Study of the Contribution of Central Public Sector Enterprises and Public Sector Financial Companies to the Bombay Stock Exchange Market Capitalization

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Abstract

Central Public sector Undertakings and Public Sector Financial Institutions (CPSEs and PSFIs) were seen as white elephants and cash cows during the 1960s 70s and 80s. After the liberalization from the early 90s the continuous losses, operational and administrative inefficiencies have created a number of problems for them. However at the same time, so many companies in the public sector are still doing well and contributing significantly to the exchequer, even though the dominance is in the hands of the private sector. Objectives of the study are - To find the pattern of movement of the CPSEs and PSFIs stocks quoted at BSE and BSE total market capitalization. To find whether CPSEs and PSFIs market capitalization plays a significant role in the total BSE market capitalization. To find whether individual CPSEs Sectoral market capitalization influences BSE market capitalization. The study observes that overall CPSEs and PSFIs have contributed 23 percent on average and CPSEs have contributed 19.57 percent and PSFIs 3.44 percent for the BSE market capitalization during the study period. From the regression analysis it is observed that R2 value is 0.96 and it is understood that the relation is very strong and positive and it indicates that there is a good fit between the market capitalization of BSE and PSU. The paper concludes that the contribution of CPSEs and PFSIs has been on an increasing trend and this would provide stability to the stock market in the long run as there involves control of the government in the operations of these CPSEs and PFSIs.

Keywords: CPSEs and PSFIs, Market Capitalization, Stock Market.

JEL Classification: G32, H54, H83, R53.

1. Introduction

Central Public sector Undertakings and Public Sector Financial Institutions (CPSEs and PSFIs) were seen as white elephants and cash cows during the 1960s 70s and 80s. After the liberalization from the early 90s the continuous losses, operational and administrative inefficiencies have created a number of problems for them. However at the same time, so many companies in the public sector are still doing well and contributing significantly to the exchequer, even though the dominance is in the hands of the private sector. This is because of their strengths like clear balance sheets and accountability and the fact that they are in the core sectors. In the stock markets too CPSEs and PSFIs have been playing a pervasive role in the post liberalization scenario. Most of the market players, both indigenous and foreign, have been shifting their portfolio investments to public sector undertakings scrips due to the increasing volatility with equity investments of the private sector. The public sector alone was responsible for a Plan investment of about Rs. 1,70,000 crores during the first two years of the Tenth Five-Year Plan. The overwhelming response to the six IPOs of PSUs within just three months, of January to March 2004, also indicates the confidence institutional buyers as well as retail investors have in Central public sector Undertakings. The Government exercises control over these CPSEs and PSFIs compared to the other Public Limited Companies in the following counts:

1. CPSEs are subjected to Comptroller and Auditor General (CAG) audit other than the statutory audit which is mandatory under Companies Act 1956 ensures clear and clean balance sheet.

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2. Guidelines on corporate governance for CPSEs are mandatory for all the CPSEs from March 25th, 2010 which cover issues like CPSEs Board Composition, Audit committee, disclosures, code of conduct risk management and reporting.
3. The implementation of the guidelines by CPSEs on Corporate Governance would ensure transparency thereby protect the interests of the stake holders including the naïve investors
4. The Department of Public Enterprises, Ministry of Heavy Industries and Public Enterprises have issued in April 2010, comprehensive "Guidelines on Corporate Social Responsibility (CSR) for Central Public Sector Enterprises". These Guidelines are mandatory for all the CPSEs but other Public Limited Companies does have CSR but there are no compulsion these companies to adhere.
4. Constitution of Task Force on Memorandum of Understanding MoU by the Government of India: The (MoU) is a mutually negotiated agreement between the management of the enterprise and Government of India. Under this agreement, both sides come to a mutual understanding regarding the targets (both financial and non-financial) to be achieved by the enterprise in the ensuing year and the commitments to be fulfilled by the Government that are considered essential in fulfillment of those targets. MoU System is a major policy initiative of the Government of India in facilitating the empowerment and enhancing the performance levels of the Central Public Sector Enterprises[1]
5. The total number of CPSEs 246 companies are under various ministries like Ministry of Steel, Ministry of Heavy Industries etc., these are headed by the Cabinet Minister. The CMDS of CPSEs will be reporting to the secretary who represents the government this ensures good governance.
6. Compulsory appointment of government representative in the company in the form of independent director.
7. Government set up a Board for Reconstruction of Public Sector Enterprises (BRPSE) in December, 2004 to advise the Government, inter alia, on measures to be taken to restructure / revival of sick Central Public Sector Enterprises (CPSEs).[2]

Inspite of the above, there are many issues that being raised by the market and public need to be addressed. They are in regard to profitability, liquidity, dividend pay out, large and diverse investments, obsolete technology, lesser market orientation, over- regulation and control by government, etc. In fact, it is these issues that are pulling CPSUs into down. It is also asserted that the failure of CPSUs both in the product market and financial market is because of these factors. The question that arises here therefore, is whether the public sector enterprises are performing in the markets or not. This is not just a simple doubt of the researcher but a million dollar question as well. With this backdrop an attempt is made in the study to evaluate the Contribution in terms of market capitalization of public enterprises in the stock market with reference to the companies quoted at the Bombay Stock Exchange.

Review of Literature

Viviana (2011) tested the spatial version of the Capital Asset Pricing Model by taking a panel of 126 Latin American Firms as this model specification makes it possible to account for alternative measures of distance between firms, such as market capitalization, the market-to-book, and other financial ratios.

Lima and et al. (2010) paper is finds that Cramer's stock-picking style is consistent with a positive-feedback trading strategy, favouring stocks which have outperformed over an interval prior to the pick date. Subsequent to a pick, Cramer's immediate effect on a stock appears inversely proportional to the corresponding firm's market capitalization.

Clarke and et al. (2010) The paper focuses on the set of common factors that explains the cross section of individual stock returns, as that of Fama and French a three-factor model that includes the market size, which is frequently cited in academic research and widely used in portfolio management.

Hasenfuss and et al. (2010) the article focuses on the market capitalization of the Top 200 companies in South Africa. It notes that market capitalization can demonstrate which stocks have gained or lost market support.

[1] http://indiacurrentaffairs.org/guidelines-on-corporate-social-responsibility-for-cpses/

[2] www.indiacurrentaffairs.org/guidelines-on-corporate-social-responsibility-for-cpses/

Thomas and et al. (2009) In this article, to show the ongoing development of the commercial real estate market in this transitional economy the capitalization rates, based on market price data for commercial real estate transactions from 2006 through the first quarter of 2008 for 25 regional cities in Ukraine, were calculated and analyzed.

Chung and et al. (2010) tries to build a relationship between liquidity, market efficiency and market capitalization by taking NYSE quoted firms and concludes that higher liquidity and market efficiency ensures larger market capitalization.

De Klerk and et al. (2010) the notes that small capitalization business in South Africa is those with a market capitalization of less than 1 billion rand. The authors conclude that even though companies are successful, it is still a challenge when investing their shares because the liquidity of those shares is low which make it difficult to invest.

Kumar and et al. (2009) the author tries to link customer equity (CE) to market capitalization (MC). The authors found that a CE-based framework can reliably predict the Market Capitalization of the firm and marketing strategies directed at increasing the CE not only increase the stock price of the firm but also beat market expectations.

Koch and et al. (2011) The authors tested the magnitude of various announcements on Apple's share price and its market capitalization (9 events including Mr. Steve Jobs Health). The authors conclude that Jobs' health has an impact on Apple's share price and market capitalization, but that impact is not always negative and not nearly as large as many observers apparently believe.

DRIP (2011) the article offers the author's insights on the advantages of investing in mid-capitalization (midcap) stocks. The author says that midcaps give investors growth potential to large caps and huge size to risky small caps. The author concludes that midcaps offer big profits compared to both large and small caps.

