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ANALYSIS OF PROFITABILITY OF DPSUS THROUGH ROA & ROE RATIOS

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1.0 INTRODUCTION

Profit is the leftover revenue that keeps an organization alive. Weston and Brigham mentioned that "to the financial management profit is the test of efficiency and a measure of control to the owners a measure of the worth of their investment, to the creditors the margin of safety, to the government a measure of taxable capacity and a basis of legislative action and the country profit is an index of economic progress national income generated and the rise in the standard of living. The term profitability is derived from two words namely "profit" and "ability". Profit is the surplus that is achieved after meeting all expenses in a particular time frame. Ability is the strength or force of earning profit. As such, profitability is the ability to earn profit from all the activities of an organization. This indicates the efficiency of the management of an organization in generating profit by utilizing the available resources. In other words profitability is the earning performance of an enterprise.

The profitability is an outcome of profit. Profitability denotes the state of affairs of the company over a period of time. Profit is an absolute term where as profitability is a relative term although both are closely related and mutually independent with distinct roles in business

1.1 Profitability Management.

The Profitability Management (PM) concept is defined as planning, measurement and control, and interpretation of the profitability of organizations, services and account relationships, using transfer charging as a key-tool for calculating profitability. Profitability management is a tool of management process rather than just an accounting or analysis procedure. It is a process of exploding financial objectives into operating targets, measuring, and controlling results and interpreting them. In a developing country like India, where social objectives have to be balanced with the organizations, PM may be taken to be the process of utilization of funds or resources in an optimum manner.

1.2 Measurement of Profitability

Profitability relates to the size of investment in the business. Four useful measures of enterprise profitability are the rate of return on assets (ROA), the rate of return on equity (ROE), operating profit margin and net income. The operating profit margin measures the returns to capital per rupee of gross revenue. The two ways a business can increase profits is by increasing the profit per unit produced or by increasing the volume of production. The operating profit margin focuses on the per unit produced component of earning profit and the asset turnover ratio as discussed in this chapter

focuses on the volume of production component of earning a profit. The profitability measurement is essential to have forward decision making. According to Murthy V.S. "The most important measurement of profitability of a company is ratio. E.g. profitability of assets, variously referred to as earning power of the company, return on total investment or total resources committed to operations". Profitability ratios are calculated to measure the operating efficiency of the **b**usiness. Profitability analysis focuses on the relationship between revenues and expenses and on the level of net DPSUs income that emerges directly off the income statement and is calculated by matching firm revenues with the expenses incurred for creating such revenues and the gain or loss on the sale of capital assets.

1.3 Profitability Analysis of DPSUs

An attempt is made to analyze and understand the profitability of DPSUs in India. The recommended measures of profitability are the (a) Return on Equity Ratio and (b) Return on Asset Ratio.

1.3.1 Return on Assets Ratio

The **ROA** measures the return to all firm assets and is often used as an overall index of profitability. It indicates whether the total assets have been properly utilized or not. If not properly used it proves inefficiency and vice versa. It is measured by net income divided by average total assets. This ratio of DPSUs as ascertained from the financial statements is given below.

