IMPACT OF FINANCIAL LEVERAGE ON FINANCIAL PERFORMANCE OF SELECTED STEEL COMPANIES OF INDIA

Prof. (Dr.) CA. Haresh Kothari[*]

ABSTRACT

Financial Management basically deals with raising of financial resources and its proper allocation in order to maximize shareholders wealth. For a successful running of an organization fixed and current assets play a crucial role as organization generally invests in these options. A firm's working capital consists of its investments in short-term assets like cash and bank balance, inventories, receivable and short-term investments. Therefore, the working capital management mainly refers to the management of all these individual current assets. In this research paper an attempt has been made to study the components of financial leverage and the possible implications of financial leverage on financial performance of selected steel companies of India. The paper also attempts to analyse the correlation between liquidity, profitability and return on investments of selected steel companies. The study is based on secondary data collected from annual reports of selected 5 steel companies for the period 2007-08 to 2016-17. In this paper there is an application of regression analysis to identify the significant impact of financial leverage on the financial performance. Financial leverage is essential as it might have a direct impact on profitability and liquidity.

Keywords: *Financial Leverage, Liquidity, Steel Companies, Financial Performance.*

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Introduction

Financial leverage is a measure of how much firms use equity and debt to finance its assets. A company can finance its investments by debt and equity. The company may also use preference capital. The rate of interest on debt is fixed irrespective of the company's rate of return on assets. The financial leverage employed by a company is intended to earn more on the fixed charges funds than their costs. As debt increases, financial leverage increases. It has been seen in different studies that financial leverage has effect on corporate performance of quoted pharmaceutical companies in Nigeria. The primary motive of a company in using financial leverage is to magnify the shareholders' return under favourable economic conditions. The role of financial leverage in magnifying the return of the shareholders' is based on the assumptions that the fixed-charges funds (such as the loan from financial institutions and other sources or debentures) can be obtained at a cost lower than the firm's rate of return on net assets (RONA or ROI). Damouri, et al (2013) states that leverage ratios contribute in measuring the risk of using equity costs. They adds that there are various measures known for the capital structure among which the most important are book value based measures, market value based measures and semi- market value based measures (adjusted market value). Financial leverage affects profit after tax or earnings per share. The combined effect of two leverages can be quite significant for the earnings available to ordinary shareholders (Pandey, 2010).

Objectives of the Study

- To study relationship between financial leverage and Financial Performance
- To study the impact of financial leverage on financial performance of selected steel companies

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[*]   Vice Chancellor, KK Modi University, Chhattisgarh, India.

Literature Review

In his study, **Nhung Thi Hong Bui (2017)** looked at the influence of debt ratios on corporate performance, and the results showed that financial leverage had a significant negative impact on the firm's performance.

Huang and Song (2016) discovered that long-term debt and return on assets, as well as all liabilities and return on assets, had negative associations.

Nasrollah (2015) investigated the impact of financial leverage variation on management income and earnings. Their findings reveal that financial leverage has an effect on a company's earnings management.

Jeliks (2014) investigated the impact of financial leverage, free cash flow, and firm growth on earnings management, and found that the company has knowledge and experience in increasing financial leverage over the course of five years, as opposed to those who have performed less earnings management and have a high leverage degree.

Financial leverage and cash flow, according to Ujah and Brusa (2014), influence the degree to which institutions regulate their earnings. They discovered that it was determined by their economic group or Industry Company, which was linked to their level of managed earnings change. Tong and Green discovered in 2013 that profitability and gearing have a negative connection. Their conclusion was that past dividends and present debt levels have a positive relationship. Finally, their findings revealed that there is a weak negative association between previous dividends and investment.

One of the most important studies, conducted by Akhtar in 2012, examined the relationship between financial leverage and financial performance evidence from Pakistan's fuel and energy sector. When compared to the debt-to-equity ratio, the study's findings show that the perception of financial performance has a favourable relationship between leverage and financial performance. The gearing ratio indication, on the other hand, has a negative relationship with leverage indicators.

According to Bancel and Mittoo (2004) and Brounen, de Jong, and Koedijk (2006), who utilised large sample sizes and identical questionnaires to determine the leverage across Europe, different European countries and different types of firms used same questions. The timing of issuing debt or equity depending on interest rates and market value is the most critical factor in determining the level of leverage, according to the study, and they employed many theoretical arguments to support their findings.

