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Research Paper

A Comparative Study of Bombay Stock Exchange (BSE) and National Stock Exchange (NSE)

Commerce

KEYWORDS : Entrepreneurs, Investments, Stock Exchange, Turnover, BSE, NSE

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ABSTRACT

Entrepreneurs needed money for long term whereas investors demanded liquidity the facility to convert their investments into cash at any given time. The answer was a ready market for investments and this was how the Stock Exchange came into being. The health of the economy is reflected by the growth of stock market. Over the years, the Indian stock markets have become stronger. Presently, the Bombay Stock Exchange Limited and National Stock Exchange of India Limited put together account for 99% of the total turnover as compared to 1% by the other stock exchanges. So the researcher interested to compare these two most prominent stock exchanges of India that which one beats the other.

1. Introduction

Financial markets played a vital role in raising funds from public for the companies and it helped the investors to get profits from the trading on the shares and other financial assets of these companies. For this purpose there, a special part of the financial market called 'Stock Exchange' evolved.

The comparison between two most prominent Stock Exchanges of India on the basis of financial performances is presented in the present paper. Financial statement analysis is a subjective measure of how well a firm can use assets from its primary mode of business and generate revenues. This can be used to compare similar firms across the same industry or to compare industries or sectors in aggregation.

2. Research Methodology

The research methodology of the selected topic follows in these dimensions:

2.1 Objectives of the study

The broader objectives of the study are:

(i) To make comparative analysis of financial performances of Bombay Stock Exchange and National Stock Exchange over the period of time.

(ii) To make comparative analysis of profitability of Bombay Stock Exchange and National Stock Exchange over the period of time.

2.2 Population of the Study

In this study, all Indian stock exchanges are the census for the study. All the 23 stock exchanges in India are as the population for this study.

2.3 The Period of the Study

The study is covered for ten years from the year 2000-2001 to 2009-2010. This period is selected by the researcher for the study because she wanted to study the current scenario of the performances of Indian stock exchanges. This period covers the major fluctuations in the Indian capital and financial markets as well as Indian economics.

2.4 Type of study

The study done is Empirical in nature. As the statistical tools have been used to analyze the financial data it is also a quantitative study. It focuses on the functional aspects of the stock exchanges.

2.5 Scope of the Study

This study is based on census of all stock exchanges of India for the period of ten years from 2000-2001 to 2009-2010. It covers the evaluation and comparison of financial performance (profitability) of NSE and BSE for ten years. The tool for appraisal of financial performance is mean, standard deviation, co-efficient of variance and trend analysis.

2.6 Data Collection

This study is based on secondary data. For this purpose, the researcher has referred the books, newspapers, journals, articles, reports and surveys published on Capital Markets. The researcher had also purchased the annual reports of NSE from BusinessBecon website monitored by Centre for Monitoring Indian Economy (CMIE).

2.7 Tool to Data Analysis

For the comparison between the two major stock exchanges the researcher had used some statistical tests according to the nature and objectives of the study. The collected information are suitably classified and tabulated and analysed with the help of statistical tools like Mean, Standard Deviation, Co-efficient of variance, trends analysis, t-test. The hypothesis have been analysed by t-test and the conclusions have been drawn on the basis of 5% level of significance.

3. Data Analysis, Interpretation and Findings

3.1 Net Current Assets

Table 3.1
Net Current Assets
(Rs. in Crores)

Year	BSE		NSE	
	Amount (Rs.)	Trend Percentage	Amount (Rs.)	Trend Percentage
2000-'01	320.3468386	100	187.9913	100
2001-'02	403.9309663	126	215.1607	114
2002-'03	230.9891626	72	266.3620	142
2003-'04	29.2808830	9	390.6900	208
2004-'05	168.1246173	52	673.3048	358
2005-'06	-1129.8876001	-353	625.9273	333
2006-'07	-303.6133180	-95	754.1293	401
2007-'08	-482.8326514	-151	1307.9687	696
2008-'09	768.0716256	240	1948.2700	1036
2009-'10	168.9984962	53	2688.2200	1430
Mean	17.34		905.80	
SD	533.93		833.16	
CV%	3079.00		91.98	

Source: Computed from (1) annual reports of NSEIL, Mumbai (Annual reports purchasedeonlineefromehttp://www.businessbeacon.com/kommon/bin/sr.php?kall=wcos&tab=6010&cocode=155676&ttype=entire_text, maintained by Centre for Monitoring Indian Economy (CMIE) accessed on Jan. 15, 2011)

(2) annual reports of BSE Limited, Mumbai downloaded from http://www.bseindia.com/qresann/resultarch.aps accessed on Jan. 7, 2011.

