

Impact of Capital Structure on Financial Performance of DPSUs(BDL&BEL) in India.

Dr.(CMA) Bholanath Mandal
Assistant Professor & HOD,Commerce
Nims university,Rajasthan,jaipur

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.

(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 BDL

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

Table 1.1
Capital Structure ratios of BDL (Ratios in percent, Fig Rs in lakhs)

Year	D/E	D-TA	NW-TA	PAT	ROCE	Net worth	EBIT	EBIT/Sales
2002-03	4.19	0.81	0.19	6453	16.72	39317	10206	36.80
2003-04	3.43	0.78	0.22	5037	12.77	41779	7906	15.09
2004-05	3.13	0.77	0.23	3116	7.74	42222	5278	11.62
2005-06	3.17	0.77	0.23	7690	17.52	47279	11899	22.38
2006-07	3.12	0.79	0.21	3274	7.28	47862	5080	11.72
2007-08	3.60	0.78	0.22	4765	8.90	49937	7250	16.00
2008-09	4.27	0.81	0.19	4764	8.45	52013	7482	16.15
2009-10	3.95	0.80	0.20	3377	6.71	52708	5064	8.09
2010-11	8.26	0.91	0.09	5087	10.29	55205	7840	8.37
2011-12	7.76	0.89	0.11	23496	32.08	73239	34839	0.36

Source: Annual Reports of the company

Based on the above ratios, the impact of Capital Structure on various financial performances is brought out through regression analysis as given below.

Table -1.2

Regression statistics – Impact of Capital Structure on financial performance of BDL

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	0.6	0.36	4.6	0.06	3.22	0	4.11	2.14	0	0.06
ROCE	0.51	0.26	2.87	0.13	2.87	0.13	2.6	1.69	0.03	0.13
NW	0.74	0.55	9.91	0.01	-2.9	0	-1.22	3.15	0.26	0.01
EBIT	0.6	0.36	4.49	0.07	3.17	0	3.93	2.12	0	0.07
EBIT/Sales	0.46	0.21	2.17	0.18	5.81	-0.09	5.48	-1.47	0	0.18

Source: Regression based on SPSS Programme

PAT: The table 1.2 presents the regression statistics between the Capital Structure (independent variable) and PAT (dependent variable) considering the significant level at 5percent. The statistics shows that the Correlation (Multiple R) is 0.6 indicating that there is a positive relationship between the two variables. The Coefficient of determination (R Square) is 0.36 which indicates that 36 percent of variance in the Financial performance (PAT) is accounted by Capital Structure and the balance 64 percent of variance is attributed to other factors. Further, the reliability of individual coefficient provides that the value of both significance F as and P value are 0.06 which is greater than 0.05 at 5 percent significant level. It could be asserted that the coefficient of estimate is not reliable because it has much dispersion or variance. The Regression equation $y = 3.22 + 0x$ indicates the impact of Capital Structure on financial performance. If Capital Structure is $x = 0$, the financial performance (PAT) is to be 3.22. If Capital Structures increased by 1, the performance (PAT) will neither increase nor decrease. **Therefore, it can be asserted that there is no impact of Capital Structure on financial performance (PAT) of the BDL.**

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 5percent. The regression statistics shows that the Correlation (Multiple R) is 0.51 indicating strong relationship between the two

variables. The Coefficient of determination (R Square) is 0.26 which indicates that 26 percent of variance in the Financial performance (ROCE) is accounted by Capital Structure and the balance 74 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 0.13 each which are greater than 0.05 showing exceeding the 5 percent confidence level. It can be asserted that the coefficient of estimate is not reliable because it has too much of dispersion or variance. The Regression equation $y = 2.87 + 0.13x$ indicates the impact of Capital Structure on financial performance. If Capital Structure is $x = 0$, the financial performance (ROCE) is to be 2.87. If Capital Structure is increased by 1, the financial performance (ROCE) of BDL will be increased by 0.13. **Therefore it can be said that there is impact of Capital Structure on financial performance (ROCE) of BDL.**

