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Impact of Capital Structure on Financial Performance of DPSUs(BEML&GSL) in India.

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1.0 Introduction

The capacity of a firm to operate its activities is based on the availability of funds. Normally, these funds in finance literature are termed as long term funds, which are contributed by owners (shareholders) and outsiders. The owners'funds are represented by equity contributions and internally generated financial resources. A unique characteristic of procuring funds is that a firm may tap any of these sources and hence the blend of these different sources of long term funds is termed as capital structure in finance literature.

An attempt has been made to ascertain the association between the capital structure and corporate financial performance through correlation and regression analysis. The Capital Structure ratios namely (i) Debt Equity Ratio has been considered as independent variables .The financial performance measures such as PAT, ROCE, Net worth, Sales, EBIT, and EBIT/sales ratio are considered as dependent variables .

Separate statistical simple Regression has been carried out with each of the dependent variables (Financial performances) individually with the capital structure (Independent variable) and the statistical results have been shown in the tables for analysis and interpretations.

1.1 Financial performance measures considered

(i) **Profit After Tax (PAT)-**This is the net profit earned by the Company after deducting its expenses like interest, depreciation and Tax.

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(ii) **Return on Capital Employed (ROCE)-**This ratio indicates the efficiency and profitability of the Company based on the capital investment.

iii) **Net Worth (NW):** The net worth is the book value of shares of the company as measured by its total assets minus total liabilities. This indicates how much the company would have left over in assets if it went for dissolution immediately.

(iv**) Sales:** It is the Revenue earned by the companies both from sale of goods and services. The sales reflect the growth in size of a company. The more the sales, there will be inflow of more funds which will affect the financial structure of the company

(v) **EBIT**: This is the earning made before payment of interest and Tax.

(vi)**EBIT/Sales**: This is the ratio between the EBIT and Sales

1.1.1 Impact of Capital Structure on Financial performance of BEML

The data for the years from 2002-03 to 2011-12 have been taken into consideration and the relevant ratios of Capital Structure (Debt Equity) and Financial Performances (PAT,ROCE, EPS, EBIT and EBIT/sales) have been worked out as given in the following table.

Table 1.1

Capital structure and financial performance ratios of BEML

BEML	D/E	D-TA	NW-TA	PAT	ROCE	Net worth	EBIT	EBIT/Sales
2002-03	2.17	0.70	0.30	2661	4.53	58514	4138	2.64
2003-04	2.01	0.68	0.32	2348	3.95	60125	5098	3.05
2004-05	1.91	0.67	0.33	17438	23.02	73468	27368	15.79
2005-06	1.42	0.59	0.41	18680	21.75	87971	28990	14.08
2006-07	1.19	0.55	0.45	20509	20.28	103349	32181	13.28
2007-08	0.98	0.50	0.50	21746	11.52	170570	36291	14.29
2008-09	1.17	0.54	0.46	26964	11.00	191538	42751	14.85
2009-10	1.16	0.54	0.46	22292	7.76	203784	36855	10.77
2010-11	0.99	0.50	0.50	17611	5.31	213904	27173	7.87
2011-12	1.27	0.56	0.43	2874	2.37	217208	12637	4.63

Source: Annual Reports of the company

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Based on the above ratios, the relationship between the Capital structure and various financial performances are brought out through regression analysis as given below:

Table – 1.2

Regression statistics – Impact of Capita Structure on financial performance of BEML

Financial Performance (Dependent variable)	Multiple R	R Square	F	Sig F	Co-efficient		t-Stat		p-Value	
					Intercept	Capital Structure	Intercept	Capital Structure	Intercept	Capital Structure
PAT	0.66	0.44	6.29	0.04	1.91	0	8.59	-2.51	0	0.04
ROCE	0.03	0	0.01	0.93	1.45	0	5.47	-0.09	0	0.93
NW	0.82	0.68	16.84	0	2.17	0	10.89	-4.1	0	0
EBIT	0.74	0.55	9.73	0.01	2.04	0	9.31	-3.12	0	0.01
EBIT/Sales	0.45	0.2	2.03	0.19	1.81	-0.04	6.01	-1.43	0	0.19