Research Methodology

- **Sample Size**

For this study, researcher has selected 5 steel companies to study the relation between financial leverage and financial performance.

- **Sources of Data**

Secondary sources of data has been used for this study. Annual reports of steel companies have been analysed.

- **Research Period**

Last 10 years' (2007-08 to 2016-17) annual reports of steel companies have been collected.

- **Data Analysis Techniques**

Regression techniques has been used.

Data Analysis

Ratio	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008
Operating Profit Margin(%)	17.99	17.41	15.80	15.42	21.30	19.24	22.22	27.65	27.02	30.09
Profit Before Interest And Tax Margin(%)	12.06	11.45	10.54	9.31	15.16	13.22	16.33	22.39	22.01	25.25
Gross Profit Margin(%)	12.25	11.68	10.79	9.52	15.43	13.43	16.57	22.72	22.37	26.38
Net Profit Margin(%)	7.93	7.45	8.06	7.41	9.24	9.92	11.82	14.77	16.03	19.56
Current Ratio	0.68	0.79	0.76	0.76	0.70	0.78	0.76	0.70	0.82	0.78
Quick Ratio	0.51	0.66	0.59	0.59	0.54	0.58	0.57	0.51	0.61	0.59
Interest Cover	9.23	8.30	10.49	11.85	13.38	13.37	14.52	26.85	24.94	19.68
Financial Charges Coverage Ratio	14.14	12.59	14.20	16.74	17.17	17.54	18.31	31.22	28.87	21.73
Long Term Debt Equity Ratio	0.55	0.69	0.91	0.86	0.71	0.58	0.56	0.58	0.55	0.45
Debt Equity Ratio	0.84	1.02	1.24	1.29	0.78	0.76	0.74	0.75	0.73	0.58
Inventory Turnover Ratio	9.56	9.69	8.96	8.54	10.81	13.83	15.16	17.93	20.90	17.73
Asset Turnover Ratio	1.07	1.04	1.07	1.12	1.10	0.95	0.96	1.06	1.04	1.06

Regression Analysis

- **Debt Equity Ratio Vs Operating Profit Margin (%)**

Summary Output						
Regression Statistics						
Multiple R	0.6519988					
R Square	0.4251025					
Adjusted R Square	0.3532403					
Standard Error	7.4141979					
Observations	10					

ANOVA						
	df	SS	MS	F	Significance F	
Regression	1	325.17831	325.17831	5.915524	0.041062	
Residual	8	439.76264	54.97033			
Total	9	764.94094				

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%
Intercept	38.097581	6.0184539	6.3301275	0.0002254	24.219001	51.97616
X Variable 1	-8.280052	3.4043677	-2.432185	0.041062	-16.13054	-0.429566

Interpretation

H_0 : There is no linear relationship between Debt equity ratio vs operating profit margin of selected iron and steel companies

H_1 : There is linear relationship between Debt equity ratio vs operating profit margin of selected iron and steel companies

Multiple R = 0.651, which indicates that there is linear relationship between Debt equity ratio vs operating profit margin of selected iron and steel companies.

From the ANOVA table, it can be seen that p-value 0.04 which is less than specified α of 0.05. So null hypothesis is rejected and it concluded that there is linear relationship between Debt equity ratio vs operating profit margin of selected iron and steel companies

- **Debt Equity Ratio Vs Profit before Interest and Tax Margin (%)**

Summary Output						
Regression Statistics						
Multiple R	0.6585948					
R Square	0.4337471					
Adjusted R Square	0.3629655					
Standard Error	8.4164046					
Observations	10					

ANOVA						
	Df	SS	MS	F	Significance F	
Regression	1	434.07958	434.07958	6.1279632	0.0383816	
Residual	8	566.68693	70.835866			
Total	9	1000.7665				

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%
Intercept	34.412315	6.8319923	5.036937	0.0010054	18.657712	50.166917
X Variable 1	-9.566586	3.8645497	-2.475472	0.0383816	-18.47825	-0.654918

Interpretation

H_0 : There is no linear relationship between Debt equity ratio vs profit before interest and tax margin of selected iron and steel companies

H_1: There is linear relationship between Debt equity ratio vs profit before interest and tax margin of selected iron and steel companies

Multiple R = 0.658, which indicates that there is linear relationship between Debt equity ratio vs profit before interest and tax margin of selected iron and steel companies.