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 percent. The regression statistics shows that the Correlation (Multiple R) is 0.74 indicating positive relationship between the two variables. The Coefficient of determination (R Square) is 0.55 which indicates that 55 percent of variance in the Financial performance (NW) is accounted by Capital Structure and the balance 45 percent of variance is attributed to other factors. Further, the reliability of individual coefficient as per the ANOVA provides that the values of significance F and P are 0.01 each which are below to 0.05 showing within the 5 percent confidence level. It can be asserted that the coefficient of estimate is reliable and has limited dispersion or variance. The Regression equation $y = -2.9 + 0.00x$ indicates the impact of Capital Structure on financial performance. If Capital Structure is $x = 0$, the financial performance (NW) is to be -2.9. If Capital Structure increased or decreased, the financial performance (Net worth) will be the same. **Therefore it can be said that there is no impact of Capital Structure on financial performance (net worth) of the BDL.**

EBIT: The table-1.2 presents the regression analysis between the Capital Structure (independent variable) and EBIT (dependent variable) considering the significant level at 5 per cent. The regression statistics shows that the Correlation (Multiple R) is 0.60 indicating positive relationship between the two variables. The Coefficient of Determination (R Square) is 0.36 which indicate that there is only 36 percent of variance in the Financial performance (EBIT) is accounted by Capital Structure and the balance 64 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 0.07 each which is more than 0.05 showing above the 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 $y = 3.17 + 0.00x$ indicates the impact of Capital Structure on financial performance .If Capital Structure is $x = 0$, the financial performance (EBIT) is to be 12126.3. If Capital Structure increased or decreased, the financial performance (EBIT) will be the same. **Therefore, it can be asserted that there is no impact of Capital Structure on financial performance (EBIT) of BDL.**

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 5percent. The regression statistics shows that the Correlation (Multiple R) is 0.46 indicating positive relationship between the two variables. The Coefficient of Determination (R Square) is 0.21 which indicates that there is only 21 percent of variance in the Financial performance(EBIT/sales) is accounted by Capital Structure and the balance 79 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 0.18 each which are higher than 0.05 showing exceeding the 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 $y = 5.81 + (-)0.09x$ indicates the impact of Capital Structure on financial performance. If Capital Structure is $x = 0$, the financial performance (EBIT/Sales) is to be 5.81.If Capital Structure is increased by 1, the

performance (EBIT/Sales) will decreased by 0.09. **Therefore it can be asserted that there is impact of Capital Structure on financial performance (EBIT/sales) of BDL.**

Test of Hypothesis

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

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

1.1.2 Impact of Capital Structure on Financial performance of BEL

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 1.3

Capital Structure and Financial performance ratios of BEL(Ratio in percent, Rs in lakhs)								
Year	D/E	D-TA	NW-TA	PAT	ROCE	Net worth	EBIT	EBIT/Sales
2002-03	2.15	0.70	0.30	26636	27.80	102173	40388	16.38
2003-04	2.28	0.71	0.29	36300	28.12	124861	52098	19.02
2004-05	1.71	0.65	0.35	47764	31.57	159332	72634	22.80
2005-06	1.53	0.62	0.38	58835	31.00	204246	88743	25.34
2006-07	1.25	0.57	0.43	71895	29.98	259215	105406	27.08
2007-08	1.15	0.55	0.45	80609	27.14	323313	115090	28.35
2008-09	1.23	0.56	0.44	82325	20.70	380712	118510	25.86
2009-10	1.14	0.54	0.46	75243	17.39	434567	107711	20.79
2010-11	1.63	0.63	0.37	84139	18.13	500257	114150	20.86
2011-12	1.64	0.63	0.37	82990	14.72	563697	107545	18.65

Source: Annual Reports of the company.