Source: Regression based on SPSS programme

PAT: The table 1.2 presents the regression analysis between the two variables like Capital Structure (independent variable) and PAT (dependent variable) considering the significant level at 5percent. The regression statistics shows that the Correlation (Multiple R) is 0.88 indicating strong relationship between the two variables. The Coefficient of Determination (R Square) is 0.77 which indicate that's 77 percent of variance in the PAT is accounted by capital structure and balance 23 percent of variance is attributed to other factors. Further, the reliability of individual coefficient provides that the value of significance F as well as P value is 0.00which is lower than 0.05 (at 5 percent confidence level). It can be asserted that the coefficient of estimate is reliable because it has less dispersion or variance. The Regression equation y = 1.91 +0.00x indicates the impact of capital structure on financial performance .If capital structure is x = 0, the financial performance (PAT) is to be 1.91. If capital structure is increased by 1, the financial performance (Gross Profit) will neither increase nor decrease. **Therefore it can be asserted that there is no impact of capital structure on financial performance (PAT).**

ROCE: The table 1.2 presents the regression analysis between the two variables like Capital Structure (independent variable) and ROCE (dependent variable) considering the significant level at 5per cent. The regression statistics shows that the

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Correlation (Multiple R) is 0.96 indicating strong relationship between the two variables. The Coefficient of Determination (R Square) is 0.92 which indicate that there is only 92 percent of variance in the ROCE is accounted by Capital Structure and the balance 8 percent of variance is attributed to other factors. Further, the reliability of individual coefficient as per the ANOVA provides that the value of significance F as well as P value is 0.00 which is much lower than 0.05 (at 5 percent confidence level). It can be asserted that the coefficient of estimate is reliable because it has too less dispersion or variance. The Regression equation y =1.45 +0.00x indicates the impact of capital structure on financial performance .If capital structure is x = 0, the financial performance (ROCE) is to be 1.45. If capital structure is increased by 1, the financial performance (ROCE) will neither increase nor decrease. **Therefore it can be asserted that there is no impact of capital structure on financial performance (ROCE).**

Net worth: The table 1.2 presents the regression analysis between the two variables like Capital Structure (independent variable) and Net worth (dependent variable) considering the significant level at 5 per cent. The regression statistics shows that the Correlation (Multiple R) is 0.74 indicating strong relationship between the two variables. The Coefficient of Determination (R Square) is 0.54 which indicate that there is only 54 percent of variance in the NW is accounted by Capital Structure and the balance 46 percent of variance is attributed to other factors. Further, the reliability of individual coefficient as per the ANOVA provides that the value of significance F as well as P value is 0.00 which is lower to 0.05 (at 5 percent confidence level). It can be asserted that the coefficient of estimate is reliable because it has less dispersion or variance. The Regression equation y = 2.17 + 0.00x indicates the impact of capital structure on financial performance .If capital structure is x = 0, the financial performance(Net worth) is to be 2.17. If capital structure is increased by 1, the financial performance Net worth will neither increase nor decrease. **Therefore, it can be asserted that there is no impact of capital structure on financial performance (Net worth).**

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EBIT: The table 1.2 presents the regression analysis between the two variables like Capital Structure (independent variable) and EBIT (dependent variable) considering the significant level at 5per cent. The regression statistics shows that the Correlation (Multiple R) is 0.87 indicating strong relationship between the two variables. The Coefficient of Determination (R Square) is 0.77 which indicates that there is only 77 percent of variance in the EBIT is accounted by Capital Structure and the balance 33percent of variance is attributed to other factors. Further, the reliability of individual coefficient as per the ANOVA provides that the value of significance F as well as P value is 0.00 which is much lower than 0.05 (at 5 percent confidence level). It can be asserted that the coefficient of estimate is not reliable because it has much dispersion or variance. The Regression equation y = 2.04 +0.00x indicates the impact of capital structure on financial performance .If capital structure is x = 0, the financial performance EBIT is to be 2.04. If capital structure is increased by 1, the financial performance EBIT will neither decrease nor increase. **Therefore it can be asserted that there is no impact of capital structure on financial performance(EBIT).**

EBIT/Sales: The table 1.2 presents the regression analysis between the two variables like Capital Structure (independent variable) and EBIT/sales (dependent variable) considering the significant level at 5 percent. The regression statistics shows that the Correlation (Multiple R) is 0.97indicating strong relationship between the two variables. The Coefficient of Determination (R Square) is 0.95 which indicate that there is 95 percent of variance in the EBIT/Sales is accounted by Capital Structure and the balance 5percent of variance is attributed to other factors. Further, the reliability of individual coefficient as per the ANOVA provides that the value of significance F as well as P value are0.00each which are much lower than 0.05 (at 5 percent confidence level). It can be asserted that the coefficient of estimate is reliable because it has much dispersion or variance. The Regression equation y = 1.81-0.04x indicates the impact of capital structure on financial performance .If capital structure is x = 0, the financial performance EBIT/sales is to be 1.81. If capital structures increased by 1, the financial performance EBIT/sales will decrease by 0.04.

