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IMPACT OF DEBT FINANCING ON FIRM PERFORMANCE: A CASE OF BUSINESS SECTOR OF PAKISTAN

Aisha Yusuf* and Dr. Abur Rehman Aleemi**

ABSTRACT

It is essentially important to remove the ambiguity as to which measure of financing in a company's capital structure proves as more favorable in improving its performance, or contrarily if there is no relevance of capital structure choice on the company's value creation. For conducting this study, a leverage ratio of Debt-to-Equity and performance measurements of Return-on-Assets, Return-on-Equity and Tobin's-Q ratio have been used as independent and dependent variables respectively to check for the impact of debt financing level on a firm's performance outcomes. Firm age and size have been controlled for, in order to improve the reliability of the results. The sample comprises of 50 business firms of Pakistan, listed on the stock exchange, divided into the sectors of service and manufacturing, and the data has been collected for six years, from 2013 to 2018. Fixed Effects Regression analysis is used for the balanced panel data, which yields that debt financing has a significantly positive impact on firm performance for manufacturing sector companies, while for the service sector, this impact is insignificant. Because of the manufacturing sector, the whole business industry achieves high results on the performance indicators, and since the debt-to-equity ratio is a notable contributor to this achievement, debt financing is found to be beneficial for company's operating activities. Therefore, this paper holds major implications for corporate boards to combine feasible proportions of debt and equity when making financing decisions, and for shareholders and creditors to choose whether to make investments in a potential firm.

JEL Classifications: *G320, C100, M000*

Keywords*: Capital structure, Debt financing, Firm performance, Manufacturing sector, Service sector*

**Research Assistant, IoBM.*
***Assistant Professor, IoBM.*

INTRODUCTION

Background of the Study

Considered as an inexpensive financing method, debt financing offers various benefits to organizations such as tax saving. However, according to some researchers, it might portray a negative picture of the organization having no or less finances of its own and more of others. According to Harris & Raviv (1991), "debt financing is always related to the trade-off between costs and benefits, and there is an optimum level of debt beyond which the costs may exceed the associated benefits". Therefore, it is crucial for an organization to achieve this level in order to make the most out of its profitability prospects.

The capital structure-performance outcome link for a firm has been a subject of much popularity among contemporary researchers. Capital structure is the pool of debt and equity proportions a firm maintains, for utilization in varied firm operations. Modigliani & Miller (1958) theorized that in a perfect capital market, capital structure does not bear any influence over the performance of a firm. This supposition served a great input in capital structure theories. However, the drawback brought about by this theory pertains to its unreasonable assumptions, being that costs of transaction and taxes are non-existent, the opportunities for all investors to become debtors or creditors are equal, and the market is informational efficient. With debt as the financing source, there is lower amount of tax to be paid due to interest payments, therefore fully debt comprising capital structure would be an ideal scenario (Modigliani & Miller, 1963). But markets in the real world are very different and complex than the above mentioned unreasonable assumptions, and do comprise of imperfections, agency and other costs and information asymmetry (Greenwald, Stiglitz, & Weiss, 1984; Greenwald & Stiglitz, 1993; Jensen & Meckling, 1976; Stiglitz, 1988; Myers & Majluf, 1984).

Various characteristics are associated with each type of finance, such as time period, ownership and control and source of generation. Scale of firms often defines the type of finance they require to continue operations, and there is a major role of the governing board in choosing the appropriate financing technique. Hence, it needs to be looked into whether financing structure impacts firms' financial performance in the best interests of the stakeholders.

Problem Statement

There exists a lot of variation in the capital structure of different

companies in Pakistan with respect to the composition of Debt and Equity. It is ambiguous as to which form of finance proves beneficial in terms of economic outcomes. Therefore, it is important to know if having considerable debt in the structure improves the performance of a firm, with respect to specific sectors, so that this mode of financing can be widely utilized.

Scope of the Study

The scope of this study lies in serving as key inferences for various stakeholders of the firm. Managers and executives would be able to implement the most efficient capital structure ratios with regard to the firm's performance outcomes, ease of availability and confidence of shareholders and debt holders. This confidence itself would build up through the better figures on the financial statements of the firm. Lastly, favorable and timely carved out debt policies would lead to minimization of the risk of financial distress and other faults.

Research Questions

In order to determine the role of debt financing, this study will answer the following research questions:

1. How much impact does the debt mode of financing have on a firm's performance ratios, when the age and scale of the varied firms are controlled for?
2. How does this impact differ through the service and manufacturing sectors of the industry?
3. Should firms in Pakistan go for debt financing and reap its benefits to continue or expand their operations?