Based on the above, the impact of Capital Structure on various financial performances is brought out through regression statistics as given below:

Table – 1.4

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

Financial Performance (Dependent)	Multiple R	R Square	F	Sig F	Co-efficient		t-Stat		p-Value	
					Intercept	Capital Structure	Intercept	Capital Structure	Intercept	Capital Structure
PAT	0.81	0.65	14.8	0	2.56	0	9.54	-3.86	0	0
ROCE	0.25	0.06	0.54	0.4	1.18	0.02	2.12	0.73	0.07	0.48
NW	0.53	0.28	3.09	0.1	1.97	0	7.75	-1.76	0	0.12
EBIT	0.87	0.76	25.8	0	2.73	0	11.54	-5.09	0	0
EBIT/Sales	0.74	0.55	9.93	0.0	3.25	-0.07	6.02	-3.15	0	0.01

Source: Regression based on SPSS

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 per cent. The regression statistics shows that the Correlation (Multiple R) is 0.81 indicating strong relationship between the two variables. The Coefficient of Determination (R Square) is 0.65 which indicate that 65 percent of variance with (PAT) is attributed to Capital Structure and balance 35 percent to other factors. Further, the reliability of individual coefficient provides that the value of significance F as well as P value is 0.00 which is less than 0.05 (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 $y = 2.56 + 0.00x$ indicates the impact of Capital Structure on financial performance .If Capital Structure is $x = 0$, the financial performance (PAT) is to be 2.56. If Capital Structure 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) of BEL.**

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 5 per cent. The regression statistics shows that the Correlation (Multiple R) is 0.25 indicating weak relationship between two variables. The Coefficient of Determination (R Square) is 0.06 which indicate that there is only 6 percent of variance in the Financial performance (ROCE) is accounted by Capital Structure and the balance 94 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 0.48 which is more 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 $y = 1.18 + 0.02x$ indicates the impact of Capital Structure on financial performance. If Capital Structure is $x = 0$, the financial performance (ROCE) is to be 1.18. If Capital Structure is increased by 1, the financial performance (ROCE) will be increased by 0.02. **Therefore it can be asserted that there is 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 5 per cent. The regression statistics shows that the Correlation (Multiple R) is 0.53 indicating weak relationship between the two variables. The Coefficient of Determination (R Square) is 0.28 which indicate that there is only 28 percent of variance in the Financial performance(NW) 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 0.12 each which is 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 $y = 1.97 + 0.00x$ indicates the impact of Capital Structure on financial performance. If Capital Structure is $x = 0$, the financial performance (Net worth) is to be 1.97. If Capital Structure increased by 1, the financial performance (NW) will neither increase nor decrease. **Therefore it can be asserted that there is no impact of Capital Structure on financial performance (Net worth) of BEL.**

EBIT: The table 1.4 presents the regression analysis between the two variables like Capital Structure (independent variable) and (EBIT) (dependent variable) considering the significant level at 5percent. 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 0.76 which indicates that

there is only 76 percent of variance in the Financial performance(EBIT) is accounted by Capital Structure and the balance 24 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 0.00 each which are lower than 0.05 (at 5 percent confidence level). It can be asserted that the coefficient of estimate is reliable because of less dispersion or variance. The Regression equation $y = 2.73 + 0.00x$ indicates the impact of Capital Structure on financial performance .If Capital Structure is $x = 0$, the financial performance (EBIT) is to be 2.73. If Capital Structure 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 0.74 indicating the strong relationship between the two variables. The Coefficient of Determination (R Square) is 0.55 which indicates that there is only 55 percent of variance in the Financial performance (EBIT/sales) is accounted by Capital Structure and the balance 45 percent of variance is attributed to other factors. Further, the reliability of individual coefficient as per the ANOVA provides that the values of significance F as well as P value are 0.01each which are 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 $y = 3.25 + (-)0.07x$ indicates the impact of Capital Structure on financial performance .If Capital Structure is $x = 0$, the financial performance (EBIT/Sales) is to be 3.25. If Capital Structure increased by 1, the financial performance (EBIT/Sales) will be decreased by 0.07.**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 ROCE and EBIT/Sales and accepted in case of PAT,NW and EBIT indicating **that there is impact of the Capital Structure on Financial performance(ROCE & EBIT/sales) and no impact on Financial performance (PAT,NW and EBIT) of the DPSU(BEL).**