An Empirical Analysis of the Optimal Capital Structure for Corporate Firms: with Special reference to a few select Public and Private Sector Industries in India

Uma Charan Pati *

Sudhanshu Sekhar Rath**

*Assistant Professor, School of Economics, Gangadhar Meher University, Amruta Vihar, Sambalpur-768004, Odisha, India & Ph.D. Scholar in Sambalpur University, Sambalpur

**Former Vice Chancellor, Gangadhar Meher university, Amruta Vihar, Sambalpur-768004 and currently Professor of Economics, Sambalpur University, Sambalpur,

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Abstract

One of the most important subjects of interest in corporate finance is to search for the optimal capital structure that helps organisations to maximize the value of the firm. Optimal capital structure does have profound impact on the profitability and financial sustainability of corporate firms. Empirical studies have confirmed the relatioship between capital structure and value of a firm which was not the case when Modigliani and Miller conceptualised it in their original work. We have tried to find out, if any relationship exists between the capital structure, represented by the debt-equity ratio and the profitability of operations of firms as reprersented by the Earning Before Interest and Taxes (EBIT). An empirical study having the debt-equity ratio and EBIT of ten important corporate firms, five from the public sector and the rest five from the private sector have been undertaken to verify the stated relationship. The two variable linear regression model having the debt-equity ratio and EBIT has confirmed the theoretical postulate of a close connection between the optimal capital structure and the value of the firm.

Introduction:

The globalized economic framework has facilitated the expansion of opportunities for the productive enterprises to prosper and also to convert them as real engine of economic growth all over the world. The

corporate world has got the opportunity to effect tremendous expansion of production and productivity as well in this phase of widening of the size of the market across segments. Such expansion plans by corporate entities exerting pressure on the existing capital structure of the concerned firms. The capital structure is undergoing a change and also demanding that the capital structure that is going to emerge must conform to the principles of corporate prudence and maximization of returns on investment. Further, the capital structure is seen as the calibrated act of balancing between equity and debt that a business makes use of to finance its wealth, business operations and future growth with sustainability.

However, if we approach the problem from a tactical stand point, the capital structure decision influences not only the risk and return profiles of the firms but it has profound impact on the cost of the funds and the degree of insulation of the firms from microeconomic fluctuations and macroeconomic downturns.. In this context, progressive corporate entities aspire to have an optimal capital structure which is estimated by calculating the mix of debt and equity that minimizes the weighted average cost of capital (WACC) while maximizing its market value. The lower the cost of capital, the greater the present value of the firm's future cash flows, discounted by the WACC. Thus, the main aim of the finance department of any corporate firm is to find the optimal capital structure that will achieve the lowest WACC and the highest possible value of the firm or that of the shareholders' wealth.

Further, if we look back we find that the most celebrated Modigliani-Miller Hypothesis proposed that, in the absence of taxes, bankruptcy costs, agency costs, and asymmetric information; and in an efficient market, the value of a firm is unaffected by its capital structure. But the real world situation is not like the way the MM Hypothesis has thought of. All these obstacles are bound to be a part of all corporate establishments across segments. Thus, the fact of the matter is that a progressive corporate firm always tries to give preference to debt capital than equity capital so that it can avoid dilution and stop giving negative signals to the market. It has been seen that Debt Signaling by a firm is always accepted by the stakeholders as positive news. The marginal cost of capital tend to rise when a company raises too much capital during a given time period and the costs of debt, preferred stock, and common equity will begin to rise.

2. Rationale of the study:

A company's profits and returns earned by shareholders are the two most important considerations in determining the capital structure of a corporate firm. The capital structure has a strong impact on corporate profits and sales and general performance whether the capital structure is equity-dominated or debt-oriented and what impact it does have on the profitability of the firm are the pertinent questions financial experts and financial manager ponder over. This is an important event because the company should use these funds to maximize their profits. The uncertainties associated with equity-based funding and the taxation-related beneficial aspects of debt funding results in creating conditions for the corporate firms to enjoy financial leverage in addition to the operating leverage. This particular study tries to understand the dynamics of having an optimal capital structure for corporate firms belonging to the public sector and private sector as well. Whether an optimal capital structure is possible to be achieved and if possible, how firms in the public and private sector try to obtain such financial leverage effects for the larger interest of the firm and its stakeholders.

The financial manager of a corporate firm must not lost sight of all possible options before subjecting itself to a particular type of capital structure. Thus, the present study tries to throw lights on the possibility and profitability of achieving an optimal capital structure by firms belonging to the private and public sector of India.

