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The Impact of Financial Leverage on the Profitability of Fertilizer Companies of Pakistan

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Abstract: *This study identified the impact of financial leverage on the profitability of fertilizer companies of Pakistan. The profitability was measured by ROA. Financial leverage is taken as independent variable. The data was collected over a period of 2012 to 2018 from the annual consolidated financial statement of five companies which consists of 35 observations. Regression analysis was used to examine the impact of financial leverage on profitability. The result showed that financial leverage has a significant negative impact on the profitability of fertilizer companies of Pakistan.*

Key words*: Financial Leverage, Profitability, Return on Assets, Pakistan*

INTRODUCTION

Many researchers have been investigated that financial leverage is one of the main factors among others factors which affect firm profitability. It is examined that mostly the managers of the company use debt finance or equity financing to finance their assets. Therefore right combination of debt and equity is important for the managers of the company. The companies who do not like to borrow fund for financing their assets have to use completely equity financing to finance their assets. Such companies are free from the payment of any fixed amount of charges which means that no financial leverage is associated with that company. If company is taking more debt then it will pay less income tax but the financial risk of the company will be increased. If the interest on debt is less than the return from debt then the firm should take debt (Mandelker and Rhee, 1984; Sheel, 1994). It is very important for every individual of the company that to give special focus towards the amount of financial leverage and their impact on the firm profitability. Financial leverage of the company is measured by the ratio of total debts to total assets. Financial leverage ratio tells that how much money the company has borrowed for financing their capital structure. In simple words financial leverage shows the debts of the firm. If the company use more amount of debts then it will have to pay more fixed amount of money associated with that debts and if the company use less amount of debts then the company will have to pay less fixed amount of payment. If the company borrows more money than the company has to pay more amount of cost of debts which is known as interest rate. In the result the net income of the company decreases and the profitability of the firm will be decreased. Financial leverage helps to increase the rate of return by generating a return on borrowed money. If the return on assets of the firm is greater than before tax interest rate then the financial leverage will be positive. If the firm return on asset is less than before tax interest rate then the financial leverage will be negative (Lang, Ofek, & Stulz, 1996).

Problem Statement

To study the impact of financial leverage on firm's profitability belongs to fertilizer sector of Pakistan.

Purpose of the Study

The purpose of this study is to examine the impact of financial leverage on the profitability of fertilizer companies listed on Karachi Stock Exchange and to identify the significant relation. Financial leverage was

used as independent variable measured as the ratio of total debt to total assets. Total debts includes short term debts and long term debts. Profitability was taken as dependent variable and was measured as the ratio of net income after tax to total assets.

Literature Review

Murphy Jr (1968) concluded that there is a negative relation between leverage and firms profitability. Baker (1973) He studied the impact of financial leverage for industry profitability. He used least square method and ordinary least square method for the measurement of the impact of financial leverage by using the least square method, he observed that there is significant negative relationship between financial leverage and industry profitability. By using the ordinary least square method he obtained the same result. Mandelker and Rhee (1984) examined that the firms which are profitable in many industries, they have lowest leverage ratio.

Titman and Wessels (1988) They studied the determinant of capital structure and examined that those firms having more financial leverage their profitability will be less. There is inverse impact of financial leverage on firm's profitability. When the firms use its own earning its financial leverage will be less and hence the profitability of firm will be more and when the firms takes the capital from outside its financial leverage will be more and profitability will be less.

Gu (1993) Studied the relationship between the debt use and profitability of the restaurant industry. He investigated that the restaurants which use little or no debts have more profitability and return on assets such as dining restaurants. The restaurants which use medium or excessive amount of debts have low profitability such as fast food restaurants and economy or family restaurants. The use of more debts increases the interest expenses of the firm and hence its profitability decreases. The result of the analysis shows that there is inverse relationship between financial leverage and firm profitability.

Sheel (1994) studied the leverage behaviour of 33 firms in two industry groups, hotel and manufacturing firms. He used the cross sectional regresssion analysis and find out that there is a negative relationship between financial leverage and firms profitability. Lang et al. (1996) studied the relationship between leverage and growth and took twenty years data from large firms and examined that there is negative relation between leverage and growth.

