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## Who Moved My Cheese [The Story of Stock Exchange of India]

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### WHO MOVED MY CHEESE

'Who Moved My Cheese' is a story from a bestselling author Dr. Spencer Johnson. It guides a person how to anticipate change, adapt to change quickly and enjoy the change and remain ready to change quickly, again and again. It equally applies to any person - individual, organization or even government. If one fails to recognize the change and adapt accordingly, all of a sudden he will discover himself in a strange world which he can not cope up with. Life will become miserable for him and even he may lose his existence.

Two characters - Hem and Haw - in the story, after serious efforts, discovered their choice of cheese one day. They felt happy, successful and secure and considered that they deserved the cheese. Their confidence grew into arrogance of success so much so that they did not notice what was happening. After some days they suddenly discovered that there was no cheese. They screamed: "Who moved my cheese? ... How could this have happened? ... It was not right. It was not the way things are supposed to be. ... We are special. This sort of things should not happen to us." After a lot of debate, Haw realized the futility of such screaming, started searching for fresh cheese and ultimately found it. Hem could not accept the change and wanted his cheese back. Ultimately he had a painful existence. Two other characters in the story - Sniff and Scurry - who are mice, immediately responded to what happened. They quietly accepted the change, searched for and found new cheese and became happy. And they remained ready for any further change. Cheese is a metaphor for what one wants to have in life - whether it is a good job, health, peace, market share, growth, etc.

The story lucidly explains how, many Stock Exchanges have landed themselves in the current state of affairs. The market environment has been changing slowly since early 1990s. The National Stock Exchange of India Limited (NSE) was established at the initiative of the Government who found the working of other Exchanges deficient. The advent of cost effective information technology made fully automated screen based trading possible. Exchanges were allowed to set up nation wide trading platforms. Mandatory requirement of listing on the nearest stock exchange was withdrawn. Delisting from the

**Although there are twenty-three stock exchanges in India in the current environment only couple of Exchanges are successful in their functioning. A situation of monopoly seems to be fast approaching. What are the reasons for the bad financial position of the small exchanges and what are the options available are lucidly explained here.**

regional stock exchange was permitted. The brokers of small exchanges were permitted to withdraw their base minimum capital. These changes did not happen overnight; these came after prolonged debates for years. Had the exchanges noticed the debates and smelled the changes, they should not be grumbling today: "Who moved my cheese?". The story has

also a message for currently successful exchanges, even for that matter for all economic agents, not to rest on laurels and allow success to convert to arrogance.

Many Exchanges did not reorient their working to meet the challenges of the changed environment, as they refused to believe the

weightiest proof against it. They continued to cling with both arms to the earlier environment where they prospered. That is why they have been asking for restoration of earlier environment, i.e., asking for return of their cheese (restoration of listing on Regional Exchange, reservation of securities for small Exchanges, earmarking the jurisdiction of operation etc.). Because they hope, their cheese would be returned to them if they keep on cribbing; they are not changing their attitude and not reorienting their capability to operate in the unshielded dynamic environment. Unfortunately the restoration of the cheese is not possible and may not be desirable in the changed environment. As a result, delusion has set in which makes them more rigid and the vicious circle operates.

Why did many Exchanges fail to respond to changes? It is because they lived long in a protected environment. They did not have to struggle to get business. They are the exclusive centres of trading of securities. The regulatory framework favours them by banning trades of securities outside Exchanges. They were granted territorial monopoly, which precluded competition among them. The requirement of listing on the nearest exchange provided assured listing income. Once listed, the company was never allowed to delist resulting in perennial listing fee for the Exchanges. Further, they continued to believe that if they do not do well on their own, the authorities would come to their rescue. All these made them complacent; they failed to notice the change and to prepare themselves for a change. It is like a vulture that lived for years in a poultry farm. It fed on the easily available chicken. The life style did not require the vulture to fly for years. As it gradually finished the entire poultry stock, it had to look around for food. Then it could not fly; it had lost its ability to fly. Howsoever competent or efficient one may be at one point of time; it must sharpen

<sup>1</sup>The views expressed in this paper are of the authors and not necessarily of their employer. The authors thank Ms. Patricia Crasto for her painstaking data compilation for this paper.

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and reorient its capability continuously; it must always remain alert to the changes in the environment; it must notice the change and prepare itself continuously to meet the challenges of change. If it hangs its boots, it cannot survive in the unshielded dynamic environment, as has happened to many Stock Exchanges in India.

## MARKET STRUCTURE

Let us look at the changing fortunes of the Exchanges, as the cheese moved away gradually from many of them to their competitors. It is painful if the cheese moves away. It is much more painful if it grows and the growing cheese moves away to competitors, who adapted to the changes promptly. Tables given at the end of this article present the impact of movement of growing cheese from many Exchanges to their youngest competitor. These tables present the raw data, which can be analysed by readers to get different insights from different perspectives. These data have been used here only to draw some inferences having policy implications.

The trading volumes on Exchanges have been witnessing phenomenal growth over the last one decade. Since the advent of screen based trading in 1994-95 (Table 1), it has been growing by leaps and bounds. The total turnover on Exchanges reached a peak of Rs. 33,068 billion in 2000-01. It, however, declined to Rs. 19,347 billion during 2001-02 in view of the market misconduct in early 2001. The introduction of rolling settlement and ban on deferral products also contributed to decline of the volume as market participants took some time to adjust to the new settlement regime. The trading volumes picked up in subsequent years reporting a total turnover of Rs. 50,886 billion during 2003-04. The period 1994-95 to 2003-04 registered a compound growth rate of 44% in total turnover.

The growth of turnover, however, has not been uniform across the Exchanges as may be seen from Table 1. The increase in turnover took place mostly at big Exchanges and it was partly at the cost of small Exchanges that failed to keep pace with the changes. The business moved away from small Exchanges to Exchanges which adopted technologically superior trading and settlement systems. The huge liquidity and order depth of big Stock Exchanges further sucked liquidity of other Exchanges. Further, the volumes in derivatives and government securities reported faster growth rate in the recent past. Trades in such instruments constituted nearly 70% of total turnover in 2003-04. Only the big Exchanges offer facilities for trading in such instruments. As a result, 21 Stock Exchanges (Exchanges other than NSE and BSE) put together, as may be seen from table below, reported only 0.36% of turnover during 2003-04 while the two big Exchanges accounted for the balance. Over a dozen Exchanges have been reporting nil turnovers in recent years.