Study Design

Following is the structure this paper is designed in. After the above presented Introduction, the next section gives a detailed account of past studies conducted in the similar area under Literature Review along with the proposed hypotheses, followed by the methodological model and techniques. The next section would describe the Results of the techniques applied, proceeding with the Discussion as compared to past studies. The final section represents Conclusion to the study proceeded by Recommendations drawn for relevant stakeholders.

LITERATURE REVIEW

Debt Financing

Concerning the financial leverage-profitability relationship for an

organization, a vast majority of studies conducted have yielded mixed results. Majumdar & Chhibber (1999), in their study, analyzed this relationship using debt ratio as the predictor variable and Return-on-Assets as the outcome variable proxied for firm performance over a six year period for the Indian companies belonging to different sectors, which resulted in an inverse association between the two indicators. Similarly, in a study based on Swedish SMEs through five industry sectors, fixed effects and three stage least squares models were used, which confirmed that all forms of debt negatively impact the profitability of a firm (Yazdanfar & Ohman, 2015). Muritala (2012) showed in his study that a firm's performance ratios are negatively influenced by its ratio of debt. This study suggested that for a feasible capital structure, asset tangibility ought to be given due consideration because organizations can save themselves from financial constraint with more tangible assets. Other studies concluding for a negative influence of financial leverage on financial performance include the contributions of Goddard, Tavakoli, & Wilson (2005), Salim & Yadav (2012), and Pakistani studies by Sheikh & Wang (2011) and Ahmad, Salman, & Shamsi (2015). Pertaining to a study on Pakistani cement sector, in which the sample comprised of the stock exchange quoted corporations with seven-year data for the cross-sections, the analysis showed that Debt Financing (gauged through Debt-to-Assets ratio) negatively influences performance of corporations, gauged through the Return-on-Assets ratio (Ahmad & Ali, 2016).

As for companies in the U.S, Simerly & Li (2000) analyzed 700 large firms, the results of which showed that financial leverage can have an impact in positive or negative direction, depending on the overall business environment. On the other hand, Mesquita & Lara (2003) carried out their study on differentiated types of debt in Brazilian service companies and concluded that the Return-on-Equity ratio of profitability maintained association with short-term debt in positive direction, however the profitability ratio was inversely related to long-term debt. Nawaz & Ahmad (2017) carried out their study on types of debt analyzing the Pakistani petroleum sector, which yielded that both long and short term debt either associate with firm performance negatively (considering Return on Assets) or insignificantly (Return on Equity).

Jensen (1986) developed a perspective of free cash flow, according to which performance of a firm has positive association with firm's leverage, as managers are increasingly under pressure of making investments in

positive Net Present Value (NPV) projects, the reason being that they are liable to make payments to the creditors in future. Another effect of financial leverage is that higher leverage serves as a monitoring and control mechanism, which is able to reduce the agency problem likely to arise between managers and shareholders, as managers would then strive to pay the issued debt before striving for gains of personal interest (Hutten, 2014).

Additionally, varied sectors have been analyzed by authors in African countries of Ghana (Abor, 2005), Rwanda (Harelimana, 2017) and Kenya (Karuma, 2018) respectively, all of which resulted in capital structure of firms having positive relationship with their financial performance. Considering the reverse causality pertaining to how firm performance affects financial leverage, Shah & Khan (2017) conclude for negative impact of profitability, which means that as firms become more profitable, their capital structure tends to lower on debt. In the same study, it was shown that this capital structure leverage is impacted in a positive direction by factors such as firm size, assets tangibility and the non-debt tax shield.

As regards recent studies are concerned, Aziz & Abbas (2019) conducted their research on the non-financial sector of Pakistan, in which they concluded for detrimental impact of debt financing on corporate performance, irrespective of duration of the debt. The study recommended for keeping the level of debt to a minimum proportion and depend on own financing method. Giving an account of emerging economies, considering non-financial companies in Vietnam using different measures of debt financing, to check for an exhaustive impact of debt on performance, the analysis through dynamic statistical techniques and employment of different variables as controls for greater reliability, also resulted in negative effect of debt financing on performance of companies. Similarly, a study on Indian companies in the manufacturing sector took into account the debt to equity ratio, agency cost indicators and financial performance variables, which resulted in debt financing negatively affecting performance (Pandey, & Sahu, 2019). This leverage in capital structure was found to positively affect (increase) administrative expenses, while no effect was shown on the ratio of sales to assets. These are the proxies used for measuring agency costs, that is, costs incurred by the governing board in resolving the agency issue between managers and shareholders. In consideration of policy implication, the study recommended for strengthening and regulating ownership structure instead of debt concentration.

