CHAPTER –V
CAPITAL STRUCTURE PRACTICES OF SELECT CPSEs: AN ANALYSIS

The present Chapter deals with the Capital structure practices of the Central Public Sector Enterprises in India for the period 1991-2010 as selected sample firms and industry wise i.e. Manufacturing Industry, Services Industry, Mining Industry and Power Industry.

Capital structure is essentially a relationship between debt and equity which has several implications. The proportion of debt to the total capital invested has certain inherent risk and benefits. It is a myth that greater use of debt will automatically improve the overall return on investment and risk also. The capital mix in a public sector enterprise cannot be decided by the internal management at the enterprise level. The capital mix is generally the result of managerial actions, which are guided by Cabinet Ministers in accordance with the government rules and regulations. Public enterprises can not regulate the cost of capital by adjusting the capital mix and these enterprises can not enjoy the maneuverability available to private firms. Public Enterprises can not go to the capital market without prior approval of the government. However, it has been observed that PSUs have adopted different debt-equity ratios. A very high debt-equity ratio can be problematic. It is, therefore, essential that some reasonable ratio should be laid down unit wise or sector wise by the central government.

Efficient financial management significantly contributes not only to the profitability but also to the creation of a balance between procurement and utilization of funds. Hence, there is a highest need for a better financial management in the PSUs in India.

Capital structure is defined as the amount of long-term debt, preferred stock, and common stock used to finance a firm’s assets and it is a part of financial structure, represents the permanent sources of the firm’s financing.

The firm needs funds to finance its activities continuously. Every time when funds have to be procured, the financial manager weighs the pros and cons of various sources of finance and selects the most advantageous sources keeping in view the target capital structure. Thus, the capital structure decision is a continuous one and has to be taken whenever a firm needs additional finance. Capital Structure refers to mix of long-term sources of funds, such as
debentures, long-term debt, preference share capital and equity share capital including reserves and surpluses (i.e. retained earnings).

Capital structure decision is the strategic decision that has occupied much of the time and attention of academicians and managers. Important as it is for the survival and growth of the firms and it is also one of the most controversial subjects in the world of finance.

The current study is intended to throw light on the capital structure practices of the Central Public Enterprises in overall selected firms as well as industry wise. The study uses three capital structure ratios. Each ratio has been studied under the following five heads.

I. Capital structure practices of the selected CPSEs
II. Capital structure practices of selected CPSEs in Manufacturing Industry
III. Capital structure practices of selected CPSEs in Service Industry
IV. Capital structure practices of selected CPSEs in Mining Industry
V. Capital structure practices of selected CPSEs in Power Industry

Scope of the study
The sample size used for the study is limited to the Central Public Enterprises pertaining trading concerns only (excludes NBFCs), which are listed on Bombay Stock Exchange as on 31-03-2010. The sample size varies from year to year and month to month. Three capital structure ratios have been used as tools of financial analysis for the purpose of the study. The ratios indicate the direction of changes in the capital structure practices of CPSEs over the study period.

Capital Structure Ratios
The capital structure practices of selected CPSEs have been measured by the following ratios
(i) Debt-equity ratio
(ii) Debt to total assets ratio
(iii) Networth to total assets ratio
Degree of financial leverage is used to identify the financial risk and operating risk is identifying by terms of operating leverage to analyze the risk factors. Gross interest coverage ratio is used to evaluate the debt servicing capacity of the corporate firms.

To have a deeper understanding of the situation, mean, median, quartile values and frequency distributions of the ratios have also been drawn for the sample CPSEs for the entire the study period.

The present section examines the financing policies of the selected sample firms. This study further strives to determine whether the CPSEs are more oriented towards debt or equity. The study acquires significance as it studies not only the CPSEs but also studies the differences in the financing pattern in industries with in the sample CPSEs. The analysis is done by considering three important ratios namely debt-equity ratio, debt to total assets ratio and Networth to total assets ratio.

I) Capital structure practices in overall selected CPSEs

Debt-equity ratio is calculated to measure the relative claims of outsiders and the owners (i.e., shareholders) against the firm’s assets. The ratio indicates the relationship between the outsiders’ funds and the shareholders’ funds.

To have a profound understanding of capital structure practices in CPSEs, this study analyzed the share of total assets financed by creditors using the debt to total assets ratio. This ratio highlights the long term solvency of the firm. A ratio below one means a majority of assets are financed through equity, above one means they are financed more by debt. A low ratio indicates high margin of safety to lenders and is desirable. On the other hand, a high ratio would expose the creditors to high risk.

Net worth to total assets ratio indicates the portion of total assets financed by equity funds. Net worth to total assets ratio is an alternative measure to study the capital structure practices of the corporate sector by relating their equity funds to total assets. Net worth includes equity share capital, reserves and surplus. This ratio determines the strength of the equity base in the assets of the corporate firms.