Besterand et al. (2008) this article aims to determine the methods used by companies listed on the JSE Securities Exchange South Africa (JSE) to calculate their number of shares when publishing market capitalisation. It was found that only about 25% of companies participating in share repurchase and publishing market capitalisation in their annual reports calculated market capitalisation based on the number of group shares. About 75% of the companies did not calculate their market capitalisation based on the number of group shares (i.e. they omitted to deduct subsidiary repurchases and/or trust consolidations in their calculation of the number of shares).

Nawrocki and et al. (2010) while previous studies of industry competitive have traditionally utilized sales or market share data, it can be argued that concentration indices and other metrics based on the market value of the firms in an industry should be a good proxy for market power within an industry.

Cendrowski and et al. (2010) the author uses market capitalisation as a tool to decide whether to purchase Apple stock during 2010.

Cline and et al. (2010) The authors examine executive stock option exercises around a sample of 1,268 seasoned equity offerings (SEOs) from 1996 to 2004 focusing on a subset of exercises we identify as potentially informed. It is found from six months prior to the announcement date to six months after issuance; an average 1.76% of the total market capitalization for issuing firms is exercised and sold.

According to Ericson (2010) the three external benchmarks to be consulted by organizations and boards are analyst predictions, market capitalization multiples and stock prices while setting the financial targets for corporations.

Yan and et al. (2010) The authors designed modified value investing strategies in emerging equity markets by comparing a country's value weight with its market capitalization weight among a group of emerging countries.

From the above review of the literature on the topic, it is found that prime importance is given for market capitalization in taking financial decisions by the corporations, buying or selling of shares by the investors, researchers and stock analysts in deciding the various factors affecting the share prices. The above literature also reveals that vast work is done in this area abroad but still there are gaps in Indian context and especially for the CPSE stocks which are traded in the stock markets in India and this study would form a basic work and eye opener for the future studies in this area of research and on the basis of the above the objectives and hypothesis are set.

Methodology

Market capitalization

Market capitalization is the total value of a company's free float as determined by its share price in the stock market; it is calculated as the number of free float of ordinary shares multiplied by the previous day's closing share price. Thus market capitalization = (Share Price * Free float of shares). The market capitalization of any stock is an important indicator showing what the worth of the company is.

Objectives of the study

To find the pattern of movement of the CPSEs and PSFIs stocks quoted at BSE and BSE total market capitalization?

To find whether CPSEs and PSFIs market capitalization plays a significant role in the total BSE market capitalization.

To find whether individual CPSEs sectoral market capitalization influences BSE market capitalization?

Hypothesis to be tested

i) Whether CPSEs and PSFIs market capital has an influence over the BSE market capital

H0 = CPSEs and PSFIs market capitalization does not influence the BSE market capitalization.

H1 = BSE market capitalization is influenced by the PSU market capitalization

ii) Whether individual CPSEs sectoral market capitalization influences BSE market capitalization

H0 = Does not influence

H1 = Does influence

Data and sources: Central Public sector Undertakings (CPSUs) (Central Public Enterprises and Central Financial Institutions) Month-end market capitalization of 41 CPSEs (Annexure -1), Central Public Financial Institutions (17) and total BSE market capitalization for the period 1993-94 to 2007-08. The data is collected from Prowess database.

Tools used: Simple regression, Squared Euclidian, trend analysis, correlation matrix, *t* – test, pie diagram, simple line graphs, tabulation of data.

Note 1: There are as many as 44 CPSEs are listed on the stock exchanges of India, out of which 5 CPSEs were not traded during 2006-07. Since IBP Co. LTD. has been merged with Indian Oil Corporation, the trading in this script has been discontinued.

Public Enterprise Survey 2006-07: Vol No: 1 PP: 2-2

Note 2: According to Department of Public Enterprises Survey 2006-07- Volume:3 there are 21 sectors/industries namely, Agro based Industries, Coal and Lignite, Crude Oil, Other Minerals and Metals, Steel, Petroleum (Refinery and Marketing), Fertilizers, Chemicals and Pharmaceuticals, Heavy Engineering, Medium and Light Engineering, Transportation Equipment, Consumer Goods, Textiles, Generation, Transmission, Trading and Marketing, Transportation Services, Contract and Construction Services, Industrial Development & Tech. Consultancy Services, Tourist Services, Financial Services and Telecommunication Services. The study has broadly classified the above 41 CPSEs quoted at Bombay Stock Exchange under various sectors like Oil and Gas, Minerals and Metals, Logistics, Power, Engineering, Financial Services, Telecom, Fertilizers and Chemicals and Miscellaneous so as to have meaning ful conclusion as they belong to broad categories for example Generation, Transmission of power are broadly taken into Power sector.

For the purpose of studying the above objectives the market capitalization at the end of the financial year is taken. Further, Nine private companies are chosen on the basis of highest market capitalization during 2007-08 and compared with one of the CPSEs in the same line of activity from each sector to make a comparative analysis between the public sector and private sector. The year 2007-08 was taken keeping into consideration the changes in the stock market-

1. During 2007-08 the secondary market rose on a point-to-point basis with the Sensex and Nifty rising by 47.1 and 54.8 per cent respectively. 3
2. The Indian financial sector emerged as the third best performing market in the world with a dollar return of 71.23 per cent.
3. The Bombay Stock Exchange (BSE) benchmark index, SENSEX, posted its highest ever absolute gain of 6500 points in over two decades. 4

Further, trend analysis is applied on market capitalization to study the pattern followed through the study period. For the above purpose 1997-98 is taken as base year.

To study the influence of PSU market capitalization on BSE market capitalization a simple regression is run taking PSU market capitalization as an independent variable and BSE as a dependent variable for the study period. To know how much these two variables are different, squared Euclidean distance test is used. To obtain the influence of each PSU sector's market capitalization on the total BSE market capitalization, a simple regression is run taking each sector's market capitalization as an independent variable and BSE market capitalization as a dependent variable and coefficient is tested using t-test.

3 and 4. Punithavathy Pandian and Queensly Jeyathi, " Stock Market Volatility in Indian Stock Exchange", India Stat.com, May- June 2009.

Table 1. **Actual Contribution by PSU Various Sectors to the Total BSE Market Capitalization during 1993-94 to 2007-08**

IN RS. CRORE

YEAR/ SECTOR	OIL & GAS	MIN & METALS	ENGINEER-ING	LOGIS-IT-ICS	TELECOM	FERT & CHEM	POWER	FINAN-CIAL	MIS.CEL.	SUM OF 9SEC	TOTAL BSE
1993-94	19673.46	23927.93	4262.07	4227.73	11700.00	3507.48	0.00	0.00	435.54	67734.21	368071.00
1994-95	15096.53	21555.37	3763.09	1798.36	10350.00	3411.15	0.00	0.00	435.54	56410.04	425481.00
1995-96	72614.63	19426.38	3319.43	2017.36	10680.00	2690.06	8534.72	0.00	586.48	119718.12	526476.00
1996-97	68217.68	18317.96	7373.72	4295.82	14460.00	3105.48	7726.17	0.00	709.48	124083.31	463912.00
1997-98	90928.85	10994.86	10127.78	4579.92	16556.40	3731.20	4132.60	0.00	1127.96	141761.09	560325.00
1998-99	42214.57	7212.14	7093.52	2106.52	11125.80	3787.55	1814.75	0.00	1138.61	76482.81	545361.00
1999-00	48981.70	8503.08	4702.43	1862.09	14805.00	2867.95	1042.13	0.00	1296.05	83902.99	912842.00
2000-01	47985.79	7511.58	4290.99	2083.72	8334.90	2528.40	1442.83	0.00	1231.27	75474.26	625553.00
2001-02	81956.92	9014.73	6125.01	4343.45	9289.35	3539.08	3347.03	0.00	1317.67	118846.84	612224.00
2002-03	93956.98	10413.94	7738.24	3755.36	6051.15	3096.21	4420.76	92.23	1890.27	130842.54	572197.00
2003-04	240700.77	31157.76	17792.50	10334.39	8076.60	5194.38	9202.24	99.11	2339.22	324448.02	1201207.00
2004-05	229582.99	57469.60	23397.29	12228.70	7232.40	4786.07	81820.40	136.29	3589.97	418992.96	1698428.00
2005-06	317649.17	86845.69	66153.69	21439.58	11579.40	5258.44	123080.43	268.59	3811.82	635864.96	3022189.00
2006-07	285717.33	94724.57	63096.95	22731.27	9242.10	4284.92	131931.49	12149.44	12708.07	627689.89	3545041.00
2007-08	341268.46	261358.18	109638.41	22861.13	6082.65	5991.31	223776.99	27908.54	112086.34	1011593.74	5296758.00
Average	133103.06	44562.25	22591.67	8044.36	10371.05	3851.98	40151.50	2710.28	9646.95	267589.72	1358404.00