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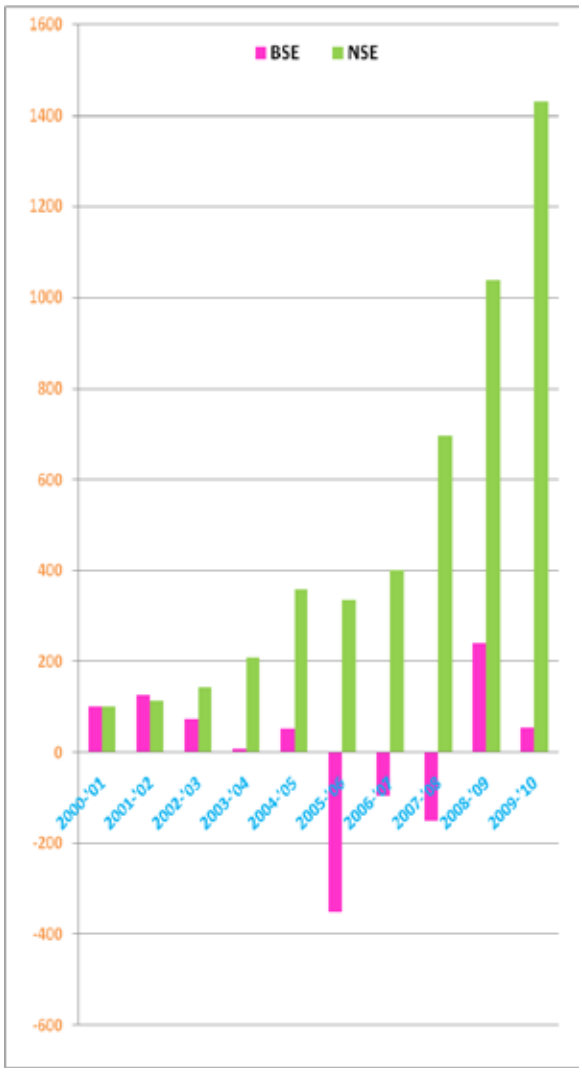
Table 3.1 shows a drastic difference between means of Net Current Assets of BSE and NSE. BSE is having very low mean score and NSE is having very high, 52 times of mean score of BSE. This is due to negative amounts of net current assets of BSE. These negative amounts have reduced the value of the mean. Though the standard deviation of data of BSE is lower than that of NSE, it is 31 times of its mean. Due to this the percentage of dispersion is 3079 which shows high intensity of fluctuations. While co-efficient of variation in NSE is comparatively very much lower, representing more consistency in net current assets.

Chart 3.1
Net Current Assets



Interpretation:
Chart 3.1 shows comparatively higher indices of Net Current Assets of NSE than BSE. NSE Net Current Assets indices have upward trend only in the year 2005-'06 it decreased a bit. Trend of BSE is mixed and in middle years the decrease is so intensive that it reduced to negative values by intersecting x axis. This is due to increased amounts of current liabilities and lower amounts of total current assets in the years 2005-'06, 2006-'07 and 2007-'08. This may be due to mismanagement of working capital.

Hypothesis Testing
H0: μ1= μ2 There is no significant difference between mean scores of Net Current Assets of Bombay Stock Exchange and National Stock Exchange over the period of time.

H1: μ1 < μ2 The mean score of Net Current Assets of Bombay Stock Exchange is higher than the mean score of Net Current Assets of National Stock Exchange over the period of time.

Table 3.2
t-test
Net Current Assets

S.E.	Sample Size (n)	Mean (X)	Standard Deviation (SD)	Pooled Standard Deviation	df	t-calculated (tcal)	Level of Sig.	t-table value (ttv)
BSE	10	17.34	533.93	737.58	18	2.69	0.05	1.734
NSE	10	905.80	833.16				0.01	2.552

Table 3.2 indicates that calculated value of t is 2.69, which is more than the alpha/critical/table value of t at 5% as well as 1% level of significance. tcal > ttv(18, 0.05) and tcal > ttv(18, 0.01). Which means tcal is in the rejection region hence H0 is not accepted at 5% as well as 1% level of significance.