(A) Debt-equity ratio of selected CPSEs(D/E):

An analysis of data pertaining to debt-equity ratio of selected sample firms is shown in Table 5.1 is indicate that the debt equity ratio of selected sample firms during the year 1991-
92 it was 0.95 and gradually increased to 3.43 during the year 2002-03 and then it showed decline trend except during the year 2009-10. It reached high range in the years 2003-04 and 2004-05 with 3.32 and 1.08 respectively. It was very low during the years 2005-06, 06-07, 07-08 and 08-09 with 0.53, 0.52, 0.61 and 0.67 respectively.

The median value of debt-equity ratio of overall sample firms decreased from 1.01 in the year 1990-01 to 0.25 in the year 2004-05. But again it increased to 0.67 during the year 2009-10. It shows a gradual declining trend for the entire study period.

Quartile one values indicate that one fourth of the sample firms had debt-equity ratio of 0.53 in the year 1990-91 and with slight ups and downs it reached 0.06 in the year 2008-09, but it was 0.29 in the year 2009-10. The Q1 value reached very low levels between the values of 0.04 to 0.08 from the year 2002-03 to the year 2008-09. It was showing the decreasing trend supporting as the median values showing same trend.

Quartile three values reveal that the debt-equity ratio was 1.54 in the year 1991 and with slight changes it reached 0.94 in the year 2007-08, showing a decline trend and in the last two years of study period it was 1.58 and 1.95 respectively. A close observation of the median and quartile values reveals a lesser inclination towards debt in the latter years.

For instance in the year 1990-91 35.81 percent of the sample firms had a debt to equity ratio of more than one but during the year 2009-2010 the percentage decreased to 15.38 percent in the selected sample CPSEs.

An analysis of frequency distribution of sample firms debt-equity ratio from the table-5.2 shows that on an average 7.5 percent of the selected sample firms in the study have negative debt-equity ratio. Similarly, 58.57 percent of the sample companies have that their debt-equity ratio less than one and 20.14 percent sample firms have debt equity ratio of 1-2. An analysis of the data reveals that the on an average sample CPSEs have a debt equity ratio of 2-3 (4.8 percent), 3-4 (2.74 percent), 4-5 (1.87 percent), 5-10 (2.41 percent) and also 10 (1.98 percent) of the study period. (see Table-5.2)

(B) Debt-Total Assets ratio of selected CPSEs (D/TA):

The debt to total assets ratio of selected sample firms is showed in the table 5.7. The mean value of this ratio in the year 1990-1991 was 34.12 and it was 27.67 in the year 2009-2010. The mean values were very high in the years 1991-1992, 1992-1993, 1993-1994 and 1994-
1995 with 46.53, 47.92, 46.89 and 42.21 percent respectively. The value in the year 1995-1996 was 39.75 then it gradually decreased to 27.67 in the year 2009-2010.

The median value of the debt to total assets ratio of selected sample firms was 37.96 in the years 1990-1991 and in the year 1994-1995 it was 31.03. It was 33.83 in the year 1995-1996 and it gradually decreased from the year 1995-1996 with 30.78 to 26.59 in the year 2009-2010. In the year 2004-2005 it reached very low value 16.4 and very high value 37.96 in the year 1990-1991. In the years 2005-2006 and 2006-2007 it was 18.21 and 22.01 respectively.

Q1 value of debt to total assets ratio of overall sample firms in the year 1990-1991 was 18.31 and it was 1.61 in the year 2009-10. In the years 1991-1992, 1992-1993, 1993-1994, 1994-1995, 1995-1996 it was 21.89, 22.84, 22.96, 15.79 and 14.58 respectively, but in the year 1996-1997 it was 20.08 and in the year 2001-2002 it was 14.49.

Q3 value of debt to total assets ratio of overall sample firms was 43.1 in the year 1990-1991 and 40.2 in the year 2009-2010. The high Q3 value was observed in the year 2003-2004 with 53.7 and low value was 30 in the year 2005-2006.

An analysis of frequency distribution of debt to total assets ratio sample firms from the table-5.8 shows that on an average the sample CPSEs have a debt to total assets ratio of 0-10 (20.80 percent), 10-20 (15.25 percent), 20-30 (20.57 percent), 30-40 (13.53 percent), 40-50(13.01 percent), 50-100 (14.24 percent) and also above 100 (2.60 percent) for the study period. (see Table-5.8)

(C) Net worth -Total Assets ratio of selected CPSEs (NW/TA):

The selected sample firms net worth to total assets ratio denoted in the table 5.13. The table shows that the mean value in the year 1990-1991 it was 14.1 and in the years 1991-1992 and 1992-1993 it was 6.59 and 0.12 respectively. In the year 1993-1994 it was negative and in the years 1994-1995 and 1995-1996 it was 3.35 and 5.94 respectively. In the year 1996-97 it was 37.4 and it was 38.6 in the year 2009-2010.

