

# Impact of Capital Structure on Firm's Financial Performance: Evidence from Food Sector of Pakistan

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## **Abstract**

The main aim of the study is to find the impact of capital structure on firm's financial performance in food sector. Firm's performance is measured by using the five dependent variables which are return on assets, earnings per share, net profit margin, return on equity, and return on capital employed. Four independent variables are taken for quantifying the capital structure like debt equity ratio, debt to total assets ratio, short term debt to total assets ratio and long term debt to total assets ratio. For this study, Quantitative data is gathered from annual reports of 49 firmsin food sector listed at Karachi stock exchange in Pakistan over the six years from 2007-2012. Linear Regression analysis is used to discover the impact of capital structure on financial performance of firms. Results of this study indicate that capital structure has a significant negative impact on firm's return on equity, net profit margin, return on capital employed and return on assets. It is also concluded that capital structure has a significant negative impact on firm's earnings per share. Therefore, it is concluded that capital structure has a significant negative impact on financial performance of firm in food sector of Pakistan. The results of correlation analysis find out that significant negative relationship exist among capital structure and financial performance of firms in food sector of Pakistan. Descriptive statistics analysis is also applied to find the level of capital structure used in food sector of Pakistan and to find the performance of firms.

**Keywords:** Capital Structure, Firm's Financial Performance, Return on Equity, Return on Assets, Food Sector, Pakistan

### Introduction

Capital structure is defined as combination of equity, debt or hybrid securities through which a company finances its assets. Firm's leverage refers to the percentage of total debt in total financing. Decisionof Capital structure involve what type of source should be used either equity, or short or long term debt, or mix of sources of funding which better the firm's financial performance. Initiating a business require purchasing assets in order to fulfill the purpose of organization i-e profit and continuous survival of business. Firm may finances these assets by using various sources of finance like debt, equity or mix of both. When firm uses debt then it has to pay a specific amount from the profit generated to pay off loan. On the other hand, if firm use only equity then net profit is divided just among shareholders after paying the tax or some amount may be retained to fulfill the future needs. So, provision of company's profit amid shareholders and creditors depend on the decision of capital structure. By tradition, it was thought by the financial experts that firm should not cross a certain limit of leverage because by doing this financial performance of company may be decreased due to increase in cost of financing. (Chowdhury & Chowdhury, 2010). A firm can use high level of debt if there is no financial distress in a company. But, if a firm is in financial distress then it should avoid from using high debt. Because when a company will be unable to pay the interest then amount of interest will increase and creditors may demand their amount and firm may face bankruptcy.

Fundamentally, a theory on capital structurewas proposed by Modigliani and miller in 1958 which states that the way a firm uses for financing is not relevant to the value of a firm. In this theory some situation were also assumed like no taxes, no bankruptcy, no asymmetry information and no agency cost. Therefore, this might be acceptable, because 54 years ago environment was not such complex as today. But today, situation has become more complex so it becomes necessary to determine the linkbetween capital structure (CS) and financial performance (FP) of firms. Since Modigliani and miller study, several researchesare done to find the association among performance of firms and capital structure. Many variables have taken out for measuring firm's performance and capital structure by different researchers. In these studies, both positive and negative link found amongCS and FP of firms. According to Modigliani and millers (1963), it was examined that, where the



financial leverage is then it will have two impacts on the performance of firm. First is that if the market is not perfect then firm will get the benefit of tax shield by using the more debt. Second is that firm can suffer in financial distress when higher financial leverage is used? Under this situation, optimal capital structure play greater role in the performance of firm by balancing the risk of bankruptcy and taking the benefit of tax saving; hence, more profitable firm should use the high financial leverage. Since (1958), theories of CS and effect of CS on financial performance of firm has remained a great concern among the finance scholars.

This Study intends to examine the effect of capital structure (CS) on financial performance (FP) of firms of food sector listed at KSE. The six years quantitative data (2007-2012) is collected form annual reports of 49 companies in food sector and from financial statement analysis done by state bank of Pakistan. Ratio analysis is conducted on the data collected from 49 companies listed at Karachi stock exchange from year 2007 to 2012. Regression analysis is applied to find the impact of CS on FP of organizations and correlation analysis is done to examine the associationamongCS and FP of firms. Descriptive statistics is used to examine the level of CS and FP of firms in food sector. I section of this paper explains the literature review including both theoretical and empirical studies and variables identification, problem statement, research model, research questions, objectives, hypotheses formulation. II section includes the research methodology and III section explains the results and discussions including descriptive statistics, correlation analysis, and regression analysis. IV section includes conclusions and recommendation.

## Literature review

Basically, a theory on capital structure was proposed by Modigliani and miller in 1958 which states that the way a firm uses for financing is not relevant to the value of a firm. In this theory some situation were also assumed like no taxes, no agency cost, no bankruptcy, and no asymmetry information. Since that study, Theories of CS and effect of CS on FP of firm has remained a great concern among the finance scholars. According to Modigliani and millers (1963), it was examined that, where the financial leverage is then it will have two impacts on the performance of firm. First is that if the market is not perfect then firm will get the benefit of tax shield by using the more debt. Second is that firm can suffer in financial distress when higher financial leverage is used? Under this situation, optimal capital structure play greater role in the performance of firm by balancing the risk of bankruptcy and taking the benefit of tax saving; hence, more profitable firm should use the high financial leverage.

