

Securities Markets

Equity market

Pre IPO stage

4.3 In addition to the traditional sources of capital from family and friends, startup firms are created and nurtured by Venture Capital Funds and Private Equity Funds. According to the Indian Venture Capital Association Yearbook (2003), investments of \$881 million were injected into 80 companies in 2002, and investments of \$470 million were injected into 56 companies in 2003. The firms which received these investments were drawn from a wide range of industries, including finance, consumer goods and health.

4.4 The growth of the venture capital and private equity mechanisms in India is critically linked to their track record for successful exits (Table 4.1). Investments by these funds only commenced in recent years, and we are seeing a rapid buildup in a full range of channels for exit, with a mix of profitable and unprofitable outcomes. This success with exit suggests that investors will allocate increased resources to venture funds and private equity funds operating in India, who will (in turn) be able to fund the creation of new firms.

The primary market

4.5 The volume of public issues rose by roughly five times to a level of Rs.35,859 crore in 2004 (Table 4.2). Beyond this, a considerable volume of issuance also takes place through private placements. The bulk of

Table 4.1 : Types of exit for venture capital or private equity funds

Category	2001	2002	2003
IPO	0	0	2
Post-IPO	1	7	40
Trade sale	4	6	8
Bankruptcy	1	0	0
M&A	4	7	6
Buyback	8	16	16

Source: Indian Venture Capital Association Yearbook, 2003.

this was made up of equity issuance, which amounted to Rs.33,475 crore in 2004. This was the highest-ever level of public equity

Table 4.2 : Primary market				
(Rs. crore)				
	Calendar year			
	2001	2002	2003	2004
Debt	4,916	3,451	3,790	2,383
Equity	726	2,373	2,892	33,475
Of which, IPOs	525	1,981	1,940	22,611
Number of IPOs	17	6	13	26
Mean IPO size	31	330	149	870
Total	5,643	5,825	6,682	35,859
Number	48	28	42	65
Source: SEBI.				

issuance in India's history, over two times higher than the previous peak of 1995. The public debt market continued to languish at low levels, and the bulk of primary issuance of debt securities took place through private placement.

4.6 The growing sophistication of the market was visible in a slew of very large issues. The mean IPO size rose from Rs.31 crore in 2001 to Rs.870 crore in 2004. The success of these large issues has dispelled earlier doubts about the feasibility of billion-dollar offerings in the Indian market.

4.7 A major development in the Indian primary market has been the introduction of "screen based bookbuilding", where securities are auctioned through an anonymous screen-based system, and the price at which securities are sold is discovered on the screen. This eliminates the delays, risks and implementation difficulties associated with traditional procedures. Despite considerable skepticism about the extent to which computers could replace the services of highly skilled investment bankers, it is reported that resource mobilisation through bookbuilding rose steadily from 25 per cent of public equity offerings in 2001 to 53 per cent in 2002, 64 per cent in 2003 and 99 per cent in 2004. In this process, the primary market has matched the secondary market in terms of using technology to achieve an impersonal system of price discovery with widespread retail participation that spans the country.

4.8 Early indications suggest that a considerable volume of issuance may take place through the public equity issues market in 2005 also. It is reported that fresh issuance of securitisation paper grew sharply over this period, to a level of Rs.14,694 crore in 2004. However, this value continued to be much behind those found in developed countries, both in absolute terms and when viewed in comparison against the overall debt market.

The secondary market

4.9 One international ranking in the area of finance, where India figures, is the size of securities exchanges, as measured by the *number* of transactions. While the average value of transaction in India is small by world standards, India has a very large number of transactions, which are required to be implemented by commensurately large and yet low-cost IT systems. In 2002, NSE displaced Shanghai to take 3rd place, and BSE moved up from 8th rank in 2001 to 5th rank in 2003 (Table 4.3). NSE and BSE were stable at rank 3 and 5 respectively in 2003 and 2004.

Table 4.3 : Biggest exchanges by number of transactions in 2004				
	Rank by number of transactions			
	2001	2002	2003	2004
NASDAQ	1	1	1	1
NYSE	2	2	2	2
NSE	4	3	3	3
Shanghai	3	5	4	4
BSE	8	7	5	5
Korea	6	4	7	6
Taiwan	7	6	6	7
Shenzhen	5	8	8	8
Deutsche Borse	9	9	9	9
London	14	12	11	10

4.10 While index returns were strong in the recent period (Tables 4.4, 4.5 and 4.6), the rise in market value was roughly proportional to the rise in corporate earnings, giving a stable price to earnings (P/E) ratio.

