

Capital Structure and Financial Performance: Evidence from Sugar Industry in Karachi Stock Exchange Pakistan

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Abstract This study is attempted to identify the impact between capital structure and performance in which core area is financial performance of sugar companies listed in Karachi Stock Exchange Pakistan (KSE Pakistan). For this purpose secondary data was utilized from company's financial reports, annual reports and state bank of Pakistan (SBP) Financial review for the period of six years (2006-2011). The results show that there is weak positive correlation between capital structure and financial performance at 0.354. Coefficient of determination is .125. F and T values are 28.060 and -5.297 respectively which shows insignificant level of the sugar companies listed in KSE Pakistan.

Key words Capital structure; financial performance; sugar companies; KSE Pakistan

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1. Introduction

Capital structure is the composition of equity and the debt of company used as the finance of the company. The decision about the composition of capital structure is very hard for the companies and it is important topic for the scholars of accounting and finance. Overall objective of the companies is to reduce the cost of capital when capital structure decision taken into account, so that value maximizations of the companies. Determinants of capital structure are mainly short term debt to capital ratio, long term debt to capital ratio and total debt to capital ratio (Muhammad, Ammar and Muhammad, 2013). Companies keep balance in composition of capital structure which is very necessary for return of the companies because it attached the level of risk of return if the composition includes more debt instead of equity with results the disturbance of cash flows in companies. Another way the equity holders of the companies want to high rate of return to compensate this risk. In short there is no single and ultimate way to conclude the exact formulation about the composition of capital structure. Usually, capital structure policy depends upon the company's size, ownership, profitability, various costs, earning growth and liquidity of company's assets (Faruk and Ayub, 2012). In developing countries optimum benefits of the debt and equity depending upon the managers that are engaged in management of the financial issues of the company.

The relationship between capital structure and financial performance is not get adequate attention by the researchers in financial literature. Both for the company as well as for the investors viewpoints there is a lot of important to focus it (Puwanenthiren, 2011). There are 54 companies which are listed in Karachi Stock Exchange KSE under food sector in which 36 belong from sugar firms and rest of the 18 are

from other food products. Focus of this paper is the sugar firms of Pakistan which are listed in KSE (State Bank of Pakistan review, 2006-2011).

2. Literature review

Pandey (2009) argue that Capital structure based on the decisions of a firm about how the firm finances it. Its main sources are shareholders equity, debts and securities. To meet out the requirements of stakeholders of the firm capital structure is very necessary for the firm. So it is very important that the firm makes the structure of its capital in such a way that it will be beneficial for the shareholders as well as the other stakeholders i.e. employees, creditors, customers and society etc. According to the Brander and Lewis (1986) capital structure and market structure has the link with each other. They provided the theoretical frame work on it and the main cause is the competitive strategies and behavior of the firms. B. Nimalathasan and Valeriu Brabete (2010) investigated in their research of impact of capital structure on profitability in the manufacturing concerns of Sri Lankan companies. Their analysis shows that debt equity ratio is positively and strongly associated to all other profitability ratios in which net profit, gross profit and operating profit are included. Arowoshegbe and Idialu (2013) said in their document which contains the title of capital structure and profitability of listed companies of Nigeria with the sample of sixty non financial companies of year 1996-2010. Penal data was used in this study and the results shown that there were negative relationships between capital structure and profitability.

Modigliani and Miller (1958) stated that capital structure of the firm have no effect on market value of the firm if the firm treating in perfect market. But this theory based on several assumptions and have not exist in real sense due to the brokerage cost and individual taxes which are not remain in perfect market situation, and it is impossible for the investors to take the same rate that are practiced in companies.

