

Impact of capital structure on the financial health of the manufacturing companies in Pakistan

Abstract

Aims: The main aim of this research is to identify the impact of capital structure on the financial health of the manufacturing companies in Pakistan.

Methodology: The researcher aimed at evaluating the effect of the company's capital structure on the firm's performance. The researcher will also determine a number of variables for this purpose. The researcher took analysed a sample of 50 companies and the data was collected for the most recent 5 years of the financial statements which was from 2016 to 2020. In respect to analysis of the dataset, it is conducted mainly through the software E-views where wide range of statistical techniques are applied for revealing the findings.

Findings: The results of the findings have indicated that and it was found that most of the companies in the manufacturing sector of Pakistan have a negative impact of capital structure on the profitability. In other words, the capital structure and profitability of the company had an inverse relationship.

Keywords: *Capital Structure, Financial Health, Financial Performance, Manufacturing, Companies, Assets, Equity*

Introduction

The goal of the management of every organization is to maximize the wealth of its shareholders. The management takes two main steps for this purpose; it either reinvests what it has already earned in the business or pays divide. The main aim of the business id to achieve an optimal capital structure that reduces the cost of capital of the company. The capital structure is the company's financing options or the mixture of finance it has obtained through either debt or equity or a combination of both (Ardalan, 2017). Selection of the capital structure of the company is a very significant step that has to be taken by the management. It is one of the key issue faced by the management today because of its critical nature. Both the company's equity holders and debt holders are very concerned about the capital structure of the company and what are the company's policies for the domain. The capital structure of the company depicts the risk the company is facing subjected to its profits. It has been identified that the best capital structure of the company is which has a cost which is at minimum levels whereas the profits are highest (Bhagat, Bolton and Subramanian, 2011). The cost of capital for a company can be minimized by deciding on what the

best combination of equity and debt is used for financing the company's operations. Hence if the cost of capital is at minimum levels the net profits of the company will be higher. These profits can then be invested back in the company or distributed among the shareholders as dividends. Both of which will increase the shareholders wealth. But the main problem is that there is no formula for an optimal capital structure. Contrary to this Miller and Modigliani have identified that the financing options of the company have no relation to the value of the company. However, it is suggested that the value of the company is solely dependent on the operations and productivity of the company. It also depends on the quality of assets that are invested in the operations (Yapa Abeywardhana, 2017). However further they corrected their statement by taking in account the tax benefit that is attained on the debt securities. This tax benefit also prevents the speculators from performing arbitrage on these securities. This theory of irrelevancy was over shadowed by the practice of determining the optimal capital structure. It is till commonly believed that the optimal capital structure can help the company become more profitable and if the management fails to give proper attention to the phenomenon, it can cause the company to land in major financial problems.

Literature Review

According to Nawaz and Ahmad (2017) the main objective of firms is to maximise the wealth of shareholders and the main goal of manufacturing firms is to get the best intention of capital structure and cause the cost of capital to decrease. Various studies have been conducted to determine the impact of capital structure on the firm's financial health and the assessment of capital structure is considered to be important for identifying the cost of capital and value of the company. According to Ashraf, Ameen and Shahzadi (2017) the result that is generated from the decision of the capital structure can cause the cost of capital to increase of manufacturing firms and it can lower the value of many firms and affects their productivity in a negative manner. There are several determinants that are used to analyse the impact of capital structure on the health of the companies such as Return on Equity, Return on Assets, Earnings per Share and various other factors. These factors help to assess the impact of capital structure on the financial health of the company and managers and executive take decisions accordingly. The study conducted by Iqbal and Javed (2017) states that the capital structure of the firm is negatively associated with the EPS and ROA of the company. However, there is a positive association of EPS with ROE of the company.

According to Das and Swain (2018) the manufacturing sector earns profits through sales of tangible products and intangible services. Ariyani, Pangestuti and Raharjo (2019) conducted a study and its states that capital structure determinants were linked with profitability in the cement industry and it was observed that health and profitability is considered to be important as it causes the shareholders wealth to be maximised and further causes the debt structure to be lowered. Another study conducted by Shah and Khan (2017) indicates that there is negative relationship of financial health and leverage and this indicates that if leverage increase, it causes the profitability of the company to decrease. The results of the study further indicate that financial health of the company is negatively associated with long term profitability and is positively associated with short-term profitability. It has been observed that the Financial Field of Pakistan has been analysing the modifications since its independence and it has been observed that the major issue is between debt and equity. The firms are not able to pay short-term liabilities and this causes the industry to witness increased failure rates. The manufacturing firms have invested deeply to generate profits and economy of the country is another factor should be considered that cause the capital structure and financial health of the company to be affected.

Another study conducted by Oyedokun (2018) indicates that there as adverse relationship between the capital structure and the financial health of companies. It has further been observed that companies that consume long-term debts have a low profitability ratio, whereas, firms that use short-term loans have high profitability and it attracts several shareholders. Many studies have incorporated the idea of the trade-off theory and it provides ideas of the firm for the selection that how much the financial debt and equity is being used to minimise the costs of the company. Sultan, et al. (2020) examined the relationship between capital structure and the monetary performance of listed organisations and the variables involved were ROA and Tobin Q. The results of the study indicates that determinants of capital structure such as sales and growth positively influence the financial health of companies and this indicates that sales are considered to be important for manufacturing sector the profit is dependent on the sales. Furthermore, it enables companies to attract investors and causes the financial health of the company to increase.