	2001	2002	2003	2004
January	1372	1075	1042	1810
February	1351	1142	1063	1800
March	1148	1130	978	1772
April	1125	1085	934	1796
May	1168	1029	1007	1484
June	1108	1058	1134	1506
July	1073	959	1186	1632
August	1054	1011	1357	1632
September	914	963	1417	1746
October	972	951	1556	1787
November	1067	1050	1615	1959
December	1059	1094	1880	2081

	2001	2002	2003	2004
January	2408	1349	1377	3368
February	2141	1496	1387	3331
March	1602	1567	1260	3392
April	1525	1608	1340	3640
May	1627	1497	1664	2847
June	1415	1617	1784	2903
July	1343	1456	2012	3082
August	1277	1453	2275	3199
September	1084	1258	2457	3504
October	1174	1255	2656	3482
November	1334	1337	2801	3885
December	1298	1413	3406	4453

4.11 The Nifty index, which shows the biggest 50 liquid stocks in the country, experienced a sharp growth in market capitalisation from Rs.2,85,007 crore in 2001 to Rs.9,02,831 crore in 2004. Strong returns of 71.9 per cent in 2003 were followed by modest returns of 10.7 per cent in 2004. Index volatility in 2004 was elevated to 2001 levels, reflecting the flow of news in these two years.

4.12 The second tier of 50 liquid but smaller stocks makes up the Nifty Junior index. This index has also seen a sharp rise in market

capitalisation, from Rs.28,498 crore in 2001 to Rs.1,65,444 crore in 2004. Returns on this set of stocks appears to have a high sensitivity to returns on Nifty, both in the upward and the downward direction. The volatility of this index is somewhat higher than that of Nifty. The gap in P/E, between Nifty and Nifty Junior, has been substantially closed in the period from 2001 to 2004. This may reflect a percolation of liquidity and market efficiency from the top 50 stocks to a second tier of mid-cap stocks, thus giving the benefit of a low cost of capital for a wider set of firms.

	2001	2002	2003	2004
BSE Sensex:				
Returns (per cent)	-17.9	3.5	72.9	13.1
End-year mkt.cap.	2,46,230	2,76,916	6,35,015	7,35,528
Daily Volatility	1.71	1.10	1.17	1.59
End-year P/E	15.57	14.64	18.86	17.07
Nifty :				
Returns (per cent)	-16.2	3.3	71.9	10.7
End-year mkt.cap.	2,85,007	3,52,943	6,34,248	9,02,831
Daily Volatility	1.62	1.07	1.23	1.73
End-year P/E	15.35	14.83	20.73	15.32
Nifty Junior :				
Returns (per cent)	-46.5	8.8	141.0	30.8
End-year mkt.cap.	28,498	35,668	1,32,409	1,65,444
Daily Volatility	1.93	1.34	1.37	1.94
End-year P/E	5.84	12.26	15.73	14.19

4.13 Equity volatility in India and abroad has been lower in the latest two years as compared with the recent decade (Table 4.7). The time-period from October 1995 onwards is homogeneous insofar as India had fully moved to anonymous electronic exchange-traded markets over this period. In India, a particularly sharp decline has come about in the volatility of Nifty Junior. Indian equity index volatility is not unlike that of Korea in the recent period. However, the Indian equity market has been much more volatile than that of the United States.

Table 4.7 : Volatility of weekly returns on the equity market		
Class of stocks	Period	
	Oct '95 - Dec '04	Jan '03 - Dec '04
India		
Top 50 (Nifty)	3.538	3.010
Next 50 (Nifty Junior)	4.303	3.551
Outside India		
U.S. (S&P 500)	2.455	1.805
Korea (Kospi)	4.987	3.399

4.14 A liquid market is one where transacting is frictionless, hence the best measure of liquidity is the "impact cost" suffered when doing transactions on the market. High liquidity corresponds to low impact cost. The impact cost for doing trades to buy or sell Rs.0.5 crore of Nifty has dropped steadily and dramatically over this period, from 0.27 per cent in 2001 to 0.09 in 2004 (Table 4.8). This suggests that

Table 4.8: Equity spot market liquidity				
	For calendar year			
	2001	2002	2003	2004
Nifty:				
Turnover ratio (per cent)	225	164	131	133
NSE impact cost at Rs. 5 million (per cent)	0.27	0.12	0.10	0.09
Nifty Junior:				
Turnover ratio (per cent)	565	369	101	89
NSE impact cost at Rs.2.5 million (per cent)	0.62	0.41	0.32	0.31

the shift to rolling settlement, and the takeoff of derivatives trading - which were the two major changes of this period - have significantly helped market liquidity.