The median value of NW/TA ratio of selected firms was 34.4 in the year 1990-1991 and it gradually increased to 40.6 during the year 1997-98, but in the years 1993-94 and 95-96 it was 40.6 and 41.5 respectively. In the year 2004-2005 it was 36.5 and increased to 45.6 during the year 2009-2010. It was very high in the year 1998-1999 with 45.
Q1 value means one fourth of the sample firms have NW/TA ratio 21 in the year 1990-1991 and increased to 30 in the year 1999-2000 except in the year 1991-1992 with 18.7. In the year 2000-2001 it was 27.9 and decreased to 24.1 in the year 2009-2010, except in the years 2002-2003 and 2003-2004 with 17.2 and 16.7 respectively.

Q3 value means three fourth of the sample firms have low value NW/TA ratio 42.6 during the year 1990-1991 and high in the year 2005-2006 with 60.3. The Q3 value in the year 2000-2001 was 55.7 and slightly decrease to 52.2 and 51.9 for the years 2001-2002 and 2002-2003 respectively. It was 55.6 in the year 2009-2010.

The mean, median Q1 and Q3 value showing almost all same pattern of increase trend of the ratio for the entire study period.

Table 5.14 shows the trend pattern of the net worth to total assets ratio of selected sample firms. On an average of the study period firms have ratio of 0-10 (4 percent), 10-20 (8.7 percent), 20-30 (11.95 percent), 30-40 (19.67 percent), 40-50 (18.08 percent) and 50-100 (31.20 percent). And further, no single firm has a 100 & above ratio for the entire study period. On an average 6.4 percent firms have negative ratio for the entire study period. (see Table 5.14)

II) Capital structure practices of selected CPSEs’ in Manufacturing Industry

(A) Debt-equity ratio of Manufacturing Industry (D/E): Debt/equity ratio of selected public sector enterprises (PSEs) in manufacturing industry was showed in table-5.1. The table shows that the mean value of debt/equity ratio was 0.648 in the year 1990-1991 and it was 1.09 in the year 2009-2010. The mean value of debt/equity ratio for most of the study period lies between 1-2, with slight variations but except in the years 2002-2003 and 2003-2004 with very high values 4.35 and 4.98 respectively. But it was reached very low level in the years 2006-2007, 2007-2008 and 2008-2009 with 0.47, 0.49 and 0.37 respectively.

The same table shows the median values of debt/equity ratio that from the year 1990-1991 to 1993-1994 it was from 0.91 to 1.34 but after it was reached to 0.75 in the year 2009-2010. In the years 2003-2004 and 2004-2005 it was declined to very low levels with 0.29 and 0.24, 0.18 respectively. It was very high in the first five years of the study period and after
then it was gradually decreased. The mean and median values show the same trend of pattern.

The Q1 value means the one fourth of the sample firms have very low level of debt/equity ratio 0.42 in the year 1990-1991 and 0.21 in the year 2009-2010. The Q1 value reached very low levels in the years 2005-2006, 2006-2007, 2007-2008 and 2008 and 2009 with 0.03, 0.03, 0.09 and 0.08 respectively. The Q1 values showing negative ratio in the years 2003-2004 and 2004-2005 with -1.51 and -1.09 respectively.

The Q3 value means three out of four firms also supporting the team values. It was 1.21 in the year 1990-1991 and 1.83 in the year 2009-2010. Thus, the data showing increasing trend for the study period. It was very low in the years 2003-2004 and 2004-2005 with 0.65 and 0.43 respectively but it was very high in the year 2002-03 and 2000-01 with 3.49 and 2.11 respectively.

An analysis of frequency distribution of sample firms debt to equity ratio in manufacturing industry from the table-5.3 shows that on an average 12.28 percent firms have negative ratio and 49 percent firms have the ratio of 0-1, 22 percent firms have ratio of 1-2 and 5.3 percent firms have ratio of 2-3. Further, 3.09 percent and 1.83 percent firms have ratio of 3-4 and 4-5 respectively. Frequency table also reveals that 3.01 percent and 3.24 percent firm have ratio of 5-10 and above 10 respectively.

(B) Debt to Total Assets Ratio of Manufacturing Industry (D/TA):

From the table 5.7 data shows that the mean values of debt to total assets ratio of select firms in manufacturing industry. The value was 32.78 in the year 2009-2010. The mean value reached high level 61.31 in the year 1993-1994 and reached low level 32.2 in the year 2009-2010. From the year 1991-1992 to the year 1995-1996 it was 54.64, 59.88, 61.31, 52.59 and 48.69 respectively. Between the years 1996-1997 and 2008-2009 the mean values laid between 33.57 and 41.97 with insignificant changes.

Table 5.7 shows the median value of debt to total assets ratio of select firms in manufacturing industry. The median value was 34.07 in the year 1990-1991 and 27.65 in the year 2009-2010. The highest value was 35.79 in the year 1993-1994 and lowest value was 18.67 in the year 2004-2005. From the year 1991-1992 to the year 2003-2004 except in the years 1993-94, 1996-97 and 2000-2001 it was 25.73, 35.57, 32.01, 34.38, 33.24, 34.54,
29.25, 31.51, 30.64, 33.12, 29.27 and 24.12 respectively. And in the year 2005-2006 it was 21.85, in the years 2006-2007 and 2007-2008 it was 25.36 and 24.71 respectively and in the year 2008-2009 it was 29.86.