### Turnover on Exchanges, 2003-04

			(%)	
Exchange	Cash	Derivative	WDM	Total
NSE	67.83	99.46	99.30	89.34
BSE	31.03	0.54	0.70	10.29
Rest	1.14	0.00	0.00	0.36
Subsidiaries	7.65	2.46	0.00	3.47

For most of the Exchanges, the *raison d'être* for their existence, i.e., turnover has disappeared. The total turnover on 21 Exchanges continued to show growth in absolute terms till 2000-01. It declined thereafter drastically with market misconduct in early 2001 followed by ban on all deferral products and introduction of uniform settlement cycle and rolling settlement, which made shifting of positions across Exchanges difficult. These Exchanges reported a total turnover of Rs. 183 billion in 2003-04 as against Rs. 5346 billion in 2000-01. However, the relative share of these Exchanges declined with the advent of NSE in 1994-95. The share of these Exchanges in total turnover declined steeply from 60% in 1993-94 to 0.36% in 2003-04. The share of NSE, which commenced operations in 1994-95, increased continuously to 89.3% in 2003-04. Its turnover registered a compound growth rate of 66% during 1995-96 to 2003-04. The share of the oldest Exchange, BSE in total turnover reduced from 40% in 1993-94 to 10% in 2003-04.

As the share of the many Exchanges in turnover declined, about a dozen of them joined hands to set up another Exchange, the Inter-connected Stock Exchange of India (ICSE), to pool their markets together. The ICSE at best contributed 0.01% of total turnover. In another experiment, these Exchanges floated subsidiaries, which became brokers of the big Exchanges and their brokers became sub-brokers of the subsidiaries. The subsidiaries of all small Exchanges taken together accounted for only 3.47%, which is less than that of the largest broker, of total turnover during 2003-04. These experiments do not seem to have extended the lifeline of small Exchanges.

The big two Exchanges (NSE and BSE) have nation wide presence with operations from over 400 cities each. The non-Mumbai locations accounted for 56% and 25% of turnover in the cash segments of NSE and BSE respectively during 2003-04, though Mumbai continues to contribute most of the volumes in derivatives and government securities. Table 2A presents the comparative volumes of turnover of other Exchanges and their subsidiaries vis-à-vis turnover in the terminals of NSE and BSE (only cash segment) from different exchange cities. Assuming that the turnover on the local exchange and on its subsidiary has been generated from the city of location of the local exchange, the turnover on big Exchanges from these cities is about 10 times of such turnover. The total turnover of 21 Exchanges and their subsidiaries was Rs. 1,424 billion in 2003-04. The total turnover of NSE and BSE from the cities of these 21 Exchanges was Rs. 14,390 billion during the same period. Except for 3 cities (Kanpur, Ludhiana and Rajkot), the two big Exchanges reported higher turnover from their trading terminals in the home turf of most of the corresponding small Exchanges indicating declining attractiveness of Regional Exchanges even for local investors.

The NSE today accounts for almost 100% of the market in derivatives and government securities (WDM) and more than 2/3rd of the trades in the cash market. It presents one of the best examples of natural monopoly. A natural monopoly occurs when greater productive efficiency can be achieved with higher scale of operation. With intensive use of technology in trading, clearing and settlement, setting up an exchange requires huge initial cost, while the marginal cost of operation is negligible.

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The technology used in these operations is such that these do not pose any capacity constraint, as these are easily scalable. Further, the business of Exchanges is such that if the volumes on an exchange reaches or goes beyond the threshold level of liquidity, the liquidity begets liquidity. If it falls below that level, the liquidity dries up. As a result, the big becomes bigger and bigger and small becomes smaller and smaller. These features of operations of the exchange provide strong incentive for an exchange to operate at a higher scale and become a monopolist. Since all Exchanges initially set up the systems, but business concentrates at a few in course of time, most of the Exchanges end up having excess capacity, which is not desirable from an economic point of view.

While the Exchanges can provide trading services at negligible or zero explicit cost, the traders face a variety of other costs, some of them being implicit. The major implicit cost is the impact cost which reflects the price of liquidity. While explicit costs are negligible, the traders prefer that exchange where the liquidity cost is minimum or liquidity is high. This feature of the market does not allow an Exchange, having even 100% market share, to become a true monopolist, as its pricing strategy has no influence on the volumes. If market sentiments are good, trades take place on the exchange irrespective of the price the exchange charges for its services. The decline of volume in 2001-02 or improved volumes in 2003-04 cannot be attributed to the pricing strategy of NSE or of the Exchanges. It is because the charge levied by Exchanges is too insignificant in comparison to other costs a trader incurs. Thus, though the technology and the nature of business provide scope for an Exchange to have a very large market share, it cannot act like a pure monopolist, because it does not have any control over the volume of business.

### FINANCIAL HEALTH

There is a direct relation between the volume of business carried on the Exchanges and their profits. The profits of the Exchanges decreased from Rs. 162 crore in 2000-01 to Rs. 61 crore in 2001-02 as the turnover decreased from Rs. 33,068 billion to Rs. 19,347 billion during the same period. Similarly, the profits increased to Rs. 69 crore in 2002-03 as turnover increased to Rs. 24,846 billion. The profits should be much higher for 2003-04 (data are not yet available) when the turnover drastically increased to Rs. 50,886 billion. However, the increase in profits or revenue is not proportionate to increase in turnover, as the composition of turnover is changing. Of late, most of the increase in turnover is coming from derivatives and government securities, which contribute relatively less to the revenue of the Exchanges.