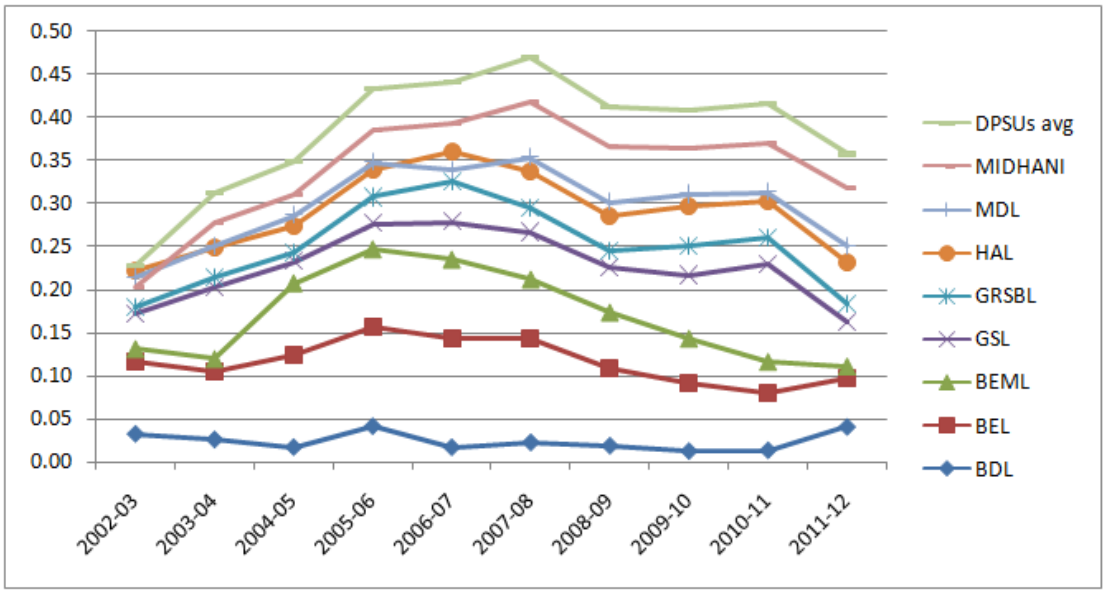
Table – 1.1.
Return on Assets Ratio of DPSUs in India

DPSU\YEAR	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	Average	S.D	Covar	Min	Max
BDL	0.03	0.03	0.02	0.04	0.02	0.02	0.02	0.01	0.01	0.04	0.02	0.01	44.18	0.01	0.04
BEL	0.08	0.08	0.11	0.12	0.13	0.12	0.09	0.08	0.07	0.06	0.09	0.02	25.85	0.06	0.13
BEML	0.01	0.01	0.08	0.09	0.09	0.07	0.06	0.05	0.04	0.01	0.05	0.03	60.71	0.01	0.09
GSL	0.04	0.08	0.03	0.03	0.04	0.06	0.05	0.07	0.11	0.05	0.06	0.03	46.59	0.03	0.11
GRSE	0.01	0.01	0.01	0.03	0.05	0.03	0.02	0.03	0.03	0.02	0.02	0.01	51.37	0.01	0.05
HAL	0.04	0.03	0.03	0.03	0.03	0.04	0.04	0.04	0.04	0.05	0.04	0.01	15.16	0.03	0.05
MDL	-0.01	0	0.01	0.01	-0.02	0.02	0.02	0.01	0.01	0.02	0.01	0.01	179.1	-0.02	0.02
MIDHANI	-0.01	0.03	0.02	0.04	0.05	0.06	0.06	0.05	0.06	0.07	0.04	0.02	55.69	-0.01	0.07
Average	0.03	0.03	0.04	0.05	0.05	0.05	0.05	0.05	0.05	0.04	0.04	0.02	59.83	0.01	0.07
Std Dev.	0.03	0.03	0.04	0.04	0.04	0.03	0.03	0.02	0.03	0.02	0.03	0.01	50.55	0.02	0.04
Covar	121.79	88.3	92.27	73.82	91.17	64.81	58.43	53.95	72.57	50.53	61.1	49.67	84.48	172.57	54.49
Min	-0.01	0	0.01	0.01	-0.02	0.02	0.02	0.01	0.01	0.01	0.01	0.01	15.16	-0.02	0.02
Max	0.08	0.08	0.11	0.12	0.13	0.12	0.09	0.08	0.11	0.07	0.09	0.03	179.1	0.06	0.13

Sources: computation based on Annual Reports of DPSUs

The above table shows ratios computed based on the actual data available of all the eight DPSUs for various years. The ratios have been calculated on time basis. The table shows the ratios for the individual companies with their respective Average, Standard Deviation, Co-variance, the Minima and the Maxima over the years. The table also shows the Average, Standard Deviation, Co-variance, the Minima and the Maxima of the DPSUs as a whole for individual years to facilitate the study. The above data is presented in the following graph .