3. A Theoretical Analysis with the help of the Review of Literature:

An interesting area in the financial economics literature hovers around the debate on whether capital structure matters in corporate financial decision making. The debate gathered ground after the publication of the seminal article on capital structure decision of firms by the two famous economists Modigliani and Miller in 1958. A review of existing literature clearly delineates the path through which the debate has moved so far to reach to the stage it is in at present. We are trying to present a short review of some of the well-accepted and well-appreciated publications to analyse the subject under consideration.

Modigliani and Miller (1958) conducted a path-breaking study on the theory of capital structure, and came out with the conclusion that the capital structure of a company has nothing to do with the value of the firm in the market.. The problem of the capital structure of firms took a huge stride in the arena of corporate finance and since then it has been widely studied by scholars.

Bowman and Harbir Singh (1993) studied on Corporate Restructuring and have inferred that Financial restructuring, when accompanied with investment in key strategic activities, can be effective for the firm.

Zeitun and Tian (2007) conducted a study of capital structure and derived the conclusion that the capital structure does have a significant and negative impact on firm's performance. Further, underestimation of bankruptcy costs may make firms go for excessive borrows and as a result they carry high debt in their capital structure However, other studies have derived mixed results regarding the impact of capital structure on firm's performance.

Lotfollahpour and Bagheri (2012) found from their study that so far as the relationship between capital structure and firm performance was concerned, it was highly significant. It implies that the performance of a firm depends not only on other facilitating factors but depends to a significant extend also on the capital structure that it possessed.

Mwangi (2010) went for a study on the capital structure of firms listed at the Nairobi Stock Exchange and through that study he tried to look at the relationship between capital structure and financial performance. He adopted a structured questionnaire method to collect data to substantiate his idea. The study arrived at the conclusion that there existed a strong positive relationship between the leverage and the return on equity, liquidity, and return on investment.

Moh'D, M.A., Perry, L.G. and Rimbey, J.N. (2010) had underataken a study on the impact of a company's shareholding structure on the company's capital structure. The results that they derived from their study showed that the manager's shareholding had a negative relationship with the debt ratio.

Brockman (2010) clearly derived the conclusion that portfolio sensitivity is negatively correlated with short-term debt, and portfolios fluctuate against stock income. Sensitivity, according to his study and analysis, is positively correlated with short-term debt of firms.

Ahmad (2012) study took the case of Malaysian firms and examined the impact of capital structure on firm performance. His study included firms listed as consumer and producer goods sectors in Malaysian equity market from 2005 to 2010, to measure firms' performance. This particular study had used return on equity (ROE) and return on asset (ROA) to measure the performance of firms, and to measure capital structure they had used long-term debt (LTD), short-term debt (STD), and total debt (TD). According to this study, debt of each type had significant negative relationship with ROE, while ROA had significant positive relationship only with STD and TD.

Magara (2012) conducted a systematic study on capital structure and its determinants at the Nairobi Securities Exchange. The main objective of this study was t to find out the major determinants of capital structure. This study made it clear through findings that during the period from 2007 to 2011, there was a positive significant relationship between the firm size, tangibility and growth rate and the degree of leverage of the firm. The study did not take into consideration such factors as macro- economic factors like inflation and interest rates.

Michael Albert (2013) extended the argument that the Pay Performance Sensitivity (PPS) in corporate is significantly negatively correlated with the corporate leverage, and this negative correlation is due mostly to the relationship between PPS and the cost of bankruptcy of individual companies.

Ferati, Rametulla (2014) collected a sample of 150 SMEs operating in the region of Polog, Macedonia to study the impact of the financial structure in the profitability of small and medium enterprise (MSEs) in the republic of Macedonia .with. He has employed the correlation and regression analysis to quantitatively estimating a function relating the return on the equity (ROE) with the indexes of long and short-run debts, and also with the total of owner's equity. A thorough analysis of his results throw lights on the fact that the profitability is positively correlated with short term debt and equity, and inversely correlated with long-term debt. The conclusions derived brought forth a great dispersion among the several capital sources used by the Macedonian companies, exception to the equity, the main component, and the one that presents smaller variability.