Firm Performance

According to Neely, Gregory, & Platts (2005), measuring performance relates to determining the level of effectiveness and efficiency of an activity. Organizations are entities that set goals for themselves, plan accordingly, allocate resources and then evaluate to what extent the targeted objectives were achieved. For this reason, measuring an organization's performance for the function of controlling is of indispensable importance (Bititci, Carrie, & McDevitt, 1997). However, the problem arises as to ascertain which performance measure to use for analysis, out of innumerable existing measures. The two broadest classifications of these measures are Accounting-based and Market-based, with the former pertaining to short term and past performance, while the latter category relating to long term and ensuing performance. One of the most appropriate and extensively used accounting-based measures is Return on Assets (ROA), which depicts the state of utilization of assets through shareholder equity (Klapper & Love, 2002; Haniffa & Hudaib, 2006; Ibrahim & AbdulSamad, 2011). Another performance tool under accounting-based measures deemed exhaustive and used widely by researchers (e.g. Al Manaseer, Al-Hindawi, Al-Dahiyat, & Sartawi, 2012; Obiyo & Lenee, 2011; Rouf, 2011; Yasser, Entebang & Mansor, 2011; Chamberlain, 2010) is Return on Equity (ROE), which gauges the proportion of a firm's income as a ratio of shareholder equity. Among market-based measures, Tobin's Q ratio has been analysed by majority of researchers because of its accurate nature (e.g. Shah & Hussain, 2012; Karaca & Ekşi, 2012; Kang & Kim, 2011; Leung & Horwitz, 2010). This ratio compares a firm's market value to its book value and depicts a true picture of the firm's financial performance in the contemporary market.

In a nutshell, an appropriate performance measure should be such that represents the most accurate and overarching impression, and provides basis for comparison over various time periods, therefore this study uses a combination of different measurements.

Firm Size

According to Bain (1951) and Richard, Barnett, Dwyer, & Chadwick (2004), performance of a firm is expected to be positively affected by size of the firm, due to the reason that larger firms, in general, have the advantage of economies of scale over smaller firms and therefore have more power and reach in the market. However, there are studies that conclude for a negative relationship between the two variables, theorizing

that larger-scale firms are usually controlled by managers who are self-oriented rather than firm oriented, and who are likely to meet the goal of utility maximization primarily, before working after profit / value maximization (Pervan & Višić, 2012). Another argument in the context of negative association between firm size and firm performance is that there exists corporate bureaucracy in large-sized firms. This has the tendency to bring the competence level of a firm to a downward sloping curve pertaining to changes in the external business environment and reacting to those changes promptly.

Firm Age

According to the review of a vast literature, no consensus has been established as to the impact of a firm's age on its performance. Firms that are older are more experienced, and therefore, undoubtedly it is expected that they would have higher earnings as compared to the firms that are younger, as they are yet in the starting and / or growing phase of the business cycle. However, just like large-sized firms, old aged firms are also on the verge of corporate bureaucracy, more prone to becoming slack, and reaching towards the ending phase of the business cycle (Smith, Smith, & Verner, 2006).

Lagged Performance Variables

Another control measure used in the study is the lagged value of performance variables, since the debt financing-corporate financial performance relationship is deemed as having a dynamic nature, rather than fixed or static. This argument is supported by many research studies, stating the variation in the current performance of a firm may significantly be explained/determined by its past performance (e.g. Shah & Khan, 2017).

Theoretical Basis

This theory is most closely connected to the Trade-off theory. According to this theory, when a firm needs to choose between the capital structure components of equity and debt, it makes a comparison of costs attached to and prospective benefits of each type of financing. An example of costs related to debt-comprising structure is financial distress, while one of the benefits it brings is the tax advantage at total or marginal level.

Another theory, called as the Pecking Order Theory by Donaldson (1961) forms the basis of this study. This theory is deeply rooted in decisions related to financial structure of firms, and was modified in later

years by Myers & Majluf (1984). It states that a company's priority is to utilize internal funds for financing purposes. Once they are depleted, the company issues debt, and when any more debt issuance becomes non feasible, it goes for equity financing. External ownership is brought into the company as the last resort, and this prioritization is done based on the idea of least effort, or least aversion.

When a firm's value increases due to issuance of new equity, managers are presumed to exploit this rise in valuation to their own advantage, while the investors seek overall advantage for the firm with which return on investments would be optimal and future prospects would increase. Pertaining to this idea, Jensen & Meckling (1976) gave the Agency Theory, which states that there is conflict of interest between principal (owners/investors) and agent (managers). These differing motives can be aligned by the corporate board, usually by offering incentives to the managers called as agency costs (Hill & Jones, 1992). In order to identify if an agency issue exists, corporations usually perform a litmus test, that is comparing their Return on Assets with Return on Equity. Maximizing ROA is the goal of firm's management, while maximizing ROE is the goal of shareholders. If both of them appear to be in opposing directions, there is possibility of an agency issue. However, altering the capital structure through creation of debt can act as a remedial measure, as suggested by recent research, because this scenario would result in more liabilities towards creditors, and additional earnings would be paid out to them on priority basis, before managers invest them in self profitable projects.