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Therefore it can be asserted that there is impact of capital structure on financial performance (EBIT/sales).

Test of Hypothesis

Hypothesis - There is no impact of the Capital Structure on Financial Performance of select DPSUs.

Test result – On the basis of above analysis, it is noted that the null hypothesis is rejected in cases of EBIT/Sales and accepted in case of PAT,ROCE,NW and EBIT indicating **that there is impact of the Capital Structure on Financial performance(NW) and no impact on Financial performance(PAT,ROCE, EBIT& EBIT/sales) of the DPSU(BEML).**

1.1.2 Impact of Capital Structure on Financial performance of GSL

The data for the years from 2002-03 to 2011-12 have been taken into consideration and the relevant ratios of Capital Structure (Debt Equity)and Financial Performances (PAT,ROCE,Net worth, EBIT and EBIT/sales) have been worked out as given in the following table.

Table – 1.3

Capital Structure and Financial Performance Ratios of GSL(Ratio in percent, Rs in lakhs)

Year	D/E	D-TA	NW-TA	PAT	ROCE	NW	EBIT	EBIT/Sales
2002-03	1.39	0.59	0.41	1869	10.57	18082	3004	7.77
2003-04	1.19	0.54	0.46	3200	18.64	17261	5178	17.44
2004-05	1.22	0.55	0.45	1120	5.57	17529	1496	17.92
2005-06	1.96	0.66	0.34	1698	8.97	18471	2869	26.82
2006-07	3.29	0.77	0.23	4270	17.70	21586	6837	44.75
2007-08	3.66	0.79	0.21	7042	22.74	27166	11380	422.42
2008-09	3.64	0.78	0.22	8196	25.08	33421	13657	28.64
2009-10	3.04	0.75	0.25	13152	44.33	43438	20911	44.22
2010-11	1.70	0.63	0.37	17613	29.93	56911	27010	52.50
2011-12	1.49	0.59	0.40	8276	12.87	63183	14309	20.99

Source: Annual Reports of the company.

Based on the above ratios, the relationship between the Capital structure and various financial performances are brought out through regression analysis as given below:

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Table – 1.4

Regression Analysis – Impact of Capita Structure on financial performance of GSL

Financial Performance (Dependent variable)	Multiple R	R Square	F	Sig F	Co-efficient		t-Stat		p-Value	
					Intercept	**Capital Structure**	**Intercept**	**Capital Structure**	**Intercept**	**Capital Structure**
PAT	0.26	0.07	0.58	0.47	1.93	0	3.54	0.76	0.01	0.47
ROCE	0.52	0.27	2.94	0.12	1.35	0.05	2.23	1.72	0.06	0.12
NW	0.02	0	0	0.97	2.23	0	2.96	0.04	0.02	0.97
EBIT	0.28	0.08	0.66	0.44	1.9	0	3.45	0.81	0.01	0.44
EBIT/Sales	0.53	0.28	3.16	0.11	1.96	0	5.82	1.78	0	0.11

Source: Regression based on SPSS programme

PAT: The table 1.4 presents the regression analysis between the two variables like Capital Structure (independent variable) and PAT (dependent variable) considering the significant level at 5 percent. The regression statistics shows that the Correlation (Multiple R) is 0.26 indicating weak positive relationship between the two variables. The Coefficient of Determination (R Square) is 0.07 which indicates that there is 7 percent of variance in the PAT is accounted by capital structure and hence 93 percent of variance is attributed to other factors. Further, the reliability of individual coefficient provides that the value of significance F as well as P value are0.47 which are more than 0.05 (at 5 percent confidence level). It can be asserted that the coefficient of estimate is not reliable because it has more dispersion or variance. The Regression equation y = 1.93 + 0.00x indicates no impact of capital structure on financial performance .If capital structure is x = 0, the financial performance (PAT) is to be 1.93. If capital structure is increased by 1, the financial performance (PAT) will neither increase nor decrease. **Therefore it can be asserted that there is no impact of capital structure on financial performance (PAT).**

