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The Impact of Financial Leverage on Firm Performance in Fuel and Energy Sector, Pakistan

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Abstract:
This research is finds the effect of financial leverage on firm performance of the fuel and energy sector in Pakistan. For this purpose 10 listed public limited firms out of 16 form fuel and energy sector listed at Karachi Stock Exchange (KSE). The main objective of the study is investigate the financial leverage has an effect on financial performance of the firm by taking evidence from listed fuel and energy companies of Pakistan. There is a positive relationship between the financial leverage and financial performance or not? The main plan of this study is to examine the simplification that the firms get work with high profits may choice high leverage by using different statistical tools.
Keywords: Financial leverage, Firm Performance, Financial ratio, Fuel and Energy Sector in Pakistan
Paper type: Research paper

Introduction:

Financial leverage means the use of borrowed money to increase production volume, sales and earnings according to Pandey (2008). It is measured as ratio total debt to total equity. The greater amount of debt the greater the financial leverage. Financial performance is a subjective measured of how a firm uses assets and generates revenue according to Leontief (2011). This term is used as a general measure of a firm overall financial health over a given period of time and can be used to compare similar firm across the same industry.

Fuel and Energy are playing a very important role in the economy of developing and developed countries. It provides help for the economic development of the country and shows the positive trends in the growth sectors. A general observation shows that there is a relation between financial leverage and firm performance. Financial leverage is a measure of how much firm uses equity and debt to its assets. As debt increases, financial leverage increases. Hypotheses are going to be tested in this study. In this study the sample size consists of 10 listed public limited companies out of the 16 listed public limited companies from the fuel and energy sector of Karachi Stock Exchange.

The aim of this study is to investigate the relationship between financial leverage and financial performance. The dependent variable which is used in this study is the financial performance of the listed fuel and energy companies in Karachi Stock Exchange. The financial performance will be measured by using five indicators, return on equity ratio, return on assets ratio, net profit margin ratio, earning per share after tax ratio, return on capital employed ratio. Financial leverage is the independent variable of the fuel and energy sector which is measured by using debt to equity ratio, debt ratio, and equity ratio. Show the real picture of the study through expected result.

Literature review:

Akhtar,et al.(2012) In his paper examine the Relationship between Financial leverage and Financial Performance of the Fuel & Energy Sector of Pakistan. In this study they used sample of 20 listed public limited companies from Fuel and Energy sector listed at Karachi Stock Exchange (KSE). Result show financial leverage has positive relationships with financial performance.

Ojo, (2012) in his paper The Effect of Financial Leverage on Corporate Performance of some chose organizations in Nigeria. Used the sample of some selected organization of the Nigeria and data collection time period of the year 1993-2005. The result show leverage shocks (debt/ equity ratio) have significant effect on corporate performance when the net assets per share is used as an indicator of corporate performance in Nigeria over the period covered by the study. Earnings per share depend on feedback shock and less on leverage shock.

Sunderkotter, (2011) explore the how expected stock return impact by the fuel mix structure in power generation portfolios for European power companies. Using the sample of 22 largest public companies listed in European power producers were selected for the time period of January 2005 to December 2010. The result show of the fuel mix generation significantly impact on the stock returns of the European power companies.

Abubakar, (2015) had investigated the relationship between financial leverage and financial performance of deposit money banks in Nigeria. How debt- equity ratio and debt ratio have an effect on return on equity of deposit money banks in Nigeria. This study selects 11 deposit money banks from out of 23 deposit money banks of the Nigeria, data collection period is 2005- 2013. Result of the correlation analysis show there is significant relationship between debt- equity ratio and financial performance.

Nawaz,et al. (2015) Study the relationship between financial leverage and Profitability of cement sector operating in Pakistan. Using the sample of 18 cement manufacturers out of 21 cement manufacture in the study and six years annual data from 2005 to 2010 are using. The sample size for eighteen firms for six years consists of 108 observations. Result of the study is finds financial leverage has a significant inverse impact on profitability at 99% confidence interval.

Yoon and Jang, (2005) studied the relationship between profitability, financial leverage and size of the firm in restaurant industry. He use study period from 1998 to 2003 by using ordinary least square regression method and for this purpose they take 62 restaurant firms in United States. Result of the study is show high leverage firms were less risky in both market-based and accounting based measured and show positive relationships between financial leverage and firm's profitability.