Q1 value means one fourth of the selected sample firms of CPSEs in manufacturing industry value of debt to total asset ratio was 18.27 in the 1990-1991 year. The highest Q1 value 24.99 was in the year 1992-1993 and it reached to lowest value 4.39 in the year 2006-2007, but it was 6.25 in the year 2009-2010. The Q1 values show constant decline trend, but expect during the years 1994-1995, 1995-1996 and 2003-2004 with values 16.41, 16.08 and 9.89 respectively.

Q3 values from the table 5.7 show the trend of debt to total assets ratio of three fourth of the selected sample firms in manufacturing industry. It was 42.4 during the year 1990-1991 and it was increased to 46.4 during the year 1994-1995 and again it was decreased to 40 in the year 1998-1999. It reached to high levels 60.7 in the year 2003-2004 then it decreased to 34.3 low levels in the year 2006-2007.

The table 5.9 reveals the debt to total assets ratio of selected sample firms in manufacturing industry. No single firm does not have negative ratio and on average of the study period the firms have ratio of 0-10 (14.20 percent), 10-20 (15.18 percent), 20-30 (21.15 percent), 30-40 (15.46 percent), 40-50 (15.45 percent), 50-100 (14.07 percent) and 100&above (4.5 percent) (see Table- 5.9)

(C) Networth to Total Assets Ratio in Manufacturing Industry (NW/TA):

Table 5.13 shows the networth to total assets ratio of selected sample CPSEs in manufacturing industry. The mean value was -1.7 in the year 1990-1991 and -28 in the year 1995-1996. The mean value in the year 1996-1997 was 26.2 and gradually decreased to 14.6 during the year 2002-2003. And again it was 18 during the year 2003-2004 and decrease to 6.39 during the year 2006-2007. In the year 2007-2008 it was 16.3 and in the years 2008-2009 and 2009-2010 it was 26.2 and 28.2 respectively.

The median value was 37 in the year 1990-1991 and in the years 1991-1992 and 1992-1993 it was 38.4 and 31.4 respectively and gradually increased to 33.9 in the year 1999-2000. In the year 2001-2002 it was 28.9 and 27.3 in the year 2002-2003. It was 31.4 in the year 2003-
2004 and increased to 34.8 during the year 2004-2005 and 35.4 in the year 2005-2006 and it decreased to 33.4 during the year 2009-2010.

Q1 value was 17.2 in the year 1990-1991 and it was constantly continues to the year 1995-1996 with the value 17.1. It decreased to 10.2 during the year 1996-1997 and with slight changes it decreased to 3.79 during the year 2004-2005 again it was abruptly increased to 26.4 during the year 2005-2006. It decreased to 21.8 during the year 2009-2010 except in the year 2007-2008 with 30.

Q3 value (or) three fourth of the samples firms in manufacturing industry has NW/TA ratio value at 40.1 in the year 1990-1991 and 50.6 in the year 1991-1992. It decreased to 39.4 during the year 1992-1993 and with slight changes it was 48.3 during the year 2009-2010.

An analysis of frequency distribution of sample CPSEs networth to total assets ratio in manufacturing industry from the table-5.35 that on average of the study period the firms have ratio of 0-10 (5.28 percent), 10-20 (11.55 percent), 20-30 (17.21 percent), 30-40 (25.99 percent), 40-50 (15.81 percent), 50-100 (13.32 percent).Further, on average 11.31 percent CPSEs have negative ratio and no single firm have 100 & above ratio for the entire study period. (see Table- 5.15)

III) Capital structure practices of selected CPSEs’ in Service Industry

(A) Debt-Equity ratio in Service Industry(D/E):

The debt/equity ratio of selected firms in service industry is showed in the table 5.1. The mean value of ratio for sample firms in the year 1990-91 was 1.71 and 1.03 in the year 1996-1997. In the last two years of the study period was 2.113 and 2.073 respectively. The median value was 2.02 in the year 1990-91 and immediately decreased to 0.52 during the year 1991-92. It was continuously low level up to the year 2007-08 with 0.26. But in the last two years of the study period 2008-2009 and 2009-2010 it was 2.12 and 2.13 respectively.

Q1 values means one fourth of the sample firms in service industry is shows stable debt/equity ratio from the year 1990-1991 with 0.7 and to the year 2009-2010 with 0.12. The Q3 values means one third of the sample firms in the service industry shows growth trend in debt equity ratio the value was 2.88 in the year 1990-1991 then it declined to 0.41 in
the year 2004-2005 and in the year 2005-2006 it was 0.59. Further, it increased to 4.09 and 3.97 in the years 2008-2009 and 2009-10 respectively.