ROCE: The table 1.4 presents the regression analysis between the two variables like Capital Structure (independent variable) and ROCE (dependent variable) considering the significant level at 5percent. The regression statistics shows that the Correlation (Multiple R) is 0.52 indicating strong relationship between the two variables. The Coefficient of Determination (R Square) is 0.27 which indicate that

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there is 27 percent of variance in the ROCE is accounted by Capital structure and the balance 73 percent of variance is attributed to other factors. Further, the reliability of individual coefficient as per the ANOVA provides that the value of significance F as well as P value are 0.12 which are much higher than 0.05 (at 5 percent confidence level). It can be asserted that the coefficient of estimate is not reliable because it has more dispersion or variance. The Regression equation y = 1.35+0.05x indicates the impact of capital structure on financial performance .If capital structure is x = 0, the financial performance (ROCE) is to be 1.35.If capital structure is increased by 1, the financial performance (ROCE) will be increased by 0.05.**Therefore it can be asserted that there is positive impact of capital structure on financial performance (ROCE).**

Net worth: The table 1.4 presents the regression analysis between the two variables like Capital Structure (independent variable) and net worth (dependent variable) considering the significant level at 5percent. The regression statistics shows that the Correlation (Multiple R) is 0.02 indicating weak relationship between the two variables. The Coefficient of Determination (R Square) is 0.00 which indicate that there is only 0 percent of variance in the NW is accounted by Capital structure and the balance 100 percent of variance is attributed to other factors. Further, the reliability of individual coefficient as per the ANOVA provides that the value of significance F as well as P value is 0.97each which are greater than 0.05 (at 5 percent confidence level). It can be asserted that the coefficient of estimate is not reliable because it has much dispersion or variance. The Regression equation y = 2.23 +0.00x indicates the impact of capital structure on financial performance .If capital structure is x = 0, the financial performance (net worth) is to be 2.23. If capital structure is increased by 1, the financial performance (net worth) will neither increase nor decrease. **Therefore it can be asserted that there is no impact of capital structure on financial performance (Net worth).**

EBIT: The table 1.4 presents Capital Structure (independent variable) and EBIT (dependent variable) considering the significant level at 5 percent. The regression statistics shows that the Correlation (Multiple R) is 0.28 indicating weak relationship

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between the two variables. The Coefficient of Determination (R Square) is 0.08 which indicate that there is only 08 percent of variance in the EBIT is accounted by Capital structure and the entire 92 percent of variance is attributed to other factors. Further, the reliability of individual coefficient as per the ANOVA provides that the value of significance F as well as P value is 0.44 which is much higher than 0.05 (at 5 percent confidence level). It can be asserted that the coefficient of estimate is not reliable because it has much dispersion or variance. The Regression equation y = 1.90+0.00x indicates the impact of capital structure on financial performance .If capital structure is x = 0, the financial performance (EBIT) is to be 1.90.If capital structure is increased by 1, the financial performance (EBIT) will neither increase nor decrease. **Therefore it can be asserted that there is no impact of capital structure on financial performance (EBIT).**

EBIT/Sales: The table 1.4 presents the regression analysis between the two variables like Capital Structure (independent variable) and EBIT/sales (dependent variable) considering the significant level at 5 per cent. The regression statistics shows that the Correlation (Multiple R) is 0.53 indicating strong relationship between the two variables. The Coefficient of Determination (R Square) is 0.28 which indicate that there is an only 28 percent of variance in the EBIT/sales is accounted by Capital structure and the balance 72 percent of variance is attributed to other factors. Further, the reliability of individual coefficient as per the ANOVA provides that the value of significance F as well as P value is 0.11 which is higher than 0.05 (at 5 percent confidence level). It can be asserted that the coefficient of estimate is reliable because it has less dispersion or variance. The Regression equation y = 1.96+0.00x indicates the impact of capital structure on financial performance .If capital structure is x = 0, the financial performance (EBIT/sales) is to be 1.96. If capital structure is increased by 1, the financial performance (EBIT/sales) will neither increase nor decrease. **Therefore, it can be asserted that there is no impact of capital structure on financial performance (EBIT/sales).**

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Test of Hypothesis

Hypothesis - There is no impact of the Capital Structure on Financial Performance of select DPSUs.

Test result – On the basis of above analysis**,** it is noted that the null hypothesis is rejected in cases of ROCE and accepted in case of PAT,NW, EBIT,EBIT/sales indicating **that there is impact of the Capital Structure on Financial performance(ROCE) and no impact on Financial performance (PAT,NW, EBIT& EBIT/Sales) of the DPSU(GSL).**