Khan,et al. (2013**)** Examine the impact of financial performance and leverage on dividend payout policy of Chemical and Pharmaceutical industries of Pakistan. Using the sample of 34 listed firms was taken from two industries from 2003-2010. The results tell that profitability of any firm positively affects dividend payouts and leverage has no significant effect on firm dividend payouts.

Shah Fasih Ur Rehman, (2013) in his study Relationship between financial leverage and financial performance in listed sugar companies of Pakistan. The results of the study is show the positive relationship of debt equity ratio with return on asset and sales growth and negative relationship of debt equity ratio with earning per share and net profit margin and return on equity.

Kartikasari and Merianti, (2016) had investigated the impact of leverage and firm size to profitability of public manufacturing companies in Indonesia. Used the sample of 100 qualified manufacturing companies listed in Indonesia Stock Exchange was selected for the year 2009-2014. Leverage was measured by debt ratio; firm size was measured through total assets and total sales and profitability through return on assets. Result show the debt ratio had a significant positive effect on profitability and total assets had a significant negative impact.

Kebewar, (2012) had investigated the impact of Debt on Corporate Profitability Evidence from French Service Sector. In their study they used sample of 2240 French non listed companies of service sector form the period 1999-2006. Result of the study show debt ratio has no effect on corporate profitability, regardless of the size of company.

Baker, (1973) had investigated the effect of financial leverage or relatively more use of debt capital on industry profitability. He calculated inversely as the ratio of equity to total assets for the leading firms in an industry over ten years. He used two methods; first he used least square method of estimation result shows leverage is significant and has theoretically exact negative sign which means low amounts of leverage tend to raise industry profit raises. Secondly he used ordinary least square estimation which also attested the same results.

Saini, (2012) had investigated the Impact of Financial Leverage on Shareholders Return and business sector from the Indian Telecom part organizations. Used the sample of seven listed firm from telecommunication sector for the period of seven year. Descriptive, Co-relation and T-test has been analyze to find out relationships and influenced of financial leverage on shareholder return and market capitalization. Result of the study show positive relationships between financial leverage and shareholder return but negative relationship between financial leverage and market capitalization

Alcock, et al. (2013) explored the Effect of Financial Leverage in the performance of private equity real Estate funds. he inspected the short & long haul effect of monetary power on execution of private value land venture supports by taking specimen of private equity real estate funds from the period 2001-2011.The results indicate that store execution is practically straightforwardly social to profit for underlying land market, meaning that fund manager effectively tracks the performance of their target markets. Further results show that Influence can't be embraced as a technique in the long haul to upgrade execution.

Taani, (2012) had investigated the Impact of working Capital management policy and financial leverage on financial performance. His study had determined the Impact of working capital administration approach and budgetary power on monetary execution of Jordanian organizations measured regarding ROE, ROA and Net Income. Sample size consisted of 45 Jordanian companies and time period of 5 years from 2005- 2009. Study results show the Test of obligation proportion has moderate negative direct relationship to net Income and ROA however a frail positive association with ROE.

Ali, (2014) had investigated the relationship between financial leverage and financial Performance evidence of listed chemical companies of Pakistan. For this purpose a Sample of 20 listed companies from Chemical Sector of Karachi Stock Exchange for a period of 2006 -2013. The results of the study show a positive relationship between financial leverage and financial performance.

Enekwe, et al. (2014) had investigated the effect of financial leverage on financial Performance evidence of quoted pharmaceutical companies in Nigeria. Researcher historic data used in the analysis were generated from annual financial reports of selected quoted pharmaceutical companies in Nigeria from 2001 – 2012 period of twelve years. Result of the study show all the independent variable has no significant effect on financial performance of the selected company.

Mule and Mukras, (2015) had investigated the relationships between financial leverage and the financial performance of listed firm in Kenya. He used annual data for the period 2007 – 2011. Result of the study shows with strong evidence that financial leverage significantly and negative affect the performance of listed firms in Kenya.