Kim (1997) He studied the determinants of capital structure of restaurant firms. In his study he regressed seven variables. After the analysis he concluded that there is significant negative relationship between firm size, growth opportunities, lease expenses and long-term debts. It means that restaurants of large size, high growth opportunities and high lease expenses will use fewer amounts of debts. The restaurant of smaller size, low growth opportunities and less lease expenses will use more amounts of debts. The four variables (profitability, non-debt tax shields, percentage of franchise and earning volatility) have insignificant relationship with debts of the firm. Wald (1999) studied firms capital structure and conducted cross countries comparision of 5 countries and took the data from Japan, France, UK, United States and Germany. He examined that financial leverage have negative impact on firms profitability.

Yoon and Jang (2005) examined the relation between financial leverage, size and profitability of resturants firms. They collected the data of sixty two resturants firms from 1998 to 2003 and used OLS regressions. They measured profitability by ROE and firm size by total assets and find out that resturants having large size are more profitable than small resturants and there is negative relation between financial leverage and profitability. Huang (2006) studied the determinants of capital structure of Chinese Listed Companies. They took the market and accounting data and find out that there is a negative relationship between financial leverage and profitability of the firm.

Ebel Ezeoha (2008) Studied the determinants of corporate financial leverage and took firms size, profitability, assets tangibility as independent variables and financial leverage as dependent variable. He collected the data from 71 firms over a period of 17 years listed on Nigerian stock exchange and used regression model. He showed that there is negative significant relationship between financial leverage and firm's profitability.

Amsaveni (2009) collected twenty years data of aluminum industries in india and concluded that there is a negative relationship between financial leverage and profitability. Chandrakumarmangalam and Govindasamy (2010) They studied the impact of leverage on firm's profitability by analyzing the relationship between financial leverage and the earning per share of the firm. They have collected seven years data of seven companies listed on Bombay stock exchange and used ANOVA for the analysis. They find out that there is an inverse relationship between financial leverage and earnings per share.

Tayyaba (2013) carried out her study on the impact of Leverage on profitability of selected Oil and Gas companies of Pakistan. She studied the relationship between leverage and profitability. She measured profitability on Earning Per Share, Return On Assets, Return On Equity and Return On Investment. She used four dependent and two independent variables. Four dependent variables are Return On Assets, Return On Equity, Return On Investment and Earning Per Share. Two independent variables are Financial Leverage and Operating Leverage. The analysis showed that Financial Leverage have positive relationship with Return on Assets, Return on Equity and Earning per Share. Financial Leverage has negative relationship with Return on Investment. Rehman (2013) studied the impact of financial leverage on financial performance of listed sugar firms in pakistan. He examined negative relation of financial leverage with earning per share and positive relation with return on assets.

Kumar (2014) studied the relation of financial leverage with profitability of bata india limited and observed positive relation of financial leverage with return on investment. Ilyukhin (2015) collected the data from 2003 to 2013 of russian companies and concluded that there is a negative impact of financial leverage on firms performance. Ahmad, Salman, and Shamsi (2015) They studied the impact of financial leverage on the profitability of cement companies in Pakistan and find out that financials leverage has negative impact on profitability. They have collected the six years data from eighteen cement companies in Pakistan from 2005 to 2010 which consists of 108 observations. They used the regression analysis and observed that when the financial leverage increases the profitability of the firms will be decreased.

Narware (2016) Studied the impact of financial leverage on the profitability of fertilizer sector in india and collected the data from 2006 to 2015. He concluded that there is a significant impact of leverage on the profitability of fertlizer sector in india. Iqbal and Usman (2018) studied the impact of financial leverage on the performance of textile companies of pakistan and gathered five years data from 2011 to 2015. They used the regression model and correlation analysis and observed that there is a negative impact of financial leverage on ROE and significant positve impact on ROA of textile companies operating in Pakistan.

Research Methodology

Method of Data Collection

The data was collected from the official sites of fertilizer companies of Pakistan. Consolidated annual financial statements of five companies are used for data collection. The data is collected from 5 fertilizer companies listed on KSE (Karachi Stock Exchange) from 2012 to 2018.