# Capital structure theories:

# Pecking order theory:

This Theoryexplains that firms clearly know that which type of funding should be selected for outlay in long period. Very last option of funding its assets used by the firm is raising fund from outsider by issuing stock. When firm's performance is good then the insider fund is used firstly and after that they may borrow fund (Donaldson, 1961).

Pecking order theory considers that external are less aware about the actual position of the company than internal therefore manger always give higher rate than the real rate while issuing it. But investor understands this type of manager's behavior so it leads to opposite impact on the shares' worth. Borrowing is more used for financing as compared to equity when a firm is going upward. The concept that insiders have more information than outsiders is understood in pecking-order theory such as by using a portion of debt as compared to equity and particular portion of debt to finance its assets, a sound situation is not achieved. As an alternative, take the decision of selecting source of finance is tracked by a hierarchal design (Myers, 1984; Myers and Majluf, 1984). According to asymmetric information theory, outsiders are not well informed as insiders are informed about the performance of firm. The agency theory states that mostly companies are managed by those persons who are not the owner of the firm. So, manager more works for the gain of their personal interest than organization's wellbeing. This agency problem can be reduced if take loan; because it will force manage to think and work for the interest of owners.

## **Agency Theory:**

This theory states about the relationship among owner and managers. This relationship is built up when shareholder or owners hire agent or mangers and assign responsibilities of making decision about the firm to the managers. And agency problem arise when managers think for their own benefits instead of thinking for firm's benefits.

In this study, it was recognized that agency cost is divided into two most important kinds. One is when shareholder-manager seeks for its own benefits over the benefits of external investors then a cost come up due to this disagreement refer as external equity cost. The earlier may involve in ethical dangerous practices to increase their value because external equity contributors participate in taking profit from shareholder-manager. By which motivation and supervising method enhanced and results in cost increased with increase in external equity contributor. Therefore it means performance increased when cost is decreased by using higher level of debt. Another kind of agency cost occurs from the disagreement between creditors and investors as they think for their own benefits. Investors are interested in taking greater risk for earning more profit. But debt holders



consider that this action of investors may increase the financial distress so they charge high interest rate for the risk associated with that company. So, it proposed that using greater level of debt may decrease the financial performance of a firm (Jensen & Meckling, 1976). But the connection of these concepts is further analyzed in later studies in which it is stated that in addition to the advantages of higher level of debt some disadvantages are also associated with higher level of debt like risk of insolvency (Grossman & Hart, 1983) and a pre-determined fixed cost of debt is to pay even in case of loss occur in firm (Jensen, 1986).

It was predicted that the advantages a company attain from using borrowing i-e saving of tax are greater than the cost arise due to the conflict among manager-shareholder for debt. Therefore this conflict of agency cost of equity is decreased by using borrowed money (Parrino & Weisbach, 1999).

#### Trade off theory:

In this theory, it was stated that performance of companies is enhanced when it increase the use of money owing for funding its activities by assuming the exchange of benefits i-e increase use of debt will provide give more benefits i-e saving of tax and less cost that may occur in case of insolvency (Baxter, 1967 & Altman, 1984). Therefore companies may put a limit on leverage level for which companies do effort and with the passage of time this level is achieved by which obtain more advantages than cost (Karadeniz, 2009).

### **Review of Empirical studies:**

It was examined that, to increase the overall worth of a company, administration should do efforts for increasing market worth of both money owing & equity. Cost charged for obtaining these sources of finance is decreased if an adequate mix of these financing is used (Ross et al., 1999). Recent methods help management to determine such a mix of equity and debt which enhance the financial performance of firms but various researchers have concluded that such a mix is not used by most companies (Simerly & Mingfang, 2000). The reason of their behavior is that management has not any interest in increasing the financial performance like profit of firm when they are not motivated or encouraged to do this such as increase or decrease in profit has not any impact on their reward. They waste the firm's money by doing extra expenses on their comfort (Boodhoo, 2009).

Management cannot change the capital structure for their own benefits when outside investors keep an eye efficiently on manager' decisions (Brailsford et al., 2002). When outside investors are more, managers do not employ debt greater than a certain limit wherever uncertainty of financial distress increased. When there is less uncertainty of financial distress hen organization can increase the level of debt (Anderson et al., 2003). A study was done in Europe which concluded that financial performance of firm decreases as use of debt increases (Gleason, et al., 2000).

A direct link was found among performance of banks measured by ROE and portion of debt. By increasing the level of debt, shareholders gets more profit because debt borrows from one party is further lend out to other. But the case is different with other non-financial companies like by using more debt, cost charged for getting this debt enhanced due to which earning of shareholders decreased (Damodaran, 1997; Rose et al., 1999). As level of debt increased, it restricts the manager to do surplus or less investment than a certain limit because a continuous payment is made to the creditors for paying off that loan amount (Stulz, 1990). The results of this study are in favors of Myers argument that major positive relationship exists between performance of companies and SDTA. Negative relationship is determined amid CS and FP in this study. (Zeitun & Tian, 2007).

In Pakistan, equity market is incompetent and market of debt is not built-up therefore firms are interested to use more debt for short period than long period for carrying out its activities. While doing this study it was examines that performance of engineering companies was not adequate. Long term debt is only used by firms with large size because more finance cost is associated with using long term debt (Khan, n.d.)In Ghana, different companies use different leverage level to carry out their business activities found by a study. Companies consider the cost of insolvency while choosing the leverage level which was proved by concluding the negative effect of cost of insolvency on the leverage level (Bokpin et al. 2010). It was concluded that leverage level has not a significant impact on performance (Ebaid et al., 2009).