As may be seen from the Table below, though the Exchanges as a whole have earned profits, the 21 Exchanges together incurred loss during 2002-03. With the fall in turnover, the financial health of many Exchanges is deteriorating. The small 21 Exchanges employing an asset base of Rs. 795 crore as on 31st March, 2003 earned a negative profit of Rs. 3 crore during 2002-03. The subsidiaries of small Exchanges, which were expected to extend the life line of these Exchanges, too incurred loss. The Exchanges together generated a 2.52% return on assets during 2002-03. The small Exchanges generated negative return, while the big Exchanges did not show any

exemplary performance. It is a myth that only small Exchanges are generating sub-optimal return; the big Exchanges do not earn better than interest paid on savings deposits by banks. The returns of 5% and 2% on assets of NSE and BSE respectively are hardly a return on investment for a capital scarce economy of India. Such poor returns on investments by the Exchanges is discomforting particularly because the Exchanges profess to ensure most efficient allocation of resources among competing enterprises. The rate of return is negative for many Exchanges because they have assets but they do not have business. Most of the assets at the disposal of small Exchanges are unutilized or underutilized. Since they do not have business and incur loss, the asset base of the Exchanges is declining, which is a cause for concern. The total assets of the Exchanges reduced from Rs. 32,269 million at the end of March 2001 to Rs. 27,302 million at the end of March 2004. It is welcome if better utilization of assets has released some of the assets of the Exchanges for some other use. Unfortunately, it is not the case for most of the Exchanges. Table 3 presents trend in revenue, cost and profits of the Exchanges during the last 3 years for which audited accounts for all Exchanges are available.

### Financial Performance of Exchanges, 2002-03

Exchange	Profit (Rs. cr.)	Assets (Rs. cr.)	Return on Assets (%)
All	68.70	2730.24	2.52
NSE	48.81	972.13	5.02
BSE	23.05	963.01	2.39
Rest	-3.17	795.09	-0.40
Subsidiaries	-1.39	129.12	-1.07

Such poor financial performance is despite the fact that the Exchanges earn substantial amount of non-business income (income from listing, interest, and rent), as may be seen from Table 3A. Listing contributed Rs. 33 crore accounting for about 9% of total income of the Exchanges during 2002-03. The small Exchanges, however, earned Rs. 20 crore from listing, which is about 37% of their income. The listing income accounted for as high as 3/4th of total income of Gauhati Exchange and 2/3rd for MP Exchange. It may be noted that the small Exchanges earned such huge income from listing without any corresponding benefit to the investors or the listed company.

The listing has been a perennial source of income for many Exchanges and irrespective of the volume of business, it contributed almost same amount year after year. The income from listing is, however, declining in recent years; it declined from Rs. 42 crore in 2000-01 to Rs. 33 crore in 2002-03. It would be much less during 2003-04, which will reflect the impact of withdrawal of the mandatory listing on regional Exchanges. It will be still much less in 2004-05, which will reflect the impact of liberal delisting guidelines.

The income from interest and dividend has been increasing with increase in turnover, which required Exchanges to collect proportionately higher custodial deposits for risk management. However, as the turnover declined of late, the income from interest and dividend also declined. It declined from Rs. 185

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crore in 2000-01 to Rs. 141 crore in 2001-02 and further to Rs. 109 crore in 2002-03. It may be a little higher in 2003-04 as the turnover surged during 2003-04, but, it will be much less in subsequent years, as the Exchanges having negligible business have been allowed to refund base minimum capital to brokers. Such income accounted for as high as 4/5th of total income of OTCEI and 2/3rd for Bhubaneswar Exchange during 2002-03. It constituted 29% and 36% of total income of big and small Exchanges respectively. Rent, another non-business income, contributed handsomely for some small Exchanges. It contributed 83% of total income of Coimbatore Exchange during 2002-03.

The pattern of revenue of small Exchanges varies sharply from that of big Exchanges. Non-business income is the dominant source of income for small Exchanges while business income contributes major portion of revenue of big Exchanges. Nine (Ahmedabad, Bangalore, Delhi, Ludhiana, MP, Madras, Mangalore, SKSE, and Vadodara) of the small Exchanges managed to earn profit, albeit negligible, only because of their non-business income. Business income constituted about 43% of total income of big Exchanges and 10% of that of small Exchanges during 2002-03. The revenue pattern of Exchanges is presented in the following table.

### Revenue Pattern of Exchanges, 2002-03

Exchanges	Business	Interest & Dividend	Rent	Listing	(%)
All	37.84	30.30	3.16	9.23	19.47
NSE	43.57	21.29	0.83	1.42	32.89
BSE	41.71	40.33	5.28	8.17	4.51
Rest	10.01	36.01	5.80	37.23	10.94

The declining income from all sources - listing, interest and dividend, and business - indicate further deteriorating health of small Exchanges in the days to come. The companies making IPOs will no more seek listing on small Exchanges. The companies with no zero/negligible trading will delist from small Exchanges. With zero/negligible turnover, their custodial deposits will reduce and hence interest income. With zero business, they will have zero income from business. While the income would reduce, they would continue to incur administrative expenses and depreciation, and absorb the loss of their subsidiaries. This would not only cause loss but also contribute to decline of assets. This process, unabated for a decade or so, may wipe up the entire assets of the small Exchanges.

### PUBLIC POLICY ASPECTS

There was a time when we needed a large number of Exchanges spread across the length and breadth of the country. The circumstances have changed making most of them redundant. The market simply does not have space for 24 Stock Exchanges. We are in a catch 22 situation when we neither find enough justification in their continued existence nor do we like to hasten their exit. We seem to be waiting for their natural death, which is not happening for a long time. As a result, clinically dead Exchanges are surviving on artificial support system and underutilising the assets/resources at their

disposal. They have blocked sizable resources, a part of which can be released for some other use without affecting the quality or quantity of output. This is akin to the disguised unemployment, the standard remedy for which is withdrawal of underutilized resources, which improves overall productivity. An economic agent carries on business as long as it earns normal profits. It pulls down shutters when it fails to earn normal profits. Despite their dismal performance, the Exchanges are not voluntarily exiting from the market. It resembles a typical soft state where economic agents do not receive or fail to receive the signals emanating from the economic environment and respond to them appropriately and consequently, the market has failed to arrive at desirable outcome in resource use. This is striking because these are the institutions who profess to ensure best allocation of resources. If market is efficient and yielding desirable outcome, the state is not expected to interfere in the functioning of the market in normal circumstances. The state is, however, expected to interfere if the market malfunctions, because the economic agents are either inefficient or manipulating the market. In the former case, i.e., where the economic agents, for whatever reason, do not receive the right signals or make use of opportunities available in the environment, the State needs to guide them. In the later case, the State needs to discipline them. Unfortunately, when the Exchanges are having huge excess capacity, the State is not actively guiding them. It is rather extending its protective shield for their continued existence. It supported them to set up ICSE and also subsidiaries. It is contemplating to reserve SMEs for them and to support them to float Indonext. The continued existence of 23 Exchanges thus presents a classic case of market failure and state failure. It is market failure because the economic agents have failed to receive the signal emanating from the changes in the environment. The State has also failed because it has not yet ensured optimum utilization of resources.