Hypotheses

H_1: "Return-on-Assets ratio does not bear influence from the Debt-to-Equity ratio of a firm"

H_2: "Return-on-Equity ratio does not bear influence from the Debt-to-Equity ratio of a firm"

H_3: "Tobin-Q ratio does not bear influence from the Debt-to-Equity ratio of a firm"

H_4: "Return-on-Assets ratio does not bear influence from the Debt-to-Equity ratio of a Manufacturing sector business firm"

H_5: "Return-on-Equity ratio does not bear influence from the Debt-to-Equity ratio of a Manufacturing sector business firm"

H_6: "Tobin-Q ratio does not bear influence from the Debt-to-Equity ratio of a Manufacturing sector business firm"

H_7: "Return-on-Assets ratio does not bear influence from the Debt-to-

Equity ratio of a Service sector business firm"
H_8: "Return-on-Equity ratio does not bear influence from the Debt-to-Equity ratio of a Service sector business firm"
H_9: "Tobin-Q ratio does not bear influence from the Debt-to-Equity ratio of a Service sector business firm"

CONCEPTUAL MODEL

The conceptual model developed for the study is as follows:

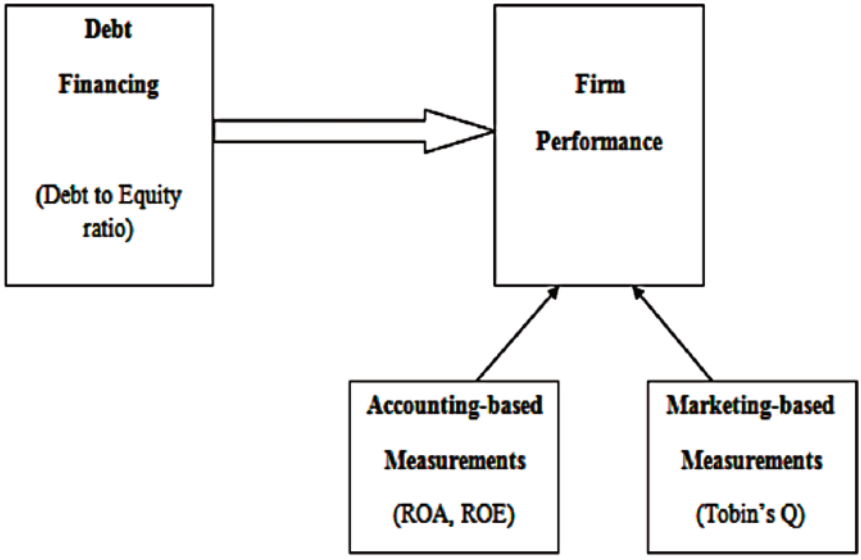

Figure 1. Conceptual Model

METHODOLOGY

Sample and Data

This study is focused on a broad range of organizations across Pakistan. The sample comprises of companies listed on the stock exchange, due to the availability of vast data on financial analysis of these public companies. A large number of researchers (e.g. Marinova, Plantenga, & Remery, 2015) use similar scope in their studies. Companies in the data set belong to the sectors of **Service Industry** and **Manufacturing Industry**. All these companies are members of the Pakistan Business Council (PBC), which is the largest representative body of business companies in Pakistan. The data for the independent, dependent and control variables has been obtained from the financial statements and

annual reports of these companies. The data is a balanced panel, which includes values for 50 firms through six years, that is 2013 to 2018. Pertaining to the included cross-sections, time periods and variables, the total number of observations included is **1,800**.

Study Variables

Table 1: Variable Description

		Description
Independent Variable	Debt to Equity Ration	The financial ration indicating the relative proportion of shareholders' equity and debt used to finance a company's assets, calculated as Total Liabilities of a company divided by its Shareholder Equity.
Dependent Variables	Return on Assets	Net Income divided by Total Assets at the end of the year
	Return on Equity	Profit After Tax divided by Total Equity shares in issue at year end
	Tobin's Q	Market Capitalization plus Total Debt divided by Total Assets of the Company
Control Variables	Firm Size	Natural logarithm of Total Assets of the company
	Firm Age	Number of years since the company was incorporated
	Tobin's Q-1	One-year lagged value of Tobin's Q
	ROA-1	One-year lagged value of ROA
	ROE-1	One-year lagged value of ROE

Statistical Techniques

For the statistical analysis of our Balanced Panel Data, Fixed Effects Regression is used. With the Hausman test of specification, we reject the null hypothesis that a random effects regression is consistent, as the probability value obtained is 0.00. Hence the model of fixed effects is regarded as suitable.

One argument is that the performance of a firm determines the level of debt financing, as it attracts better and more creditors. Therefore, as a remedial measure to eliminate the reverse causality, one year lagged values of the dependent variables are used.