Salteh (2015) in his study has tried to analyse the impact of capital structure on firm performance by working on the Iranian corporations listed in the Tehran Stock Exchange (TSE). To measure firm performance five variables have been included in the study like Return on Assets (ROA), Return on Equity (ROE), Tobin's Q, Earning per Share (EPS), and equity market value to equity book value (MB/ VR). In this study the capital structure has been measured by Long-Term Debt, Short- Term Debt and Total Debt to Total Assets, and Total Debt to Total Equity. The findings derived from the study indicate a positive and significant relationship between capital structure and ROE, MB/VR, and Tobin's Q, while a negative relationship is shown with respect to the ROA and EPS.

Ardalan (2018), through his study has tried to prove that there is a key capital structure for each firm. However, the largest companies like companies in the United Kingdom, Germany, France and PIIGS (Portugal, Italy, Ireland, Greece and Spain) emerged between 2006 and 2016 have been found to be having significant discrepancies in their capital structures.

4. Research Design

Finance is considered as the lifeline of any business activity. Financial management constitutes the foundation of all economic activities.. It is the key to all sources of manufacturing and selling and marketing activities. It is said that business requires money not only to thrive but also to earn profits sustainably.. Thus, effective management of each business is closely related to sound financial management. Successful sustainability depends on continued performance and effective use of financial resources. In this context it is highly imperative for a corporate firm to move towards such financing methods which would maximize the profitability aspect of it. Every researcher wants to attempt to look for that level of optimum capital structure which maximizes the value of the firm which can only be possible through optimal use of limited financial resources for a particular corporate firm .This study has been conceptualized and is being taken up to derive meaningful insights into the very aim of corporate to achieve an optimal capital structure to add value to the firm. To explore the ABC of an optimal capital structure as regards public and private corporate sector firms, we have devised the objectives as presented below.

4.1. Sample Design:

To comprehend the issue at hand, we have taken the case of ten Companies which have been selected on the basis of their influence on the Indian Economy. Samples have been selected for both public and private undertakings to make the study a representative one. Keeping in mind the requirements of the study at hand, financial parameters like EBIT and Debt Equity ratios have been analyzed and examined to show the effects of capital structure on profitability and financial performance of the selected firms.. The total sampling units have been divided into 2 types as given below:

- Public Undertakings like SAIL, MTNL,IOCL,GAIL & BPCL
- Private Undertakings like HINDALCO, L&T, ASIAN PAINTS, DABUR INDIA & JSPL.

4.2. Period of the Study:

The introduction of economic reform programs by India in 1991 has been a major paradigmatic shift as far as the history of economic transitions is concerned. The LPG-led model of development turned the economy up in the late 90's and became more prominent in the beginning of the 21st century. Rapid progress in the industrial arena of the economy caught the attention of the policy makers the world over. In view of the shifted emphasis to capitalisation of corporate firms in the post-reform period, we have collected data on the ten corporate firms for the period from 2009 to 2018. Thus, this study is based on the capital structure initiatives of these corporate firms in second decade of the 21st century starting from 2009.

4.3. Techniques of Data Analysis:

The main objective of the study is to explore the possibility of an optimum capital structure and its effect on selected samples of public and private industrial firms .For this purpose, we have tried to devise a two-variable Regression Model with the two variables i.e. the Debt to Equity ratio and the EBIT. The Debt to Equity ratio (D/E) is taken as the dependent variable while the Earning Before Interest and Tax (EBIT) is taken as an independent variable.

4.4 Regression Analysis:

A statistical measure that attempts to determine the strength of the relationship between a dependent variable (usually indicated by Y) and a series of other changing variables (known as independent variables) is known as regression analysis. The two basic types of regressions are linear regression that is limited to two variables and multiple regressions that study more than two variables at the same time. The equation for this forecast is Y = dependent variable while X= independent variable that is calculated by determining the intercept coefficient and the variable x coefficient through the regression analysis. Here we have taken the EBIT as the independent variable and the Debt to Equity ratio as the dependent variable. The period of study has been taken as a ten year period from the year 2009 to 2018. After indicating the periods by means of appropriate values, the regression model was executed. Statistical software like MS-Excel and SPSS has been used to run the two-variable regression model.

5. An Empirical Analysis of optimal capital structure with reference to Debt Equity Ratios with EBIT for Public and Private Corporate Sectors.

5.1. Optimal Capital Structure Analysis of Private Firms:

The ratio establishes relationship between operating cost and net sales. Operating cost means cost of goods sold plus operating expenses. Operating expenses include all the expenses which have matching relationship with sales and in this context administrative expenses and selling are
included mainly to examine the relationship between debt equity ratios with operating profit of the selected companies. Following linear regression model has been applied.