Figure – 1.1
Return on Assets Ratio of DPSUs



Sources: Compiled from the annual reports of DPSUs

An analysis of data (see Table 1.1 & Figure 1.1) reveals the return on Assets ratio of all individual DPSUs and the industry average for the years from 2002-03 to 2011-12 as given below:

BDL: The Return on Assets ratio was 0.03 times in the year 2002-03 & 2003-04 and it decreased to 0.02 times in the year 2004-05. It then increased to 0.04 times in the year 2005-06 and decreased from 0.02 times to 0.01 times from 2006-07 to 2010-11. It again increased to 0.04 times in the year 2011-12. The Minima and Maxima of the ratio were 0.01 and 0.04 respectively. The ratio for BDL average was 0.02 times, standard deviation was 0.01 times and the covariance was 44.18. The average of the DPSUs is 0.04 over the period. Since the average of BDL is lower to the industry average (0.20), the company needs to improve its profitability.

BEL: The Return on Assets ratio was 0.08 times in the year 2002-03 & 2003-04 and it kept increasing from 0.11 times to 0.13 times in the year 2004-05 to 2006-07. It then decreased from 0.12 times to 0.06 times in the year 2007-08 to 2011-12. The Minima and Maxima of the ratio were 0.06 and 0.13 respectively. The ratio for BEL average was 0.09 times, standard deviation was 0.02 and the covariance was 25.85. The average of the DPSUs is 0.04 over the period. Since the average of BEL is higher to the industry average (0.08), apparently the company is doing well.

BEML: The Return on Assets ratio was 0.01 times in the year 2002-03 & 2003-04 and it kept increasing from 0.08 times to 0.09 times from the year 2004-05 to the next two years of 2005-06 & 2006-07. It then decreased from 0.07 times to 0.01 times in the year 2007-08 to 2011-12. The Minima and Maxima of the ratio were 0.01 and 0.09 respectively. The ratio for BEML average was 0.05 times, standard deviation was 0.03

and the covariance was 60.71. The average of the DPSUs is 0.04 over the period. Since the average of BEML is lower to the industry average (0.17), apparently the company is not doing well and needs to improve the ratio.

GSL: The Return on Assets ratio was 0.04 times in the year 2002-03 and it increased to 0.08 times in the year 2003-04. It then decreased to 0.03 times in the year 2004-05 & 2005-06 and it kept increasing from 0.04 times to 0.06 times in the year 2006-07 to 2007-08. It again decreased to 0.05 times in the year 2008-09. Again it increased from 0.07 times to 0.11 times in the year 2009-10 to 2010-11 and further decreased to 0.05 times in the year 2011-12. The Minima and Maxima of the ratio were 0.03 and 0.11 respectively. The ratio for GSL average was 0.06 times, standard deviation was 0.03 and the covariance was 46.59. The average of the DPSUs is 0.04 over the period. Since the average of GSL is higher to the industry average (0.43), apparently the company is not doing well and needs to improve the ratio.

GRSE: The Return on Assets ratio was 0.01 times in the year 2002-03 to 2004-05 and it kept increasing from 0.03 times to 0.05 times in the year 2005-06 to 2006-07. It then slightly decreased from 0.03 times to 0.02 times in the year 2007-08 to 2008-09 and again increased to 0.03 times in the year 2009-10 & 2010-11. Further it decreased to 0.02 times in the year 2011-12. The Minima and Maxima of the ratio were 0.01 and 0.05 respectively. The ratio for GRSE average was 0.02times, standard deviation was 0.01 and the covariance was 51.37. The average of the DPSUs is 0.04 over the period. Since the average of GRSE is lower to the industry average (0.43), the company needs to improve its profitability.

HAL: The Return on Assets ratio was 0.04 times in the year 2002-03 and it decreased to 0.03 times in the next four years i.e. 2003-04 to 2006-07. It then slightly kept increasing from 0.04 times to 0.05 times from the year 2007-08 to 2011-12. The Minima and Maxima of the ratio were 0.03 and 0.05 respectively. The ratio for HAL average was 0.04 times, standard deviation was 0.01 and the covariance was 15.16. The average of the DPSUs is 0.04 over the period. Since the average of HAL is maintained to the industry average (0.08), apparently the company is not doing well and needs to improve the ratio.