Following are the regression models run for the data:

For the total sample

$$ROA = \alpha + \beta_1 DE\_Ratio + \beta_2 FirmSize + \beta_3 FirmAge + \beta_4 ROA1 + \beta_5 Indus + e_{i,t} + u_i + u_t \quad (1)$$

$$ROE = \alpha + \beta_1 DE\_Ratio + \beta_2 FirmSize + \beta_3 FirmAge + \beta_4 ROE1 + \beta_5 Indus + e_{i,t} + u_i + u_t \quad (2)$$

$$TOBINQ = \alpha + \beta_1 DE\_Ratio + \beta_2 FirmSize + \beta_3 FirmAge + \beta_4 TOBINQ1 + \beta_5 Indus + e_{i,t} + u_i + u_t \quad (3)$$

For each industry sector

$$ROA = \alpha + \beta_1 DE\_Ratio + \beta_2 FirmSize + \beta_3 FirmAge + \beta_4 ROA1 + e_{i,t} + u_i + u_t \quad (4)$$

$$ROE = \alpha + \beta_1 DE\_Ratio + \beta_2 FirmSize + \beta_3 FirmAge + \beta_4 ROE1 + e_{i,t} + u_i + u_t \quad (5)$$

$$TOBINQ = \alpha + \beta_1 DE\_Ratio + \beta_2 FirmSize + \beta_3 FirmAge + \beta_4 TOBINQ1 + e_{i,t} + u_i + u_t \quad (6)$$

RESULTS AND DISCUSSION

Table 2: Descriptive Statistics for the Total Sample

Descriptive Statistics						
Variable	**N**	**Mean**	**SD**	**Median**	**Min**	**Max**
Dependent						
ROA	300	0.087	0.096	0.059	-0.08	0.679
ROE	300	0.24	0.532	0.169	-0.496	7.47
Tobin-Q	300	2.662	3.241	1.378	0.576	25.42
Independent						
SE_Ratio	300	4.045	5.57	1.324	0.05	28.24
Controls						
Firm Size	300	10.579	0.749	10.40	9.12	12.45
Firm Age	300	48.16	29.88	46.00	1.00	155
Industry	300	0.62	0.486	1.00	0.00	1.00

According to the descriptives in Table 2, the mean value of Return on Assets for the 50 companies for six years is 0.087 (8.7 per cent), which shows that the performance of the companies in the sample has been high, as ROAs above 5 per cent are generally considered good. Similarly, the mean Return on Equity amounts to 0.24 (24 per cent), with ROEs of 15-20 per cent being generally considered good. However standard deviation of 0.532 for ROE means that the values in the data set are farther away from the mean, on average. There is large amount of variation in the company figures for this variable. Tobin's Q mean value is 2.662, which depicts success of the overall industry, because the value is greater than one, and this shows that the market value of a company is higher than the book value of its assets.

With the whole business sector singularly taken into account, the capital structure leverage in terms of debt to equity ratio is 4.045 per cent on average. The mean age that the companies can be characterized with is 48 years and according to firm size mean, they can be classified as large businesses.

Table 3: Descriptive Statistics for Service Sector

Descriptive Statistics						
Variable	**N**	**Mean**	**SD**	**Median**	**Min**	**Max**
Dependent						
ROA	114	0.033	0.037	0.018	-0.058	0.1427
ROE	114	0.146	0.102	0.142	-0.218	0.492
Tobin-Q	114	1.139	0.229	1.05	0.645	1.86
Independent						
SE_Ratio	114	8.186	6.876	6.86	0.41	28.24
Controls						
Firm Size	114	11.16	0.768	11.31	9.57	12.45
Firm Age	114	53.5	36.92	55.5	7.00	155

The sub-sample of service firms comprises of 19 cross-sections. The two measures of firm performance depict low mean values (ROA equals to 3.3 per cent and ROE equals to 14.6 per cent), while Tobin's Q indicates long-term success of the sector (Value of ratio is greater than one, that is, 1.139). The firms are 53.5 years old on average and have a large size of business scale (identified using antilog of 11.16). The debt to equity ratio, on average, equals to 8.18 per cent.

Table 4: Descriptive Statistics for Manufacturing Sector

Descriptive Statistics						
Variable	**N**	**Mean**	**SD**	**Median**	**Min**	**Max**
Dependent						
ROA	186	0.12	0.106	0.101	-0.08	0.679
ROE	186	0.29	0.665	0.186	-0.496	7.47
Tobin-Q	186	3.59	3.827	2.178	0.576	25.42
Independent						
SE_Ratio	186	1.507	2.059	0.795	0.05	16.03
Controls						
Firm Size	186	10.219	0.449	10.259	9.12	11.07
Firm Age	186	44.88	24.13	45.00	1.00	124

The sub-sample of manufacturing firms comprises of 31 cross-sections. All the three measures of firm performance depict high mean values indicating success of the sector (ROA equals to 12 per cent, ROE equals to 29 per cent and Tobin's Q ratio is 3.59). The firms are almost 45 years old on average and own assets worth more than 16 billion rupees (calculated using antilog of 10.2), signifying large size of the business scale.