On this base it can be concluded that μ1 <μ2. The mean score of Net Current Assets of Bombay Stock Exchange is higher than the mean score of Net Current Assets of National Stock Exchange over the period of time.

3.2 Total Income
Table 3.3
Total Income (Rs. in Crores)

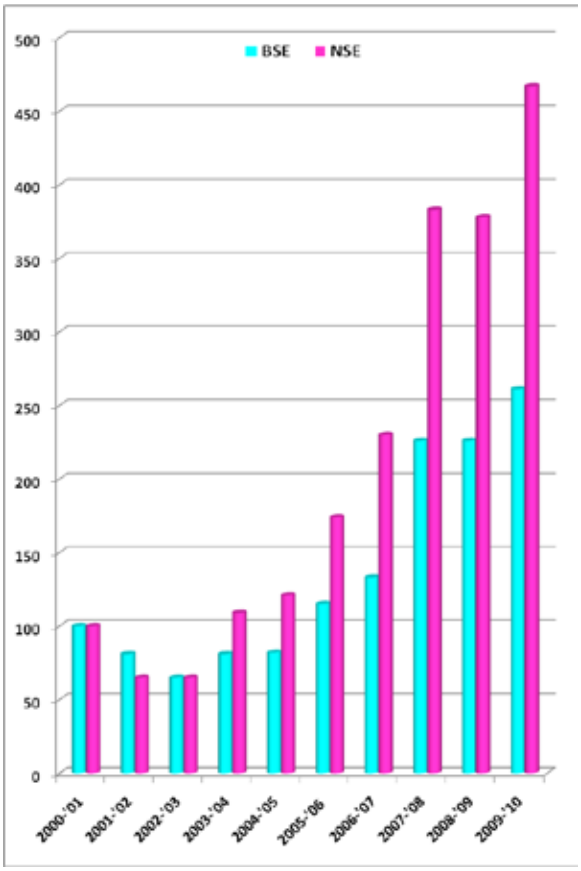
Year	BSE		NSE	
	Amount (Rs.)	Trend Percentage	Amount (Rs.)	Trend Percentage
2000-'01	186.1944706	100	270.9950	100
2001-'02	150.1278850	81	175.3108	65
2002-'03	121.8498674	65	177.4409	65
2003-'04	151.5066993	81	295.8374	109
2004-'05	153.1270372	82	327.5951	121
2005-'06	214.9780457	115	472.5055	174
2006-'07	248.0086165	133	623.5334	230
2007-'08	420.4489498	226	1038.7030	383
2008-'09	421.0943126	226	1024.2800	378
2009-'10	485.2140493	261	1266.3800	467
Mean	255.25		567.26	
SD	135.06		402.29	
CV%	52.91		70.92	

Source: Computed from (1) annual reports of NSEIL, Mumbai (Annual reports purchasedeonlineefromehttp://www.businessbeacon.com/kommon/bin/sr.php?kall=wcos&tab=6010&cocode=155676&ttype=entire_text, maintained by Centre for Monitoring Indian Economy (CMIE) accessed on Jan. 15, 2011)

(2) annual reports of BSE Limited, Mumbai downloaded from http://www.bseindia.com/qresann/resultarch.aps accessed on Jan. 7, 2011.

Table 3.3 highlights that the difference between the means of Total Income of BSE and NSE over the period of time. The Total Income of both the stock exchanges mostly in increasing manner but in NSE the total income is higher rather than BSE. Standard deviation is also higher in total income of NSE which shows, NSE is having more deviations and range is also greater than that of BSE. Co-efficient of Variation of NSE total income is also higher than that of BSE. The percentage of deviation is higher in NSE which shows that total income of BSE is more stable and consistent over the period of time.

Chart 3.2
Total Income Indices



Interpretation:
Chart 3.2 shows the Total Income Indices of both the stock exchanges are going upward in most of the years. This shows a good revenue inflow in both the stock exchanges. the growth in the total income is higher in NSE, while BSE shows lower growth but consistent total income.