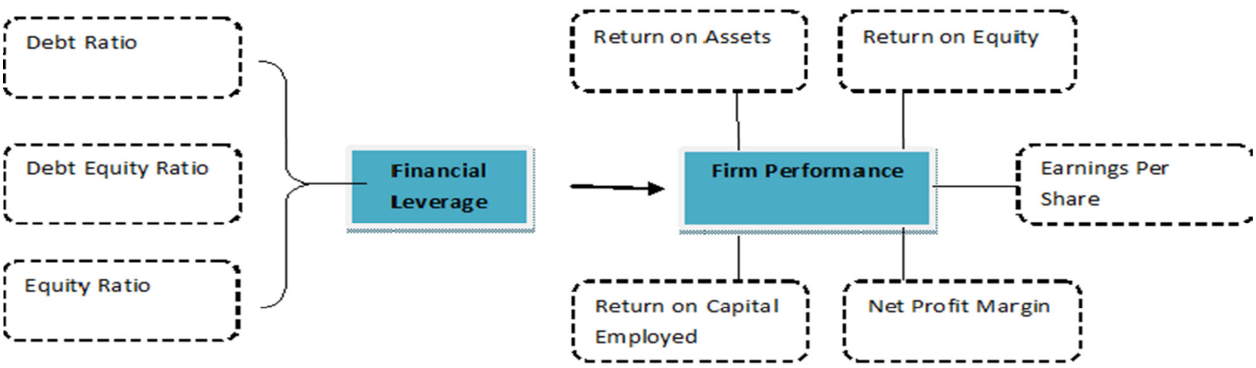
Gweyi and Karanja, (2014) had investigated the effect of financial leverage on financial performance of deposit taking Saccos in Kenya. The sample data was used 40 saving and credit co-operation societies registered by Sacco society regulatory authority from the period 2010 to 2012. The result show perfect positive correlation between debt equity ration with return on equity and profit after tax and weak positive correlation between debt equity ratio with return on assets and income growth.

Research methodology:

This research is based on a quantitative research in which secondary data is used. Secondary data is data that have been previously collected for other research. The data collection for this research is collected through the annual reports of the companies and state bank issued financial statements which provide help in getting the reliable results. This data is published by state bank of Pakistan. Collection of relevant data through several websites and research journals and different articles will provide more guideline for studying the literature and previous studies continuous research on relevant topics.

The sample size consists of 10 public listed companies out of the 16 companies from fuel and energy sector of Karachi Stock Exchange. The listed fuel and energy companies are included in the study from fuel and energy sector of Karachi stock exchange .All other companies of the fuel and energy sector are excluded from this study. It is commonly expected that financial leverage influence the performance of the firm. This study will investigate the impact of financial leverage on the financial performance of the firms in fuel and energy sector in Pakistan. The main variable used in the study is a dependent variable is financial performance of fuel and energy sector and on the other side independent variable financial leverage in fuel and energy sector.

Conceptual Framework:



$ROA = \sigma + \beta_1 DR_{nt} + \beta_2 DER_{nt} + \beta_3 ER_{nt} + \varepsilon$ .... (1)
$ROE = \sigma + \beta_1 DR_{nt} + \beta_2 DER_{nt} + \beta_3 ER_{nt} + \varepsilon$ .... (2)
$EPS = \sigma + \beta_1 DR_{nt} + \beta_2 DER_{nt} + \beta_3 ER_{nt} + \varepsilon$ .... (3)
$NPM = \sigma + \beta_1 DR_{nt} + \beta_2 DER_{nt} + \beta_3 ER_{nt} + \varepsilon$ .... (4)
$ROCE = \sigma + \beta_1 DR_{nt} + \beta_2 DER_{nt} + \beta_3 ER_{nt} + \varepsilon$ .... (5)

Where
ROA = Return on Asset
ROE = Return on Equity
EPS= Earning per share
NPM=Net profit margin

ROCE=Return on capital employed
DR=debt ratio
DER=debt equity ratio
ER=equity ratio

Data analysis and result discussion:
In this section data analysis and result discussion with financial leverage on financial performance. Research used method for measure financial leverage through financial ratio in which debt ratio and debt to equity ratio and equity ratio is being calculated and analyzed. Debt ratio is calculated by total liabilities divided total assets. Debt to equity is calculated by total liabilities divided by shareholders equity .equity ratio is calculated by shareholder equity divided by total assets. Fuel and Energy Company listed in Pakistan, the average debt ratio is 0.5588 percent, maximum value is 1.6300 percent and minimum value is 0.0100 percent, standard deviation of the debt ratio is 0.3882 percent. The average of Debt to equity ratio is 414.8350 percent, maximum value is 30980.00 percent and minimum value is -49.7000 percent standard deviation is 0.4938 percent. The average of equity is 0.4991 percent, maximum value is 3.2200 percent and minimum value is -0.8300 percent, standard deviation of the equity 0.4938 percent. The result is show in table 1.