Table 5: Correlation Analysis for the Total Sample

Correlations							
	ROA	ROE	Tobin-Q	DE_Ratio	Firm Size	Firm Age	Industry
ROA	1						
Prob.	——-						
ROE	0.483	1					
Prob.	*0.00*	——-					
Tobin-Q	0.571	0.568	1				
Prob.	*0.00*	*0.00*	——-				
DE_Ratio	-0.378	0.076	-0.166	1			
Prob.	*0.00*	*0.184*	*0.0039*	——-			
Firm Size	-0.345	-0.1	-0.291	0.706	1		
Prob.	*0.00*	*0.082*	*0.00*	*0.00*	——-		
Firm Age	0.086	0.04	0.054	-0.128	0.173	1	
Prob.	*0.135*	*0.489*	*0.349*	*0.026*	*0.0025*	——-	
Industry	0.437	0.138	0.368	-0.582	-0.615	-0.14	1
Prob.	*0.00*	*0.016*	*0.00*	*0.00*	*0.00*	*0.0152*	——-

Correlations analysis was carried out for the total sample in order to check for the degree of association among the variables of concern.

Firstly, the predictor variable, Debt-to-Equity ratio, resulted in negative moderate relationship with Return-on-Assets and negative weak relationship with Q ratio, however it was not found to be significantly related with Return-on-Equity.

As regards the control variables, Return-on-Assets and Q ratio maintain negative moderate association with size of the firm, while significant relationship resulted neither between ROA and firm's age nor Q ratio and firm's age. Similarly, the ratio of Return-on-Equity has negative but weak association with size of the firm, while ROE and age of the firm have no relationship with each other.

Firm age and size are significantly related to the D/E Ratio, with age having a weak negative correlation and size having very strong positive correlation value, which implies that as the firms get older, they make lesser use of debt financing, however, with increase in the firm's scale, more debt ratio is preferred. Age and size have significant positive relationship with each other, which indicates that the larger firms are also the older ones.

Table 6: Regression Analysis for Total Sample

	(Model 1) ROA	(Model 2) ROE	(Model 3) TOBINQ
Debt to Equity Ratio	-0.001	0.039	0.0335
Prob.	*0.38*	*0.00*	*0.26*
Firm Age	0.00011	0.0025	0.0024
Prob.	*0.44*	*0.0329*	*0.484*
Firm Size	-0.0022	-0.198	-0.103
Prob.	*0.80*	*0.004*	*0.609*
Industry	0.025	0.209	0.568
Prob.	*0.035*	*0.0185*	*0.033*
ROA1	0.628		
Prob.	*0.00*		
ROE1		0.327	
Prob.		*0.00*	
TOBINQ1			0.822
Prob.			*0.00*
R-Squared	0.559	0.222	0.79
Adjusted R-Squared	0.543	0.193	0.782
Observations	250	250	250
F-Statistic	33.92	7.644	100.56
Prob. (F-Statistic)	0.00	0.00	0.00
Cross-section Effects	None	None	None
Period Effects	Fixed	Fixed	Fixed

The results of the regression analysis in Table 6 indicate that all the three models are significant.

Model 1

The outcome variable, ROA, is insignificantly affected by the Debt Financing decision of the firm, denoted by Debt to Equity Ratio. Similarly, neither the age nor the size of the firm has significant impact on ROA. On the other hand, return on assets is significantly affected by the industrial sector. The interpretation of this would be that if the sector is manufacturing, an increase of 2.5 per cent in ROA is expected in comparison to service sector.

Model 2

Return on Equity is significantly affected by the predictor variable, D/E Ratio. For every one percent increase in the debt, there is increase in ROE by 3.9 per cent, with other variables constant. Firm age and size have significant impact on ROE, with age having positive and size having

negative impact. For one year increase in the firm's age, ROE tends to increase by 0.25 per cent, and the increase in firm size by one unit value of assets leads to 19.8 per cent decrease in ROE. Industrial affiliation also has significant impact on ROE, which means that if the sector is manufacturing, an increase of 20.9 per cent in ROE is expected in comparison to service sector.

Model 3

As for the firm performance variable of Tobin's Q, D/E Ratio holds insignificant impact. The age and size of the firm also hold insignificant effect on Tobin's Q ratio, while the ratio is significantly and positively affected by industrial sector, and signifies that there would be increase in the Q ratio by ratio of 0.568 if the affiliation of the firm is with the manufacturing sector as opposed to the service industrial sector.