The table 5.4 shows that the sample CPSEs in service industry on average no single firm does not have negative debt-equity ratio. On an average 71.28 percent firms have ratio 0-1, 13.95 percent firms have ratio 1-2, 5.67, 5.85 and 2.25 percent firms have debt-equity ratio of 2-3, 3-4 and 4-5 respectively. Only 1 percent firms possessed 10 and above ratio for the entire study period for the sample CPSEs in service industry. (see Table- 5.4)

(B) Debt to Total Assets ratio in Service Industry(D/TA):

From the table 5.7 it is evident that in the year 1990-1991 debt to total assets ratio for selected firms in service industry was 39.6 and in the years 1991-1992, 1992-1993, 1993-1994 and 1994-1995 it was 28.61, 27.44, 23.08 and 23.55 respectively. In the year 1995-1996 it was 25.38 and in the year 1996-1997 it was 28.85. Further, in the year 1997-1998 it was 28.28 and it was 25.18 in the year 1998-1999 and gradually decreased to 6.92 during the year 2004-2005 and again it increased to 24.96 during the year 2009-10.

Table 5.7 shows the median value of debt to total assets ratio for selected firms in service industry. It was 44.8 in the year 1990-1991 and in the years 91-92, 92-93, 93-94, 95-96, 97-98 and 99-2000 it was 21, 18.7, 9.57, 12.6, 14.6, 27.4, 32, 25.1 and 16.7, respectively. Further, it increased to 19.8 during the year 2000-2001 and then after it decreased from 13.5 during the year 2001-2002 to 4.93 during the year 2004-2005. In the year 2005-2006 it was 5.82 and abruptly it increased to 27.5 during the year 2009-2010.

The Q1 value of debt to total assets ratio for selected firms in service industry was 18.3 in the year 1990-1991 and in the year 1991-1992 it was 4.94. Further, from the year 1992-1993 to the year 1999-2000, it was 10.7, 4.71, 1.58, 8.2, 12.3, 9.33, 17.9 and 13 respectively. Further, it abruptly reduced to 6.56 and 6.55 during years 2000-2001 and 2001-2002 respectively. It reduced to very low value 0.81 in the year 2007-2008 and again it increased to 7.38 in the last year of the study period.

The Q3 value was 54 in the year 1990-1991, and it decreased to 13.6 and 9.56 in the years 2003-2004 and 2004-2005 respectively. Further, in the year 2005-2006 it was 14.1 and increased to 39.9 in the last year of the study period.
An analysis of frequency distribution debt to total assets ratio of sample CPSEs in service industry from the table-5.10 shows that on average of the study period the firms have ratio of 0-10 (34.76 percent), 10-20 (19.08 percent), 20-30 (16.62 percent), 30-40 (9.32 percent), 40-50 (9.23 percent) and 50-100 (9.75 percent). Further, on average 1.25 percent CPSEs have negative debt to total assets ratio in service industry and no single firm have 100&above ratio for the entire study period. (see Table- 5.10)

(C) Net worth-Total Assets ratio in Service Industry (NW/TA):

It is evident from the table 5.13 that selected sample CPSEs in service industry have networth to total assets ratio mean value 30.18 during the year 1990-1991 and in the year 1991-1992 it was 33.71. It was 45.09 in the year 2009-2010 and it reached high level at 55.48, 55.19 and 54.02 in the years 1999 -2000, 2000-2001 and 2001-2002 respectively. Further, it decreased to 47.01 and 45.09 in the years 2008-2009 and 2009-10 respectively.

The median value of networth to total assets ratio for the selected sample CPSEs in service industry in the year 1990-1991 was 30.3 and reached highest point at 51.9 during the year 2000-2001 and again it decreased to 44.2 during the year 2009-2010. Median values supporting the mean values trend.

The Q1 value was 18.3 in the year 1990-1991 and gradually increased and reached high level at 47.7 during the year 2000-2001, then after it was gradually declined to 14.7 during the year 2009-2010. It was 17.9 in the year 2004-2005.

The Q3 value in the 1990-1991 was 36.6 and it increased to 70.3 during the year 1999-2000. It showed down trend and reached to 59.3 during the year 2002-2003. Again, it increased to highest value at 78.3 in the year 2007-2008 and it was 77.4 in the last year of the study period.

An analysis of frequency distribution networth to total assets ratio of sample CPSEs in service industry from the table-5.16 shows that on average of the study period the firms have ratio of 0-10 (3.13 percent), 10-20 (9.23 percent), 20-30 (6.85 percent), 30-40 (15.15 percent), 40-50 (25.39 percent) and 50-100 (39.02 percent). Further, on average 1.25 percent
CPSEs have 100% above ratio and no single firm have negative networth to total assets ratio in service industry for the entire study period. (see Table- 5.16)

IV) Capital structure practices of selected CPSEs in Mining Industry

(A) Debt-equity ratio (D/E) in Mining Industry

The table 5.1 denotes the debt and equity ratio of selected sample CPSEs in mining industry. The mean value of the debt and equity ratio of sample firms in mining industry was 1.25 in the year 1990-1991 and in the years 1996-1997 and 1997-1998 it was 0.39 and 0.46 respectively. It was low at 5.78 during the year 2002-2003 and further it decrease to 0.025 during the year 2008-2009.

The median value was 1.3 in the year 1990-1991 and gradually decreased to 0.03 during the year 2008-2009, expect in the years 1995-1996, 1997-1998 and 2000-2001, with 0.4, 0.3, 0.2 respectively. The median values trend pattern supporting the mean value trends.