Source: Annexure: 2

Table 1 represents the actual market capitalization of the PSU sectors individually and collectively for the period 1993-94 to 2007-08. From the table it is seen that, on an average, the Oil & Gas sector has contributed Rs.1,33,103.06 crore for the period 1993-94 to 2007-08. Contributions by the other sectors are: Minerals & Metals Rs.44,562.25 crore, Engineering Rs.22,591.67 crore, Logistics Rs. 8044.36 crore, Telecom Rs.10371.05 crore, Fertilizers & chemicals Rs.3,851.98 crore, Power Rs. 40,151.50, Financial Services Rs.2,710.28 and Miscellaneous Rs.9,64,6.95 crore. Further, the table reveals that the sum of the Nine sectors for the year 1993-94 it was Rs.67, 734.21 crore. There is an increasing trend up 1997-98 at Rs.1,41,761.09 crore and a decline to Rs76482.81 crore in 1998-99. During the year 1999-00 there is an increase Rs.83902.99 crore, the trend continued over the rest three years ending at Rs.10,11,593.74 crore. This shows that the contribution by the sectors is good during the period 1995-96 to 1997-98 and then there is a decline. However, towards the end of the period there is an increasing trend. The table also represents the BSE total market capitalization. In the year 1993-94 it was Rs.3,68,071 crore out of which Rs.67,734.21is contributed by the PSU sector. There is a decrease in total BSE market capitalization from Rs.5,26,476.00 crore in 1995-96 to Rs. 4,63,912.00 crore in 1996-97. During the year 1999-00 it increased to Rs.9,12,842 crore. The BSE market capitalization was reported at Rs.52,96,758 crore in 2007-08.

Table 2. **Percentage Contribution by PSU Various Sectors to the Total BSE Market Capitalization during 1993-94 to 2007-08**

(IN PERCENTAGE)

YEAR/ SECTOR	OIL & GAS	MIN & METALS	ENGINEER-ING	LOGISI-TICS	TELECOM	FERT & CHEM	POWER	FINANCIAL SERVICES	MIS. CEL.	TOTAL
1993-94	5.35	6.50	1.16	1.15	3.18	0.95	0.00	0.00	0.12	18.40
1994-95	3.55	5.07	0.88	0.42	2.43	0.80	0.00	0.00	0.10	13.26
1995-96	13.79	3.69	0.63	0.38	2.03	0.51	1.62	0.00	0.11	22.77
1996-97	14.70	3.95	1.59	0.93	3.12	0.67	1.67	0.00	0.15	26.77
1997-98	16.23	1.96	1.81	0.82	2.95	0.67	0.74	0.00	0.20	25.37
1998-99	7.74	1.32	1.30	0.39	2.04	0.69	0.33	0.00	0.21	14.03
1999-00	5.37	0.93	0.52	0.20	1.62	0.31	0.11	0.00	0.14	9.21
2000-01	7.67	1.20	0.69	0.33	1.33	0.40	0.23	0.00	0.20	12.05
2001-02	13.39	1.47	1.00	0.71	1.52	0.58	0.55	0.00	0.22	19.43
2002-03	16.42	1.82	1.35	0.66	1.06	0.54	0.77	0.02	0.33	22.97
2003-04	20.04	2.59	1.48	0.86	0.67	0.43	0.77	0.01	0.19	27.05
2004-05	13.52	3.38	1.38	0.72	0.43	0.28	4.82	0.01	0.21	24.74
2005-06	10.51	2.87	2.19	0.71	0.38	0.17	4.07	0.01	0.13	21.05
2006-07	8.06	2.67	1.78	0.64	0.26	0.12	3.72	0.34	0.36	17.96
2007-08	6.44	4.93	2.07	0.43	0.11	0.11	4.22	0.53	2.12	20.97
AVG	10.85	2.96	1.32	0.62	1.54	0.48	1.57	0.06	0.32	19.74

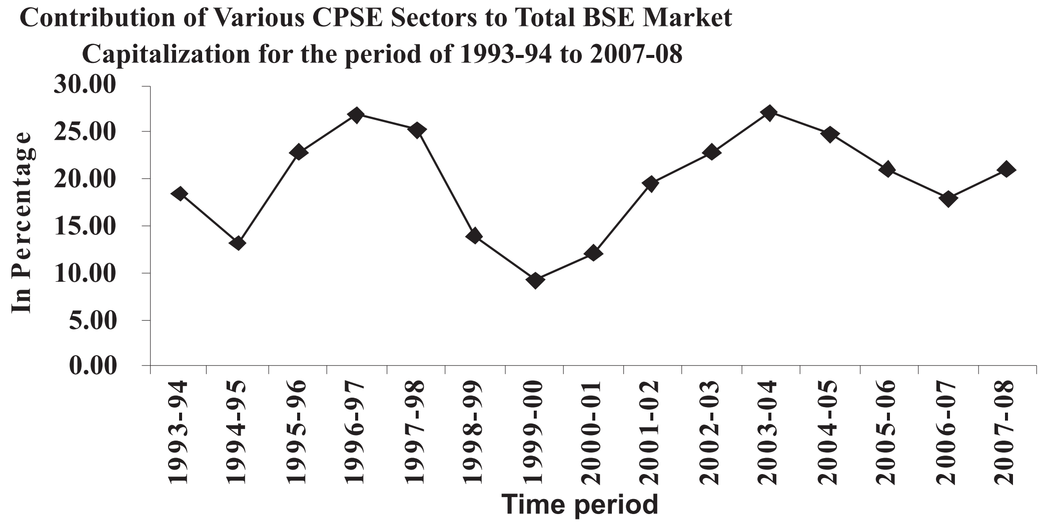

Figure 1 **Representation of Percentage of PSU Market Capitalization during the Period 1993-94 to 2007-08**

Table 2 gives the contribution by various PSU sectors to total BSE market capitalization in percentage. From the table it is observed that the Oil & Gas sector, on an average, contributed 10.85 percent of the 19.74 percent by the entire PSUs to total BSE market capitalization. Minerals & Metals follows at the rate of 2.96 percent, on an average, for the study period. The total contribution by the nine sectors reveals that in 1993-94 they have contributed 18.40 percent. They increased to 22.77, 26.77, during the years 1995-96, 1998-99 respectively. Then there is a decrease (Figure 1) in the year 1999-00 and recovered in the year 2000-01 at the rate of 9.21 and 12.05 respectively. At the end of the study period, 2007-08, the PSU contribution to total BSE market capitalization is at the rate of 20.97 percent.