According to Nasar (2020) it has been observed that the financial health is considered to be important for manufacturing firms as it supports the productivity of the company and enables wealth to be utilised and attracts investors. The study conducted by Basit and Hassan (2017) indicates that profitability in manufacturing is dependent of the sales and production however, there is a negative effect in the long-term is investors are more attracted towards the longevity of the company and how much profit it is able to generate in the long run. Another study conducted by Ha, et al. (2019) indicates that there is a negative significant relationship between capital structure and firm performance however, it has a significant and positive association with short-term profitability of the company. Many studies have incorporated the idea of the agency theory and it states that companies and shareholders have different views of profitability and it enables managers and top executives to take decisions accordingly. Hence, the main conflict is that shareholders invest based on the productivity and sales of the company and it causes the relationship with profitability to be negative.

Methodology

For this article this part will focus more on the type of data that is collected and the kinds of methods that are used to analyse the data. The researcher aimed at evaluating the effect of the company's capital structure on the firm's performance. The researcher will also determine a number of variables for this purpose. For the purpose of the research, the researcher has selected the manufacturing sector of Pakistan. Pakistan's manufacturing sector is analysed by many researchers from within Pakistan as well as international researcher. The researcher decided to collect data from secondary sources because the company's financial data was needed that should be authentic. For this purpose the researcher used sources like the annual reports of the companies in manufacturing sector of Pakistan. These annual reports contained the official financial statements of the company. The researcher decided to use a purely quantitative research design for the article because financial numbers from the company's financial statements will be recorded. To analyse the data collected the researcher used Statista to perform various analysis like regression. Correlation, historic analysis and descriptive analysis. The manufacturing sector of Pakistan is very wide and is comprised of a number of companies. The researcher took analysed a

sample of 50 companies and the data was collected for the most recent 5 years of the financial statements which was from 2016 to 2020. The researcher included various factors for analysing the company’s performance and the capital structure. Debt to equity and long term debt to equity ratios were taken as variables of capital structure. Return on assets and Return on equity were taken as variables for companies’ financial performance. Firm size and EPS was taken as the control variable.

In respect to analysis of the dataset, it is conducted mainly through the software E-views where wide range of statistical techniques are applied for revealing the findings. The descriptive statistics is applied for summarizing the raw dataset into easier transformation of the dataset. The next technique that is applied on the dataset is the correlation analysis where it investigates the association of the variables with each other. The last technique is the regression analysis for investigating the influence of the variables with each other. However, the preliminary testing on the dataset is also conducted through Hausman for determining as whether the random effect or fixed effect model is applicable for conducting regression. The following are the two equations that are developed based on the two variables of the study:

$$ROA = a + \beta_1 DE + \beta_2 LTD.Assets + \beta_3 EPS + \beta_4 FS + \varepsilon \text{ ---- (1)}$$

$$ROE = a + \beta_1 DE + \beta_2 LTD.Assets + \beta_3 EPS + \beta_4 FS + \varepsilon \text{ ---- (2)}$$

Results

Descriptive Statistics

Table 1 reflects to the outcome of the descriptive statistics where there are total of six variables that are incorporated in the research. The total number of observation that is observed for each of the variable is 248. While referring to debt to equity, its mean value is computed as 0.895 which indicates that average number of firms has less reliance on debt as the value is below 1. The LTD/assets mean value is observed to be 0.153 which depicts that average number of Pakistani companies are healthy as the value is below 0.5. In respect to EPS, its mean value is computed as 0.183 which illustrates the average number of EPS for the manufacturing companies

of Pakistan. The ROA and ROE being 0.097 and 0.186 which depicts a lower return for the companies based on its assets and equity.

Table 1: Descriptive Statistics

Descriptive Statistics	Debt to Equity	LTD/Assets	EPS	Firm Size	ROA	ROE
Mean	0.895	0.153	0.183	6.584	0.097	0.186
Maximum	10.230	4.351	3.070	10.982	0.613	2.683
Minimum	0	0	-0.600	0	-0.176	-4.553
Std. Dev.	1.524	0.339	0.412	2.413	0.122	0.516
Observations	248	248	248	248	248	248

Correlation Analysis

Table 2 represents the correlation assessment where its purpose is to evaluate the connection of the variables with each other. The association of the dependent variables of the research are ROA and ROE. While reflecting to ROA, it is determined to have significant connection with debt to equity, LTD/Assets and EPS. The coefficient value of debt to equity and LTD/Assets is computed as -0.179 and -0.235 which depicts a negative association with ROA. On the other hand, EPS coefficient value is computed as 0.364 which indicates a positive connection. Hence, this depicts that capital structure has negative connection with ROA. While referring to ROE, debt to equity and EPS is found to have positive and significant connection as the coefficient value is computed as 0.168 and 0.406, respectively.