Practitioners and Educational people have a major interest in knowing the link of CS and firm's FP. Managers of those firms are remunerated when they increase the financial performance of firm by decreasing the cost charged for raising finance. Manager does this by assessing an optimal combination of equity and debt. Probability to not paying borrowing influenced through the capital structure of a company; it means that there exist a relationship among CS and FP. This study conducted in manufacturing companies of Nigeria, in which it was found, considerable linkamong FP and CS and of firms measured by using ROI, ROE, and ROA (ALIU, 2010).

A study done by taking data from the annual reports of Iranian manufacturing companies found that capital structure has positive consequence on financial performance calculated throughROE and Tobin's Q. Negative effect of CS was found on performance measured by earning per share and return on assets. (Salteh, et al., n.d.). Selection of source of finance depends on the economic situation and ability of firm properly using borrowing finance in business. In good economic situation, firm should choose more debt for financing because firm can get more benefit than cost charged for using that borrowed fund by which investors are also benefited through receiving greater profit (Norvaisiene, 2012)



In a study it was pointed out that management of banks in Pakistan should give attention on capital structure decision for increasing shareholder's worth by providing results that positive relationship exists among performance of banks and decision of selecting sources of finance (Aftab, et al., 2012). A study conducted on the companies listed at NSE found that major direct link existsamid choice of financing and market worth of organizations (ADEYEMI & OBOH, 2011). A study conducted to find the relationship among financial performance of companies in GSE. It was concluded that when a company uses more debt or short term debt to finance its assets then more return received by the shareholders (Abore, 2005).

A study done to inquire the relationship among firm's financial performance and capital structure and firm's age. For this purpose, data was collected from the companies of cement industry in Pakistan for period of 2007-2011. Findings shows that these companies use more debt for short period as compared to debt for long period therefore performance of firms decreased when they are using more short term debt because greater cost of financing associated with short term debt (Sattar, et al., 2013). A study done to investigate the relationship among performance of sugar industry in Pakistan listed at KSE and capital structure. 5 years that was collected for this purpose and on the basis measurement of this data, it was find that when companies use debt for short period it decrease the financial performance of these companies and on the other hand firm's financial performance is enhanced when debt for long period increased. Findings also point out that financial performance of companies is negatively influenced through the level of leverage (Badar & Saeed, 2013).

Objective of paper be to examine association among performance and financial structure in Pakistan by selecting companies from chemical industry. The results were not steady with precedingresearches such as by increasing short term debt performance is also increased but performance is decreased when these companies use more long term debt (Amjad, n.d.). This study looked at the link among performance of companies in Jordan and capital structure. It was found that negative link exist among firm' performance measured with the help of profit margin and ROA and CS calculatedthrough using long LDTA, D/E ratio, and SDTA (Al-Taani, 2013).

A study was conducted in 403 microfinance institutions to find the relationship between financial performance and leverage level. By using regression analysis, it was concluded that less equity and high level of debt is used for funding assets in microfinance institutions located in seventy three countries. In this paper, CS was assessed by using D/E ratio and D/assets ratio and performance was measure with the help of ROE and cost of finance. Results indicated that cost of fund is positively but insignificantly affected by LTDTA and significantly positively affected by short term or total debt to assets ratio. Insignificant negative relationship was found between ROA and STDTA. Significant negative relationship was found among ROA and long term or total debt (Lislevand, 2012).

A study was done to analyze the organization's financial performance in Nigeria and capital structure by using empirical evidences. Unimportant and positive link was found among the size of company and return on assets (Muritala, 2012). In a paper impact of CS is examined on performance and regression analysis was used to examine this relationship. For this study secondary data was collected from banks listed at Karachi stock exchange and. In this study, 3 independent variables TDCR, LDTA, SDTA were used for assessing the financial structure and EPS, ROE, ROA as dependent variables were selected to compute the financial performance of banks. A study concluded that more borrowing for less time and all debt are used for financing then financial performance of bank is increased. Negative significant link was assessed between EPS and assets growth. When more long term debt is used in capital then it decreases the financial performance of banks or vice versa it was proved by measuring the impact of LTDTC on EPS, ROA and ROE. So, these findings indicate that direct offinancial structure found on the financial performance for banks (Saeed, et al., 2013).

A study was done concluded that financial performance is indirectly affected through capital structure. (pratheepkanth, 2011). A study done to find out the relationship among CS and FP of Malaysian construction companies determined that there is relationship among FP of construction companies and CS. In that paper, companies of construction industry were divided into three segments on the basis of size which are large, medium, and small companies. The results indicated that; for small firms, there is negative relationship between EPS and DC and for medium firms; just positive link exists between OM and LDCE. There is negative link between EPS and DC; EPS with LDC and ROC with DEMV are positively related in large companies. (San & Heng, 2011).