Under the law, the State has responsibility to recognize a stock exchange in the interest of trade and also in the public interest. It is expected to withdraw recognition of a stock exchange in the interest of trade or in the public interest. Probably the ends of public interest can be met, if the State withdraws recognition of the Exchanges that do not have adequate turnover to justify their continued existence. The minimum the state should do is to refuse the renewal of recognition in public interest. By not doing so, the State, which has also responsibility of ensuring efficient allocation of resources, is tacitly supporting underutilization of resources. The courtesy should begin at home. The State should demonstrate efficient use of resources by it and also the regulated entities. Besides, it is continuing to incur expenses on regulation of so many idle Exchanges, which pose the threat of a regulatory danger, without any corresponding benefit to market or public.

With the availability of technology and given the nature of exchange operations, it is possible that only one exchange can meet the entire demand for trading in securities in India. There is no room for second or third exchange, though it is necessary to have at least two Exchanges for the sake of competition only. The State has, therefore, the added responsibility to ensure that there are at least two equally

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good Exchanges, so that the market is not dependent on whims of only one exchange. A monopolist exchange is not only a threat to efficient market; it can also influence the policy about the market to the detriment of public interest.

### TOO MANY OPTIONS

What is the option? The options are plenty, but it all depends on the affected parties, namely the Exchanges and the State. They should be willing to accept the fact and look for alternatives possible in the changed environment. What is required is realization of the fact that the business of exchange has moved away from many of them and they need to reorient their business. If the change is marginal, they need to slightly change their business model. But if the change is substantial, they may have to look for a completely different business model, or even a different business. In case of the Exchanges, the change in environment is so profound that tinkering in the business model will not help. It requires a drastically different business model or even a different business.

The simplest and most obvious option, of course, is the closure of Exchanges by the Exchanges themselves. If they do not do so on their own, the next obvious solution is withdrawal of the recognition which will force the Exchanges to close the Exchanges. This would release the assets blocked by them currently for other alternative use. These solutions are, however, not painless.

Besides, these carry the danger of reducing the number of Exchanges to one or zero. In the current environment, though there are 23 Exchanges on paper, there are really only two Exchanges. If the current trend continues, we may soon have only one Exchange. In either case, we are approaching towards a monopoly situation, which the state must avoid.

The Exchanges could explore better models of consolidation which really consolidates the business of all Exchanges and results in emergence of the second or third exchange. This means that the number of Exchanges reduces to just 2 or 3. This is possible only if the small Exchanges are willing to forego their identity. Alternatively, each of these Exchanges could consider moving into business of a non-stock exchange. They could operate as a service provider or intermediary such as stock broker, commodity exchange/broker, investment banker, insurance agent, etc. The list is really endless. Luckily the Exchanges have skill, expertise and infrastructure to take up any of these activities in the financial market. While the State has powers to close down the Exchanges, its policies could persuade them to adopt a viable business model. It could encourage them to consolidate into one platform and reserve for them a niche area such as SMEs, primary issues, trading of mutual fund units, investor services etc. Again the list is endless. What is required is that the Exchanges and the state need to act fast, before the assets of the Exchanges deplete further.

**Table 1A: Growth and Distribution of Turnover on Stock Exchanges**

Stock Exchange	1994 - 95	1995 - 96	1996 - 97	1997 - 98	1998 - 99	1999 - 2000	2000 - 01	2001 - 02	2002-03	2003-04	(Rs. crore)
NSE	8,586	79,155	337,681	481,456	519,943	1,143,267	1,770,457	1,562,283	2,126,545	4,546,279	
Mumbai	67,749	50,064	124,190	207,113	310,750	686,428	1,001,704	309,474	321,160	524,022	
Uttar Pradesh	7,923	12,373	16,070	15,209	18,429	23,876	25,112	13,349	14,763	11,751	
Ahmedabad	12,452	20,626	41,065	31,117	29,928	37,566	54,036	14,644	15,459	4,545	
Calcutta	52,872	62,149	105,481	178,779	172,818	357,167	355,035	27,075	6,523	1,928	
Madras	6,117	3,259	3,912	2,458	739	500	218	48	76	101	
OTCEI	365	224	219	283	198	3,603	126	4	0	16	
Delhi	9,144	10,083	48,992	67,936	50,651	94,528	82,997	5,526	11	3	
Hyderabad	1,160	1,107	480	1,861	1,270	1,236	978	41	5	2	
Bangalore	712	897	4,389	8,637	7,749	1,115	600	70	0	0	
ICSE	NA	NA	NA	NA	NA	274	237	70	53	0	
Magadh	797	1,629	2,755	323	1	9	2	0	0	0	
Bhubaneshwar	303	211	231	203	74	68	0	0	0	0	
Cochin	614	287	152	164	96	66	26	2	0	0	
Coimbatore	3,192	5,007	4,798	4,274	769	78	0	0	0	0	
Gauhati	285	616	484	120	52	0	0	0	0	0	
Jaipur	879	1,048	1,519	453	63	2	0	0	0	0	
Ludhiana	4,975	4,849	5,274	8,316	6,070	6,872	9,154	964	0	0	

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Stock Exchange	1994 - 95	1995 - 96	1996 - 97	1997 - 98	1998 - 99	1999 - 2000	2000 - 01	2001 - 02	2002-03	2003-04
Madhya Pradesh	118	202	5	1	1	10	2	16	0	0
Mangalore	62	39	380	314	11	0	0	0	0	0
Pune	3,672	7,096	10,084	8,624	4,827	6,090	6,171	1,171	0	0
SKSE	329	452	395	17	0	0	0	0	0	0
Vadodara	3,855	2,519	4,344	4,577	1,749	159	2	20	3	0
<b>Total</b>	<b>186,161</b>	<b>263,892</b>	<b>712,901</b>	<b>1,022,235</b>	<b>1,126,187</b>	<b>2,362,913</b>	<b>3,306,856</b>	<b>1,934,757</b>	<b>2,484,596</b>	<b>5,088,647</b>
<b>NSE+BSE</b>	<b>76,335</b>	<b>129,219</b>	<b>461,871</b>	<b>688,569</b>	<b>830,693</b>	<b>1,829,695</b>	<b>2,772,161</b>	<b>1,871,757</b>	<b>2,447,704</b>	<b>5,070,302</b>
<b>Total (Except NSE + BSE)</b>	<b>109,826</b>	<b>134,674</b>	<b>251,030</b>	<b>333,666</b>	<b>295,494</b>	<b>533,219</b>	<b>534,695</b>	<b>63,000</b>	<b>36,892</b>	<b>18,345</b>