From the ANOVA table, it can be seen that p-value 0.03 which is less than specified α of 0.05. So null hypothesis is rejected and it concluded that there is linear relationship between Debt equity ratio vs profit before interest and tax margin of selected iron and steel companies

- **Debt Equity Ratio Vs Gross Profit Margin (%)**

Summary Output						
Regression Statistics						
Multiple R	0.6565324					
R Square	0.4310349					
Adjusted R Square	0.3599142					
Standard Error	8.6583188					
Observations	10					

ANOVA						
	df	SS	MS	F	Significance F	
Regression	1	454.34302	454.34302	6.0606153	0.0392066	
Residual	8	599.73188	74.966485			
Total	9	1054.0749				

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%
Intercept	35.21353	7.0283655	5.0102019	0.0010395	19.00609	51.42097
X Variable 1	-9.78733	3.9756291	-2.461832	0.0392066	-18.95515	-0.619513

Interpretation

H_0:   There is no linear relationship between Debt equity ratio vs gross profit margin of selected iron and steel companies

H_1:   There is linear relationship between Debt equity ratio vs gross profit margin of selected iron and steel companies

Multiple R = 0.656, which indicates that there is linear relationship between Debt equity ratio vs gross profit margin of selected iron and steel companies.

From the ANOVA table, it can be seen that p-value 0.03 which is less than specified α of 0.05. So null hypothesis is rejected and it concluded that there is linear relationship between Debt equity ratio vs gross profit margin of selected iron and steel companies

- **Debt Equity Ratio Vs Net Profit Margin (%)**

Summary Output						
Regression Statistics						
Multiple R	0.7576474					
R Square	0.5740296					
Adjusted R Square	0.5207833					
Standard Error	8.6244398					
Observations	10					

ANOVA						
	df	SS	MS	F	Significance F	
Regression	1	801.87485	801.87485	10.780646	0.0111313	
Residual	8	595.0477	74.380962			
Total	9	1396.9226				

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%
Intercept	30.513408	7.0008644	4.3585201	0.0024174	14.369386	46.65743
X Variable 1	-13.00246	3.9600729	-3.283389	0.0111313	-22.13441	-3.870517

Interpretation

H_0:   There is no linear relationship between Debt equity ratio vs net profit margin of selected iron and steel companies

H_1:   There is linear relationship between Debt equity ratio vs net profit margin of selected iron and steel companies

Multiple R = 0.757, which indicates that there is linear relationship between Debt equity ratio vs net profit margin of selected iron and steel companies.

From the ANOVA table, it can be seen that p-value 0.01 which is less than specified α of 0.05. So null hypothesis is rejected and it concluded that there is linear relationship between Debt equity ratio vs net profit margin of selected iron and steel companies

- **Debt Equity Ratio Vs Current Ratio**

Summary Output						
Regression Statistics						
Multiple R	0.3734607					
R Square	0.1394729					
Adjusted R Square	0.031907					
Standard Error	0.4325308					
Observations	10					

ANOVA						
	df	SS	MS	F	Significance F	
Regression	1	0.2425769	0.2425769	1.2966277	0.287778	
Residual	8	1.4966635	0.1870829			
Total	9	1.7392404				

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%
Intercept	1.3988178	0.3511057	3.9840364	0.0040388	0.5891666	2.2084689
X Variable 1	-0.22615	0.1986046	-1.138696	0.287778	-0.684133	0.2318329

Interpretation

H_0: There is no linear relationship between Debt equity ratio vs current ratio of selected iron and steel companies

H_1: There is linear relationship between Debt equity ratio vs current ratio of selected iron and steel companies

Multiple R = 0.373, which indicates that there is no linear relationship between Debt equity ratio vs current ratio of selected iron and steel companies.

From the ANOVA table, it can be seen that p-value 0.287 which is higher than specified α of 0.05. So null hypothesis is accepted and it concluded that there is no linear relationship between Debt equity ratio vs current ratio of selected iron and steel companies.