4.15 The second tier of stocks - Nifty Junior - has also obtained major progress on liquidity, with impact cost going down from 0.62 per cent to 0.31 per cent over this period. This group of stocks has benefited from the move to rolling settlement, and indirectly from access to index derivatives trading. However, this group of stocks has not had the direct benefits of derivatives trading on individual stocks. While liquidity of Nifty junior improved in absolute terms, the gap between Nifty and Nifty junior in liquidity actually worsened between 2001 and 2004.

4.16 India is ranked 12th in an international comparison of turnover ratio (one year's trading volume divided by market capitalisation) on the equity spot market, in the 12-month period from November 2003 to October 2004 (Table 4.9). With a turnover ratio of 107 per cent, India lags behind China and Turkey. India's situation appears to be broadly in the range of values seen with well

Table 4.9 : Turnover ratio (per cent) on the equity spot market: An international comparison		
Rank	Country	Turnover ratio
1	United Kingdom	165
2	Taiwan	163
3	Turkey	141
4	China	139
5	Germany	125
6	Spain	120
7	United States	119
8	Sweden	118
9	Korea	118
10	Italy	113
11	Finland	112
12	India	107
13	Thailand	98
14	Switzerland	91
15	Japan	88

Note : Pertains to 11/2003 - 10/2004.

developed equity markets such as those of Japan (88 per cent) or the United States (119 per cent). This suggests that in the future, the headroom for growth in spot market turnover in India will come from growth of the economy and of market capitalisation. Spot market turnover is likely to grow in rough proportion to the growth in market capitalisation.

4.17 Between 2001 and 2004, turnover on the NSE equity spot market grew by 69 per cent (Table 4.10). Over this same period, the NSE equity derivatives market came of age, with turnover growing dramatically to reach a level which was 2.2 times bigger than equity spot trading at NSE. At the same time, the equity derivatives market in India has yet to attain the multiples of spot market turnover which are prevalent in successful derivatives exchanges internationally. There is considerable headroom for growth, in response to growing knowledge in the country, and improvements in regulation.

Investors

4.18 There is growing evidence about increasing participation in the securities markets. The number of accounts at NSDL,

which is the best measure of the number of participants in the market, had stagnated in 2001 and 2002 at roughly 3.7 to 3.8 million (Table 4.11). This grew by 21 per cent and then 29 per cent in the following two years, to reach roughly 6 million as of end-2004. The evidence for 2004 corresponds to 5,400 new depository accounts being opened per weekday.

4.19 The average trade size on the NSE and BSE spot markets in 2004 was Rs.27,715 and Rs.23,984 respectively. This highlights the domination of individual investors in price discovery. This is in sharp contrast with (say) the bond market, where the average trade size exceeds Rs.1 crore. If institutional investors (domestic or foreign) had been major players in this market, the average trade size would have been much bigger.

4.20 The average trade size at the NSE derivatives segment rose significantly from 2001 to 2004. However, the value as of 2004 - of roughly Rs.5 lakh - remained accessible to a large number of households, given that this trade size requires collateral of roughly Rs.1 lakh. The domination of individual investors in the derivatives market is even more complete than that found on the spot market.

Table 4.10 : Growth of turnover

(Turnover in Rs. crore)

	For calendar year			
	2001	2002	2003	2004
NSE spot	6,95,610	6,24,322	9,07,882	11,75,159
BSE spot	4,75,201	3,32,814	4,09,161	5,33,253
NSE derivatives	39,848	3,45,443	14,31,142	25,86,738
BSE derivatives	2,076	928	9,103	19,173
Indian equity turnover	12,12,735	13,03,508	27,57,287	43,14,322

Table 4.11 : A predominantly retail market

As of year-end

	2001	2002	2003	2004
	Number of NSDL accounts	3,658,098	3,813,336	4,612,884
Average trade size (rupees):				
NSE spot	40,509	26,703	26,993	27,715
BSE spot	35,783	22,485	22,782	23,984
NSE derivatives	2,85,983	3,00,334	4,25,077	4,88,790

4.21 The mutual fund industry has experienced slow growth in recent years, with assets under management nearly stagnant at Rs.1,50,537 crore (Table 4.12). The bulk of mutual fund assets continue to be in debt securities. However, assets in growth funds rose sharply in 2004 to reach Rs.31,551 crore. These small magnitudes, compared with overall market size, are consistent with the picture of India being a highly retail market, where households directly own the bulk of securities.