After M.M theory there were five main theories of capital structure introduced by different researcher. Jensen and Meckling (1976) first time gave the agency theory in corporate world. According to the agency theory the principal or the shareholders have given the authority to run the operations of companies to agents or managers of the companies. In particular manager's work in companies for their own interests not for the welfare or value maximization of the companies and this may include in agency problem. In order to reduce the conflict, the firms should give ownership to the managers in companies. In this way equity will increase and firm take debt in lesser amount, moreover the managers avoid the leverage for minimizing the risk of the companies. Ross (1977) developed signaling theory in which he argued that managers make the capital structure as the signal of the company to the investors. If the company takes debt the investors influence and interrupt it by giving signal that in future out flow of cash will be increased. In this way this is showing that company has the attractive options in near future. Ross assumes that if the company issues shares then the shareholders think out that the company shares its losses and it becomes a signal.

Scott (1977) presented trade-off theory and commented that the firms should take the debt by understanding its costs and benefits on both sides. One aspect of it decreases the profitability and another aspect is tax savings. The best and optimal combinations of debt and equity would be in capital structure. Myers and Majluf (1984) gave Packing order theory in which they argue that the target amount of leverage have not followed by the firms. Firms funds all the projects from retained earnings and if retained earnings have not required amount of balance then the firms should go for debt financing and if there is a need of more capital then the firms should go for equity financing. M. Jensen (1986) argued in his free cash flow theory that the discretion powers to manager have been controlled. If companies have the positive NPV and after financing the projects the managers should flow of cash by paying dividend to the equity holders instead of starting some ill projects.

3. Conceptual framework

According to the research question the conceptual model may be constructed. This model shows the relationship between capital structure and financial performance of listed companies in KSE of sugar industry in Pakistan.



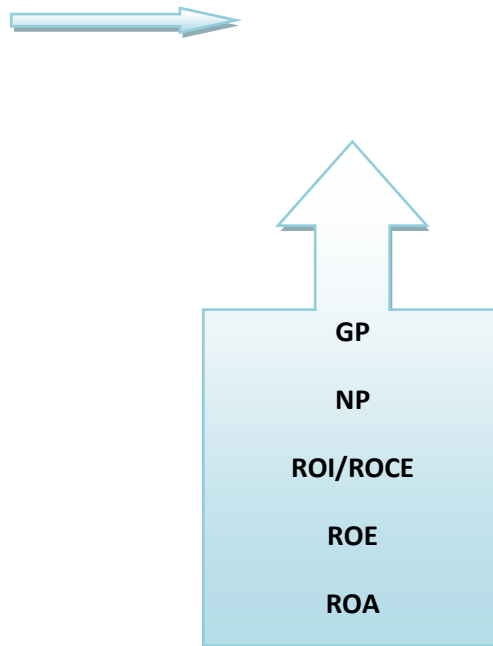


Figure 1. Conceptual framework

4. Hypothesis Development

This study contains the following hypothesis:

H_0 : Capital structure and financial performance have the negative relationship.

H_1 : There is a significance impact of capital structure on financial performance.

H_2 : Capital structure and financial performance have the positive relationship.

5. Methodology of research

To analyze the research secondary data was collected from State Bank of Pakistan SBP, Karachi Stock Exchange KSE and different financial reviews and annual financial reports of companies. This research includes 33 sugar companies listed in KSE Pakistan from the year of 2006-2011. All the values from these companies have been taken for analysis of ratios.

5.1. Mode of analysis

Table 1. Mode of analysis

Capital Structure	<i>Debt Equity Ratio:</i> (Current Liabilities + Non Current Liabilities)/ Shareholders Equity * 100
Performance Analysis	<i>GP:</i> Gross Profit/Net Sales * 100
	<i>NP:</i> Net Profit/Net Sales * 100
	<i>ROI/ROCE:</i> NPBT/Average of Total Capital Employed * 100
	<i>ROE:</i> NPBT/Average of Shareholders Equity * 100
	<i>ROA:</i> NPBT/Average of (Non Current Liabilities + Current Liabilities) * 100

Source of formulas: SBP (2006)

5.2. Testing the Hypothesis

H₀: Capital structure and financial performance have the negative relationship.

The empirical results show that H₀ is rejected because there is positive relationship in capital structure and financial performance.