Selection of Variables

Two variables are used in this study to find out the impact of financial leverage on profitability. One variable is used as dependent and the other is used as independent.

Dependent Variable

In this study profitability was measured by ROA and was taken as Net profit after tax / Total assets.

Independent Variable

Financial Leverage (FL) was taken as independent variable and was taken as Total debts/ Total assets.

Hypothesis of the Study

This research is focused on testing the following hypothesis.

H_0: Financial leverage has no significant negative impact on profitability of fertilizer companies of Pakistan.

H_1: Financial leverage has a significant negative impact on profitability of fertilizer companies of Pakistan.

Model Development

The model for this study is given below in which ROA is the dependent variable and FL(financial leverage) is the independent variable.

$$ROA = \alpha + \beta FL + \varepsilon$$

Where as
ROA= Return on assets
FL = Financial leverage
ε = the error term
α= the constant,
ß= the regression coefficient

Data Analysis

The collected data was analyzed through SPSS software to get the correct result. Simple linear regression analysis is used to examine the impact of independent variable on dependent variables and also to test the developed hypothesis.

Statistical Analysis

Table 1: Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation	Variance
ROA	35	-.03	.30	.0985	.07311	.005
FL	35	.42	.84	.6373	.11322	.013
Valid N (listwise)	35					

Source: Data Collected from 2012-18

Descriptive statsitics for all variable used in this study are given in the table 1. The mean of ROA is .0985 and its standard deviation is .07311. The mean of financial leverage is .6373 and its standard deviation is .11322.

Table 2: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.490[a]	.241	.218	.06467
a. Predictors: (Constant), FL				

Source: Data Collected from 2012-18

Table 2 shows the summary of the model used in this study. R Square value is .241. This means that 24.1% variation in the dependent variable "ROA" is explained by the independent variable "Financial Leverage".

Table 3: Anova[b]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	.044	1	.044	10.453	.003[a]
	Residual	.138	33	.004		
	Total	.182	34			
a. Predictors: (Constant), FL						
b. Dependent Variable: ROA						

Source: Data Collected from 2012-18

Table 3 tells us about the validity of a regression model. The value of F is 10.453 and sig. value is 0.003 which is less than 0.05, which shows that the model is statistically significant and the model is valid.

Table 4: Coefficients[a]

Model	Unstandardized Coefficients	Standardized Coefficients	t	Sig.

		B	Std. Error	Beta		
1	(Constant)	.300	.063		4.739	.000
	FL	-.317	.098	-.490	-3.233	.003
a. Dependent Variable: ROA						

Source: Data Collected from 2012-18

Table 4 tells us the summarized result of the regression equation. In the table the Column B gives us the value of the constant and the value of regression coefficient. The result shows that FL(Financial Leverage) is significant and the coefficient is -0.317. This shows the negative relationship, which means that when the financial leverage increases the ROA will be decrease by 0.317.

Conclusion

This study identified the impact of financial leverage on the profitability of fertilizer companies of Pakistan over a period of 2012 to 2018. The profitability of fertilizer companies was measured by ROA and taken as net profit to total assets. The financial leverage is independent variable and as taken as total debt to total assets.Total debts includes both short term debts and long term debts.Statistical analysis result showed that financial leverage has a negative relationship with return on assets and hence the hypothesis that there is a significant negative impact of financial leverage on profitability of fertilizer companies is accepted. When the financial leverage increase the profitability will be decrease.This result is similar with the result of Murphy Jr (1968), Baker (1973), Titman and Wessels (1988), Sheel (1994) and wald (1999).

Limitation and Recommendation

1. This sector is only limited to the fertilizer sector of Pakistan. Seven years data is taken from 2012 to 2018.
2. Profitability is measured by ROA and is taken as the ratio of net income after tax to total assets.
3. Financial leverage is measured by the ratio of total debt to total assets.
4. It is recommended to conduct such type of study and include all firms listed on KSE. Other variables can also be included to examine their impact on profitability of fertilizer sector

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