- **Debt Equity Ratio Vs Quick Ratio**

Summary Output						
Regression Statistics						
Multiple R	0.3186035					
R Square	0.1015082					
Adjusted R Square	-0.010803					
Standard Error	0.3346051					
Observations	10					

ANOVA						
	df	SS	MS	F	Significance F	
Regression	1	0.101191	0.101191	0.9038096	0.3695959	
Residual	8	0.8956846	0.1119606			
Total	9	0.9968756				

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%
Intercept	1.1320215	0.2716147	4.167747	0.0031318	0.5056768	1.7583662
X Variable 1	-0.146064	0.1536402	-0.950689	0.3695959	-0.500359	0.2082309

Interpretation

H_0: There is no linear relationship between Debt equity ratio vs quick ratio of selected iron and steel companies

H_1: There is linear relationship between Debt equity ratio vs quick ratio of selected iron and steel companies

Multiple R = 0.318, which indicates that there is no linear relationship between Debt equity ratio vs quick ratio of selected iron and steel companies.

From the ANOVA table, it can be seen that p-value 0.369 which is higher than specified α of 0.05. So null hypothesis is accepted and it concluded that there is no linear relationship between Debt equity ratio vs quick ratio of selected iron and steel companies.

- **Debt Equity Ratio Vs Interest Cover**

Summary Output						
Regression Statistics						
Multiple R	0.0220896					
R Square	0.0004879					
Adjusted R Square	-0.124451					
Standard Error	226.38542					
Observations	10					

ANOVA						
	df	**SS**	**MS**	**F**	**Significance F**	
Regression	1	200.1582	200.1582	0.0039055	0.9517026	
Residual	8	410002.87	51250.359			
Total	9	410203.03				

	Coefficients	**Standard Error**	**t Stat**	**P-value**	**Lower 95%**	**Upper 95%**
Intercept	81.784413	183.76772	0.4450423	0.6680846	-341.9847	505.55353
X Variable 1	6.4961939	103.9491	0.062494	0.9517026	-233.2109	246.20325

Interpretation

H_0:   There is no linear relationship between Debt equity ratio vs interest cover ratio of selected iron and steel companies

H_1:   There is linear relationship between Debt equity ratio vs interest cover ratio of selected iron and steel companies

Multiple R = 0.022, which indicates that there is no linear relationship between Debt equity ratio vs interest cover ratio of selected iron and steel companies.

From the ANOVA table, it can be seen that p-value 0.951 which is higher than specified α of 0.05. So null hypothesis is accepted and it concluded that there is no linear relationship between Debt equity ratio vs interest cover ratio of selected iron and steel companies.

- **Debt Equity Ratio Vs Financial Charges Coverage Ratio**

Summary Output						
Regression Statistics						
Multiple R	0.3885698					
R Square	0.1509865					
Adjusted R Square	0.0448598					
Standard Error	5.145663					
Observations	10					

ANOVA						
	df	**SS**	**MS**	**F**	**Significance F**	
Regression	1	37.670048	37.670048	1.4227005	0.2671331	
Residual	8	211.82278	26.477848			
Total	9	249.49283				

	Coefficients	**Standard Error**	**t Stat**	**P-value**	**Lower 95%**	**Upper 95%**
Intercept	11.515178	4.1769773	2.7568209	0.0247962	1.8830513	21.147305
X Variable 1	-2.818191	2.3627275	-1.19277	0.2671331	-8.26665	2.6302686

Interpretation

H_0:   There is no linear relationship between Debt equity ratio vs financial charges coverage ratio of selected iron and steel companies

H_1:   There is linear relationship between Debt equity ratio vs financial charges coverage ratio of selected iron and steel companies

Multiple R = 0.388, which indicates that there is no linear relationship between Debt equity ratio vs financial charges coverage ratio of selected iron and steel companies.

From the ANOVA table, it can be seen that p-value 0.267 which is higher than specified α of 0.05. So null hypothesis is accepted and it concluded that there is no linear relationship between Debt equity ratio vs financial charges coverage ratio of selected iron and steel companies.

- **Debt Equity Ratio Vs Long Term Debt Equity Ratio**

Summary Output						
Regression Statistics						
Multiple R	0.9800671					
R Square	0.9605316					
Adjusted R Square	0.955598					
Standard Error	0.1163066					
Observations	10					

ANOVA						
	df	SS	MS	F	Significance F	
Regression	1	2.6336677	2.6336677	194.6937	6.743E-07	
Residual	8	0.1082179	0.0135272			
Total	9	2.7418856				

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%
Intercept	0.1329714	0.0944116	1.4084226	0.1966624	-0.084742	0.3506849
X Variable 1	0.7451656	0.0534044	13.953269	6.743E-07	0.6220149	0.8683163

Interpretation

H_0:   There is no linear relationship between Debt equity ratio vs long term debt equity ratio of selected iron and steel companies

H_1:   There is linear relationship between Debt equity ratio vs long term debt equity ratio of selected iron and steel companies

Multiple R = 0.980, which indicates that there is linear relationship between Debt equity ratio vs long term debt equity ratio of selected iron and steel companies.