A study done to find the relationship among FP and CS in which it was concluded that CS has major indirect effect on firm's financial performance in Malaysia. DTER, DTARwere measures for capital structure and ROE, ROA, ROIC, for measuring firm's performance. Regression analysis was applied on the data collected for the period 2002-2010 from the financial statement of companies in Malaysia (Mohamad & Abdullah, 2012). Whether a company earns profit or loss, it must have to give a predetermined cost of financing which is charged for financing its assets by using debt. Therefore, risk of firm increases with the increase in leverage. Study found that performance of a company is affected by variation in capital structure ratio it was found an indirect linkamong valueof firms and alteration in borrowing of a company such as when proportion of debt increase, the value of firm is decreased. (Mumtaz, et al., 2013).



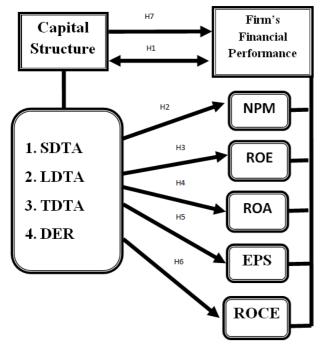
**Table I: Variables identification:** 

Dependent Variables	Independent Variables			
Firm's Financial Performance	Capital Structure			
<ol> <li>Net Profit Margin</li> </ol>	<ol> <li>Debt To Equity Ratio</li> </ol>			
<ol><li>Return on capital employed</li></ol>	2. Long Term Debt to Total Assets			
3. Earnings Per Share	3. Total Debt to Total Assets			
4. Return on Assets	4. Short Term Debt to Total Assets			
5. Return on equity				

#### **Problem Statement:**

Objective of this paper to investigate the effect of CS and FP on firm's financial performance by taking data from organizations in food sector listed at Karachi stock exchange in Pakistan. Many studies have been done on this areain developed countries but the findings vary from country to country particularly difference in findings exist among developed and developing countries. In developing countries less research has been done on this topic and companies do not give much attention on best use of source of financing. Therefore, results of this study will enhance the existing knowledge and which will help the companies to use such a combination of debt and equity by which these can grow and enhance their financial performance.

#### **Research Model:**



# Objective of study:

The objectives of paper are:

- To find mainly the impact of CS on FP of firms in food sector listed at KSE, Pakistan.
- To find association among capital structures and financial performance of companies in food sector listed at KSE, Pakistan.
- To find the level of CS and FP of companies in food sector listed at KSE, Pakistan.

# **Research Questions:**

- What is the effect of CS on FP of firms in food sector?
- > What is the nature of association among capital structure and financial performance of firms in food sector?
- > How is the financial performance of firms and level of capital structure and in food sector?

# **Hypotheses:**

- H1: A significant relationship exist among capital structure and firms' financial performance
- H2: Capital structurehas significant impact on firm's Net profit margin
- H3: Capital structure has significant impact on firm's Return on equity
- **H4:** Capital structurehas significant impact on firm's Return on assets
- H5: Capital structure has significant impact on firm's Earnings per share



 $\textbf{H6:} \ Capital \ structure has \ significant \ impact \ on \ firm's \ return \ on \ capital \ employed$ 

H7: Capital structure has significant impact on firms 'financial performance

# I. Research Methodology

#### Data collection:

The main purpose of this study is to discover the effect of capital structure on financial performance of organizations in food sector. Therefore to attain the purpose of this study, quantitative data is gathered from the annual reports of firms in food sector individually and remaining is taken from the financial statement analysis of non-financial organizations listed at KSE from years 2007-2012 done by statement bank of Pakistan statistics and DWH department. Cross checking is done to check the reliability of data by comparing individual annual report of companies and financial statement analysis done by state bank of Pakistan statistics and DWH department. To measure the capital structure, data is collected from balance sheet of firms listed at KSE and for measuring financial performance; data is collected from both income statements and balance sheets. After collecting this data, ratio analysis is done to measure the CS and FP of firms in food sector. For literature review, data is gathered by reading various research papers.

### Sample selection:

In this study, companies in food sector listed at Karachi stock exchange (2007-2012) are selected to find the impact of CS on firm's FP for doing empirical analysis. Currently 53 companies in food sector are listed at KSE and data of 49 companies is available for the year 2007-2012. Therefor in this study all 49 companies in food sector are selected to correctly find the results.

#### **Research instruments:**

Linear regression analysis is used to give the answer of first question i-e what is the impact of capital structure on financial performance of organizations in food sector listed at KSE. Correlation analysis is used to provide the answer of second question that is what is the nature of relationship amongCS andFP of firms? Descriptive statistics is done to give the answer of third question I-e what level of capital structure is used in firms of food sector and find the financial performance of firms in food sector.

## Variables description and measurements:

To achieve the purpose of this study, capital structure is considered as an independent variable and financial performance is considered as a dependent variable.

# Financial performance:

For measuring financial performance, five variables are used which are net profit margin (NPM), return on assets (ROA), Earning per share (EPS), return on equity (ROE), and Return on capital employed.

#### Table II

Dependent Variables	Measurements
NPM	Net income *100
	Net sales
ROE	Net income *100
	Avg. shareholder's equity
EDC	N. ( i,,,,, 1 1; i.l., 1
EPS	Net income-preferred dividend
	Number of common shares
ROA	Net income *100
	Avg. total assets
ROCE	Net income *100
	Average total capital employed

## **Capital Structure:**

Four variables are used to measure the capital structures which are long term debt to total assets (LDTA), total debt to total assets (TDTA), and short term debt to total assets (SDTA), debt equity ratio (D/E).