4.22 There has been a considerable focus upon the net purchases of FIIs on the equity spot market, which amounted to Rs.38,965 crore in 2004 (Table 4.13). On a typical day, of the 637 registered FIIs and 1,785 sub-accounts, some buy while others sell

Table 4.12 : Assets under management of mutual funds			
<i>(Rs. crore)</i>			
	At end of year		
	2002	2003	2004
Money market	10,801	32,424	59,447
Gilt	4,316	6,917	4,876
Income	77,469	71,258	47,451
Growth	14,371	22,938	31,551
Balanced	14,164	4,663	5,472
ELSS	1,479	1,893	1,740
Total	1,22,600	1,40,093	1,50,537

securities. Thus, putting the spot and derivatives markets together, in 2004, FIIs purchased Rs.2,69,877 crore and sold Rs.2,32,840 crore. This reflects the diverse range of FIIs, with a diversity of views and portfolio strategies. India's equity market has always been strong in terms of attracting a diverse array of participants, with heterogeneous views and compulsions. The entry of FIIs has further strengthened the diversity of views and compulsions, and helped fuel market liquidity.

4.23 Over the past four years, the number of registered FIIs has risen from 490 to 637, and the number of sub-accounts has risen from 1,372 to 1,785. Growth of these two measures is desirable insofar as it indicates a more diverse, and hence more stable, pool of foreign investors.

4.24 Institutional investors (including most domestic and foreign) account for roughly 10.8 per cent of spot market turnover, and just 3.3 per cent of derivatives turnover (Table 4.14). Since price discovery primarily takes place on the derivatives market, this suggests that individual investors and not institutional investors dominate price discovery.

4.25 Almost all derivatives turnover by institutions - of Rs.1,76,940 crore - in 2004 came from FIIs, who accounted for Rs.1,70,338 crore of derivatives turnover.

Table 4.13 : Foreign institutional investors				
<i>(Rs. crore)</i>				
	For calendar year			
	2001	2002	2003	2004
End-year number of FIIs	527*	490*	502*	637
End-year number of sub-accounts	—	1,372*	1,361*	1,785
Spot market activity:				
Gross buy	51,779	28,759	94,412	1,85,672
Gross sell	38,651	25,257	63,954	1,46,707
Net	13,128	3,502	30,458	38,965
Derivatives activity:				
Gross buy				84,205
Gross sell				86,133
Net				-1,928
Note : Data on derivatives transactions by FIIs were not separately reported prior to 2004.				
* As on 31st March.				

	For calendar year			
	2001	2002	2003	2004
Spot market:				
NSE+BSE gross turnover	23,41,622	19,14,273	26,34,085	34,16,824
All institutions	1,05,581	1,13,374	2,04,745	3,70,609
FII's	90,430	54,016	1,58,366	3,32,379
Derivatives:				
NSE+BSE gross turnover	83,848	6,92,742	28,80,489	52,11,820
All institutions			51,397	1,76,940
FII's				1,70,338
Equity spot + derivatives				
NSE+BSE gross turnover	24,25,470	26,07,015	55,14,574	86,28,645
All institutions	1,05,581	1,13,374	2,56,142	5,47,449
FII's	90,430	54,016	1,58,366	5,02,717

Conversely, it appears that domestic institutions have a negligible presence on the equity derivatives market. This may reflect superior human resources, systems, firm-level policies, risk management systems, and regulatory constraints operative upon FIIs relative to domestic institutions.

4.26 A key feature of measurement in Table 14 is the use of "gross turnover". Trading volume data, as normally reported by exchanges, shows volume of Rs.100 when one security worth Rs.100 goes from a seller to a buyer. However, when data is captured about the gross trading of market participants, this transaction shows up twice, as Rs.200 of trades. To ensure comparability, the table re-expresses all data as gross turnover, by doubling the trading volume as reported by exchanges.