$D/E = \alpha + \beta (EPS) + e$.....(1)

D/E= debt equity ratio

EBIT= earnings before interest and tax

α , β – parameters to be estimated (intercept and coefficient respectively)

e – Error term

H_0 = there is no significant relationship between debt equity ratio and EPS of selected companies

H_1 = there is a significant relationship between debt equity ratio and EPS of selected companies.

Table-1: .Debt to Equity & EBIT of HINDALCO)

Year	Total Debt to Equity	EBIT
2009	0.71	2980.46
2010	0.77	2829.76
2011	0.73	3221.07
2012	0.75	2619.05
2013	0.76	2482.61
2014	0.72	2397.03
2015	0.77	2884.00
2016	0.67	3040.96
2017	0.48	4531.39
2018	0.41	4169.61

Source: Money Control and Equity Master.com

Table-2: Regression Statistics

Multiple R	0.903202
R Square	0.815773
Adjusted R Square	0.792745
Standard Error	0.057867
Observations	10

Source: Money Control and Equity Master.com

Table-3: ANOVA Result

	Df	SS	MS	F	Significance F
Regression	1	0.118622	0.118622	35.4248	0.000341
Residual	8	0.026788	0.003349		
Total	9	0.14541			

Source: Money Control and Equity Master.com

From the above table it can be analyzed that there is a high degree of significant relationship between the said variables. Table no.1 analyses two variables i.e Total Debt to Equity and EBIT, former is a dependent variable whereas the later is an independent one. Multiple R is 0.90 which indicates that if independent variable changes then dependent variable changes to the extent of 90%.R square is 0.81 which indicates a best fit model .Adjusted R square is 0.792 which infers that 79.2% of the data supports this model. Table no.3 reveals that the significant F value is less than the Calculated F Value, so the Null Hypothesis is rejected which means that there is significant relationship between the aforesaid variables. It implies that there is a significant relationship between the EBIT and the Debt to Equity Ratio.

Table-4: (Debt to Equity & EBIT of JSPL)

YEAR	D/E	EBIT
2009	1.65	2259.51
2010	1.62	2236.19
2011	1.6	3037.94
2012	1.25	3379.78
2013	1.73	3049.27
2014	1.74	2684.27
2015	2.09	1408.79
2016	1.04	316.36
2017	1.11	867
2018	0.94	1719.37

Source: Money Control and Equity Master.com

Table-5: Regression Statistics

Multiple R	0.912952248
R Square	0.833481807
Adjusted R Square	0.708481807
Standard Error	0.650555639
Observations	9

Source: Money Control and Equity Master.com

Table-6: ANOVA Result

	df	SS	MS	F	Significance F
Regression	1	16.94702	16.94702	40.0428	0.000393
Residual	8	3.385781	0.423223		

Source: Money Control and Equity Master.com

From the above table it can be analyzed that there is a high degree of significant relationship between the said variables. Table no.4 analyses two variables i.e Total Debt to Equity and EBIT, former is a dependent variable whereas the later is an independent one. Multiple R is 0.91 which indicates that if independent variable changes then dependent variable changes to the extent of 91% .R square is 083 which indicates a best fit model .Adjusted R square is 0.708 which infers that 70.8 % of the data supports this model. Table no.6 reveals that the significant F value is less than the Calculated F Value, so the Null Hypothesis is rejected which means that there is significant relationship exists between the aforesaid variables.

Table-7: (Debt to Equity & EBIT of Dabur India Pvt. Ltd.)

YEAR	Debt to Equity	EBIT
2009	0.188268762	14.47
2010	0.141543676	13.28
2011	0.228858658	12
2012	0.209805833	14.1
2013	0.1519094	18.4
2014	0.023281853	19.35
2015	0.055273758	9.89
2016	0.030124174	9.83
2017	0.077553118	16.23
2018	0.067787909	21.89

Source: Money Control and Equity Master.com

Table-8: Regression Statistics

Multiple R	0.712952248
R Square	0.63481807
Adjusted R Square	0.608481807
Standard Error	0.550555639
Observations	9

Source: Money Control and Equity Master.com

Table-9: ANOVA Result

	Df	SS	MS	F	Significance F
Regression	1	14.94702	14.94702	35.0428	0.000393
Residual	8	3.385781	0.423223		
Total	9	17.3328			

Source: Money Control and Equity Master.com

From the above table it can be analyzed that there is a high degree of significant relationship between the said variables. Table no.7 analyses two variables i.e Total Debt to Equity and EBIT , former is a dependent variable whereas the later is an independent one. Multiple R is 0.71 which indicates that if independent variable changes then dependent variable changes to the extent of 71% .R square is 0.63 which indicates a best fit model .Adjusted R square is 0.608 which infers that 60.8 % of the data supports this model. Table no. 9 reveals that the significant F value is less than the Calculated F Value, so the Null Hypothesis is rejected which means that there is significant relationship exists between the aforesaid variables.