#### Table III

Independent variables	Measurements
LDTA	Long term debt *100
	Total assets
TDTA	Total debt *100
	Total assets
SDTA	Short term debt *100
	Total assets
D/E	Total debt
	Shareholder's equity

## II. Results and Discussions:

# 1.Descriptive statistics:

Descriptive statistics results are shown in table IV. This table indicates the mean value of firm performance's measures and capital structure's measure of all firms in food sector over the years 2007-2012. Five variables are used to find the FP in food sector which are NPM, ROE, ROA, EPS, ROCE. The mean value of NPM is only 1.13% which shows that firmin food sector entirely are generating only 1.13% on net sales. So, percentage of NPM means that performance of firms in food is not good when NPM is used as a measure. The average of ROE and EPS is 17.20% and Rs. 14.22 respectively which shows the good performance of firms in food sector. Average value of ROE shows that average firms in food sector are giving a good return to its shareholders and EPS is also not bad. Maximum value of ROE is 388.54% and minimum value is -361.41 so there is large variation of ROE among the firms in food sector of Pakistan. The average of ROA is 5.42% which means that as whole firms in food sector are generating 5.42% return by utilizing firm's assets. The average ROCE is 6.48% which means that firms in food sector as whole are earning 6.48% return on total capital employed.

Four variables are used to measure capital structure in food sector which are SDTA, LDTA, TDTA, DER. The mean value of SDTA is 23.55% which shows that as a whole firm in food sector finance its 23.55% assets by using short term debt. Average of LDTA is 14% which indicates that firms in food sector finance its 14% assets with long term debt. Firm in food sector finances assets by using less percentage of long term debt as compared SD. Average value of TDTA and DER is 115% and 2.81 times respectively. Average Debt to equity ratio of 2.81 times indicates that firms in food sector as whole uses 65% debt in total capital. So firms in food sector of Pakistan are highly leveraged which can be one of the reasons of firm's low performance in food sector

**Table IV. Descriptive Statistics** 

	N	Minimum	Maximum	Mean	Std. Deviation
NPM	49	-49.24	18.84	1.13	11.14
ROE	49	-361.41	388.54	17.20	87.87
ROA	49	-75.89	49.75	5.42	18.03
EPS	49	-28.51	216.83	14.22	42.77
ROCE	49	-68.83	69.05	6.48	21.07
SDTA	49	.00	59.61	23.55	15.91
LDTA	49	.00	53.69	13.97	13.25
TDTA	49	.00	1127.20	115.35	171.57
DER	49	-2.83	38.99	2.81	5.86
Valid N (listwise)	49				

## 2. Correlation Analysis:

Correlation is done to measure the associationamong different variable that either relationship is strong or weak and positive or negative. The results of correlation for firms in food sector over the period 2007-2012 are shown in table V.

**Testing Hypothesis 1:** A significant relationship exist among capital structure (SDTA,TDTA,SDTA,DER) and financial performance

Correlation between NPM and SDTA, LDTA, TDTA, DER: the results show that a significant negative relationship (-.499) exist among NPM and LDTA, a negative but insignificant relationship find out between NPM and SDTA, TDTA I-e (-0.044), (-0.016) respectively. A positive but insignificant relationship is found between NPM and DER which is (0.035).



Correlation between ROE and SDTA, LDTA, TDTA, DER: the findings indicate that ROE and SDTA has positive and significant relationship (0.032) with each other, negative but insignificant relationship exist among ROE and LDTA, TDTA which is (-0.178),(-0.031) respectively.ROE and DER has a significant and negative relationship with each other's (-0.619).

Table V Pearson's correlation matrix

	NPM	REO	ROA	EPS	ROCE	SDTA	LDTA	TDTA	DER
NPM	1								
REO	0.388**	1							
ROA	0.469**	0.338*	1						
EPS	0.412**	0.351*	0.578**	1					
ROCE	0.565**	0.897**	0.614**	0.700**	1				
SDTA	-0.044	0.032	-0.002	-0.174	-0.042	1			
LDTA	-0.499**	-0.178	-0.329*	-0.266	-0.309*	0.066	1		
TDTA	-0.016	-0.031	-0.665**	-0.063	-0.140	-0.224	-0.145	1	
DER	0.035	-0.619**	0.021	0.035	-0.41**	-0.009	-0.168	-0.012	1

<sup>\*\*.</sup> Correlation is significant at the 0.01 level (2-tailed).

- ➤ Correlation between ROA and SDTA, LDTA, TDTA, DER: it is shown that a significant negative relationship found between ROA and LDTA, TDTA i-e (-.329),s(-.665) respectively. A negative but insignificant relationship found between ROA and SDTA which is (-0.002) and a positive but insignificant relationship exist among ROA and DER i-e (0.021).
- Correlation between EPS and SDTA, LDTA, TDTA, DER: correlation among EPS and SDTA, LDTA, TDTA is (-0.174), (-0.266),(-.063) which shows that negative and insignificant relationship exist among EPS and three indicators of capital structure (SDTA, LDTA, TDTA). Positive and insignificant relationship found between EPS and DER (0.035).
- Correlation between ROCE and SDTA, LDTA, TDTA, DER: results indicate that significant and negative relationship exist between ROCE and LDTA, DER shown by (-0.309),(-0.41) respectively. Negative and insignificant find out between ROCE and SDTA, TDTA, represented by (-0.042), (-.140), respectively.