4.27 Derivatives transactions by FIIs were not separately tracked prior to 2004. The inclusion of derivatives data from 2004 onwards overstates the increase in FII turnover for 2004, which hence shows a sharp jump from Rs.1,58,366 crore in 2003 to Rs.5,02,717 crore in 2004. While Rs.5,02,717 crore of one-way FII turnover - summing across spot and derivatives markets - appears to be a large number, it now makes up 5.83 per cent of the overall Indian equity market.

4.28 Equity indexes get correlated across countries through exposure to common shocks (e.g. the monsoon affects both India and Bangladesh), trade integration (e.g. Indian exports benefit from a global upswing) and portfolio integration (e.g. foreign investors require higher expected returns from Indian equities when global interest rates are higher). In the period from 1995 onwards, India has made considerable progress in terms of greater trade integration, and entry of foreign investors. This should have led to higher correlations between Indian stock market indexes and those of the outside world. As yet, the extent of global integration is still quite small, with a correlation between Nifty and the U.S. S&P 500 of 0.327 in calendar years 2003 and 2004 (Table 4.15).

Class of stocks	Period	
	Oct '95 - Dec '04	Jan '03 - Dec '04
Correlations with S&P 500		
Nifty	0.226	0.327
Nifty Junior	0.102	0.195
Korean KOSPI	0.316	0.509
Nifty and KOSPI	0.288	0.425

4.29 The Korean Kospi index serves as a proxy for “other emerging markets”. Korea had high trade integration as of 1995, but had many barriers to portfolio flows. This gave a Korea-US correlation of 0.316. In the period after the East Asian Crisis, Korea further liberalised portfolio flows. This has given a higher correlation in the most recent two years of 0.509. In India, the second tier of the next 50 less liquid stocks, Nifty Junior, has an even lower correlation of 0.195 against the S&P 500. At the same time, the correlation between Nifty and the Korean Kospi has risen from 0.288 to 0.425, which suggests that India is now more integrated with the factors that affect all emerging markets such as fluctuations in world trade, portfolio flows, and FDI.

Financial products derived from market indexes

4.30 The indexation industry, which deals with financial products derived from market indexes, is an area of growth in sophistication of Indian finance. As of December 2004, the market capitalisation of Nifty was Rs.9 lakh crore, and Nifty junior was at Rs.1.65 lakh crore. Index funds on both Nifty and Nifty junior now exist. Through these, it is reported that index fund investment strategies can cover 64 per cent of India’s broad market capitalisation. However, assets under management with index funds have stagnated in the last four years at roughly Rs.750 crore.

4.31 While index funds have not yet taken off in India, index derivatives have been extremely successful (Table 4.16). In 2004, on all days, Nifty was the largest single underlying on the equity derivatives market.

4.32 Data for “Stock derivatives” in Table 4.16 sums up all futures and options on all individual stocks. Index derivatives essentially shows the turnover for futures and options on Nifty on NSE, and futures and options on the BSE Sensex on the BSE. Index derivatives were weak in 2002 and 2003, where the takeoff of derivatives trading in India largely appears to have involved trading in derivatives on individual stocks. However, index derivatives went up from 12 per cent of NSE derivatives turnover in 2002 to 35 per cent in 2004, and Nifty is now clearly the most important underlying on the market.

4.33 Turnover in index derivatives in 2004 was roughly three times larger than that of 2003, showing growth well in excess of the growth rates seen on either the equity spot market or the individual stock derivatives market. This reflects growing knowledge in the market, and a shift to more sophisticated trading strategies. While BSE commands little market share in derivatives trading, it is interesting to note that the dominant product at BSE is the BSE Sensex as an underlying for futures and options.

	For calendar year			
	2001	2002	2003	2004
NSE derivatives	38,848	3,45,443	14,31,142	25,86,738
BSE derivatives	2,076	928	9,103	19,173
NSE stock derivatives	21,944	3,04,487	10,99,263	16,74,224
BSE stock derivatives	256	715	3,826	2,091
NSE index derivatives	17,903	40,956	3,31,676	9,12,514
BSE index derivatives	1,821	213	5,277	17,081
Fraction of days where Nifty was #1 underlying	0.94	0.99	0.64	1