Table 1: Statistical Analysis of financial Leverage Indicators

	Mean	Maximum	Minimum	Std. Dev
Debt ratio	0.5588	1.6300	0.0100	0.3882
Debt to equity ratio	414.8350	30980.00	-49.7000	0.4938
Equity ratio	0.4991	3.2200	-0.8300	0.4938

In table 2 Statistical Analysis of Financial performance Indicators is shown. The average of Return on assets (ROA) 1.0081 percent, maximum value is 25.1000 percent and minimum value is -35.2900 percent. Standard deviation of the (ROA) is 10.3234 percent. The average of the Return on equity is -81.2188 percent and maximum value is 157.2700 percent, minimum value -5665.000 percent. Standard deviation of the (ROE) is 650.4597 percent. The average of net profit margin (NPM) is -11.5787 percent and maximum value 33.4000 percent, minimum value is -409.3000 percent. The Standard deviation of the (NPM) is 650.4597 percent. The average of earning per share after tax is 1.2898 percent and maximum value is 13.1600 percent, minimum value is -28.6300 percent. The Standard deviation of the EPS after tax is 6.1031 percent. The average of the return on capital employed (ROCE) is -1.2873 percent and maximum value is 158.8800 percent, minimum value is -501.8400 percent. The Standard deviation of the (ROCE) is 58.0382 percent.

Table 2: Statistical Analysis of Financial performance Indicators

	Mean	Maximum	Minimum	Std. Dev
ROA	1.0081	25.1000	-35.2900	10.3234
ROE	-81.2188	157.2700	-5665.000	650.4597
NPM	-11.5787	33.4000	-409.3000	53.2288
EPS after tax	1.2898	13.1600	-28.6300	6.1031
ROCE	-1.2873	158.8800	-501.8400	58.0382

Table 3: Correlations analysis of financial performance indicators with Financial Leverage

	ROA	ROE	NPM	EPS	ROCE	DEBT	D to E	Equity
ROA	1							
ROE	0.3535	1						
NPM	0.5881	0.0410	1					
EPS	0.8807	0.3476	0.4597	1				
ROCE	0.2419	0.1536	0.0582	0.2554	1			
DEBT	-0.3244	-0.1687	-0.1293	-0.3674	-0.1488	1		
DER	-0.1937	-0.8581	0.0209	-0.1156	0.0009	0.1335	1	
Equity	0.1638	-0.4178	0.1353	0.2280	0.1249	-0.6445	0.5315	1

Table 3: I talk about the relationship between financial leverage and various firm performance indicators. debt ratio shows negative relations with return on return on assets (ROA) and return on equity (ROE) and net profit margin(NPM) and earnings per share after tax (EPS) and return on capital employed (ROCE). Debt to equity show negative relations with return on assets (ROA), return on equity (ROE) and earnings per share after tax (EPS).debt equity ratio show positive relation with net profit margin (NPM) and return on capital employed (ROCE).Equity ratio show positive relation with return on assets (ROA), net profit margin(NPM), earnings per share after tax (EPS) and return on capital employed (ROCE). Equity ratio show negative relation with return on equity (ROE).

Table 4 Return on assets

Variables	Coefficient	T-Statistics	Probability
C	-1.7458	-0.8279	0.4098
ROE	-0.0014	-0.9491	0.3450
NPM	0.0461	4.9330	0.0000
EPS	1.3010	13.0425	0.0000
ROCE	0.0080	1.0144	0.3130
DEBT	1.7689	0.8098	0.4201
DE	-0.0008	-2.2587	0.0262
EQUITY	1.7497	0.8747	0.3839
R-SQUARED	0.8348		
F-STATISTIC	67.1392		
PROB	0.0000		

The table: 4 show the regression result by considering the return on assets as dependent variable. The result shows that debt ratio and equity ratio has positive but insignificant impact on firm performance when it measure by return on assets. The debt to equity ratio shows negative and significant relationships with firm performance.