Table-10: (Debt to Equity & EBIT of Asian Paint)

YEAR	D/E	EBIT
2009	0.9302	365.75
2010	0.9816	646.63
2011	0.8838	990.71
2012	0.8273	945.23
2013	1.1096	847.6

2014	1.1863	361.71
2015	0.6325	835.7
2016	0.3414	1065.24
2017	0.2195	1484.24
2018	0.0719	2339.43

Source: Money Control and Equity Master.com Source: Money Control and Equity

Table-11: Regression Statistics

Multiple R	0.597748
R Square	0.357303
Adjusted R Square	0.232303
Standard Error	0.672982
Observations	9

Source: Money Control and Equity Master.com Source: Money Control and Equity

Table-12: ANOVA Result

	Df	SS	MS	F	Signif F
Regression	1	2.014312	2.014312	4.447545411	0.072905
Residual	8	3.623234	0.452904		
Total	9	5.637546			

Source: Money Control and Equity Master.com Source: Money Control and Equity

Results as derived above show that although there is a high degree of relationship between the debt to equity ratio and the EBIT, the result is not that significant. Table no.10 analyses two variables i.e Total Debt to Equity and EBIT, former is a dependent variable whereas the later is an independent one. Multiple R is 0.59 which indicates that if independent variable changes then dependent variable changes to the extent of 59% . Despite the fact that the Null Hypothesis is rejected, the R square and the Adjusted R square do not show significant results.

Table-13: (Debt to Equity & EBIT of L&T)

YEAR	DEBT TO EQUITY	EBIT
2009	0.527219725	770
2010	0.37186679	995.37
2011	0.290118323	619.25
2012	0.328022354	666.1
2013	0.274892326	982.4
2014	0.278045857	1076.08
2015	0.331804923	1419.03
2016	0.300250472	1449.04
2017	0.209334415	1316.91
2018	0.199463904	1432.23

Source: Money Control and Equity Master.com Source: Money Control and Equity

Table-14: Regression Statistics

Multiple R	0.930885228
R Square	0.866547308
Adjusted R Square	0.741547308
Standard Error	0.11309771
Observations	9

Source: Money Control and Equity Master.com Source: Money Control and Equity

Table-15: ANOVA Result

	Df	SS	MS	F	Significance F
Regression	1	0.664450368	0.66445	51.94634	0.000176322
Residual	8	0.102328736	0.012791		
Total	9	0.766779104			

Source: Money Control and Equity Master.com Source: Money Control and Equity

From the above table it can be analyzed that there is a high degree of significant relationship between the said variables. Table no.13 analyses two variables i.e Total Debt to Equity and EBIT, former is a dependent variable whereas the later is an independent one. Multiple R is 0.93 which indicates that if independent variable changes then dependent variable changes to the extent of 93 % .R square is 0.866 which indicates a best fit model .Adjusted R square is 0.741 which infers that 74.1 % of the data supports this model. Table no.15 reveals that the significant F value is less than the Calculated F Value, so the Null Hypothesis is rejected which means that there existed a significant relationship between the aforesaid variables.

5.2. Optimal Capital Structure Analysis of Public Ltd.

Table-15: (Debt to Equity & EBIT of SAIL)

YEAR	DEBT EQUITY	EBIT
2009	0.269395478	9,659.09
2010	0.495584797	10,434.80
2011	0.514056446	7,565.38
2012	0.40433751	5,978.28
2013	0.524089182	3,946.79
2014	0.568755002	4,042.11
2015	0.648680904	3,901.37
2016	0.843725237	-4,801.92
2017	1.080298125	-2,679.66
2018	1.176621725	2,241.34

Source: Money Control and Equity Master.com Source: Money Control and Equity

Table-17: Regression Statistics

Multiple R	0.747350513
R Square	0.55853279
Adjusted R Square	0.503349388
Standard Error	0.206126182
Observations	10