Table 1B: Growth and Distribution of Turnover on Stock Exchanges

Stock Exchange	1994 - 95	1995 - 96	1996 - 97	1997 - 98	1998 - 99	1999 - 2000	2000 - 01	2001 - 02	2002-03	(%) 2003-04
NSE	4.61	30.00	47.37	47.10	46.17	48.38	53.54	80.75	85.59	89.34
Mumbai	36.39	18.97	17.42	20.26	27.59	29.05	30.29	16.00	12.93	10.30
Uttar Pradesh	4.26	4.69	2.25	1.49	1.64	1.01	0.76	0.69	0.59	0.23
Ahmedabad	6.69	7.82	5.76	3.04	2.66	1.59	1.63	0.76	0.62	0.09
Calcutta	28.40	23.55	14.80	17.49	15.35	15.12	10.74	1.40	0.26	0.04
Madras	3.29	1.24	0.55	0.24	0.07	0.02	0.01	0.00	0.00	0.00
OTCEI	0.20	0.08	0.03	0.03	0.02	0.15	0.00	0.00	0.00	0.00
Delhi	4.91	3.82	6.87	6.65	4.50	4.00	2.51	0.29	0.00	0.00
Hyderabad	0.62	0.42	0.07	0.18	0.11	0.05	0.03	0.00	0.00	0.00
Bangalore	0.38	0.34	0.62	0.84	0.69	0.05	0.02	0.00	0.00	0.00
ICSE	NA	NA	NA	NA	NA	0.01	0.01	0.00	0.00	0.00
Magadh	0.43	0.62	0.39	0.03	0.00	0.00	0.00	0.00	0.00	0.00
Bhubaneshwar	0.16	0.08	0.03	0.02	0.01	0.00	0.00	0.00	0.00	0.00
Cochin	0.33	0.11	0.02	0.02	0.01	0.00	0.00	0.00	0.00	0.00
Coimbatore	1.71	1.90	0.67	0.42	0.07	0.00	0.00	0.00	0.00	0.00
Gauhati	0.15	0.23	0.07	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Jaipur	0.47	0.40	0.21	0.04	0.01	0.00	0.00	0.00	0.00	0.00
Ludhiana	2.67	1.84	0.74	0.81	0.54	0.29	0.28	0.05	0.00	0.00
Madhya Pradesh	0.06	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mangalore	0.03	0.01	0.05	0.03	0.00	0.00	0.00	0.00	0.00	0.00
Pune	1.97	2.69	1.41	0.84	0.43	0.26	0.19	0.06	0.00	0.00
SKSE	0.18	0.17	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vadodara	2.07	0.95	0.61	0.45	0.16	0.01	0.00	0.00	0.00	0.00
<b>Total</b>	<b>100.00</b>									
<b>NSE+BSE</b>	<b>41.00</b>	<b>48.97</b>	<b>64.79</b>	<b>67.36</b>	<b>73.76</b>	<b>77.43</b>	<b>83.83</b>	<b>96.74</b>	<b>98.52</b>	<b>99.64</b>
<b>Total (Except NSE + BSE)</b>	<b>59.00</b>	<b>51.03</b>	<b>35.21</b>	<b>32.64</b>	<b>26.24</b>	<b>22.57</b>	<b>16.17</b>	<b>3.26</b>	<b>1.48</b>	<b>0.36</b>

Source : Annual Reports of SEBI for various years.

Note : The turnover means total value of transactions of securities in all the market segments of an Exchange.

# Articles

Who Moved My Cheese [The Story of Stock Exchange of India]

Table 2A : Turnover on NSE/ BSE Terminals vis-à-vis that on other Exchanges/their Subsidiaries (Cash Segment other than WDM Segment)

Exchange City/ Exchange	(Rs. Crore)							
	Local Exchange	Subsidiary of Local Exchange	BSE	NSE	Local Exchange	Subsidiary of Local Exchange	BSE	NSE
1	2	3	4	5	6	7	8	9
Ahmedabad	15459	6345	7390	14106	4545	18820	17056	32902
Bangalore	0	10602	1385	15544	0	14617	3539	19397
Bhubaneshwar	0	0	79	308	0	0	139	272
Chennai (MSE)	76	463	808	22170	101	837	1677	31643
Cochin	0	2682	251	5476	0	4055	567	7787
Coimbatore	0	NA	121	3407	0	NA	136	4939
Delhi	11	43	6710	113565	3	369	13716	180081
Gauhati	0	NA	97	279	0	NA	246	29
Hyderabad	5	4197	342	19778	2	6350	750	26520
Indore (MPSE)	0	1581	1986	5262	0	2865	2363	11130
Jaipur	0	4062	2250	8208	0	6789	4051	14757
Kanpur (UPSE)	14763	1894	1275	4622	11751	2323	2241	5450
Kolkatta (CSE)	6523	NA	4289	74367	1928	NA	5524	144626
Ludhiana	0	6334	751	2710	0	11468	1751	4736
Mangalore	0	NA	378	757	0	NA	422	1106
Mumbai (ICSE)	53	11515	244574	247242	0	22530	376492	484591
Mumbai (OTCEI)	0	1072	244574	247242	16	2070	376492	484591
Patna (MaSE)	0	0	97	713	0	0	371	1017
Pune	0	4960	1112	6534	0	8546	2419	10622
Rajkot (SKSE)	0	7622	4308	1690	0	14131	8382	2698
Vadodara	3	3995	2544	4224	0	8251	5124	7751
<b>Total</b>	<b>36893</b>	<b>67364</b>	<b>280749</b>	<b>550961</b>	<b>18345</b>	<b>124022</b>	<b>446965</b>	<b>992051</b>

Note : Column 2 presents the volume of turnover on the local exchanges; Column 3 presents the volume of turnover on the subsidiary of the local exchanges; Column 4 and 5 present the volume of turnover of BSE and NSE respectively in the city of location of local exchanges.