Table 2: Correlation analysis

Correlation	Debt to Equity	LTD/Assets	EPS	Firm Size	ROA
LTD/Assets	0.256***	1			
	0.000				
EPS	0.099	-0.065	1		
	0.120	0.310			
Firm Size	-0.021	0.136	0.012	1	
	0.739	0.033	0.852		
ROA	-0.179***	-0.235***	0.364***	-0.057	1
	0.005	0.000	0.000	0.368	
ROE	0.168***	-0.022	0.406***	0.020	0.612***
	0.008	0.735	0.000	0.754	0.000

Preliminary Testing

The preliminary testing of the data as discussed in methodology is conducted through Hausman testing where the purpose of the technique is to determine whether the random effect or fixed effect model is applicable. The null hypothesis of Hausman testing is that the random effect is applicable based on the p-value which needs to be below 0.05 (Purba and Bimantara, 2020,; Jaba, E., Robu, I.B. and Balan, C.B., 2017). As per the results in Table 3, value of Hausman test for ROA model is computed as $0.028 < 0.05$; therefore, the null hypothesis is rejected where the fixed effect model is applicable. Furthermore, the value of ROE is computed as $0.075 > 0.05$ which depicts that the random effect model is applicable.

Table 3: Preliminary Analysis (Hausman)

Models	Hausman Test	Results	Outcome
ROA	0.028	Null hypothesis rejected	Fixed effect model
ROE	0.075	Null hypothesis accepted	Random effect model

Regression – ROA (Fixed effect)

Table 4 represents the fixed effect model for the ROA where the capital structure (debt to equity and LTD/Assets) influence is examined on financial performance along with two control variable which are EPS and firm size. As per the results, the R-square value is computed as 0.755 which indicates that the variance that is captured in the model is by 75.5%. The probability value is computed as $0.000 < 0.05$ which indicates that the model of regression is significant. In respect to variable effect, debt to equity [$B = -0.013$; $P = 0.029 < 0.05$] is found to have significant and negative influence on ROA. On the other hand, the control variables EPS [$B = 0.106$; $p = 0.000 < 0.01$] and firm size [$B = 0.013$; $p = 0.003 < 0.01$] is found to have significant and positive influence of ROA. Therefore, the results suggests that the capital structure has negative effect on ROA of the manufacturing companies of Pakistan while EPS and firm size has positive effect on ROA.

Table 4: ROA (Fixed effect)

ROA - Fixed effect	Coefficient	Std. Error	t-Statistic	Prob.
Debt to equity	-0.013**	0.006	-2.196	0.029

LTD/Assets	-0.008	0.017	-0.511	0.610
EPS	0.106***	0.021	4.940	0.000
Firm size	0.013***	0.005	2.963	0.003
C	0.002	0.031	0.075	0.941
R-squared	0.755			
F-statistic	11.307			
Prob(F-statistic)	0.000			
*** Significance at 1%; **Significance at 5%; *Significance at 10%				

Regression – ROE (Random effect)

Table 5 represents the random effect model for ROE model that is applied as per the Hausman testing. The proxies of both capital structure which are debt to equity and LTD/ assets are found to have insignificant influence as the p-value is above 0.10. On the other hand, the control variable of EPS is found to have significant influence as the p-value is observed to be $0.000 < 0.05$ while the coefficient value is computed as 0.322. Based on the coefficient value, EPS has positive effect on ROE. Therefore, the results indicates that the only variable that influences on ROE of the manufacturing companies of Pakistan is EPS.

Table 5: ROE (Random effect model)

ROE - Random effect	Coefficient	Std. Error	t-Statistic	Prob.
Debt to equity	0.034	0.024	1.434	0.153
LTD/Assets	-0.026	0.081	-0.323	0.747
EPS	0.322***	0.085	3.772	0.000
Firm size	0.015	0.016	0.916	0.360
C	0.003	0.122	0.024	0.981
R-squared	0.061			
Prob(F-statistic)	0.004			
F-statistic	3.968			
*** Significance at 1%; **Significance at 5%; *Significance at 10%				

Conclusion:

This research was aimed at analysing the impact of any changes in capital structure on the profitability of the firm. The main aim was to check if the relationship between the capital structure and the profitability of the company is significant or not. It was found that most of the companies

in the manufacturing sector of Pakistan have a negative impact of capital structure on the profitability. In other words, the capital structure and profitability of the company had an inverse relationship. This means that if the company finances its operations with more debt it will affect the profitability of the company in a negative manner. All the variables of the capital structure and profitability were tested and were found to be having a negative relationship. The main aim of any organization is to keep its company profitable for the foreseeable future. Since the researcher has found a negative relationship between both the factors, the management needs to keep its prime focus on maintaining an optimal capital structure that consist more equity financing then debt as debt increases the cost of capital. The management should closely monitor the sources of finance that it is acquiring. Before taking a decision to acquire finance the management should evaluate its own capacity and decide whether the operations of the company has an ability to bear the additional cost or not.

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