Q1 values of the sample firms in mining industry in the year 1990-1991 was 0.84 and gradually decreased to 0.04 during the year 2008-2009. The value reached high at 16.94 in the year 2002-2003. Further, in the years 1999-2000, 2000-2001, 2001-2002, 2003-2004 it was 2.4, 3.25, 4.8 and 4.3 respectively.

Q3 values means three fourth of the sample firms in mining industry have the 1.62 value in the year 1990-1991 and continuously decreased to 0.04 during the year 2008-2009 and last year 2010 data was not available. The value reached very lowest value was during the year 2006-2007 with 0.01.

An analysis of frequency distribution debt and equity ratio of sample CPSEs in mining industry from the table-5.5 shows that on average of the study period the firms have ratio of 0-1 (79.91 percent), 1-2 (10 percent), 2-3 (3.51 percent), 3-4 (1.32 percent), 4-5 (1.32 percent) and 5-10 (2.63 percent). Further, on average 1.32 percent CPSEs have 10% above ratio and no single firm have negative debt and equity ratio in mining industry for the entire study period. (see Table- 5.5)

(B) Debt-Total Assets ratio in Mining Industry (D/TA): The table 5.7 reveals pattern of debt to total assets ratio of sample firms in mining industry. The mean value of debt to total assets ratio was 51.7 in the year 1990-1991 and it gradually reduced to 20.9 during the year
1995-1996. Again it increased to 23.2 in the year 2001-2002 and except in the year 1998-1999 with 19.1. In the year 2002-03 it was 21.3 and it decreased to 0.07 during the year 2009-10. The median value in the year 1990-1991 was 51.72 and reduced to 30.37 during the year 1993-1994. In the year 1994-1995 it was 31.03 and reduced to 12.63 during the year 2000-2001. In the year 2001-2002 it was 16.7 and it reduced to 0.34 during the year 2009-2010.

The Q1 value of debt to total assets ratio of sample firms in mining industry was 16.46 in the year 1990-91 and reduced to 8.52 in the year 1995-1996 but it again increased to 23.93 during the year 1996-1997. Further, it was increased to 40.53 during the year 2004-2005 and it reduced to 0.003 in the last year of the study period.

The Q3 debt to total assets ratio of sample firms in mining industry value was 54.1 in the year 1991-1992 and gradually decreased to 14.4 during the year 2000-2001. Again, it was increased to 21.7 during the year 2001-2002 and it decrease to 0.17 ratio during the year 2009-2010, expect in the year 2006-2007 with 7.91.

The Q1 and Q3 values are supporting the decreasing trend of debt to total assets ratio of sample firms in mining industry with mean and median values.

An analysis of frequency distribution debt to total assets ratio of sample CPSEs in mining industry from the table-5.11 shows that on average of the study period the firms have ratio of 0-10 (42.75 percent), 10-20 (11.42 percent), 20-30 (14.42 percent), 30-40 (13.25 percent), 40-50 (4.92 percent) and 50-100 (13.25 percent). Further, no single firm has 10&above ratio and negative debt to total assets ratio in mining industry for the entire study period. (see Table- 5.11)

(C) Networth to Total Assets ratio in Mining Industry:

From the table 5.13 shows the pattern of networth to total assets ratio of selected sample CPSEs in the mining industry. The table revealed that the mean value of networth to total assets ratio of sample firms in mining industry was 36.8 in the year 1990-1991 and it gradually increased to 63.1 during the year 1998-1999. In the year 2000-2001 it was 58.6 and it increased to 67.9 in the year 2009-2010, expect in the year 2007-2008 with 67.2.
The data shows that the median value of networth to total assets ratio of selected sample CPSEs in the mining industry was 41.8 in the year 1990-1991 and it gradually increased to 68.9 in the year 2000-2001. It was 53.5 in the year 2002-2002 and 52.9 in the year 2002-2003. Further, the median of networth to total assets ratio value again increase to 67.9 during the year 2009-2010, except in the years 2007-2008 and 2008-2009 with 73.6 and 68.9 values respectively.

Q1 value of networth to total assets ratio of selected sample CPSEs in the mining industry was 25.3 in the year 1990-1991 and it increased to 52.5 during the year 1998-1999. It was 27.1 during the year 2002-2003. Again it increased to 59.2 in the last year of the study period.

Q3 value of networth to total assets ratio of selected sample CPSEs in the mining industry was 43.4 in the year 1990-1991 and it increased to 79.2 during the year 1997-1998. It decreased to 73.6 during the year 1998-99 and again it increased to 76.5 during the year 2009-2010. It was reached highest value at 78.9 and 78.2 in the years 2006-07 and 2007-08 respectively.