Table 5 Return on equity

Variables	Coefficient	T-Statistics	Probability
C	-46.8674	-0.3327	0.7401
ROA	-6.5227	-0.9491	0.3450
NPM	-0.5101	-0.7308	0.4667
EPS	37.8251	3.6153	0.0005
ROCA	1.1133	2.1370	0.0352
DEBT	33.0227	0.2262	0.8215
DE	-0.1721	-10.1847	0.0000
EQUITY	-54.8547	-0.4105	0.6824
R-SQUARED	0.8154		
F-STATISTIC	58.7121		
PROB	0.0000		

Table: 5 regression results taken on return on equity as dependent variable shows that debt ratio shows has a positive relationships with firm performance. Debt to equity ratio has negative and significant relationships with firm performance. Equity ratio has negative and insignificant relationships with firm performance.

Table 6 Net profit margin

Variables	Coefficient	T-statistics	Probability
C	-13.7259	-0.6590	0.5115
ROA	4.4923	4.9330	0.0000
ROE	-0.0111	-0.7308	0.4667
EPS	-1.9603	-1.1934	0.2357
ROCE	-0.0631	-0.8014	0.4249
DEBT	0.9248	0.0427	0.9660
DE	0.0010	0.3020	0.7633
EQUITY	-3.6933	-0.1864	0.8525
R-SQUARED	0.3953		
F-STATISTIC	8.6855		
PROB	0.0000		

The table: 6 show the regression results taking net profit margin as dependent variable. The result shows that debt ratio and debt to equity ratio has positive and insignificant relationships with firm performance. Equity ratio has negative and insignificant relationships with firm performance.

Table 7 Earnings per share

Variables	Coefficient	T-statistics	Probability
C	1.8443	1.4249	0.1574
ROA	0.4969	13.0425	0.0000
ROE	0.0032	3.6153	0.0005
NPM	-0.0076	-1.1934	0.2357
ROCE	-0.0011	-0.2384	0.8121
DEBT	-1.8324	-1.3660	0.1752
DE	0.0007	3.4858	0.0008
EQUITY	-0.3741	-0.3015	0.7637
R-SQUARED	0.8194		
F-STATISTIC	60.3082		
PROB	0.0000		

The table: 7 show the regression result by considering the return on assets as dependent variable. The result shows that debt ratio and equity ratio has negative but insignificant impact on firm performance when it measure by earning per share. Debt to equity ratio shows positive and significant relationships with firm performance.

Table 8 Return on capital employed

Variables	Coefficient	T-statistics	Probability
C	-1.6076	-0.0587	0.9533
ROA	1.3537	1.0144	0.3130
ROE	0.0420	2.1370	0.0352
NPM	-0.1086	-0.8014	0.4249
EPS	-0.5175	-0.2384	0.8121
DEBT	-7.6872	-0.2711	0.7869
DE	0.0080	1.7182	0.0891
EQUITY	5.4831	0.2110	0.8333
R-SQUARED	0.1248		
F-STATISTIC	1.8946		
PROB	0.0790		

Table: 8 Regression results taking return on capital employed as dependent variable and shows it's that debt ratio show negative and insignificant relationships with firm performance. Debt to equity has positive and significant relationships with firm performance. Equity ratio has positive and insignificant relationships with firm performance.

Conclusion

The result shows that debt ratio and equity ratio has positive but insignificant impact on firm performance when it measure by return on assets. The debt to equity ratio shows negative and significant relationships with firm performance. Return on equity shows positive and significant relationships with debt ratio and equity ratio. Debt to equity ratio has negative and significant relationships with firm performance.Net profit margin shows with debt ratio and debt to equity ratio has positive and insignificant relationships, Equity ratio has negative and insignificant relationships with firm performance. Earnings per share result shows with debt ratio and debt to equity ratio has positive and insignificant relationships, Equity ratio has negative and insignificant relationships with firm performance. Return on capital employed with debt ratio show negative and insignificant relationships and debt to equity has positive and significant relationships and equity ratio has positive and insignificant relationships with firm performance.

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