Source: Money Control and Equity Master.com Source: Money Control and Equity

Table-18: ANOVA Result

	Df	SS	MS	F	Significance F
Regression	1	0.430038	0.430038	10.12139	0.01297
Residual	8	0.339904	0.042488		
Total	9	0.769942			

Source: Money Control and Equity Master.com Source: Money Control and Equity

From the above table it can be analyzed that there is a high degree of significant relationship between the said variables. Table no.16 analyses two variables i.e Total Debt to Equity and EBIT, former is

a dependent variable whereas the later is an independent one. Multiple R is 0.74 which indicates that if independent variable changes then dependent variable changes to the extent of 74 % .R square is 0.558 which indicates a near best fit model .Adjusted R square is 0.503 which infers that 50.3 % of the data supports this model. Table no.18 reveals that the significant F value is less than the Calculated F Value, so the Null Hypothesis is rejected which means that there is a significant relationship running between the aforesaid variables.

Table-19: (Debt Equity & EBIT of IOCL)

YEAR	DEBT TO EQUITY	EBIT
2009	1.022017	7,795.19
2010	0.881578	15,254.49
2011	0.90972	11,842.09
2012	1.215581	9,066.06
2013	1.282046	12,050.65
2014	1.222131	15,106.21
2015	0.731836	11,438.12
2016	0.48203	19,916.43
2017	0.505219	29,400.63
2018	0.503991	36,174.00

Source: Money Control and Equity Master.com Source: Money Control and Equity

Table-20: Regression Statistics

Multiple R	0.73290599
R Square	0.53715119
Adjusted R Square	0.479295088
Standard Error	0.224914229
Observations	10

Source: Money Control and Equity Master.com Source: Money Control and Equity

Table-21: ANOVA Result

	Df	SS	MS	F	Significance F
Regression	1	0.469657	0.469657	9.284262	0.015893
Residual	8	0.404691	0.050586		
Total	9	0.874349			

Source: Money Control and Equity Master.com Source: Money Control and Equity

From the above table it can be analyzed that there is a high degree of significant relationship between the said variables. Table no.19 analyses two variables i.e Total Debt to Equity and EBIT, former is a dependent variable whereas the later is an independent one. Multiple R is 0.73 which indicates that if independent variable changes then dependent variable changes to the extent of 74 % .R square is 0.537 which indicates a near best fit model .Adjusted R square is 0.479 which infers that 47.9 % of the data supports this model. Table no.21 reveals that the significant F value is less than the Calculated F Value, so the Null Hypothesis is rejected which means that there is a significant relationship exists between the aforesaid variables.

Table-22: (Debt Equity & EBIT of BPCL)

DEBT EQUITY	EBIT
1.745648	735.9
1.696011	1,537.62
1.170758	1,546.68
1.42461	1,311.27
1.416783	2,642.90

1.027407	4,060.88
0.524192	5,084.51
0.504798	7,431.88
0.707952	8,039.30
0.669104	7,919.34

Source: Money Control and Equity Master.com Source: Money Control and Equity

Table-23: Regression Statistics

Multiple R	0.886370657
R Square	0.785652941
Adjusted R Square	0.758859559
Standard Error	0.232182247
Observations	10

Source: Money Control and Equity Master.com Source: Money Control and Equity

Table-24: ANOVA Result

	df	SS	MS	F	Significance F
Regression	1	1.580743	1.580743	29.32265	0.000635
Residual	8	0.431269	0.053909		
Total	9	2.012012			

Source: Money Control and Equity Master.com Source: Money Control and Equity

From the above table it can be analyzed that there is a high degree of significant relationship between the said variables. Table no. 22 analyses two variables i.e Total Debt to Equity and EBIT, former is a dependent variable whereas the later is an independent one. Multiple R is 0.88 which indicates that if independent variable changes then dependent variable changes to the extent of 88 % .R square is 0.785 which indicates a near best fit model .Adjusted R square is 0.758 which infers that 75.8 % of the data supports this model. Table no. 24 reveals that the significant F value is less than the Calculated F Value, so the Null Hypothesis is rejected which means that there is a significant relationship between the aforesaid variables in this case too.