MDL: The Return on Assets ratio was -0.01 times in the year 2002-03 and it kept increasing from 0.00 times to 0.01 times in the year 2003-04 to 2005-06. It then decreased to -0.02 times in the year 2006-07 and again increased to 0.02 times in the year 2007-08 to 2009-10. It further decreased to 0.01 times in the year 2010-11. Thereafter it increased to 0.02 times in the year 2011-12. The Minima and Maxima of the ratio is -0.02 and 0.02 respectively. The ratio for MDL average is 0.01 times, standard deviation is 0.01 and the covariance is 179.10. The average of the DPSUs is 0.04 over the period. Since the average of MDL is lower to the industry average (0.43), the company needs to improve its profitability.

MIDHANI: The Return on Assets ratio was -0.01 times in the year 2002-03 and it increased to 0.03 times in the year 2003-04. It then decreased to 0.02 times in the year 2004-05 and kept increasing from 0.05 times to 0.06 times in the year 2006-07 to

2008-09. It again decreased to 0.05 times in the year 2009-10. Again it increased to 0.06 in the year 2010-11 and increased to 0.07 times in the year 2011-12. The Minima and Maxima of the ratio were -0.01 and 0.07 respectively. The ratio for MIDHANI average was 0.04 times, standard deviation was 0.02 and the covariance was 55.69. The average of the DPSUs is 0.04 over the period. Since the average of MIDHANI is lower to the industry average (0.17), the company needs to improve the ratio.

1.3.2 Return on Equity Ratio (ROE)

The **ROE** measures the rate of return on the owner's equity employed in the business. It is useful to consider the ROE in relation to ROA to determine if the business is making a profitable return on their borrowed money. It is measured by net income divided average owner's equity. This ratio of DPSUs as ascertained from the financial statements are given below.

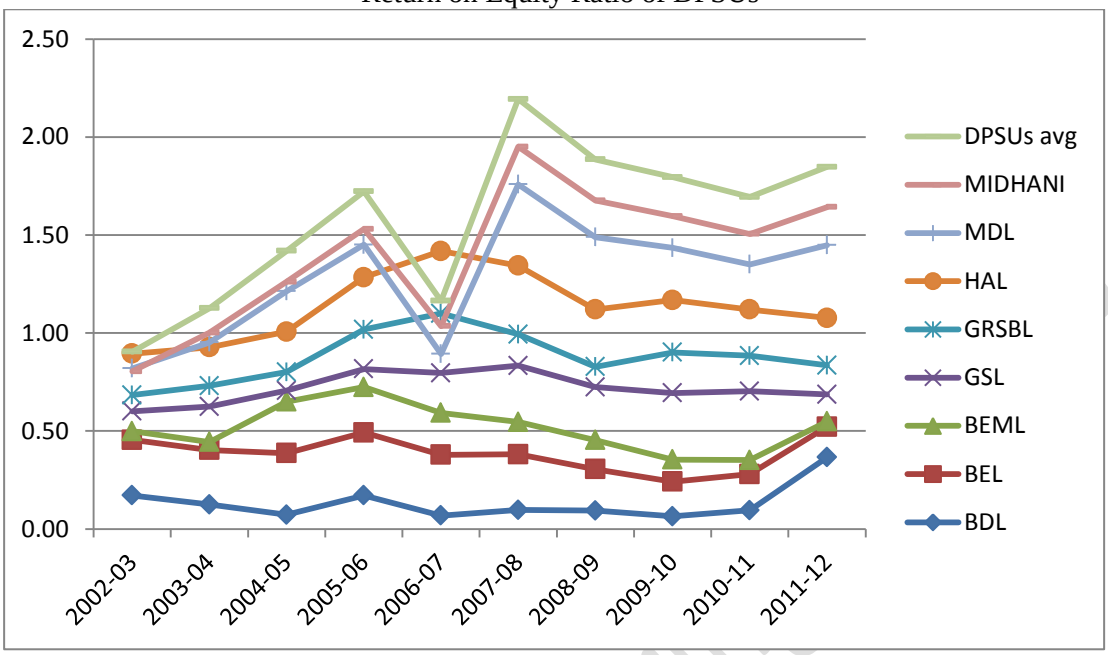
Table – 1.2
Return on Equity Ratio of DPSUs in India