Correlation analysis has provided the answer of our question that what is the nature of linkamong capital structure financial performances of companies for food sector. The findings of correlation analysis find out that significant negative relationship exist among CS and FP in food sector over years 2007-2012.H1 is accepted as significant relationship exists among CS and FP.

## 3. Regression analysis:

Study uses Linear Regression Analysis for attaining key purpose which is effect of CS on FP of firms of food sector listed at KSE for the period of 2007-2012.

Testing the hypothesis 2: the impact of capital structure (SDTA, LDTA, TDTA, DER) on firm's net profit margin in food sector of Pakistan

Table 1.1(a) indicates that adjusted R square is (coefficient of determination) is 0.193; it means that 19.3% variation in the net profit margin (dependent variable) is due to the capital structure (independent variable. It also shows that the remaining 80.7% variability in net profit margin is due to the other factor.

Table 1.2(a) ANOVA examines significance of model if significance is good it means that relationship is good like measure the impact of all independent variable (SDTA, LDTA, TDTA, and DER) as whole on the dependent variable net profit margin. The term "sig" refers to the P valuethat test significance of entire model and provides the results of hypothesis; if p is less than 0.05 it means that significant impact is found and results are significant if value of F is high. In table F=3.869 and value of p=0.009 which means that (p<0.05). The results of p value shows that capital structure (SDTA, LDTA, TDTA, DER) as a whole has a significant effect on the firm' net profit margin.

Table 1.3(a) provides the results of regression coefficient and significance of each independent variable separately. Regression B coefficient determine that either each measure of capital structure has positive or negative impact on the net profit margin. Beta coefficient of SDTA is (B=-0.022) and value of p=.811 (p>0.05) which means that SDTA has negative but insignificant impact on the net profit margin. In the above table coefficient beta of LDTA is negative (B=-0.437) that is very high and p=0.000 (p<0.0.5) which shows that LDTA has highly significant and negative impact on the NPM. Regression beta coefficient of LDTA (B=-0.437) indicates that 1 unit expansion in debt for long time give outcome in .437 unit decrease in net profit margin

<sup>\*.</sup> Correlation is significant at the 0.05 level (2-tailed).



(used to measure firm's performance). regression beta coefficient of TDTA is 0.000 and p=0.466 (p>0.05) it means that long term debt to total assets has neither positive nor negative and insignificant impact found on the net profit margin. Beta coefficient of DER is -0.054 and p=.686 (p>0.05) which indicates that debt to equity ratio has negative and insignificant impact on net profit margin. Findings show that long term debt should be the last option for firms in food sector because NPM is reduced by increasing the long term debt. Therefore H2 is accepted as results indicate that CS has a significant impact on net profit margin of firms.

Testing the hypothesis 3: the impact of capital structure (SDTA, LDTA, TDTA, DER) on firm's return on equity in food sector of Pakistan

Table 1.1(b) point outadjusted R square (coefficient of determination) is 0.424 which means that 42.4% variability in return on equity (dependent variable) is due to the capital structure (independent variables). It also demonstrates that remaining 57.6% variation is due to the other factors. Table 1.2(b) shows F=9.821 and value of p=0.000 which means that (p<0.05). The results of p value shows that capital structure (SDTA, LDTA, TDTA, DER) as a whole has highly significant effect on the ROE in food sector of Pakistan

Table 1.3(b) presents the results of regression coefficient and significance of each independent variable separately. Regression B coefficient determine that either each measure of capital structure has positive or negative impact on the return on equity. Beta coefficient of SDTA is 0.158 and value of p=.801 (p>0.05) which means that SDTA has positive but insignificant effect on ROE. When borrowing for short period are used, profit to shareholder is enhanced but insignificantly. In the above table coefficient beta of LDTA is negative (B=-0.03) and p=0.010 (p<0.0.5) which shows that LDTA has significant and negativeeffect on the return on equity. It shows that when firms uses high borrowing for longer period then less shareholders earns less profit n their equity; therefore long term borrowing should be less for firms in food sector to satisfy the shareholder. Regression beta coefficient of LDTA (B=-0.303) indicates that ROE is reduced with .303 unit by enhancing long term borrowing with 1 unit. Regression beta coefficient of TDTA is -0.001 and p=0.505 (p>0.05) it means that total debt to total assets has negative and insignificant impact found on the return on equity. Beta coefficient of DER is -0.670 and p=0.000 (p<0.05) which indicates that DE ratio has indirect and highly significant effect on ROE. This indicates that by using more debt as compared to equity, firm's performance is decreased. Therefore, Hypothesis 3 is accepted as results indicate that capital structure has a significant impact on return on equity.

Testing the hypothesis 4: the impact of capital structure (SDTA, LDTA, TDTA, DER) on firm's return on assets in food sector of Pakistan

Table 1.1(c) showadjusted R square (coefficient of determination) is 0.619 that means 62% variability in the return on assets (dependent variable) is due to the independent variable capital structure. It also shows that the only 38% variability in return on assets is due to the other factor. Results shows that this model of capital structure (SDTA, LDTA, TDTA, DER) is best fitted for return on assets. The table 1.2(c) provides the results like F=20.495 and value of p=0.000 which means that (p<0.05). Higher the F, higher is the significance so here F value is high so model is good. The results of p value shows that capital structure (SDTA, LDTA, TDTA, and DER) as a whole has a highly significant impact on the firm' ROA used to measure the performance of firms in food sector.