Hypothesis Testing
H0: μ1= μ2
There is no significant difference between mean scores of Total Income of Bombay Stock Exchange and National Stock Exchange over the period of time.

H1: μ1 > μ2
The mean score of Total Income of Bombay Stock Exchange is higher than the mean score of Total Income of National Stock Exchange over the period of time.

Table 3.4
t-test
(Total Income)

S.E.	Sample Size (n)	Mean (X)	Standard Deviation (SD)	Pooled Standard Deviation	df	t-calculated (tcal)	Level of Sig.	t-table value (ttv)
BSE	10	255.25	135.06	316.30	18	2.20	0.05	1.734
NSE	10	567.26	402.29				0.01	2.552

Table 3.4 indicates that calculated value of t is 2.20, which is more than the alpha/critical/table value of t at 5% level of significance tcal > ttv(18, 0.05) but less than 1% level of significance tcal < ttv(18, 0.01).

Which means that at 5% level of significance H0 is in the rejection region and cannot be accepted. Hence μ1 > μ2. The mean score of Total Income of Bombay Stock Exchange is higher than the mean score of Total Income of National Stock Exchange over the period of time. At 1% level of significance H0 is in the acceptance region and it can be accepted. Hence there is no significant difference between mean scores of Total Income of Bombay Stock Exchange and National Stock Exchange μ1= μ2.

In short at 5% level of significance H0 is not accepted but at 1% level of significance H0 is accepted.

3.3 Total Expenditure
Table 3.5
Total Expenditurec (Rs. in Crores)

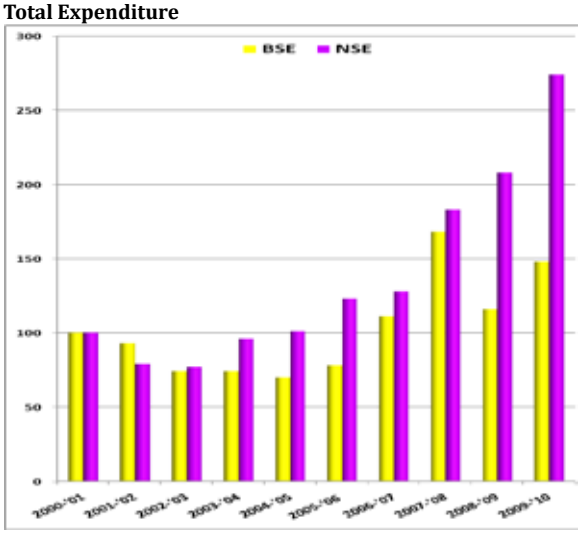
Year	BSE		NSE	
	Amount (Rs.)	Trend Percentage	Amount (Rs.)	Trend Percentage
2000-'01	133.4754352	100	166.1211	100
2001-'02	124.0736794	93	131.8595	79
2002-'03	99.0123606	74	128.6279	77
2003-'04	98.2684640	74	159.8696	96
2004-'05	93.5381865	70	168.0442	101
2005-'06 *	103.7593190	78	204.6183	123
2006-'07	147.8492253	111	212.0801	128
2007-'08	223.6606434	168	303.7522	183
2008-'09	155.0718960	116	345.2200	208
2009-'10	197.0101701	148	454.5500	274
Mean	137.57		227.47	
SD	44.31		106.87	
CV%	32.21		46.98	

Source: Computed from (1) annual reports of NSEIL, Mumbai (Annual reports purchasedeonlineefromehttp://www.businessbeacon.com/kommon/bin/sr.php?kall=wcos&tab=6010&cocode=155676&ttype=entire_text, maintained by Centre for Monitoring Indian Economy (CMIE) accessed on Jan. 15, 2011)

(2) annual reports of BSE Limited, Mumbai downloaded from http://www.bseindia.com/qresann/resultarch.aps accessed on Jan. 7, 2011.

Table 3.5 indicates that NSE has more Mean Total Expenditure than BSE. This is due to higher amounts of expenditure in NSE and comparatively lower amount of expenditure in BSE. Standard deviation is comparatively higher in NSE which shows higher deviations over the period of time. NSE also consists comparatively greater co-efficient of variance of total expenditure, which shows higher intensity of fluctuations and comparatively higher consistency of total expenditure in BSE.