Source : Exchanges

Table 2B : Financial Health of Subsidiaries of Exchanges

Subsidiary of Stock Exchange	Year					
	2000-01		2001-02		2002-03	
	Assets	Profits	Assets	Profits	Assets	Profits
Ahmedabad	587.39	5.87	1111.05	7.63	1393.35	40.58
Bangalore	2313.69	24.99	1509.90	-28.45	1295.58	-151.26
Bhubaneswar	62.43	-1.59	81.08	-0.18	83.73	-0.28
Cochin	671.31	-98.02	874.82	-44.32	727.88	-97.78
Delhi	9.63	-0.21	122.43	-5.38	633.03	-8.33
Hyderabad	427.81	-8.80	528.53	-8.17	589.49	10.75
ICSE	2090.48	-37.22	2439.10	-46.26	1718.19	7.99
Jaipur	484.60	-0.56	673.59	4.32	593.36	3.57
Ludhiana	1027.98	-24.88	1165.90	-7.02	1662.66	28.56
Madhya Pradesh	276.85	4.82	341.17	0.76	360.49	3.05
Madras	179.25	-1.67	198.71	4.40	202.33	12.00
Magadh	NA	NA	NA	NA	NA	NA
OTCEI	379.08	-106.23	444.34	-16.72	517.23	-14.10
Pune	625.97	-4.32	1054.56	-5.55	971.02	0.82
SKSE	757.94	14.73	736.23	7.67	904.47	13.62
UPSE	303.88	-3.99	406.82	-10.67	519.67	7.84
Vadodara	341.10	6.49	266.43	10.40	740.09	4.51
<b>Total</b>	<b>10539.39</b>	<b>-230.59</b>	<b>11954.66</b>	<b>-137.54</b>	<b>12912.57</b>	<b>-138.46</b>

Source: Exchanges

Table 3A : Trends in Revenue of Stock Exchanges

(Rs. Lakh)

Stock Exchange	Year																	
	2000-01					2001-02					2002-03							
	Business	Interest & Dividend	Rent	Listing Fees	Others	Total	Business	Interest & Dividend	Rent	Listing Fees	Others	Total	Business	Interest & Dividend	Rent	Listing Fees	Others	Total
Ahmedabad	163.00	528.00	0.00	298.00	1.00	990.00	77.00	393.00	0.00	287.00	6.00	763.00	50.00	337.00	0.00	231.00	37.00	655.00
Bangalore	63.28	29.79	74.26	106.57	115.07	388.97	3.96	10.44	65.74	90.25	80.41	250.80	1.80	29.41	39.52	87.78	48.12	206.63
Bhubaneswar	1.60	73.13	0.00	20.80	7.01	102.54	3.03	57.64	0.00	17.33	6.70	84.70	5.12	57.53	0.00	19.40	2.24	84.29
BSE	7375.54	10482.51	157.13	1202.00	461.07	19678.25	5206.67	7535.24	2411.19	1145.77	1110.37	17409.24	5348.63	5172.06	677.08	1047.56	578.26	12823.59
Calcutta	1876.64	900.81	8.14	532.95	474.06	3792.60	303.02	529.45	9.19	378.41	131.95	1352.02	100.20	403.30	8.98	345.70	142.17	1000.35
Cochin	38.82	10.14	14.11	35.83	8.83	107.73	17.21	8.67	3.52	44.58	0.95	74.93	19.08	7.93	5.45	59.83	6.46	98.75
Coimbatore	10.11	4.72	88.05	10.96	6.47	120.31	12.79	3.83	124.02	8.83	11.80	161.27	8.37	1.88	113.10	10.77	1.54	135.66
Delhi	39.77	874.06	36.89	739.44	45.26	1735.42	15.52	408.25	22.92	452.91	142.20	1041.80	15.00	400.21	14.01	428.45	117.81	975.48
Gauhati	2.70	0.70	0.00	33.44	4.27	41.11	2.68	2.02	0.00	15.26	4.09	24.05	1.86	0.77	0.00	23.80	5.14	31.57
Hyderabad	51.59	46.46	8.14	141.42	7.55	255.16	26.08	33.09	7.30	132.19	1.77	200.43	21.11	30.12	5.47	122.52	5.93	185.15
ICSE	87.02	106.35	0.00	0.95	25.26	219.58	90.53	69.02	0.00	1.70	32.16	193.41	91.12	43.44	0.00	1.16	19.79	155.51
Jaipur	22.97	46.65	7.90	157.00	24.39	258.91	27.70	39.99	15.59	148.07	6.20	237.55	31.21	29.45	15.21	145.97	1.38	223.22
Ludhiana	15.50	129.62	6.51	123.79	115.08	390.50	15.00	127.67	43.55	73.80	92.13	352.15	2.99	87.31	74.01	76.24	91.35	331.90
Madhya Pradesh	13.54	10.08	0.00	69.23	2.49	95.34	3.81	3.08	0.00	37.10	4.26	48.25	4.13	7.61	0.00	36.91	7.80	56.45
Madras	43.49	56.57	27.18	214.14	23.22	364.60	8.83	41.03	19.92	196.53	6.69	273.00	7.56	32.41	19.92	181.97	10.47	252.33
Magadh	12.52	11.44	0.00	13.24	0.81	38.01	12.45	6.78	0.79	12.54	0.95	33.51	12.13	3.63	1.45	11.22	1.66	30.09
Mangalore	13.90	27.76	0.51	17.28	0.63	60.08	8.42	23.83	1.34	11.75	0.44	45.78	5.92	11.31	0.95	11.80	0.83	30.81
NSE	15732.71	4412.55	0.00	227.78	6726.46	27099.50	5562.04	4173.61	27.22	223.60	7544.61	17531.08	7731.35	3778.12	146.42	251.45	5836.75	17744.09
OTCEI	48.60	301.52	0.00	19.38	29.81	399.31	40.85	334.69	0.00	16.96	24.17	416.67	28.10	233.01	0.00	12.28	10.37	283.76
Pune	9.25	95.12	0.00	70.75	19.03	194.15	9.10	45.03	0.00	64.87	15.19	134.19	8.80	43.80	0.00	56.46	8.79	117.85
SKSE	16.79	67.79	7.92	28.42	6.71	127.63	13.08	55.55	7.43	26.58	3.95	106.59	10.90	30.10	7.77	23.34	3.57	75.68
UPSE	109.30	123.51	5.90	64.13	26.15	328.99	99.09	117.43	7.13	50.27	12.68	286.60	108.79	90.25	5.88	56.21	8.44	269.57
Vadodara	11.96	106.82	4.58	65.62	34.89	223.87	9.88	121.55	5.00	80.54	51.17	268.14	10.57	78.55	4.04	82.64	64.12	239.92
Total	25760.60	18446.10	447.22	4193.12	8165.52	57012.56	11568.74	14140.89	2771.85	3516.84	9290.84	41289.16	13624.74	10909.20	1139.26	3324.46	7009.99	36007.65
NSE + BSE	23108.25	14895.06	157.13	1429.78	7187.53	46777.75	10768.71	11708.85	2438.41	1369.37	8654.98	34940.32	13079.98	8950.18	823.50	1299.01	6415.01	30567.68
Total (Except NSE and BSE)	2652.35	3551.04	290.09	2763.34	977.99	10234.81	800.03	2432.04	333.44	2147.47	635.86	6348.84	544.76	1959.02	315.76	2025.45	594.98	5439.97