From the ANOVA table, it can be seen that p-value 6.743E-07 which is less than specified α of 0.05. So null hypothesis is rejected and it concluded that there is linear relationship between Debt equity ratio vs long term debt equity ratio of selected iron and steel companies.

- **Debt Equity Ratio Vs Inventory Turnover Ratio**

Summary Output						
Regression Statistics						
Multiple R	0.3290907					
R Square	0.1083007					
Adjusted R Square	-0.003162					
Standard Error	2.3619624					
Observations	10					

ANOVA						
	df	SS	MS	F	Significance F	
Regression	1	5.4206187	5.4206187	0.9716344	0.3531427	
Residual	8	44.630932	5.5788665			
Total	9	50.05155				

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%
Intercept	8.523022	1.9173162	4.4452875	0.0021527	4.1016828	12.944361
X Variable 1	-1.069047	1.0845392	-0.985715	0.3531427	-3.569999	1.4319052

Interpretation

H_0:   There is no linear relationship between Debt equity ratio vs inventory turnover ratio of selected iron and steel companies

H_1:   There is linear relationship between Debt equity ratio vs inventory turnover ratio of selected iron and steel companies

Multiple R = 0.329, which indicates that there is no linear relationship between Debt equity ratio vs inventory turnover ratio of selected iron and steel companies.

From the ANOVA table, it can be seen that p-value 0.353 which is higher than specified α of 0.05. So null hypothesis is accepted and it concluded that there is no linear relationship between Debt equity ratio vs inventory turnover ratio of selected iron and steel companies

- **Debt Equity Ratio Vs Asset Turnover Ratio**

Summary Output						
Regression Statistics						
Multiple R	0.1087142					
R Square	0.0118188					
Adjusted R Square	-0.111704					
Standard Error	0.4635484					
Observations	10					

ANOVA						
	df	SS	MS	F	Significance F	
Regression	1	0.0205596	0.0205596	0.095681	0.7649786	
Residual	8	1.7190168	0.2148771			
Total	9	1.7395764				

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%
Intercept	0.9625983	0.3762841	2.5581692	0.033743	0.0948857	1.8303109
X Variable 1	-0.065839	0.2128469	-0.309323	0.7649786	-0.556664	0.4249873

Interpretation

H₀: There is no linear relationship between Debt equity ratio vs assets turnover ratio of selected iron and steel companies

H₁: There is linear relationship between Debt equity ratio vs assets turnover ratio of selected iron and steel companies

Multiple R = 0.108, which indicates that there is no linear relationship between Debt equity ratio vs assets turnover ratio of selected iron and steel companies.

From the ANOVA table, it can be seen that p-value 0.764 which is higher than specified α of 0.05. So null hypothesis is accepted and it concluded that there is no linear relationship between Debt equity ratio vs assets turnover ratio of selected iron and steel companies

Conclusion

Based on the data analysis it can be concluded that there is linear relationship between Debt equity ratio vs operating profit margin of selected iron and steel companies, there is linear relationship between Debt equity ratio vs profit before interest and tax margin of selected iron and steel companies, there is linear relationship between Debt equity ratio vs gross profit margin of selected iron and steel companies, there is linear relationship between Debt equity ratio vs net profit margin of selected iron and steel companies, there is no linear relationship between Debt equity ratio vs current ratio of selected iron and steel companies, there is no linear relationship between Debt equity ratio vs quick ratio of selected iron and steel companies, there is no linear relationship between Debt equity ratio vs interest cover ratio of selected iron and steel companies, there is no linear relationship between Debt equity ratio vs financial charges coverage ratio of selected iron and steel companies, there is linear relationship between Debt equity ratio vs long term debt equity ratio of selected iron and steel companies, there is no linear relationship between Debt equity ratio vs inventory turnover ratio of selected iron and steel companies, there is no linear relationship between Debt equity ratio vs assets turnover ratio of selected iron and steel companies

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