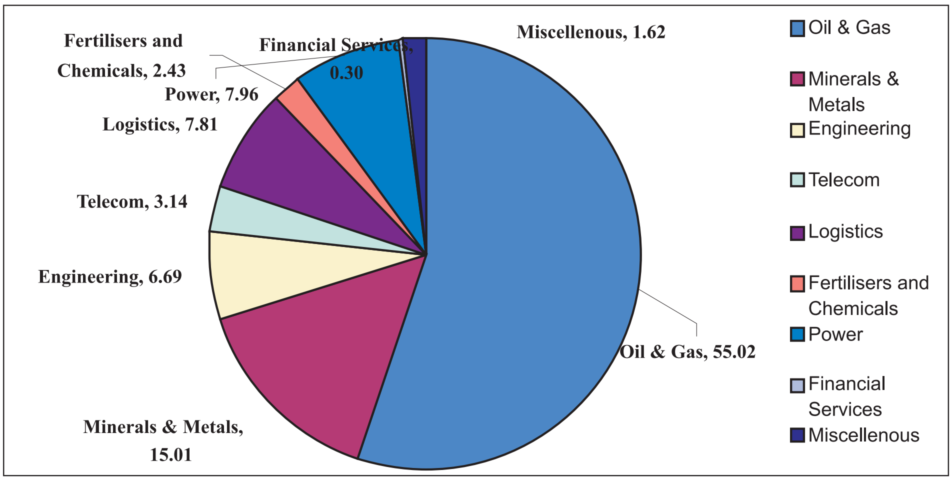

Figure 2 Representation of Average Contribution of Market Capitalization by Various Sectors during the Study Period 1993-94 to 2004-05

Figure 2 represents total contribution by each PSU sector for the period 1993-94 to 2007-08. Oil & Gas has contributed 55.00 percent, Mineral & Metals 15 percent, Engineering 6.69 percent, Logistics 7.81 percent, Telecom 3 percent, Fertilizers & Chemicals2.43 percent, Financial Services .30 percent, Power 7.96 percent and Miscellaneous 1.62 percent. This shows that the Oil & Gas sector has contributed 55 percent to the total PSU market capital, with the remaining eight sectors contributing only 45 percent.

Comparison of Trends of BSE Market Capitalization, Sectoral Market Leader and Market Leader from the Private Sector and Sectoral Average

Trend analysis of PSU market capitalization

The actual market capitalization's are subjected to trend analysis, which are tabulated in Tables 3 to 9 where the base year is taken as 100 and the other next years are represented in terms of percentage increase or decrease over the base year 1998.

From the Table no. 3 and Figure3 where CPSE Oil and Gas Sectoral details are depicted. It is observed that in the oil sector, the total has increased to 275 percent over the study period. ONGC has grown by 428 percent compared to the base year. It is also observed that Aban Lyod, the private sector exploration company being compared with ONGC, registered a growth rate of 41276 percent compared to the base year.

Table 3. Comparison of Trends of BSE Market Capitalization, Sectoral Market Leader ONGC and Aban Lyod and Oil and Gas Sectoral Average

(IN PERCENT)

YEARS	BSE MARKET CAP.	ONGC	OIL AND GAS AVERAGE	ABAN LYOD CHILES
1998–99	–2.67	–57.49	–53.57	–9.34
1999–00	62.91	–51.26	–46.13	–52.04
2000–01	11.64	–52.37	–47.23	–11.15
2001–02	9.26	–1.78	–9.87	59.43
2002–03	2.12	27.85	3.33	241.77
2003–04	114.38	201.99	164.71	1282.66
2004–05	203.11	217.19	152.49	4993.49
2005–06	439.36	370.54	249.34	14593.23
2006–07	532.68	373.30	214.22	26884.76
2007–08	845.30	428.93	275.31	41276.00

Source: Annexure 3

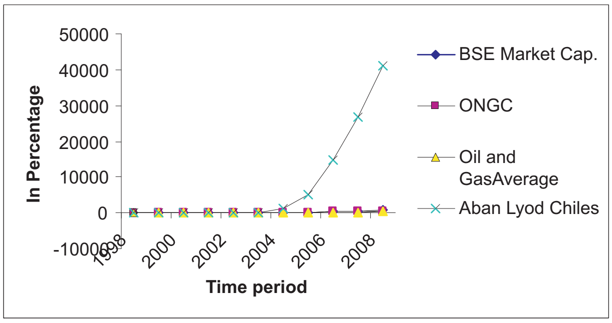

Figure 3

Table 4. Comparison of Trends of BSE Market Capitalization, Sectoral Market Leader SAIL and TISCO and Minerals and Metals Sectoral Average

(IN PERCENT)

YEARS	*BSE MARKET CAP.*	*SAIL*	*MINERALS AND METALS AVERAGE*	*TISCO*
1998–99	–2.67	–41.00	–34.40	–30.56
1999–00	62.91	–21.00	–22.66	–22.39
2000–01	11.64	–44.00	–31.68	–18.08
2001–02	9.26	–51.00	–18.01	–34.61
2002–03	2.12	–12.00	–5.28	–10.44
2003–04	114.38	223.00	183.38	157.63
2004–05	203.11	529.50	422.70	303.98
2005–06	439.36	733.00	689.88	440.52
2006–07	532.68	1041.00	761.54	375.16
2007–08	845.30	1747.50	2277.09	821.99

Source: Annexure 3

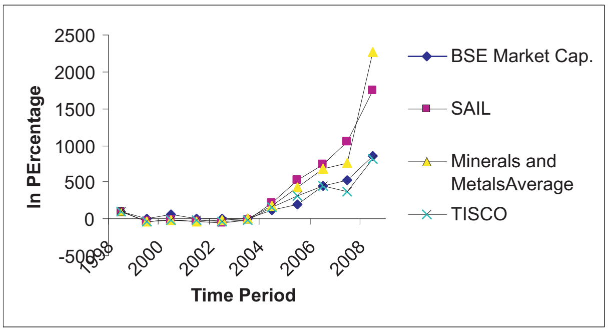

Figure 4

From the Table 4 and Figure 4 where CPSE Minerals & Metals are depicted have shown an enormous increase. The year 1997-98 is taken as 100 which is the base year and it has increased to 2278 percent at the end of the study period 2007-08. SAIL has shown an increase of 1747 percent. When SAIL is compared with TISCO, which has grown by 822 percent, SAIL's performance is better in market capitalization over the five years period.

Table 5. Comparison of Trends of BSE Market Capitalization, Sectoral Market Leader NTPC and Reliance Energy Limited and Power Sector Average

(IN PERCENT)

YEARS	*BSE MARKET CAP.*	*NTPC*	*POWER SECTOR AVERAGE*	*REL*
1997–98	100	–	100	100
1998–99	–2.67	–	–56.09	–30.82
1999–00	62.91	–	–74.78	13.46
2000–01	11.64	–	–65.09	–10.38
2001–02	9.26	–	–19.01	5.77
2002–03	2.12	–	6.97	2.77
2003–04	114.38	–	122.67	365.27
2004–05	203.11	100.00	889.94	240.68
2005–06	439.36	56.36	1389.14	349.98
2006–07	532.68	74.74	1496.23	291.99
2007–08	845.30	129.87	1704.97	921.04

Source: Annexure 3

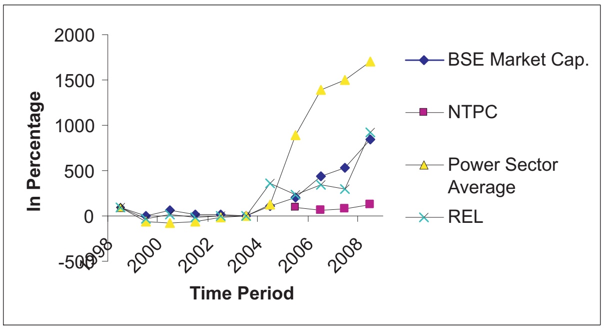

Figure 5

From the Table 5 and Figure 5 where the CPSE Power is given it is observed that the year 1997-98 is taken as 100 which is the base year and it has increased by 1704 percent at the end of the study period 2007-08. NTPC got quoted in the year 2005 therefore year 2005 is taken as base year. NTPC has shown an increase of 1747 percent. Reliance Energy is compared with NTPC, which has grown by 921percent

Table 6. Comparison of Trends of BSE Market Capitalization, Sectoral Market Leader BHEL and Siemens and Engineering Sectoral Average

(IN PERCENT)