An analysis of frequency distribution net worth to total assets ratio of sample CPSEs in mining industry from the table-5.17 shows that on average of the study period the firms have ratio of 0-10 (1 percent), 20-30 (4.67 percent), 30-40 (6 percent), 40-50 (24.33 percent) and 50-100 (53.00 percent) and (8 percent) 10&above ratio. Further, no single firm has ratio of 10-20 and only 3 percent firms have negative net worth to total assets ratio in mining industry for the entire study period. (see Table- 5.17)

V) Capital structure practices of selected CPSEs in Power Industry

(A) Debt-Equity Ratio in Power Industry (D/E):

The table 5.1 shows the debt/equity ratio of selected sample CPSEs in the power industry. The mean value of debt/equity ratio of sample CPSEs in power industry was 0.82 in the year 1990-1991 and it was 0.96 in the year 2009-2010. Further, except in the year 1991-1992 high value at 2.62, the value lied between 0.63 to 0.96 for entity study period.

The median value of debt/equity ratio of selected sample CPSEs in the power industry was 0.82 in the year 1990-1991 and it was 0.48 in the year 2006-2007. It was reached high value
at 1.12, in the year 2007-2008. In the years 2008-2009 and 2009-2010 it was 0.63 and 0.59 respectively.

Q1 value of the sample firms in power industry was 0.7 in the year 1991-1992 and it was 0.4 in the year 2009-2010. The Q1 value lied between 0.2 to 0.7 for the entire study period.

Q3 value of the sample CPSEs in power industry was 1.2 in the year 1992-1993 and it was 1.85 in the year 2009-2010. It was high value at 6.19 during the year 1991-1992. Further, from the year 1993-1994 to 2008-2009 the value was lying between 0.86-1.72.

An analysis of frequency distribution debt to equity ratio of sample CPSEs in power industry from the table-5.6 shows that on average of the study period the firms have ratio of 0-1 (73.33 percent), 1-2 (22.53 percent), 2-3 (2.5 percent) and 5-10 (1.67 percent) Further, no single firm has negative debt to equity ratio in power industry for the entire study period. (see Table- 5.6)

**(B) Debt to Total Assets Ratio in Power Industry (D/TA):**

The table 5.7 shows that the pattern of debt to total assets ratio of selected sample CPSEs in power industry. The ratio mean value was 20.19 in 1990-1991 and 51.11 in the year 1991-1992. It gradually decreased to 32.87 during the year 2001-2002 and in the year 2002-2003 it was 34.05. It slightly decreased to 30.75 during the year 2006-2007 and in the year 2007-2008 it was 33.34. Further in the year 2008-2009 it was 36.07 and it reached to 35.37 in the last year of the study period.

The median value of debt to total assets ratio of selected sample CPSEs in power industry was 40.38 in the year 1990-1991 and it was 41.24 in the year 1996-97. In the year 1997-1998 it was 39.16 and decreased to 31.41 during the year 2001-02. Further, it was increased to 33.32 during the year 2002-03 and it was 30 in the year 2003-04. It decreased to 27.85 during the year 2006-2007 and in the years 2007-2008, 2008-2009 and 2009-2010 it was 29.9, 32.7, and 31.45 respectively.

Q1 value of debt to total assets ratio of selected sample CPSEs in power industry was 36.64 in the year 1991-1992 and gradually decreased to 15.66 during 1999-2000. It was decreased to 14.03 during the year 2004-2005 but again it gradually increased to 23.56 during the year 2009-2010.
Q3 value of debt to total assets ratio of selected sample CPSEs in power industry was 72.9 in the year 1991-1992 and decreased to 48.6 in the year 1995-1996. In the year 1996 -1997 it was 51.9 and it was 51.1 in the year 2009-2010 with slight up and downs.

An analysis of frequency distribution debt to total assets ratio of sample CPSEs in power industry from the table-5.12 shows that on average of the study period the firms have ratio of 10-20 (13.75 percent), 20-30 (23.7542 percent), 30-40 (17.92 percent), 40-50 (24.17 percent) and 50-100 (20.42 percent). Further, no single firm has 10&above and 0-10 ratio and negative debt to total assets ratio in power industry for the entire study period. (see Table- 5.12)

From the table 5.12 it is evident that the sample CPSEs in power industry did not have negative debt to total assets ratio for the entire study period. No single firm has below 10 ratio range for the entire study period. On average 13.75 percent firms have 10-20 ratio range and on average 23.75 percent firms have 20-30 ratio range. Further, 17.92 percent firms have 30-40 ratio range. On average 24.17 and 20.42 percent firms have 40-50 and 50-100 ratio ranges respectively.

(C) Networth to Total Assets Ratio in Power Industry (NW/TA):

The table 5.13 revels that in 1990-1991 the net worth to total assets ratio of sample firms in power industry was 73.6 and in the year 1991-1992 it was 38.9 and it was gradually increased to 54.5 in the year 1997-1998. And with slight changes it was reached to 56.3 in the year 2005-2006 and again it decreased to 46.2 during the year 2009-2010.

The mean value was 73.6 in the year 1990-1991 and 31.6 in the year 1991-1992, it was 48.3 in the year 1992-1993 and with slight changed it was increased to 60.5 during the year 2005-2006. This after it was decrease from 58.6 during the year 2006-07 to 53 during the year 2009-2010.

