34,085	34,16,824	41,78,295
All institutions	1,13,374	2,04,745	3,70,609	7,14,638
FIIs	54,016	1,58,366	3,32,379	5,02,590
Derivatives:				
NSE+BSE gross turnover	6,92,742	28,80,489	52,11,820	78,53,687
All institutions		51,397	1,76,940	5,21,762
FIIs			1,70,338	4,76,925
Equity spot + derivatives				
NSE+BSE gross turnover	26,07,015	55,14,574	86,28,645	1,20,31,981
All institutions	1,13,374	2,56,142	5,47,449	12,36,400
FIIs	54,016	1,58,366	5,02,717	9,79,515

TABLE 4.13 : Correlations of equity indexes, January 2002 to December 2003.

	Nifty	*NiftyJunior*	*S&P 500*	*Seoul*
Nifty	1			
Nifty Junior	0.76	1		
S&P 500	0.26	0.17	1	
Seoul	0.27	0.2	0.45	1

TABLE 4.14 : Correlations of equity indexes, January 2004 to December 2005.

	Nifty	*NiftyJunior*	*S&P 500*	*Seoul*
Nifty	1			
Nifty Junior	0.89	1		
S&P 500	0.35	0.26	1	
Seoul	0.49	0.45	0.48	1

market indexes. The correlations for two 2-year periods – 2002-2003 versus 2004-2005 – are compared in Table 4.13 and 4.14.

4.23 South Korea, which is now an OECD country and has capital account convertibility, serves as a useful comparison point for India. In the 2002-2003 period, the South Korean correlation with the US was at 0.45. This has risen slightly to 0.48 in the 2004-2005 period. In India's case, the front tier of stocks (Nifty) had a rise in the correlation with the US from 0.26 to 0.35 during the same period. Similarly, the second tier of stocks (Nifty Junior) had a rise in the correlation with the US from 0.17 to 0.26.

The secondary market for debt

4.24 The policy directions of the equity market and the debt market have taken different paths from 1992 onwards. In contrast with the blossoming institutional sophistication and growing liquidity of the equity market, the debt market has continued to turn in poor outcomes. With the continuation of substantial fiscal deficits, a large volume of bond issuance had taken place every year. However, this growing market size has not been translated into liquidity and market efficiency as yet. Impact cost, which is the best measure of liquidity of a market, is not observed on the bond market owing to non-transparent trading procedures. The turnover ratio, which is the best available proxy, dropped every year from 2002 onwards, to a level of 71 per cent in 2005. The number of bonds with a turnover ratio in excess of 75 per cent dropped from 40 bonds in 2003 to just 13 bonds in 2005.

4.25 Interest rates on the GoI bonds have risen from 2004 onwards. The zero-coupon rate on a 1-year bond rose from 4.75 per cent in 2003 to 6.09 per cent in 2004 and further to 6.28 per cent in 2005. Similarly, the zero-coupon rate on a 10-year bond rose from 5.38 per cent in 2003 to 6.78 per cent in 2004 and further to 7.22 per cent in 2005. Owing to these increases in interest rates, the returns

Table 4.15 : Government of India (GOI) bond market size

(Rs. Crore)

	For calendar year			
	2002	**2003**	**2004**	**2005**
Gross issuance	1,20,213	1,13,000	1,19,500	1,29,350
End-year market cap.	6,55,148	9,59,903	9,96,341	10,51,521
SGL turnover	12,93,814	15,98,052	10,70,896	7,50,982
Turnover ratio (per cent)	197.48	166.48	107.48	71.42
Number of bonds with TR > 75 per cent	33	40	28	13
Demat GOI bonds at NSDL :				
Value (Rs. crore)		1,956	3,688	5,073
Number of accounts containing GOI bonds	924	1,580	1,960	2,341

Table 4.16 : GOI bond market outcomes

	Calendar year			
	2002	**2003**	**2004**	**2005**
Notional GOI ZC 1-year bond:				
Interest rate	5.44	4.75	6.09	6.28
Returns (per cent)	1.37	0.73	-1.24	0.35
Returns volatility	0.15	0.27	0.36	0.29
Notional GOI ZC 10-year bond:				
Interest rate	6.12	5.38	6.78	7.22
Returns (per cent)	20.28	6.83	-12.66	-4.32
Returns volatility	0.58	0.59	0.71	0.70
NSE GOI bond index:				
Returns (per cent)	15.95	10.03	-3.75	-3.40
Returns volatility	0.43	0.39	0.59	0.66

Source : NSE

on a broad portfolio of government bonds (the GOI bond index) were negative in both 2004 and 2005. The volatility of this portfolio also rose significantly to 0.66 per cent per day in 2005.