Chart 3.3
Total Expenditure



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Interpretation:
Chart 3.3 indicates that the beginning pattern of fluctuations is same that is decreasing and later on it tends to increase. But for last two years this pattern is opposite that is decrease then increase in BSE and increase in NSE. In the year 2007-'08 BSE recorded highest total expenditure out of the ten years while NSE recorded highest total expenditure in the year 2009-'10.

Hypothesis Testing
H0: μ1= μ2
There is no significant difference between mean scores of Total Expenditure of Bombay Stock Exchange and National Stock Exchange over the period of time.

H1: μ1 > μ2
The mean score of Total Expenditure of Bombay Stock Exchange is higher than the mean score of Total Expenditure of National Stock Exchange over the period of time.

Table 3.6
t-test (Total Expenditure)

S.E.	Sample Size (n)	Mean (X)	Standard Deviation (SD)	Pooled Standard Deviation	df	t-calculated (tcal)	Level of Sig.	t-table value (ttv)
BSE	10	137.57	44.31	86.23	18	2.33	0.05	1.734
NSE	10	227.47	106.87				0.01	2.552

Table 3.6 indicates that calculated value of t is 2.33, which is more than the alpha/critical/table value of t at 5% level of significance tcal > ttv(18, 0.05) but less than 1% level of significance tcal < ttv(18, 0.01).

Which means that at 5% level of significance H0 is in the rejection region and cannot be accepted. Hence, μ1 > μ2. The mean score of Total Expenditure of Bombay Stock Exchange is higher than the mean score of Total Expenditure of National Stock Exchange over the period of time.

At 1% level of significance H0 is in the acceptance region and it can be accepted. Hence there is no significant difference between mean scores of Total Expenditure of Bombay Stock Exchange and National Stock Exchange.μ1= μ2.

In short at 5% level of significance H0 is not accepted but at 1% level of significance H0 is accepted.

3.4 Profit Before Tax (PBT)
Table 3.7
Profit Before Tax (PBT) (Rs. in Crores)

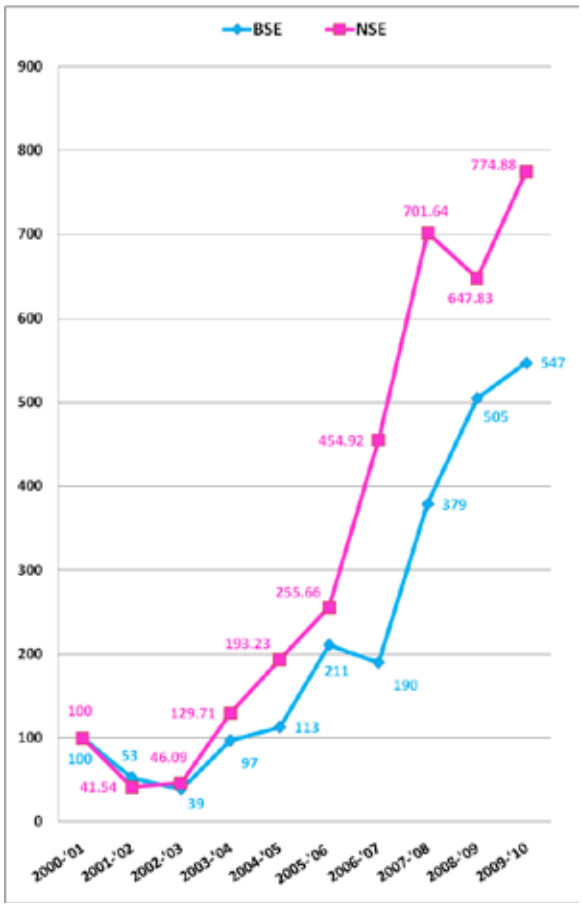
Year	BSE		NSE	
	Amount (Rs.)	Trend Percentage	Amount (Rs.)	Trend Percentage
2000-'01	52.72	100	104.7245	100.00
2001-'02	28.14	53	43.5068	41.54
2002-'03	20.75	39	48.2725	46.09
2003-'04	51.23	97	135.8336	129.71
2004-'05	59.59	113	202.3571	193.23
2005-'06	111.22	211	267.7372	255.66
2006-'07	100.16	190	476.4137	454.92
2007-'08	200.05	379	734.7881	701.64
2008-'09	266.02	505	678.4400	647.83
2009-'10	288.20	547	811.4900	774.88
Mean	117.81		350.36	
SD	98.68		298.97	
CV%	83.76		85.33	