The Q1 value was 49.1 in the year 1990-1991 and 16.8 in the year 1991-1992 the Q1 value was 50.3 in the year 1993-1994 and gradually decreased to 32.3 during the year 2009-2010.

The Q3 value was 98.1 in the year 1990-1991 and 53.5 in the year 1991-1992 and it was increased to 70.5 in the year 1997-1998. Then after it was decrease to 53.2 during the year 2009-2010 with slight up and down trends.
An analysis of frequency distribution of net worth to total assets ratio of sample CPSEs in power industry from the table-5.18 shows that on average of the study period the firms have ratio of 10-20 (1.67 percent), 20-30 (3.75 percent), 30-40 (8.75 percent), 40-50 (26.67 percent) and 50-100 (59.17 percent). Further, no single firm has negative net worth to total assets ratio in power industry for the entire study period. (see Table- 5.18)

**Correlation analysis of Capital structure ratios:**

Karl Pearson’s coefficient of correlation is also known as the product movement correlation coefficient. The value of “r” is lies between + 1 or − 1. Positive values of “r” indicate positive correlation between the two variables i.e. changes in both variables take place in the same direction), where as negative values of “r” indicate negative correlation i.e., changes in two variables taking place in the opposite directions. A zero value of “r” indicates that there is no association between two variables. When r= +1, it indicates perfect positive correlation and when it is -1, it indicates perfect negative correlation, meaning there by that variations in independent variable (X) explain 100 percent of the variations in the dependent variable (Y).

**Correlation Qualitative Assessment values**

- Zero or Null – no correlation
- 0.1 to 0.3 Weak correlation
- 0.3 to 0.6 Regular correlation
- 0.6 to 0.8 Strong correlation
- 0.8 to 0.9 Very strong correlation
- 1 perfect correlation
- -0.1 to -0.3 Negative weak
- -0.3 to -0.6 Negative regular
- -0.6 to -0.8 Negative strong
- -0.8 to 0.9 Negative very strong
-1 perfect negative

A) Overall sample CPSEs: The table 7.48 makes it clear that a debt/equity ratio does not have significant correlation with debt to total assets ratio and networth to total assets ratio at 0.01 and 0.05 level of significance. But debt to total assets ratio has very strong negative correlation at 0.01 level of significance with networth to total asset ratio in overall sample CPSEs.

B) Manufacturing Industry: The Table 7.49 reveals that the correlation between debt/equity ratio and debt to total assets ratio and networth to total assets ratio, it is not significant at 0.01 and 0.05 significance levels. But it shows very strong negative correlation between debt to total assets ratio and networth to total assets ratio in manufacturing industry at 0.01 significance level.

C) Service Industry: The Table 7.50 shows the correlation between debt/equity ratio and debt to total assets ratio in service industry, it is regular correlation at 0.01 level of significance and negative regular correlation is also evident between debt/equity ratio and networth to total assets ratio at 0.05 level of significance. The correlation between debt to total assets ratio and net worth to total assets ratio is negative strong correlation at 0.01 level of significance.

D) Mining Industry: The correlation of capital structure ratios in mining industry is shown in table7.51. The correlation between debt/equity ratio and debt to total assets ratio and networth to total assets ratio is not significant at 0.01 level of significance. The correlation between Debt to total assets ratio and networth to total assets ratio is strong negative correlation also at 0.01 significance.

E) Power Industry: The table 7.52 showing the correlation of capital structure ratio in power industry. The correlation between Debt/equity ratio and debt to total assets ratio is strong and the correlation between debt/equity ratio and networth to total assets ratio is negative regular at 0.01 level of significance. The correlation between debt to total assets and networth to total assets ratio is very strong negative at 0.01 level of significance.
Conclusion:

This chapter explains the capital structure practices in selected sample CPSEs. The study examines the debt/equity ratio, debt to total assets ratio and networth to total assets ratios are showing different trend patterns in the same group and between the groups.

The debt/equity ratio showed declines trend in all groups except the last year of the study period. However, it was also increased in the last year of the study period in all groups.

The debt to total assets ratio showed declining trend in selected sample firms and in other groups also. (i.e., manufacturing industry, service industry, mining industry and power industry).

Networth to total assets ratio showed an increase trend in almost all study groups that implying more equity shareholders’ funds was used to finance the assets in all groups, but in power industry it was showed decline trend.

The correlation between debt/equity ratio and debt to total assets ratio is not significant in overall sample firms, manufacturing industry, mining industry, but in service industry it is significant and regular. Further, in power industry significant and strong correlation has been observed.

Debt/equity ratio correlation with networth to total assets ratio was not significant in overall sample firms, manufacturing industry and in mining industry. In service industry the correlation between debt/equity ratio and networth to total assets ratio was significant and with networth to total assets was also significant and negative regular correlation is find in power industry.

It is evident that the correlation between debt to total assets to networth to total assets ratio is significant and strongly negative in all study groups. (Overall sample firms, manufacturing industry, service industry, mining industry, and mining industry)