DPSUs /Years	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	Average	S.D	Covar	Min	Max
BDL	0.17	0.12	0.07	0.17	0.07	0.1	0.09	0.06	0.1	0.37	0.13	0.09	68.32	0.06	0.37
BEL	0.28	0.28	0.31	0.32	0.31	0.28	0.21	0.18	0.18	0.16	0.25	0.06	24.99	0.16	0.32
BEML	0.04	0.04	0.26	0.23	0.21	0.16	0.15	0.11	0.07	0.03	0.13	0.09	65.1	0.03	0.26
GSL	0.1	0.18	0.06	0.09	0.2	0.29	0.27	0.34	0.35	0.14	0.2	0.11	52.31	0.06	0.35
GRSE	0.08	0.11	0.09	0.2	0.3	0.16	0.1	0.21	0.18	0.15	0.16	0.07	42.68	0.08	0.3
HAL	0.21	0.2	0.21	0.27	0.32	0.35	0.29	0.27	0.24	0.24	0.26	0.05	19.55	0.2	0.35
MDL	-0.07	0.02	0.21	0.17	-0.53	0.42	0.37	0.27	0.23	0.37	0.14	0.28	194.2	-0.53	0.42
MIDHANI	-0.02	0.05	0.05	0.08	0.14	0.19	0.19	0.16	0.16	0.19	0.12	0.07	61.57	-0.02	0.19
DPSUs avg	0.1	0.13	0.16	0.19	0.13	0.24	0.21	0.2	0.19	0.21	0.18	0.1	66.09	0.1	0.24
Std Dev.	0.12	0.09	0.1	0.08	0.28	0.11	0.1	0.09	0.09	0.12	0.06	0.07	54.81	0.08	0.07
Covar	118	70.75	64.96	42.84	215.4	44.29	45.96	45.03	46.6	57.36	31.71	72.72	82.94	81.55	21.27
Min	-0.07	0.02	0.05	0.08	-0.53	0.1	0.09	0.06	0.07	0.03	0.12	0.05	19.55	-0.53	0.19
Max	0.28	0.28	0.31	0.32	0.32	0.42	0.37	0.34	0.35	0.37	0.26	0.28	194.2	0.2	0.42

Source: computation based on Annual Reports of DPSUs

The above table shows ratios computed based on the actual data available of all the eight DPSUs for various years. The ratios have been calculated on time basis. The table shows the ratios for the individual companies with their respective Average, Standard Deviation, Co-variance, the Minima and the Maxima over the years. The table also shows the Average, Standard Deviation, Co-variance, the Minima and the Maxima of the DPSUs as a whole for individual years to facilitate the study. The above data is presented in the following graph.

Figure – 1.2
Return on Equity Ratio of DPSUs



Source: compiled from the annual reports of DPSUs

An analysis of data (see Table 1.2 & Figure 1.2) reveals the Return on Equity ratio of all individual DPSUs and the industry average for the years from 2002-03 to 2011-12 as given below:

BDL: The Return on Equity ratio was 0.17 times in the year 2002-03 and it kept decreasing from 0.12 times to 0.07 times in the year 2003-04 to 2004-05. It then increased to 0.17 times in the year 2005-06 and again decreased to 0.07 times in 2006-07. It again increased to 0.10 times in the year 2007-08 and decreased from 0.09 times to 0.06 times in the year 2008-09 to 2009-10. It further increased from 0.10 times to 0.37 times in the year 2010-11 to 2011-12. The Minima and Maxima of the ratio were 0.06 and 0.37 respectively. The ratio for BDL average was 0.13times, standard deviation was 0.09 and the covariance was 68.32. The average of the DPSUs is 0.18 over the period. Since the average of BDL is higher to the industry average (12.89), the company needs to maintain its profitability.

BEL: The Return on Equity ratio was 0.28 times in the years 2002-03 and 2003-04. It then increased to 0.31 times and 0.32 times in the years 2004-05 and 2005-06 respectively. It again decreased to 0.31 times 0.18 times, 0.18 times, 0.16 times in the year 2006-07, 2007-08, 2008-09, 2009-10and 2011-12 respectively. Then it decreased to 0.16 times in the year 2011-12. The Minima and Maxima of the ratio were 0.16 and 0.32 respectively. The ratio for BEL average was 0.25 times, standard deviation was 0.06 and the covariance was 24.99. The average of the DPSUs was 0.18 over the

period. Since the average of BEL is higher than the industry average (0.14), apparently the company is doing well.