H₁: There is a significance impact of capital structure on financial performance.

The empirical results indicate that H₁ is rejected because there is insignificant positive relationship between these two variables.

H₂: Capital structure and financial performance have the positive relationship.

According to the empirical results H₂ is accepted, capital structure and financial performance have the positive relationship.

6. Results and Discussions

6.1. Correlation analysis

Correlation analysis is used to check the strength of the relationship of two variables. In this research correlation analysis have been used to check the relationship between capital structure and financial performance.

Table 2. Capital structure correlated with

	R values	R ² values
GP	.059	.004
NP	.033	.001
ROI/ROCE	0.73	.005
ROE (Performance)	.354	.125
ROA	0.73	0.000

Table 3. Capital structure and Gross Profit

Variables	Capital Structure	Gross Profit
Capital Structure	1	.059
Gross Profit	.059	1

It shows the relationship between capital structure and gross profit. At 0.01 significance level there is a weak positive relationship between these two variables (capital structure and gross profit). The value of correlation is .059 or 5.9% where as the coefficient of determination or the value of R² is .004 or 0.4% which shows that only 0.4% of capital structure is accounted by the gross profit.

Table 4. Capital structure and Net Profit

Variables	Capital Structure	Gross Profit
Capital Structure	1	.033
Net Profit	.033	1

It indicates the relationship between capital structure and net profit variables which shows that there is weak positive relationship between them. Correlation value is .033 or 3.3% at 0.01 significance level. The value of R² is .001 or 0.1% which shows that only 0.1% variations in capital structure accounted by the net profit.

Table 5. Capital structure and ROI/ROCE

Variables	Capital Structure	Gross Profit
Capital Structure	1	.73
ROI/ROCE	.73	1

It explains the relationship of capital structure and ROI/ROCE. It shows the strong positive correlation between these two variables. Value of correlation is .73 or 73%. Coefficient of determination is .005 or 0.5% which shows the 0.5% of variations in capital structure due to the ROI/ROCE.

Table 6. Capital structure and ROE (Performance)

Variables	Capital Structure	ROE
Capital Structure	1	0.354
ROE	0.354	1

It illustrates the relationship between capital structure and ROE variables. It shows the weak positive relationship between capital structure and ROE. Correlation value is 0.354 or 35.4%. Coefficient of determination is .125 or 12.5% which shows that there is a 12.5% variation in capital structure accounted by ROE.

Table 7. Capital structure and ROA

Variables	Capital Structure	ROA
Capital Structure	1	.73
ROA	.73	1

It elaborates the relationship between capital structure and ROA variables. There is strong positive correlation between these two variables. Correlation value is .73 or 73%. The value of coefficient of determination or R² is 0.000 or 0% which shows that there are no variations in capital structure accounted by the ROA.

6.2. Regression analysis

Regression analysis is used to test the impact of capital structure on financial performance of sugar companies listed in KSE Pakistan from the year 2006-2011.

Table 8. Capital structure and Gross Profit

Model Summary						
Model	R	R.Square	Adjusted R.Square	Std. Error of the Estimate		
1	.059 ^a	.004	-.002	38.8905206		
a. Predictors: (Constant), DEBTEQUITY						
The above table shows weak positive correlation between capital structure and gross profit.						
Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	-2.707	2.937		-.922	.358
	GP	.131	.158	.059	.831	.407
a. Dependent Variable: DE						

The above table shows the coefficient of correlation between capital structure and gross profit. The value of R² is .004 which shows that only 0.4% variation in capital structure accounted by the gross profit and other 99.60% variations come from other factors.

Table 9. Capital structure and Net Profit

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.033 ^a	.001	-.004	38.9379948

a. Predictors: (Constant), NP

The above table shows the weak positive correlation between capital structure and net profit.

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	-1.922	2.769		-.694	.488
	NP	.060	.131	.033	.459	.647

a. Dependent Variable: DE

The above table shows the coefficient of correlation in capital structure and net profit. The value of R^2 is .001 which indicates that only .1% variations in capital structure are accounted by the net profit and remaining 99.9% come due to the other factors.