Table 1.3(c) presents the results of regression coefficient and significance of each independent variable separately. Regression B coefficient determine that either each measure of capital structure has positive or negative impact on the return on assets. Beta coefficient of SDTA is -0.162 and value of p=0.124 (p>0.05) which means that SDTA has negative but insignificant impact on the return on assets. In table 3.3 coefficient beta of LDTA is negative(B=-0.599) and p=0.000 (p<0.0.5) which shows that LDTA has highly significant and negative impact on the return on assets. Regression beta coefficient of LDTA (B=-0.599) indicates ROA is reduced with .599 unit by enhancing long term borrowing with 1 unit. Regression beta coefficient of TDTA is -0.762 and p=0.000 (p<0.05) it means that total debt to total assets has negative and highly significant effect found on the return on assets. Which indicates that by using more debt to finance assets of firms, firm's performance is decreased? Beta coefficient of DER is -0.064 and p=0.485 (p>0.05) which show less profit is generated by utilizing the total assets when high percentage of debt is borrowed for financing as compared to internally generating the fund. Therefore H4 is accepted as results indicate that ROA is significantly affected by capital structure.

**Testing the hypothesis 5:** the impact of capital structure (SDTA, LDTA, TDTA, and DER) on firm's Earnings per share in food sector of Pakistan

Table 1.1(d) indicates that value of R Square (coefficient of determination) is 0.115 which means that 11.5% variation in the Earnings per share (dependent variable) isbecause of the capital structure (independent variable). It also shows that the remaining 89% variability in earnings per share is due to the other factor. Table 1.2(d) provide results which are F= 1.428 and value of p=0.240 which means that (p>0.05). The results of p value shows that capital structure (SDTA, LDTA, TDTA, DER) as a whole has an insignificant impact on the firm' earnings per share which is used.

Table 1.3(d) show regression coefficient and significance of each independent variable separately. Regression B



coefficient determine that either each measure of capital structure has positive or negative impact on the earnings per share. THE beta coefficient of SDTA, LDTA, TDTA, and DER is -0.505, -0.894, -0.001, and -0.015 respectively. And p value of SDTA, LDTA, TDTA, and DER is 0.203, 0.064, 0.329, and 0.919 respectively. The beta coefficient value of all capital structure variables is negative and p=0.05 which shows that SDTA, LDTA, TDTA, and DER ratio has insignificant negative impact on the earnings per share of firms in food sector. It is generally considered that when p<0.1 shows marginal significance so we can say that LDTA has marginal significance impact on earnings per share as p value is 0.064. Therefore H2 is rejected as results indicate that capital structure has an insignificant impact on earnings per share.

**Testing the hypothesis 6:** the impact of capital structure (SDTA, LDTA, TDTA, and DER) on firm's return on capital employed in food sector of Pakistan

Table 1.1(e) indicates adjusted R square (coefficient of determination) is 0.304 which means that 30.4% variation in the return on capital employed(dependent variable) is due to the independent variable capital structure. It also shows that the remaining 69.6% variability in return on capital employed is due to the other factor. Table 1.2(e) ANOVA examines significance of model if significance is good it means that relationship is good like measure the impact of all independent variable (SDTA, LDTA, TDTA, and DER) as whole on the dependent variable return on capital employed. The term "sig" refers to the P value that tests the significance of entire model and provides the results of hypothesis. In table F=6.242 and value of p=0.000 which means that (p<0.05). The results of p value shows that capital structure (SDTA, LDTA, TDTA, DER) as a whole has a highly significant effect on the firm' returns on capital employed which is used to measure the performance of companies in food sector

Table 1.3(e) presents regression coefficient and significance of each independent variable separately. Regression B coefficient determine that either each measure of capital structure has direct or indirect impact on the return on capital employed. Beta coefficient of SDTA is -0.090 and value of p=0.585 (p>0.05) which means that SDTA has negative but insignificant impact on the ROCE. In the table 5.3 coefficient beta of LDTA is negative (B=-0.664) and p=0.002 (p<0.0.5) which shows that LDTA has significant and negative impact on the ROCE. Regression beta coefficient of LDTA (B=-0.664) indicates return on capital employed is reduced with 0.664 unit by 1 unit expansion in borrowing for long time. Regression beta coefficient of TDTA is 0.000and p=0.083 (p>0.05) it means that TDTA has neither positive nor neither negative and insignificantimpact found on the return on capital employed. Beta coefficient of DER is -0.485 and p=0.000 (p<0.05) which indicates that debt equity ratio has indirect and highly significant effect on ROCE. This indicates that by using more debt as compared to equity, firm's performance is decreased. Therefore H6 is accepted as results indicate that capital structure has a significant effect on ROCE.

**Testing the hypothesis 7:** the impact of capital structure (SDTA, LDTA, TDTA, and DER) on firm's return on Firm's financial performance in food sector of Pakistan

Results of linear regression analysis show that capital structure (SDTA, LDTA, TDTA, and DER) has significant negative impact on firm's financial performance in food sector of Pakistan. This is evidence from; findings indicate that capital structure has significant negative impact on all variables (NPM, ROE, ROA, ROCE) used to measure firm's performance except Earnings per share. Therefore, H7 is accepted as capital structure has significant indirect effecton financial performance of organizations in food sector.