BEML: The Return on Equity ratio was 0.04 times in the years2002-03 and r 2003-04. It then increased to 0.26 times in the year 2004-05 and again decreased from 0.23 times to 0.03 times during the in the years from 2005-06 to 2011-12. The Minima and Maxima of the ratio were 0.03 and 0.26 respectively. The ratio for BEML average was 0.13 times, standard deviation was 0.09 and the covariance was 65.10. The average of the DPSUs was 0.18 times over the period. Since the average of BEML was lower to the DPSUs average and the industry average (0.42), the company has to improve further.

GSL: The Return on Equity ratio was 0.10 times in the year 2002-03 and it increased to 0.18 times in the year 2003-04. It then decreased to 0.06 times in the year 2004-05 and increased from 0.09 times to 0.29 times during the years from 2005-06 to 2007-08. It again decreased to 0.27 times in the year 2008-09. Then again it kept increasing from 0.34 times to 0.35 times from the year 2009-10 to 2010-11 and further it decreased to 0.14 times in the year 2011-12. The Minima and Maxima of the ratio were 0.06 and 0.35 respectively. The ratio for GSL average was 0.20 times, standard deviation was 0.11 and the covariance was 52.31. The average of the DPSUs is 0.18 over the period. Since the average of GSL is higher to the industry average (0.04), apparently the company is doing well.

GRSE: The Return on Equity ratio was 0.08 times in the year 2002-03 and it increased to 0.11 times in the year 2003-04. It then decreased to 0.09 times in the year 2004-05 and again increased from 0.20 times to 0.30 times in the year 2005-06 to 2006-07. It again decreased from 0.16 times to 0.10 times in the year 2007-08 to 2008-09. Then it increased to 0.21 times in the year 2009-10 and again kept increasing from 0.18 times to 0.15 times from the year 2010-11 to 2011-12.The Minima and Maxima of the ratio were 0.08 and 0.30 respectively. The ratio for GRSE average was 0.16 times, standard deviation was 0.07 and the covariance was 42.68. The average of the industry is 0.18 over the period. Since the average of GRSE is lower to the industry average (0.04), the company needs to maintain its profitability.

HAL: The Return on Equity ratio was 0.21 times in the year 2002-03 and it decreased to 0.20 times in the year 2003-04. Then it kept increasing from 0.21 times to 0.35 times in the year 2004-05 to 2007-08 and decreased from 0.29 times to 0.24 times in the years from 2008-09 to 2011-12. The Minima and Maxima of the ratio were 0.20 and 0.35 respectively. The ratio for HAL average was 0.26 times, standard deviation was 0.05 and the covariance was 19.55. The average of the DPSUs is 0.18 over the period. Since the average of HAL is higher to the industry average, apparently the company is doing well.

MDL: The Return on Equity ratio was -0.07 times in the year 2002-03 and it kept increasing from 0.02 times to 0.21 times in the year 2003-04 to 2004-05. It then decreased from 0.17 times to -0.53 times in the year 2005-06 to 2006-07 respectively and it increased to 0.42 times in 2007-08. It again increased from 0.37 times to 0.23

times during the years 2008-09 to 2010-11 .Further; it increased to 0.37 times in the year 2011-12. The Minima and Maxima of the ratio were -0.53 and 0.42 respectively. The average ratio for MDL average was 0.14 times, standard deviation was 0.28 and the covariance was 194.20. The average of the DPSUs was 0.18 times over the period. Since the average of MDL is lower to the industry average (0.04), the company needs to maintain its profitability.

MIDHANI: The Return on Equity ratio was -0.02 times in the year 2002-03 and it then kept increasing from 0.05 times to 0.19 times in the year 2003-04 to 2008-09. It then decreased to 0.16 times in the year 2009-10 & 2010-11 and again increased to 0.19 times in 2011-12. The Minima and Maxima of the ratio were -0.02 and 0.19 respectively. The ratio for MIDHANI average was 0.12 times, standard deviation was 0.07 and the covariance was 61.57. The average of the DPSUs is 0.18 over the period. Since the average of MIDHANI is lower to the industry average (0.36), the company needs to improve its profitability.