Source: Computed from (1) annual reports of NSEIL, Mumbai (Annual reports purchasedeonlineefromehttp://www.businessbeacon.com/kommon/bin/sr.php?kall=wcos&tab=6010&cocode=155676&ttype=entire_text, maintained by Centre for Monitoring Indian Economy (CMIE) accessed on Jan. 15, 2011)

(2) annual reports of BSE Limited, Mumbai downloaded from http://www.bseindia.com/qresann/resultarch.aps accessed on Jan. 7, 2011.

Table 3.7 indicates that NSE earns double than BSE over the period of time because the mean of Profit before Tax of NSE almost double than that of BSE. Standard deviation and co-efficient of variance of Profit before Tax of NSE is also comparatively higher than BSE which means higher deviation and higher intensity of fluctuations are present in NSE. Standard deviation is used to calculate the risk and in NSE higher risk is involved in the earnings before tax than BSE. Hence it can be concluded that there is lower risk, more stability and consistency are involved in BSE. That can be a reason of survival of BSE more than one century.

Chart 3.4
Profit Before Tax Indices



Interpretations:
Chart 3.4 indicates the indices of growth of Profit before Tax of NSE is comparatively higher. Comparing 2000-'01 to 2009-'10 NSE registered growth in profit before tax more than seven times while BSE registered growth more than five times.

Hypothesis Testing
H0: μ1= μ2
There is no significant difference between mean scores of Profit Before Tax of Bombay Stock Exchange and National Stock Exchange over the period of time.

H1: μ1 > μ2
The mean score of Profit Before Tax of Bombay Stock Exchange is higher than the mean score of Profit Before Tax of National Stock Exchange over the period of time.

Table 3.8
t-test
(Profit Before Tax)

S.E.	Sample Size (n)	Mean (X)	Standard Deviation (SD)	Pooled Standard Deviation	Df	t-calculated (tcal)	Level of Sig.	t-table value (ttv)
BSE	10	117.81	98.68	234.66	18	0.99	0.05	1.734
NSE	10	350.36	298.97				0.01	2.552

Table 24 indicates that calculated value of t is 0.99, which is less than the alpha/critical/table value of t at 5% level of significance tcal > ttv(18, 0.05) and 1% level of significance tcal < ttv(18, 0.01).

Which means that at 5% and 1% level of significance H0 is in the acceptance region and it is accepted. Hence, there is no significant difference between mean scores of Profit Before Tax of Bombay Stock Exchange and National Stock Exchange μ1= μ2.

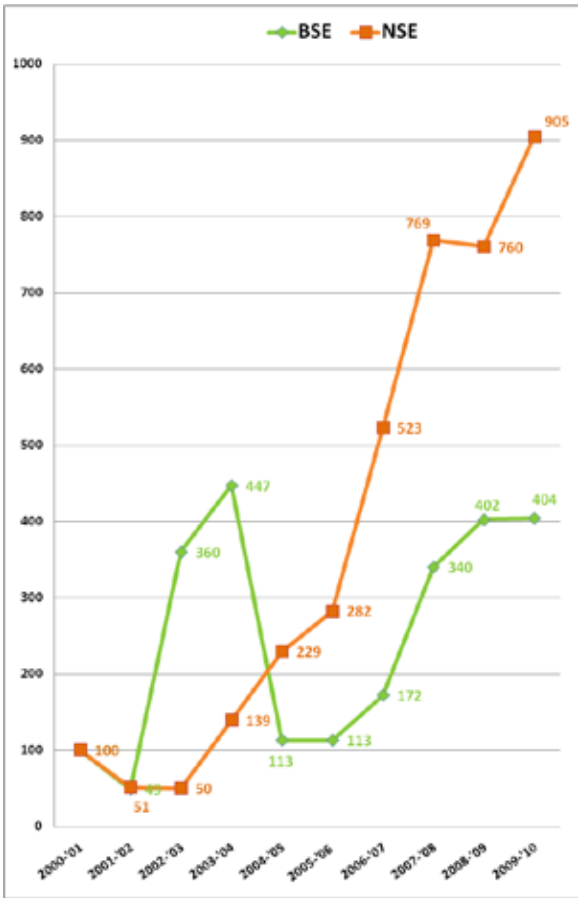
3.5 Profit After Tax
Table 3.8
Profit After Tax (Rs. in Crores)