Table 10. Capital structure and ROI/ROCE

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.073 ^a	.005	.000	38.8540091

a. Predictors: (Constant), ROI/ROCE

The above table reflects the strong positive correlation between capital structure and ROI/ROCE.

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	-2.039	2.766		-.737	.462
	ROI/ROCE	.067	.065	.073	1.030	.304

a. Dependent Variable: DE

The above table illustrates the coefficient of correlation between capital structure and ROI/ROCE. The value of R^2 is .005 which indicates that .5% variations in capital structure are accounted by the ROI/ROCE and other 99.5% variations attributed due to the other factors.

Table 11. Capital structure and ROE (Performance)

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.354 ^a	.125	.121	36.4378905

a. Predictors: (Constant), ROE

The above table indicates the positive relationship between capital structure and ROE.

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	-1.078	2.594		-.416	.678
	ROE	-.057	.011	-.354	-5.297	.000

a. Dependent Variable: DE

The above table shows coefficient of correlation in capital structure and ROE in which the value of R^2 is .125 that shows 12.5% variations in capital structure is due to ROE and other 87.5% variations is due to other factors. T- Value is the -5.297 which is insignificant.

Table 12. ANOVA test

ANOVA ^b						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	37255.429	1	37255.429	28.060	.000 ^a
	Residual	260233.094	196	1327.720		
	Total	297488.523	197			

a. Predictors: (Constant), ROE

b. Dependent Variable: DE

In the above table the F- Value is the 28.060 which is insignificant and shows that other factors that have the impact on financial performance according to this study.

Table 13. Capital structure and ROA

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.073 ^a	.005	.000	38.8549689

a. Predictors: (Constant), ROA

The above table shows the strong positive correlation between capital structure and ROA.

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	-2.640	2.859		-.924	.357
	ROA	.195	.190	.073	1.025	.307

a. Dependent Variable: DE

The above table indicates coefficient of correlation in capital structure and ROA. The value of R^2 is .000 which shows that 0% variations in capital structure is accounted by the ROA whereas the remaining 100% variations attributed by the other factors.

6.3. Descriptive analysis

Descriptive analysis displays the summary of all variables studied in the research in a single table that is help full for descriptive statistics analysis.

Table 14. Descriptive Statistics

	N	Range	Minimum	Maximum	Mean	Std. Deviation
DE	198	440.0800	-360.8000	79.2800	-1.880657	38.8599282
ROA	198	122.3100	-44.5700	77.7400	3.895455	14.5449629
ROE	198	4336.6200	-1881.8600	2454.7600	14.000000	239.9184235
ROI/ROCE	198	563.2100	-223.1200	340.0900	2.372576	42.6456131
GP	198	191.5057	-156.5433	34.9624	6.295187	17.5316888
NP	198	309.4602	-133.9054	175.5548	.692130	21.2024394
Valid N (listwise)	198					

The above table shows the years, range values, minimum values, maximum values, mean and standard deviation. According to the above table ROE and GP have the high maximum mean values which are 14 and 6.295187 respectively and at the same time DE has the minimum mean value which is -1.880657 with 38.8599282 standard deviation. The mean values of ROA and ROI/ROCE 3.895455 and 2.372576 respectively. NP has the mean value of .692130 and the performance variable ROE has the variation in minimum and maximum values which shows that the performance of sugar companies in the sample period varies.

7. Conclusions

This study shows that there is weak positive correlations in gross profit and capital structure (.059) and also have weak positive correlation in net profit and capital structure variables (.033). It shows the low financial cost in the companies. The correlation among ROI/ROCE and ROA with regarding capital structure is strongly positive (.73, .73 respectively). Capital structure and financial performance has the overall positive relationship. (.354) shows the weak positive association and coefficient of determination is .125 with F is 28.060 and T- Value is -5.297. It shows the insignificant in sugar companies in KSE Pakistan.

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