Table-25: Debt Equity & EBIT of GAIL

DEBT TO EQUITY	EBIT
0.08	0.08
0.08	0.08
0.1	0.1
0.22	0.22
0.34	0.34
0.35	0.35
0.28	0.27
0.19	0.18
0.08	0.07
0.02	0.02

Source: Money Control and Equity Master.com Source: Money Control and Equity

Table-26: Regression Statistics

Multiple R	0.999178474
R Square	0.998357622
Adjusted R Square	0.998152325
Standard Error	0.005123007

Observations	10

Source: Money Control and Equity Master.com Source: Money Control and Equity

Table-27: ANOVA Result

	Df	SS	MS	F	Significance F
Regression	1	0.12763	0.12763	4862.987	1.99E-12
Residual	8	0.00021	2.62E-05		
Total	9	0.12784			

Source: Money Control and Equity Master.com Source: Money Control and Equity

Results derived above show that in case of the GAIL, although strong relationship exists between the two variables under consideration, the F-statistics is not significant. Multiple R is 0.99 which indicates that if independent variable changes then dependent variable changes to the extent of 88 % .R square is 0.998 which indicates a near best fit model .Adjusted R square is 0.998 which infers that 99.8 % of the data supports this model. Despite the fact that the Null Hypothesis is rejected, the F value is not significant at the 5 percent level of significance.

Table-28: Debt Equity & EBIT of MTNL

DEBT TO EQUITY	EBIT
0.49	225.59
0.3	3460.54
0.05	2323.48
0.03	3095.62
0.03	4121.48
0.05	9928.06
0.04	1462.78
0.08	1088.46
0.06	1496.99
0.05	1465.16

Source: Money Control and Equity Master.com Source: Money Control and Equity

Table-29: Regression Analysis

Multiple R	0.65178474
R Square	0.638357622
Adjusted R Square	0.628152325
Standard Error	0.45123007
Observations	10

Source: Money Control and Equity Master.com Source: Money Control and Equity

Table-30 ANOVA Result

	df	SS	MS	F	Significance F
Regression	1	0.22763	0.12763	3862.987	1.99E-12
Residual	8	0.00021	2.62E-05		
Total	9	0.12784			

Source: Money Control and Equity Master.com Source: Money Control and Equity

What we can infer from the results given above is that, although there is strong relationship between the two variables under consideration, the F-statistics is not significant due to reasons internal to the organization. Multiple R is 0.651 which indicates that if independent variable changes then dependent variable changes to the extent of 65 % .R square is 0.638 which indicates a near best fit model. Adjusted R square is 0.628 which infers that 62.8 % of the data supports this model. The bottom line in this case is that although the Null Hypothesis is rejected, the F value is not significant at the 5 percent level of significance.

6. Conclusion of the Study:

From the above study it can be analyzed that there is a high degree of significant relationship between the dependent and independent variables i.e Debt Equity and EBIT of almost all selected companies which proves the basic objective of our study. Although the F-statistics is not that significant in case of two of the companies under consideration, there is strong relationship exists between the debt equity ratio and the EBIT. Thus the conclusion that we can draw from the above empirical study is that the optimum capital structure maximizes the value of the companies and thereby maximizing the shareholders wealth. The study further reveals that the impact of optimum capital structure on the financial position and performance of the firms is beyond any doubt .The analysis shows that the decisions regarding the choice of debt and equity i.e. the capital structure bears a direct relationship with firms financial position i.e if optimal choice of debt and equity is good then the firm's financial prospects will be satisfactory. The study's derived results show that the tailored made mix of debt and equity component as per the companies' requirements like funds, situations, positions etc have a significant bearing on the financial wealth and health of the corporate firms.

7. Limitations of the study and Scope for further Study:

The study is being confined to a period of 10 years only which might not reflect the true empirical analysis of our study. The limited use of the statistical tools and techniques has put the study limited to a partial analysis of the relationship between the variables under consideration. This study is based mostly on secondary data only which is one of the major limitations for achieving an academically effective research outcome.. The selection of only two variables for the purpose is one of the major bottlenecks of this particular study.

This study is very viable and important for knowing the financial position of the companies with relation to Earning per Share and its face value which has a positive impact on the value of the firm .Further this research can be utilized for knowing the solvency position of various firms. The Controller of the capital issues have laid down various rules and regulations for the management of valuation of the firm and other financial issues which are not to be violated by the financial managers for deriving financial conclusions. With the vibrant use of financial tools of debt equity ratios, the financial manager gets the leverage, tax and profitability benefits etc. Further it also fulfills the legal and financial requirements of the companies as well as the government.

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