Table 7: Regression Analysis for the sub-sample of Service Sector

	(Model 1) ROA	**(Model 2) ROE**	**(Model 3) TOBINQ**
Debt to Equity Ratio	-0.0013	0.039	0.0335
Prob.	*0.063*	*0.00*	*0.26*
Firm Age	-0.000027	0.0025	0.0024
Prob.	*0.75*	*0.0329*	*0.484*
Firm Size	0.0005	-0.198	-0.103
Prob.	*0.92*	*0.004*	*0.609*
ROA1	0.633		
Prob.	*0.00*		
ROE1		0.66	
Prob.		*0.00*	
TOBINQ1			0.82
Prob.			*0.00*
R-Squared	0.629	0.518	0.703
Adjusted R-Squared	0.594	0.474	0.675
Observations	95	95	95
F-Statistic	18.25	11.58	25.5
Prob. (F-Statistic)	0.000	0.000	0.000
Cross-section Effects	None	None	None
Period Effects	Fixed	Fixed	Fixed

For the Service Sector Regression Analysis, Table 7 indicates that all the three models are significant. The predictors in Model 1 explain 59.5

per cent of variation in return on assets, while 47.4 per cent of variation in return on equity is explained by the predictors in Model 2. The explanatory power of Model 3 is 67.5 per cent.

Model 1 shows that ROA for service firms is significantly affected by the Debt to Equity Ratio of the firms. The impact is negative, which indicates that with one percent increase in D/E Ratio, ROA decreases by 0.13 per cent, keeping other variables constant. On the contrary, neither the age nor the size of the firm has significant impact on ROA. Model 2 outcome variable, Return on Equity, is insignificantly affected by the predictor variable, D/E Ratio. Similarly, there is no change in ROE of a service firm as an impact of its age or size. For the performance variable of Tobin's Q (Model 3), all the independent and control variables hold insignificant impact.

Table 8: Regression Analysis for the sub-sample of Manufacturing Sector

	(Model 1) ROA	**(Model 2) ROE**	**(Model 3) TOBINQ**
Debt to Equity Ratio	-0.0013	0.187	0.172
Prob.	*0.66*	*0.00*	*0.0165*
Firm Age	0.0002	0.0051	0.0051
Prob.	*0.316*	*0.007*	*0.417*
Firm Size	-0.0011	-0.145	0.086
Prob.	*0.93*	*0.147*	*0.799*
ROA1	0.62		
Prob.	*0.00*		
ROE1		0.199	
Prob.		*0.003*	
TOBINQ1			0.812
Prob.			*0.00*
R-Squared	0.449	0.445	0.766
Adjusted R-Squared	0.419	0.415	0.753
Observations	155	155	155
F-Statistic	14.90	14.90	59.79
Prob. (F-Statistic)	0.000	0.000	0.000
Cross-section Effects	None	None	None
Period Effects	Fixed	Fixed	Fixed

Regression Analysis of the Manufacturing Sector sample, Table 8, indicates that all models for the three respective dependent variables are significant. The

predictors in Model 1 explain 41.9 per cent of variation in return on assets, while the predictors in Model 2 explain 41.5 per cent of variation in return on equity. As for Model 3, 75.3 per cent of variation in Tobin's q ratio is explained by the predictors, which indicates a very high explanatory power of the model.

The first model shows that ROA for firms in the manufacturing sector is insignificantly affected by the Debt-to-Equity Ratio, age and size of the firms. Return on Equity, from Model 2, however, bears positive impact by the predictor variable, D/E Ratio, with every one percent increase in the Debt Ratio causing 18.7 per cent increase in ROE. The age of the firm also positively influences ROE. When the manufacturing firm grows old by one year, ROE tends to increase by 0.51 per cent. There is no change in ROE of the firm as an impact of its size. Considering the ratio of Tobin's Q (Model 3), D/E Ratio holds significant impact, and for every one percent increase in the Debt Financing ratio, Tobin's Q increases by ratio of 0.172. Contrarily, neither the age nor the size of the manufacturing firm significantly influences Tobin's Q.

On the basis of above results, Hypothesis 1, 3, 4, 8 and 9 are retained, while Hypothesis 2, 5, 6 and 7 stand rejected because the impact is significant.