Source : Exchanges

Who Moved My Cheese [The Story of Stock Exchange of India]

Article

Table 3B : Cost Pattern of Stock Exchanges

Stock Exchange	Year															(Rs. Lakh)		
	2000-01					2001-02					2002-03							
	Wages & Salaries	Rent	Depreciation	Interest	Others	Total	Wages & Salaries	Rent	Depreciation	Interest	Others	Total	Wages & Salaries	Rent	Depreciation	Interest	Others	Total
Ahmedabad	129.00	0.00	249.00	150.00	307.00	835.00	117.00	0.00	183.00	124.00	226.00	650.00	113.00	0.00	138.00	101.00	220.00	572.00
Bangalore	80.29	0.00	104.02	0.00	270.43	454.74	102.18	0.00	97.65	0.00	169.47	369.30	106.19	0.00	72.36	0.00	150.06	328.61
Bhubaneswar	19.37	17.08	16.91	4.13	15.72	73.21	23.21	29.89	13.41	1.36	5.20	73.07	22.45	32.73	8.58	0.03	5.82	69.61
BSE	1960.48	87.89	6318.28	1058.81	4980.89	14406.35	1620.84	201.60	5525.73	2396.45	4348.63	14093.25	1609.60	176.52	2613.56	822.79	5295.71	10518.18
Calcutta	250.12	75.42	470.07	38.73	2114.57	2948.91	245.56	63.94	694.82	128.21	693.82	1826.35	255.58	21.88	426.80	0.00	520.50	1224.76
Cochin	32.87	40.12	15.89	3.11	32.96	124.95	29.44	30.15	12.09	0.21	19.87	91.76	38.96	37.78	9.95	0.35	43.17	130.21
Coimbatore	12.56	0.00	83.81	63.16	40.04	199.57	12.48	0.00	80.48	51.68	51.51	196.15	11.34	0.00	62.42	41.24	47.59	162.59
Delhi	158.41	21.38	490.19	0.00	784.21	1454.19	152.32	106.85	395.71	7.99	747.81	1410.68	225.18	0.00	273.71	0.00	338.76	837.65
Gauhati	15.16	4.35	14.97	NA	10.12	44.60	16.15	4.34	10.20	NA	6.45	37.14	17.86	3.11	6.01	NA	5.78	32.76
Hyderabad	99.00	0.00	70.10	0.05	82.47	251.62	87.79	0.00	62.96	0.98	58.46	210.19	103.16	0.00	39.74	0.46	50.98	194.34
ICSE	80.11	5.58	187.09	24.96	231.72	529.46	49.71	3.10	180.89	65.92	285.90	585.52	39.48	3.26	142.70	1.91	96.42	283.77
Jaipur	53.49	0.00	92.44	17.99	81.86	245.78	46.37	0.00	81.84	50.18	56.46	234.85	37.77	0.00	60.74	82.26	51.79	232.56
Ludhiana	58.34	0.00	148.27	0.00	232.42	439.03	51.76	0.00	150.76	4.04	234.08	440.64	38.56	0.00	97.70	1.33	150.64	288.23
Madhya Pradesh	6.27	4.79	38.38	0.00	23.33	72.77	7.14	4.20	38.50	0.00	15.50	65.34	4.41	1.05	30.91	0.00	14.48	50.85
Madras	87.55	0.00	55.45	0.00	100.68	243.68	72.81	0.00	54.12	0.00	86.36	213.29	53.85	0.00	37.45	0.00	68.68	159.98
Magadh	25.50	1.80	17.36	0.00	14.80	59.46	17.88	2.07	10.56	0.00	13.00	43.51	11.20	2.09	6.63	0.00	10.85	30.77
Mangalore	19.72	0.00	14.25	1.28	14.03	49.28	17.33	0.00	12.77	2.41	17.84	50.35	5.33	0.00	11.69	0.00	8.14	25.16
NSE	833.64	697.09	6101.95	0.00	8979.43	16612.11	833.59	451.98	5270.84	0.00	6629.54	13185.95	907.33	222.08	4850.40	0.00	6882.98	12862.79
OTCEI	125.23	3.50	508.24	22.92	306.00	965.89	118.42	3.33	249.57	5.40	269.62	646.34	110.59	2.58	185.98	0.00	194.39	493.54
Pune	40.30	0.00	98.32	10.56	63.07	212.25	35.54	0.00	114.16	2.45	53.78	205.93	38.07	0.00	69.03	0.15	52.34	159.59
SKSE	7.85	0.00	57.49	2.67	29.72	97.73	9.73	0.15	31.59	19.05	41.95	102.47	11.07	0.39	27.91	6.03	26.07	71.47
UPSE	97.67	1.77	44.55	0.00	181.83	325.82	94.96	1.84	48.25	0.00	164.41	309.46	96.06	1.95	33.37	0.00	159.80	291.18
Vadodara	29.97	0.00	126.99	0.00	39.74	196.70	28.14	0.00	119.40	0.00	33.92	181.46	28.29	0.00	31.15	0.00	57.68	117.12
Total	4222.90	960.77	15324.02	1398.37	8937.04	40843.10	3790.35	903.44	13439.30	2860.33	14229.58	35223.00	3885.33	505.42	9236.79	1057.55	14452.63	29137.72
NSE+BSE	2794.12	784.98	12420.23	1058.81	3960.32	31018.46	2454.43	653.58	10796.57	2396.45	10978.17	27279.20	2516.93	398.60	7463.96	822.79	12178.69	23380.97
Total (Except NSE & BSE)	1428.78	175.79	2903.79	339.56	4976.72	9824.64	1335.92	249.86	2642.73	463.88	3251.41	7943.80	1368.40	106.82	1772.83	234.76	2273.94	5756.75