YEARS	BSE MARKET CAP.	BHEL	CPSE ENGINEERING SECTOR AVERAGE	SIEMENS
Mar-98	100	100	100	100
Mar-99	–2.67	–34.03	–29.96	16.41
Mar-00	62.91	–65.28	–53.57	51.51
Mar-01	11.64	–60.56	–57.63	33.05
Mar-02	9.26	–53.10	–39.52	28.85
Mar-03	2.12	–37.94	–23.59	42.66
Mar-04	114.38	67.92	75.68	395.46
Mar-05	203.11	113.17	131.02	758.43
Mar-06	439.36	524.15	553.19	2820.83
Mar-07	532.68	527.99	523.01	2702.90
Mar-08	845.30	1042.53	982.55	3072.84

Source: Annexure 3

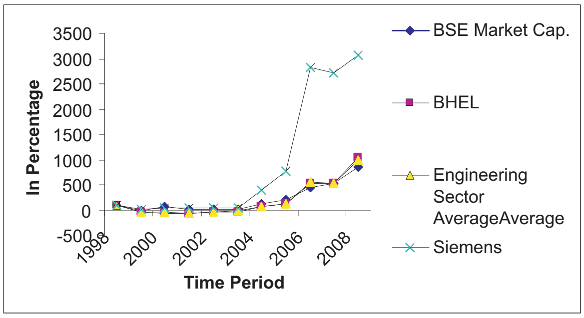

Figure 6

The details of engineering sector are shown in Table 6 and Figure 6 CPSE. The year 1997-98 is taken as 100 which is a base year then it increase to 982 percent at the end of the study period 2007-08. BHEL has shown an increase of 1042 percent. Tata Telecom is compared with BHEL, which has grown by 3072 percent.

From the Table 7 and Figure 7 CPSE where the details of CPSE Telecom sector are depicted it is observed that 1997-98 is taken as 100 and it has shown a increase of 1704 at the end of the study period 2007-08. NTPC got quoted in the year 2005 therefore year 2005 is taken as base year. NTPC has shown an increase of 1747 percent. Reliance Energy is compared with NTPC, which has grown by 921percent.

Table 7. Comparison of Trends of BSE Market Capitalization, Sectoral Market Leader MTNL and Tata Telecom and CPSE Telecom Sectoral Average

(IN PERCENT)

YEARS	BSE MARKET CAP.	MTNL	CPSE TELECOM	
Average	Tata Tele.			
1997-98	100	100	100	100
1998-99	-2.67	-32.80	-32.80	68.49
1999-00	62.91	-10.58	-10.58	361.18
2000-01	11.64	-49.66	-49.66	71.33
2001-02	9.26	-43.89	-43.89	384.75
2002-03	2.12	-63.45	-63.45	173.24
2003-04	114.38	-51.22	-51.22	488.16
2004-05	203.11	-56.32	-56.32	1028.95
2005-06	439.36	-30.06	-30.06	1207.40
2006-07	532.68	-44.18	-44.18	688.75
2007-08	845.30	-63.26	-63.26	372.40

Source: Annexure 3

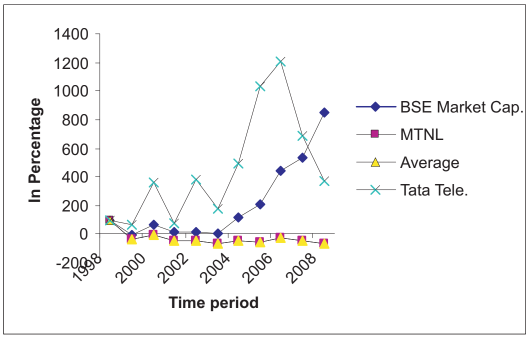

Figure 7

From the Table 8 and Figure 8 where details of CPSE Fertilizers are depicted, it is observed that the year 1997-98 is taken as 100. From the base year the sectoral average has decreased to 60 percent i.e. at the end of the study period 2007-08. BIBCL has shown an increase of 5182 percent compared to the base year. Tata Chemicals is compared to BIBCL which has shown a growth of 143 percent compared to the base year.

Table 8. Comparison of Trends of BSE Market Capitalization, Sectoral Market Leader BIBCL and Tata Chemicals Limited and CPSE Fertilizers and Chemicals Sectoral Average

(IN PERCENT)

YEARS	BSE MARKET CAP.	BIBCL	FERT., CHEM. & PHAR. AVERAGE	TCL
1997-98	100	100	100	100
1998-99	–2.67	160.37	1.51	–51.94
1999-00	62.91	647.00	–23.14	–64.86
2000-01	11.64	356.22	–32.24	–74.53
2001-02	9.26	332.72	–5.15	–70.78
2002-03	2.12	438.25	–17.02	–59.10
2003-04	114.38	2017.05	39.21	–14.86
2004-05	203.11	5242.86	28.27	20.79
2005-06	439.36	2775.58	40.93	110.30
2006-07	532.68	2116.59	14.84	64.95
2007-08	845.30	5182.95	60.57	143.47

Source: Annexure 3

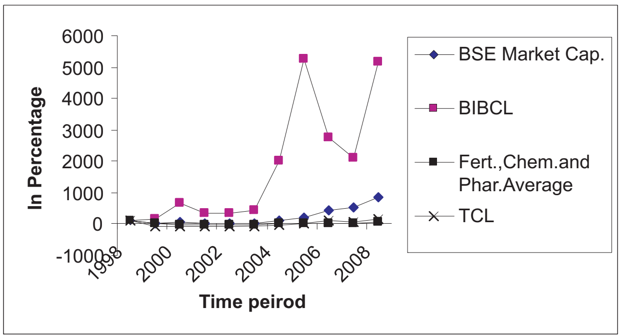

Figure 8

Table 9 and Figure 9 represent the CPSE Logistics details. From the details it is observed that the sector has grown by 399 percent compared to the base year 1998 which is taken as 100. BEML is the market leader which has shown a growth of 1673 percent compared to the base year 1998. G. E. Shipping which is a private company which is compared to the BEML has shown a growth of 406 percent compared to the base year.

Table 9. Comparison of Trends of BSE Market Capitalization, Sectoral Market Leader BEML and G.E. Shipping and CPSE Logistics Sectoral Average

(IN PERCENT)

YEARS	BSE MARKET CAP.	BEML	LOGISTICS SECTORAL AVERAGE CPSE	GE. SHIPPING
1997-98	100	100	100	100
1998-99	–2.67	–62.37	–54.01	–44.64
1999-00	62.91	–66.10	–59.34	–60.83
2000-01	11.64	–67.76	–54.50	–38.72
2001-02	9.26	–25.97	–5.16	–44.68
2002-03	2.12	–10.88	–18.00	–35.74
2003-04	114.38	170.13	125.65	113.85
2004-05	203.11	468.06	167.01	159.18
2005-06	439.36	2239.31	368.12	340.20
2006-07	532.68	1612.23	396.32	173.38
2007-08	845.30	1673.48	399.16	406.00

Source: Annexure 3

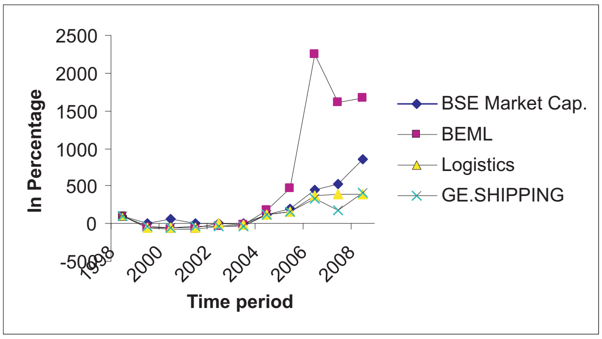

Figure 9

Section "B" covers the study of the contribution of Public Sector Financial Institutions (PSFIs) to the market capitalization of the Bombay Stock Exchange (BSE) for the period of 1993-94 to 2007-08. For the purpose of the study 17 PSFIs were taken which were regularly quoted in the BSE for the study period. The study also considered the contribution made by the private bank "ICICI" as a comparison to the performance of the PSFIs. For the study purpose PSFIs include Commercial Banks, Development Banks, Merchant Banking Companies, Financial Companies, and HFC's as these are held by certain Public Sector Banks (PSBs)