DISCUSSION

The analysis for our study shows that Debt financing bears its influence on performance of business firms, but only partially. While this influence is significant on the Return on Equity ratio, the other two performance indicators hold no significant impact from the ratio of Debt to Equity. ROE of Pakistani business firms in general improves as financial leverage increases, which is in accordance to the findings of a Brazilian study by Mesquita & Lara (2003), in which short term debt was found to positively impact ROE. This result, however, is in contrast to the study of Nawaz & Ahmad (2017), which accounted for insignificant impact of debt on ROE. The second analysis in our study was carried out on the sub-sample of Pakistani service sector business firms. Under this step, debt financing resulted in negative influence on Return on Assets ratio, while the other performance ratios remained insignificant. Our study confirms the findings of Majumdar & Chhibber (1999), Nawaz & Ahmad (2017) and Muritala (2012), where debt proportion is negatively associated with ROA ratio. As third step of the analysis, the manufacturing sector of business firms was taken into account, where the most impact of debt ratio was evident. Here, the two ratios, Tobin's Q (market based measurement) and ROE (accounting based measurement) both were found to be positively affected by debt

financing. Very less number of studies in the literature have resulted in such a positive association, so our findings point towards a different direction. For instance, the studies of Abor (2005), Harelimana (2017), and Karuma (2018) show this uniformly directed association, while the latest studies on emerging countries show otherwise (e.g. Aziz & Abbas, 2019; Pandey & Sahu, 2019).

In a way, it can be said that agency issue does not seem to exist in our sampled companies. The reason behind this deduction is the comparison of firms' Return on Assets with their Return on Equity ratios. Both the performance indicators flow in the same direction, whether increasing or decreasing, for majority of the firms over the six-year period. This disproves the litmus test of identifying conflict of motive between the principal (maximizing ROE) and the agent (maximizing ROA).

Regarding the control variables employed in all of our models, neither size of the firm nor the age held any significance in altering its performance. The reason behind this result could be that the firms in our sample were all majorly large sized with respect to total assets, also there was not much variation in years since the companies were incorporated and they were more or less of similar ages. Irrespective of the cause of this insignificance, our results are in contrast to the findings of Richard, Barnett, Dwyer, & Chadwick (2004), Pervan & Višić (2012), and Smith, Smith, & Verner (2006). Richard et al. (2004) explain for a positive association between firm size and performance, while Pervan & Višić (2012)'s study concluded for a significant but differing direction in this regard. The study by Smith et al. (2006) shows negative impact of a firm's age on its performance due to varied reasons of bureaucracy, slackness, maturity, etc.

CONCLUSION

This study is based on the impact of capital structure of firms with regard to the level of financing through debt, on their financial performance. Debt financing holds both its costs and benefits, majorly in terms of financial distress and tax saving respectively. Modigliani and Miller's (1958) capital structure irrelevancy paper has led to much attention of researchers towards the market value of a firm as affected by its capital structure choice in real world scenario. The goal of the firms is to maximize shareholder wealth and obtain high prestige in the market, in order to attract investors and creditors by building confidence in them. Therefore, it is of utmost importance to look at how financing decisions of a firm affect its performance indicators, so that maximum profitability can be achieved through an optimal capital structure.

The sample taken into account for conducting the study is comprised of balanced panel data, with 50 cross sections that are Pakistani firms in the business industry, further divided into the service and manufacturing sectors, and 6 annual periods that are from year 2013 to 2018. Performance of the firms is gauged through the variables of Return on Assets, Return on Equity and Tobin's Q ratio (dependent variables), while Debt to Equity ratio (independent variable) is used as proxy for debt financing. Control variables of firm age, firm size in terms of net assets criterion, and one-year lagged values of the dependent variables are also used to eliminate probable influences from these sources on the predictor-outcome variable impact. For analysis of the data, fixed period effects regression is used, and separate models are developed for each of the three firm performance indicators, under the total industry sample and two sub-samples of different sectors respectively.

The analysis shows that the Debt to Equity ratio has significant positive impact on ROE, but not ROA or Tobin's Q with regard to the business industry as a whole. As for the service sector, D/E Ratio has significant negative impact on ROA, but insignificant impact on the other two variables. Lastly, ROE and Tobin's Q ratio are significantly and positively affected by D/E Ratio of a firm in the manufacturing sector, however ROA bears no significant effect from the debt financing ratio. All in all, the manufacturing sector is more successful in terms of firm performance and contributes a substantial success factor to the whole business industry of Pakistan, and since the values for its performance ratios are reasonably affected by the level of debt it holds in the capital structure, debt financing is deemed to be beneficial for the company in value creation.

RECOMMENDATIONS

The recommendations drawn from the results of this paper are majorly for corporate boards of firms. Firstly, increment in the level of debt in capital structure would serve as an alternative to agency costs, called as "protective covenants". Because creditors would be the recipients of extra earnings by firms, managers would not be able to exploit finances. Secondly, having a greater debt to equity proportion would result in tax saving for firms due to additional expense of paying interest to creditors, therefore firms should take maximum advantage of this facility. As regards Pakistan, the facility of obtaining debt financing is very cheap and commonly available nowadays and is extended by various governmental and private organizations on easy terms.

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