Source: Exchanges

Artificial

Who Moved My Cheese [The Story of Stock Exchange of India]

Table 3C : Financial Health of Stock Exchanges

Stock Exchange	Year												(Rs. lakh)		
	2000-01				2001-02				2002-03						
	Revenue	Cost	Profit	Assets	Return (%)	Revenue	Cost	Profit	Assets	Return (%)	Revenue	Cost	Profit	Assets	Return (%)
Ahmedabad	990.00	835.00	155.00	6597.00	2.35	763.00	650.00	113.00	6381.00	1.77	655.00	572.00	83.00	6443.00	1.29
Bangalore	388.97	454.74	-65.77	3346.62	-1.97	250.80	369.30	-118.50	2952.70	-4.01	206.63	328.61	-121.98	2998.61	-4.07
Bhubaneswar	102.54	73.21	29.33	670.04	4.38	84.70	73.07	11.63	654.73	1.78	84.29	69.61	14.68	630.00	2.33
BSE	19678.25	14406.35	5271.90	136357.85	3.87	17409.24	14093.25	3315.99	105277.89	3.15	12823.59	10518.18	2305.41	96301.76	2.39
Calcutta	3792.60	2948.91	843.69	38251.02	2.21	1352.02	1826.35	-474.33	29941.47	-1.58	1000.35	1224.76	-224.41	29377.96	-0.76
Cochin	107.73	124.95	-17.22	1505.15	-1.14	74.93	91.76	-16.83	1527.46	-1.10	98.75	130.21	-31.46	1725.49	-1.82
Coimbatore	120.31	199.57	-79.26	2375.28	-3.34	161.27	196.15	-34.88	2302.92	-1.51	135.66	162.59	-26.93	2240.80	-1.20
Delhi	1735.42	1454.19	281.23	11011.62	2.55	1041.80	1410.68	-368.88	10385.41	-3.55	975.48	837.65	137.83	8794.58	1.57
Gauhati	41.11	44.60	-3.49	700.34	-0.50	24.05	37.14	-13.09	604.44	-2.17	31.57	32.76	-1.19	574.61	-0.21
Hyderabad	255.16	251.62	3.54	2745.21	0.13	200.43	210.19	-9.76	2461.02	-0.40	185.15	194.34	-9.19	2449.92	-0.38
ICSE	219.58	529.46	-309.88	3650.32	-8.49	193.41	585.52	-392.11	3079.40	-12.73	155.51	283.77	-128.26	3031.14	-4.23
Jaipur	258.91	245.78	13.13	3168.17	0.41	237.55	234.85	2.70	3076.46	0.09	223.22	232.56	-9.34	3045.98	-0.31
Ludhiana	390.50	439.03	-48.53	3514.07	-1.38	352.15	440.64	-88.49	2864.22	-3.09	331.90	288.23	43.67	2786.81	1.57
Madhya Pradesh	95.34	72.77	22.57	598.07	3.77	48.25	65.34	-17.09	584.86	-2.92	56.45	50.85	5.60	579.86	0.97
Madras	364.60	243.68	120.92	1506.58	8.03	273.00	213.29	59.71	1456.19	4.10	252.33	159.98	92.35	1518.91	6.08
Mogadish	38.01	59.46	-21.45	274.00	-7.83	33.51	43.51	-10.00	274.74	-3.64	30.09	30.77	-0.68	283.81	-0.24
Mangalore	60.08	49.28	10.80	833.06	1.30	45.78	50.35	-4.57	594.36	-0.77	30.81	25.16	5.65	659.99	0.86
NSE	27099.50	16612.11	10487.39	92506.74	11.34	17531.08	13185.95	4345.13	94605.07	4.59	17744.09	12862.79	4881.30	97212.60	5.02
OTCEI	399.31	965.89	-566.58	4818.86	-11.76	416.67	646.34	-229.67	4525.12	-5.08	283.76	493.54	-209.78	4247.96	-4.94
Pune	194.15	212.25	-18.10	1802.32	-1.00	134.19	205.93	-71.74	1644.34	-4.36	117.85	159.59	-41.74	1576.20	-2.65
SKSE	127.63	97.73	29.90	1652.90	1.81	106.59	102.47	4.12	1625.59	0.25	75.68	71.47	4.21	1546.38	0.27
UPSE	328.99	325.82	3.17	2525.11	0.13	286.60	309.46	-22.86	2113.27	-1.08	269.57	291.18	-21.61	2089.77	-1.03
Vadodara	223.87	196.70	27.17	2282.03	1.19	268.14	181.46	86.68	2211.29	3.92	239.92	117.12	122.80	2907.95	4.22
Total	57012.56	40843.10	16169.46	322692.36	5.01	41289.16	35223.00	6066.16	281143.95	2.16	36007.65	29137.72	6869.93	273024.09	2.52
NSE+BSE	46777.75	31018.46	15759.29	228864.59	6.89	34940.32	27279.20	7661.12	199882.96	3.83	30567.68	23380.97	7186.71	193514.36	3.71
Total (Except NSE & BSE)	10234.81	9824.64	410.17	93827.77	0.44	6348.84	7943.80	-1594.96	81260.99	-1.96	5439.97	5756.75	-316.78	79509.73	-0.40

Source: Exchanges