**Table 1.1 Model Summaries** 

Model 1	R	R square	Adjusted R square	Std. Error of the Estimate
a. NPM	.510	.260	.193	10.00897
b. ROE	.687	.472	.424	66.70720
c. ROA	.807	.651	.619	11.13143
d. EPS	.339	.115	.034	42.03039
e. ROCE	.602	.362	.304	17.57407

a. Predictors: (Constant), DER, SDTA, LDTA, TDTA



# **Table 1.2 ANOVA**

Model 1	Sum of Squares	Df	Mean Square	F	Sig.
a. NPMRegression	1550.300	4	387.575	3.869	0.009
Residual	4407.895	44	100.179		
Total	5958.195	48			
<b>b.ROE</b> Regression	174803.156	4	43700.789	9.821	0.000
Residual	195793.427	44	4449.851		
Total	370596.583	48			
c. ROA Regression	10157.807	4	2539.452	20.495	0.000
Residual	5451.987	44	123.909		
Total	15609.794	48			
d. EPSRegression	10093.776	4	2523.444	1.428	0.240
Residual	77728.377	44	1766.554		
Total	87822.152	48			
e. ROCE Regression	7710.911	4	1927.728	6.242	0.000
Residual	13589.310	44	308.848		
Total	21300.221	48			

- a. Predictors: (Constant), DER, SDTA, LDTA, TDTA
- b. Dependent variables: NPM, ROE, ROA, EPS, ROCE

# Table 4.3 Coefficients

Model 1	Unstandardized		Standardized	j l	
	Coefficient		coefficient	t	Sig.
	В	Std. Error	Beta		
a.(Constant)	7.957	3.083		2.581	.013
Short term debt to total assets	022	.093	032	241	.811
Long term debt to total assets	437	.112	520	-3.905	.000
Total debt to total assets	.000	.000	099	735	.466
Debt to equity ratio	033	.081	054	407	.686
(Dependent Variable: NPM)					
b. (Constant)	44.180	20.548		2.150	.037
SDTA	.158	.621	.029	.254	.801
LDTA	-2.011	.746	303	-2.696	.010
TDTA	001	.002	076	672	.505
DER	-3.267	.542	670	-6.025	.000
(Dependent Variable: ROE)					
c. (Constant)	19.939	3.429		5.815	.000
SDTA	162	.104	143	-1.567	.124
LDTA	599	.124	440	-4.815	.000
TDTA	003	.000	762	-8.255	.000
DER	064	.090	064	705	.485
(Dependent Variable: ROA)					
d. (Constant)	39.656	12.947		3.063	.004
SDTA	505	.391	188	-1.291	.203
LDTA	894	.470	277	-1.902	.064
TDTA	001	.001	145	988	.329
DER	035	.342	015	102	.919
(Dependent Variable: EPS)					
e. (Constant)	18.909	5.413		3.493	.001
SDTA	090	.164	068	550	.585
LDTA	664	.197	418	-3.379	.002
TDTA	.000	.001	222	-1.776	.083
DER	566	.143	485	-3.964	.000
(Dependent Variable: ROCE)					

- a. Predictors: (Constant), DER, SDTA, LDTA, TDTA
- b. Dependent variables: NPM, ROE, ROA, EPS, ROCE

## III. Conclusion

Aim of this study is to find the impact of capital structure on financial performance of companies in food sector



listed at KSE. The six years quantitative data (2007-2012) is gathered from individual annual reports of 49 companies in food sector and from financial statement analysis done by SBP, statistics and DWH department. Regression analysis is applied to find the main purpose of this study. CS is measured by using four independent variables SDTA, LDTA, TDTA, and DER. Financial performance of firms is measured by using five dependent variables which are NPM, ROE, ROA, EPS, and ROCE. In this study, it is concluded that capital structure has significant negative impact on firm's financial performance in food sector of Pakistan so hypothesis 7 is accepted. H2, H3, H4, H6 are accepted as results indicate that capital structure has a significant negative impact on firm's net profit margin, return on equity, return on assets, and return on capital employed. H5 is rejected as it is concluded that capital structurehas insignificant but negative impact on firm's earnings per share. The results of correlation analysis find out that significant indirect association exist among capital structure and firm's financial performance in food sector of Pakistan therefore H1 is accepted.

The results of descriptive statistics show that average performance of firms in food sector is good when measured with ROE and EPS but low when performance is measured by using NPM, ROA, and ROCE. Firm in food sector finances high proportion of assets by usingofshort term borrowings as compared to long term borrowing. Firms in food sector of Pakistan use less long term debt because as regression results indicate that long term debt to total assets has significant negative effect on firm's financial performance. Average value of TDTA and DER is 115% and 2.81 times respectively. Average Debt to equity ratio of 2.81 times indicates that firms in food sector as whole uses 65% debt in total capital. So firms in food sector of Pakistan are highly leveraged which is the reason of firm's low performance in food sector.

# **Suggestions and Recommendations:**

- This study suggest that firms in Pakistan should use less long term borrowing for generating fund because performance is reduced when long term borrowings are increased. Firm's performance is reduced because of high finance cost on long term debt
- This study suggests that companies in food sector of Pakistan should not use high amount of debt or should not exceed an optimal limit of debt because performance is reduced when debt are increased and high debt may cause insolvency of companies.

## **Limitations of study:**

This study is done in one sector of Pakistan, so it is recommended for future researchers to do study in other sectors because results might be different.

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