Table 10. Contribution of Public Sector Financial Institutions to Bombay Stock Exchange Market Capitalization

IN RS. CRORE

PSFIS/YEARS	*1993-94*	*1994-95*	*1995-96*	*1996-97*	*1997-98*	*1998-99*	*1999-00*	*2000-01*	*2001-02*
BSE Mart. Cap.	368071	425481	526476	463912	560325	545361	912842	625553	612224
Bank Of Baroda	–	–	–	2664.00	3093.20	1346.80	1342.36	1786.36	1419.32
Bank Of India	–	–	–	–	2709.36	1278.00	1000.04	722.07	1603.89
Can Fin Homes Ltd.	112.75	76.88	43.05	31.26	30.34	29.93	35.36	41.00	51.83
Canara Bank	–	–	–	–	–	–	–	–	–
G I C Housing Finance Ltd.	–	86.42	54.01	43.66	41.41	35.11	19.00	16.20	18.46
I D B I Bank Ltd.	–	–	7336.72	5687.64	5758.31	1999.09	3163.54	1746.32	1067.38
Ind Bank Housing Ltd.	22.50	20.00	13.00	5.75	4.00	4.50	3.50	3.05	2.00
Indbank Mer.Bank. Ser. Ltd.	–	172.05	68.82	19.98	18.65	7.77	15.99	5.77	5.33
Indian Bank	–	–	–	–	–	–	–	–	–
L I C Housing Finance Ltd.		502.89	364.03	405.31	337.76	285.60	245.81	225.55	540.79
P N B Gilts Ltd.	–	–	–	–	–	–	–	232.89	241.66
Punjab National Bank	–	–	–	–	–	–	–	–	–
S B I Home Finance Ltd.	101.25	86.25	51.00	38.25	27.00	16.50	13.80	9.75	10.50
State Bank Of Bikaner & Jaipur	–	–	–	293.38	222.50	117.50	137.25	136.50	168.22
State Bank Of India	8122.72	6019.36	8131.27	14354.80	14841.63	11231.22	10583.87	10539.14	11568.05
State Bank Of Mysore	–	–	–	–	–	86.40	79.56	75.62	101.16
State Bank Of Travancore	–	–	–	–	250.50	112.50	110.68	129.00	152.50
Total Contribution to BSE by PSFIs	8359.22	6963.85	16061.90	23544.03	27334.66	16550.92	16750.76	15669.22	16951.09
Total PSFIs Mart. Cap./BSE	2.27	1.64	3.05	5.08	4.88	3.03	1.84	2.50	2.77
ICICI Bank	–	–	–	–	755.70	452.10	5117.29	3255.38	2732.45
ICICI Bank /BSE Mark. Cap.	–	–	–	–	0.13	0.08	0.56	0.52	0.45

Table 10. (Contd.)

PSFIS/YEARS	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	IN RS. CRORE AVERAGE
BSE Mart. Cap.	572197	1201207	1698428	3022189	3545041	5296758	1358404
Bank Of Baroda	2542.64	7117.55	6394.65	8389.03	7846.29	10341.52	4523.64
Bank Of India	1851.72	2870.78	5044.58	6433.68	8178.60	13281.67	4088.58
Can Fin Homes Ltd.	58.90	83.58	90.54	101.20	122.71	138.69	69.87
Canara Bank	2919.20	5928.60	8216.40	10942.90	7982.70	9233.20	7537.17
G I C Housing Finance Ltd.	20.17	53.83	98.14	221.33	221.60	323.91	89.52
I D B I Bank Ltd.	1080.43	3792.95	5951.00	5667.31	5613.03	6453.74	4255.19
Ind Bank Housing Ltd.	3.00	3.81	7.31	10.59	14.74	17.85	9.04
Indbank Mer.Bank. Ser. Ltd.	7.10	10.92	26.45	36.57	73.67	90.75	39.99
Indian Bank	-	-	-	-	3876.53	7000.95	5438.74
L I C Housing Finance Ltd.	493.06	1368.27	2003.14	1610.32	1169.52	2375.14	851.94
P N B Gilts Ltd.	288.24	345.62	254.49	263.94	245.04	372.62	280.56
Punjab National Bank	2702.11	8858.45	12400.85	14857.05	14871.24	16022.10	11618.63
S B I Home Finance Ltd.	10.42	20.76	31.57	23.02	23.02	23.02	32.41
State Bank Of Bikaner & Jaipur	260.00	854.72	1180.00	2082.17	1674.00	2499.00	802.10
State Bank Of India	14204.81	31877.92	34575.20	50948.36	52256.22	100962.64	25347.81
State Bank Of Mysore	154.44	643.68	736.02	2277.63	1851.57	2700.00	870.61
State Bank Of Travancore	207.50	775.95	1012.57	2075.97	1504.18	2387.97	792.67
Total Contribution to BSE by PSFIs	26803.74	64607.39	78022.91	105941.07	107524.66	174224.77	47020.68
Total PSFIs Mart. Cap./BSE	4.68	5.38	4.59	3.51	3.03	3.29	3.46
ICICI Bank	8211.60	18239.04	28952.94	52432.87	76702.20	85688.06	25685.42
ICICI Bank /BSE Mark. Cap.	1.44	1.52	1.70	1.73	2.16	1.62	0.79

From the Table 10 where the PSFIs market capitalization for the period of 1993-94 to 2007-08 is given, it is observed that total PSFIs contribution has varied between 1.84 percent to 5.38 percent. In absolute figures it was between Rs.6963.85 crore to Rs.174224.77 crore. Further from the table it is observed that in 1993-94 the contribution was at 2.27 percent reduced to 1.64 percent in 1994-96. The period of 1995-96 was an increase up to 3.05 percent. On an average the PSFIs have contributed 3.46 percent to the BSEs total market capitalization.

From the Table :11 and Figure :10 where the comparison of trend movement of PSFIs , SBI and ICICI are depicted it is observed that PSFIs contribution has varied between Rs.6963.85 crore to Rs.174224.77 crore for the period of 1993-94 to 2007-08. SBI has contributed Rs.6019.36 crore to Rs.100962.64 crore. The ICICI Bank which is a private player has contributed Rs.452.10 crore in 1998-99 and increased to Rs.85688.06 crore in 2007-08. The trend of PSFIs shows that it is aligned with that SBI and ICICI Bank. Further it is observed that the contribution of SBI, ICICI are on increasing trend through out the study period.

Table 11. **Comparison of State Bank of India (SBI), Total Contribution by PFSIs and ICICI Bank to BSE Market Capitalization**

IN RS. CRORE

TIME PERIOD	*BSE MART. CAP.*	*STATE BANK OF INDIA*	*TOTAL CONTRIB-UTION TO BSE BY PSFIS*	*ICICI BANK*
1993-94	368071	8122.72	8359.22	-
1994-95	425481	6019.36	6963.85	-
1995-96	526476	8131.27	16061.90	-
1996-97	463912	14354.80	23544.03	-
1997-98	560325	14841.63	27334.66	755.70
1998-99	545361	11231.22	16550.92	452.10
1999-00	912842	10583.87	16750.76	5117.29
2000-01	625553	10539.14	15669.22	3255.38
2001-02	612224	11568.05	16951.09	2732.45
2002-03	572197	14204.81	26803.74	8211.60
2003-04	1201207	31877.92	64607.39	18239.04
2004-05	1698428	34575.20	78022.91	28952.94
2005-06	3022189	50948.36	105941.07	52432.87
2006-07	3545041	52256.22	107524.66	76702.20
2007-08	5296758	100962.64	174224.77	85688.06
Average	1358404.33	25347.81	47020.68	25685.42