Year	BSE		NSE	
	Amount (Rs.)	Trend Percentage	Amount (Rs.)	Trend Percentage
2000-'01	52.7190354	100	67.8245	100
2001-'02	26.0542056	49	34.4290	51
2002-'03	189.5825933	360	33.7763	50
2003-'04	235.8150669	447	94.5122	139
2004-'05	59.5888507	113	155.0123	229
2005-'06	59.3337442	113	191.4173	282
2006-'07	90.8414912	172	354.8744	523
2007-'08	178.9883069	340	521.2552	769
2008-'09	212.1795166	402	515.5500	760
2009-'10	212.9433792	404	613.7700	905
Mean	131.80		258.24	
SD	80.97		223.55	
CV%	61.43		86.57	

Source: Computed from (1) annual reports of NSEIL, Mumbai (Annual reports purchasedeonlineefromehttp://www.businessbeacon.com/kommon/bin/sr.php?kall=wcos&tab=6010&cocode=155676&ttype=entire_text, maintained by Centre for Monitoring Indian Economy (CMIE) accessed on Jan. 15, 2011)
(2) annual reports of BSE Limited, Mumbai downloaded from http://www.bseindia.com/qresann/resultarch.aps accessed on Jan. 7, 2011.

Table 3.8 indicates that NSE earns almost double than BSE over the period of time because the mean of Profit after Tax of NSE almost double than that of BSE. Standard deviation and co-efficient of variance of Profit before Tax of NSE is also comparatively higher than BSE which means higher deviation and higher intensity of fluctuations are present in NSE. Standard deviation is used to calculate the risk and in NSE higher risk is involved in the earnings before tax than BSE. Hence it can be concluded that there is lower risk, more stability and consistency are involved in BSE. That can be a reason of survival of BSE more than one century.

Chart 3.5
Profit After Tax Indices



Interpretations:
Chart 3.5 indicates the indices of growth of Profit after Tax of NSE is comparatively higher. The highest Profit after Tax is recorded in the year 2009-'10 by NSE and in 2003-'04 by BSE.

Hypothesis Testing
H0: μ1= μ2
There is no significant difference between mean scores of Profit After Tax of Bombay Stock Exchange and National Stock Exchange over the period of time.

H1: μ1 > μ2
The mean score of Profit After Tax of Bombay Stock Exchange is higher than the mean score of Profit After Tax of National Stock Exchange over the period of time.

Table 3.10 t-test
(Profit After Tax)

S.E.	Sample Size (n)	Mean (X)	Standard Deviation (SD)	Pooled Standard Deviation	df	t-calculated (tcal)	Level of Sig.	t-table value (ttv)
BSE	10	131.80	80.97	177.22	18	1.595	0.05	1.734
NSE	10	258.24	223.55				0.01	2.552

Table 3.10 indicates that calculated value of t is 1.595, which is less than the alpha/critical/table value of t at 5% as well as 1% level of significance. tcal < ttv(18, 0.05) and tcal < ttv(18, 0.01). Which means tcal is in the acceptance region hence H0 is accepted at 5% as well as 1% level of significance.

On this base it can be concluded that: μ1= μ2. There is no significant difference between mean scores of Profit After Tax of Bombay Stock Exchange and National Stock Exchange.

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Conclusion

It can be concluded that the financial position of BSE and NSE from 2000-'01 to 2009-'10 is quite satisfactory. In most of the cases the trends are more stable in BSE than NSE. In BSE and NSE both most of the items of balance sheet and profit and loss account show favourable trends. If any negative sign was there it was soon recovered. There are fluctuations in the amounts of Net Current Assets and from Total Income, Profit after Tax but most of them are favourable in BSE and NSE both. Most important thing to be noticed is that in not a single year of study BSE or NSE registered any loss in terms of Profit before Tax of Profit after Tax.

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