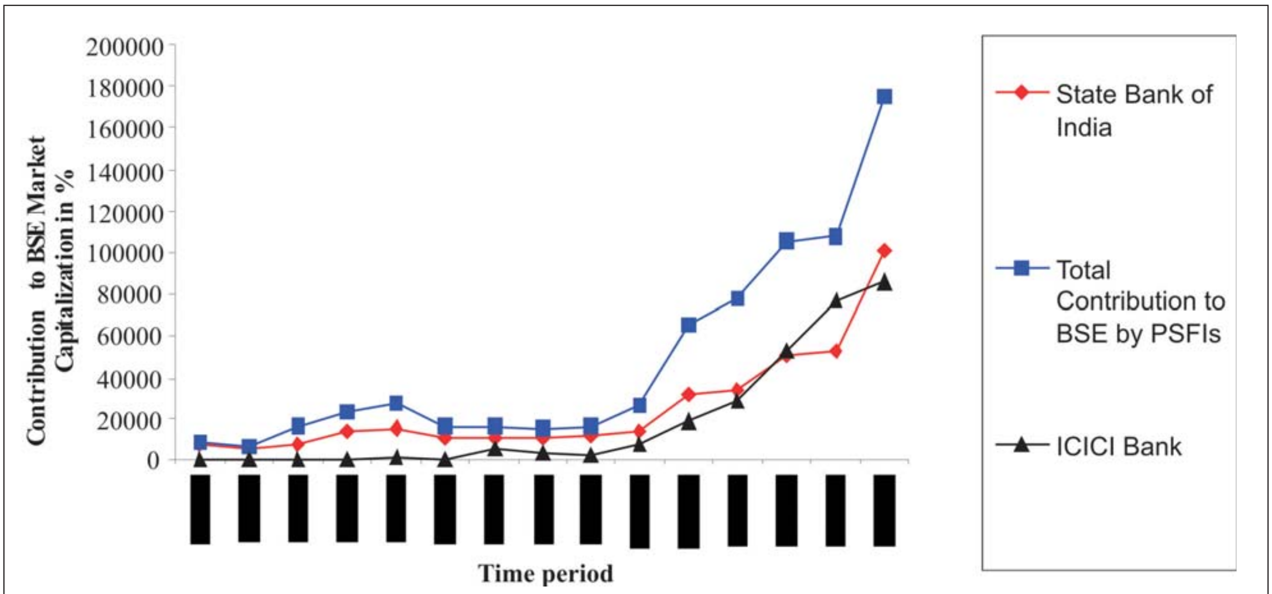

Figure 10 **Comparison of Trends of State Bank of India, Public Sector Financial Institutions and ICICI Bank to Market Capitalization of Bombay Stock Exchange**

Section "C" Study on the Contribution of Public Sector Financial Companies and Central Public Sector Enterprises to the Bombay Stock Exchange Market Capitalization for the period of 1993-94 to 2007-08

Table 12. Comparison of Contribution by PSFIs, CPSEs and Total Contribution of Public Sector to BSE Market Capitalization

TIME PERIOD	*BSE MARKET CAP.*	*CPSES CONTRIBU-TION*	*PSFIS CONTRIBU-TION*	*TOTAL CONTRIBUTION BY CPSES AND PSFIS* IN RS. CRORE	*TOTAL CONTRIBUTION BY CPSES AND PSFI*	*CPSES CONTRIBU-TION*	*PSFIS CONTRIBU-TION* IN PER-CENT
1993-94	368071.00	67734.21	8359.22	76093.43	20.67	18.40	2.27
1994-95	425481.00	56410.04	6963.85	63373.89	14.89	13.26	1.64
1995-96	526476.00	119718.12	8131.27	127849.39	24.28	22.74	1.54
1996-97	463912.00	124083.31	23544.03	147627.34	31.82	26.75	5.08
1997-98	560325.00	141761.09	27334.66	169095.75	30.18	25.30	4.88
1998-99	545361.00	76482.81	16550.92	93033.73	17.06	14.02	3.03
1999-00	912842.00	83902.99	16750.76	100653.75	11.03	9.19	1.84
2000-01	625553.00	75474.26	15669.22	91143.48	14.57	12.07	2.50
2001-02	612224.00	118846.84	16951.09	135797.93	22.18	19.41	2.77
2002-03	572197.00	130842.54	26803.74	157646.28	27.55	22.87	4.68
2003-04	1201207.00	324448.02	64607.39	389055.41	32.39	27.01	5.38
2004-05	1698428.00	418992.96	78022.91	497015.87	29.26	24.67	4.59
2005-06	3022189.00	635864.96	105941.07	741806.03	24.55	21.04	3.51
2006-07	3545041.00	627689.89	107524.66	735214.55	20.74	17.71	3.03
2007-08	5296758.00	1011593.74	174224.77	1185818.51	22.39	19.10	3.29
Average	1358404.33	267589.72	47020.68	314610.40	23.00	19.57	3.34

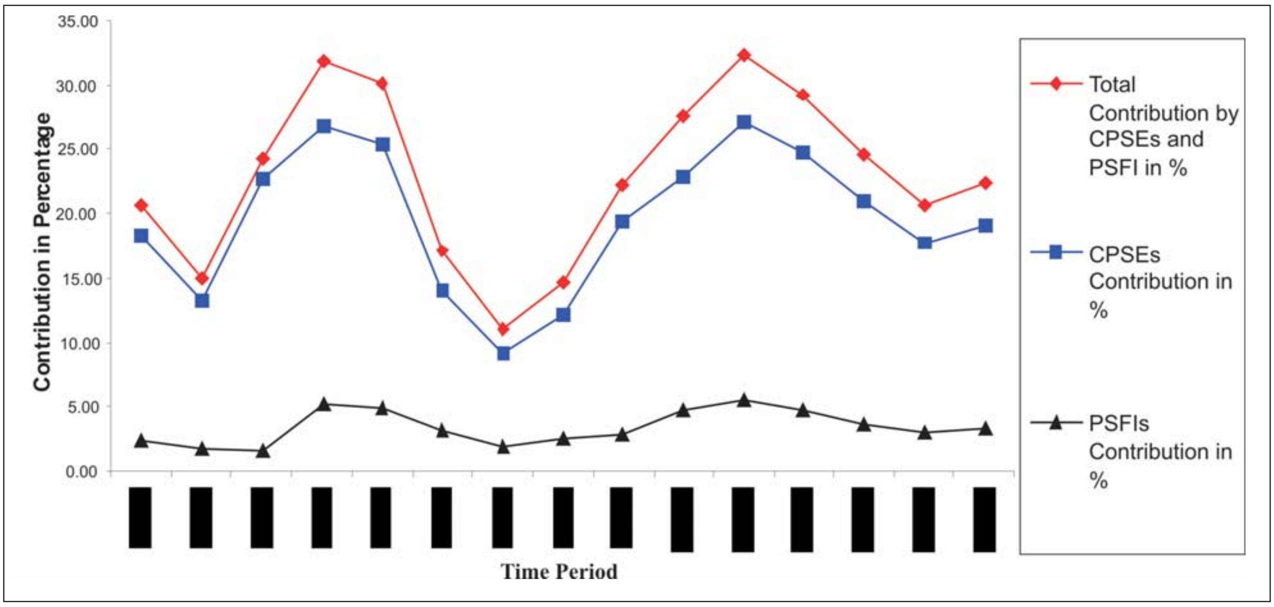

Figure 11 Comparison of Trend Movements of PSFIs, CPSEs and Public Sector

From the Table 12 and Figure 11 where the actual contribution to BSE market capitalization by the Total Public Sector, PSFIs and CPSEs in terms of actual i.e., Rs. Crores and in percentage are depicted. It is observed that CPSEs have contributed on an average Rs.267590 crore and varied between Rs.56410.04 crore to Rs.1011594.00 crore. PSFIs contributed on an average Rs.47020.70 crore and varied between Rs.6963.85 crore to 174224.80 crore. Further the table reveals that public sector has contributed 23 percent on average and CPSEs have contributed 19.57 percent and PSFIs 3.44 percent for the BSE market capitalization during the study period.

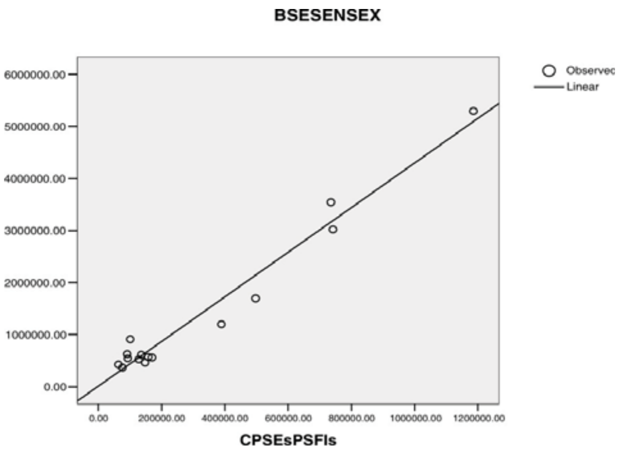

Figure 12 Linear Regression Plot between CPSE &PSFIs and BSE Market Capitalization

BSE = 11805.422+4.287* CPSE &PSFIs

R^2 = 0.96

Table 13. Regression Results for CPSE &PSFIs Market Capitalization and BSE Market Capitalization

VARIABLES	*REGRESSION CO-EFFICIENT (B)*	*STANDARD ERROR*	*T-VALUE*	*SIGNIFICANCE LEVEL (P-VALUE)*
r = 0.983	& r2 = 0.96			
(Constant)	11805.422	101357.100	0.116	0.010
CPSE &PSFIs MAR. CAP.	4.28	.225	19.050	0.000

BSE Market Capitalization = Dependent Variable

The Figure 12 and Table 13 represent the Linear Regression Plot and Regression values between CPSE &PSFIs market capitalization and BSE market capitalization. From the R2 value of 0.96 it is understood that the relation is very strong and positive and it indicates that there is a good fit between the market capitalization of BSE and PSU.

The P value is 0.001, which is less than 0.05. This signifies that contribution of CPSE &PSFIs market capitalization to overall BSE market capitalization is significant. Thus CPSE &PSFIs market capitalization is a good indicator of total market capitalization incorporated in BSE SENSEX.

Table 14. Squared Euclidean Distance

Proximity Matrix

- Absolute Square Euclidean Distance

	CPSE &PSFIs	*BSE*
CPSE &PSFIs	0.000	0.699
BSE	0.699	0.000

This is a Dissimilarity Matrix

Further, in Table 14, Absolute Squared Euclidean Distance is computed and proximity matrix is obtained. The Table indicates that the dissimilarity between CPSE &PSFIs and BSE market capitalization is 0.69. This indicates that there are dissimilarities between BSE market capitalization and PSU market capitalization to an extent of 69 percent.

Table 15. Correlation Matrix for BSE Market Capitalization and CPSE &PSFIs Market Capitalization

CORRELATIONS			
BSESENSEX	Pearson Correlation	1	.983**
	Sig. (2-tailed)		.000
	N	15	15
CPSEsPSFLS	Pearson Correlation	983**	15
	Sig. (2-tailed)	.000	
	N	15	

Further, in Table 15 correlation matrix is computed between BSE market capitalization and PSU market capitalization, which explains that there, exists a high correlation (0.983) between the two.

Conclusion

The paper attempts to evaluate the contribution in terms of market capitalization of Central Public Sector Enterprises and Public Financial Institutions in the stock market with reference to the companies quoted at the Bombay Stock Exchange. Market capitalization is the total value of a company's free float as determined by its share price in the stock market; it is calculated as the number of free float of ordinary shares multiplied by the previous day's closing share price. . At the end of the study period, 2007-08, the CPSEs contribution to total BSE market capitalization is at the rate of 20.97 percent. The study observes that the Oil & Gas sector, on an average, contributed 10.85 percent of the 19.74 percent by the entire CPSEs to total BSE market capitalization. This shows that the Oil & Gas sector has contributed 55 percent to the total CPSEs market capital, with the remaining eight sectors contributing only 45 percent. . On an average the PSFIs have contributed 3.46 percent to the BSEs total market capitalization. Further the study finds that overall CPSEs and PSFIs have contributed 23 percent on average and CPSEs have contributed 19.57 percent and PSFIs 3.44 percent for the BSE market capitalization during the study period. From the regression it is observed that R2 value is 0.96 and it is understood that the relation is very strong and positive and it indicates that there is a good fit between the market capitalization of BSE and PSU. Correlation matrix is computed between BSE market capitalization and PSU market capitalization, which explains that there, exists a high correlation (0.983) between the two.

To conclude it can be said that the contribution of CPSEs and PFSIs has been on an increasing trend and this would provide stability to the stock market in the long run as there involves control of the government in the operations of these CPSEs and PFSIs.

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Annexure No: 1 List of CPSEs Taken under Study

S.NO:	PARTICULARS	ABBREVIATION
	Oil and Gas	
1	Oil & Natural Gas Corpn. Ltd.	ONGC
2	Bharat Petroleum Corpn. Ltd.	BPCL
3	Bongaigaon Refinery & Petrochemicals Ltd.	BRPL
4	Chennai Petroleum Corpn. Ltd.	CPCL
5	G A I L (India) Ltd.	GAIL
6	Hindustan Petroleum Corpn. Ltd.	HPCL
7	Indian Oil Corpn. Ltd.	IOC
8	Mangalore Refinery & Petrochemicals Ltd.	MRPL
	Aban Lyod Chiles	
	Minerals and Metals	
9	Steel Authority Of India Ltd.	SAIL
10	Maharashtra Elektrosmelt Ltd.	MELT
11	Hindustan Copper Ltd.	HIN.COPP
12	N M D C Ltd.	NMDC
13	National Aluminum Co. Ltd.	NALCO
	Tata Iron and Steel Company	
	Power	
14	N T P C Ltd.	NTPC
15	Power Grid Corpn. Of India Ltd.	PGCIL
16	Neyveli Lignite Corpn. Ltd.	NLCL
	Reliance Energy Limited	
	Engineering	
17	Bharat Heavy Electricals Ltd.	BHEL
18	Engineers India Ltd.	EIL
19	Balmer Lawrie & Co. Ltd.	BL
20	H M T Ltd.	HMT
21	I T I Ltd.	ITI
	Siemens	
	Telecom	
22	Mahanagar Telephone Nigam Ltd.	MTNL
	Tata Telecom	Tata Tele.
	Fertilizers, Chemicals and Pharma	
23	Bharat Immunologicals & Biologicals Corpn. Ltd.	BIBCL
24	Hindustan Fluorocarbons Ltd.	HFL
25	Hindustan Organic Chemicals Ltd.	HOCL
26	Fertilisers & Chemicals, Travancore Ltd.	FACT
27	National Fertilizers Ltd.	NFL
28	Rashtriya Chemicals & Fertilizers Ltd.	RACFL
	Tata Chemicals Limited	TCL
	Financial Services	
29	Power Finance Corpn. Ltd.	PFL
30	Rural Electrification Corpn. Ltd.	RECL
31	Balmer Lawrie Invsts. Ltd.	BLIL
	Tata Finance	Tata Finance
	Logistics	
32	B E M L Ltd.	BEML
33	Scooters India Ltd.	SIL
34	Container Corpn. Of India Ltd.	CCI
35	Dredging Corpn. Of India Ltd.	DCIL
36	Shipping Corpn. Of India Ltd.	SCI
	Great Eastern Shipping	GE.SHIPPING
	Miscelenous	
37	Hindustan Photo Films Mfg. Co. Ltd.	HPFM
38	Ircon International Ltd.	IIL
39	India Tourism Devp. Corpn. Ltd.	ITDCL
40	State Trading Corpn. Of India Ltd.	STCIL
41	M M T C Ltd.	MMTC

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