

## THE EFFECT OF PROFITABILITY ON FIRM VALUE WITH MEDIATING ROLE OF CAPITAL STRUCTURE

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### ABSTRACT

*The purpose of this study is to check the effect of Profitability on Firm Value with the mediating role of capital structure in non-financial firms listed in Pakistan Stock Exchange (PSX). For the purpose 29 listed companies from the sugar industry were selected for a period of six years from 2014 to 2019 with 174 observations. Profitability proxy by Return on Assets (ROA) was used as independent variable. Firm's value proxy by market price per share to book price per share (PBV) as dependent variable and similarly, capital structure proxy by long term debt to total equity ratio (DER), as intervening variable were used in the study. Panel Data techniques has employed to foresee the significant relationship among the variables using Hyes Process Macro Method 4 in SPSS for mediation. Results showed that profitability has a positive significant effect on the firm values whereas negative significant effect on capital structure. The capital structure have the positive significant effect on firm values using profitability as controlling variable. The profitability also has positive significant effect on the firm values using capital structure as control variable. Therefore, the profitability have a positive and significant effect on the profitability with a significant mediating role of capital structure and the conducted study concluded the partial mediation effect.*

**Keywords:** Profitability, Capital Structure, Sugar Industry, Firm Value, Pakistan Stock Exchange.

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## **INTRODUCTION**

### **Firm Value**

The purpose of the corporations besides earning the profit is maximizing the value of the firm. The formation of any company is not separated from the purpose to create its value for the owners namely maximizing shareholder's wealth (Ahmad et al., 2018). The maximizing the value is based on the theory of the firm (Jensen & Meckling, 1976) that is a asymmetry information between the insiders and the outsiders. The insiders that is the managers of the corporation have a greater information as compared to the outside parties. The positive information must be shared to the outside market investors so that it encourage the confidence of the investors that results in creating the firm value. Right decisions by the financial managers should be made in value creation with the firm performance. A company with the good performance and good corporate value leads to prosperity of the shareholders. The value of the firm can be reflected by the price of the company's owned shares. Brigham & Houston (2014), explored that higher the stock price, higher will be the firm value. Stock price and firm value are directly proportionate to each other. Higher the stock price, higher would be the firm value, and higher the firm value leads to higher the shareholder's wealth. Salvator, (2005) explained that the primary goal of companies that have gone public is to increase the company's value which significantly reflect the company's performance. This prosperity is an ultimate goal of the financial managers achieved by maximizing the present value of current benefits obtained in the future. The extent of the prosperity of the shareholders can be observed by the price of the stock in the market. The higher the stock price, greater the value, greater the shareholder prosperity because the company has the good performance and has prospects in the future.

Many investors drive high demand of stock price that reflects an increase in the firm value. The higher the company value ratio, the more prosperous the owners (Arsyad et al., 2021). Firm value is the main aspect that an investor must see before going to invest the funds in any company as said by (Chabachib et al.,2019). One factor that is considered before going to invest the funds in the capital is the existence of high return. To explore such information, there is a need for the investor for stock valuation.

The firm value can be determined by using one of the financial ratio that is the price to book value (PBV), (Brigham & Houston, 2012). Higher the PBV ratio, greater the value creation for shareholders and also share the signal in the market of the company's prospects (Warsono & Zoebaedi, 2019). Several other studies also used PBV for determining the firm value as proxy such as (Ohlson, 2001; Shittu et al., 2016; Ahmadi, 2017; Cahyaningrum & Antikasari, 2017; Khairiyani, 2018; Khairiyani et al., 2019). This proxy ratio allow the investors to determine the stock price attached with the facts of the firm's fundamental or financial performance as well as the over or under valued of the price (Eliza, 2013; Pascayanti et al., 2017).

## **Capital Structure**

Capital structure is the composition of debt and the equity used by any corporation. This is the composition through which finances to the corporations. The decision for such a composition is a challenging and hard for the companies and an important topic for the accounting and finance scholars. The overall purpose of the companies is to minimizing the cost of capital and maximizing the value of the firm. The companies maintain the balances in composition to the capital structure necessary to earning the returns because it attached to the level of the risk of return. If inadequate balance is as the more debt than the equity results to disturbance of to the cash flow in the company. On the other hand equity holder desire to gain high rate of return to compensate this risk. So there is no single and ultimate way for the composition of the capital structure that adequately give the appropriate results.

Every firm has its own composition of the capital structure based on their own requirements. For the most the policy for the composition of capital structure depends on firm size, ownership structure, earning growth, various costs and the liquidity position of the firms (Faruk and Ayub, 2012). Pandey (2009) pointed that the capital structure based on the decisions that how the firms finances it. The combination of capital structure is the proportion of long term financing as depicted by debt, preferred stock and the common stock (Horne & Wachowicz 2012). Capital structure considered the most important because in the running business it is inseparable from the funds that affect the survival of the business and the returns obtained by the business.

In developing countries like Pakistan, the benefits of the optimum debt equity composition of the firms depend on the financial managers that are engaged in the management of the financial issues of the companies. Determinants of capital structure are mainly short term debt to capital ratio, long term debt to capital ratio and total debt to capital ratio (Muhammad, Ammar and Muhammad, 2013).

## **Profitability**

Profitability is the output generated by the company as a result by the business activities. The technicality of the company to use its assets efficiently to generate its profit is called profitability ratio. There are several factors that influences to the firm value and out of which the profitability is the one as reported by Haugen & Baker (1996). Yang et al., 2010 pointed out that high profitability leads to greater the income and this income is distributed among the shareholders and such shareholders expect to increase the firm value. It was explored by Weston & Copeland (2008) that high profitability reflects the company's ability to generate high return for the shareholders and which leads to a better company's performance increases its value.

Return on Assets (ROA) is a proxy used to measure the profitability of a firm as reported by Keown et al., 2014. The ratio of ROA have the ability measure the capacity of a firm to compute net profit from its assets and to evaluate its investment on its return. In this study return on assets (ROA) is used as a measure of the profitability which is the comparison value of the company's profit obtained by the assets owned. The company's effectiveness of empowering the assets to produce company's maximum profits.

## **Research Objective**

The objective of this research study is to check the effect of profitability on the firm value with the mediating role of capital structure on the non-financial firms selecting the sugar industry listed in the Pakistan stock exchange for the period of 6 years from 2014 to 2019 in the developing country Pakistan.

## **Research Question**

The study explore the research question as what is the effect of Profitability on Firm Value with mediating role of Capital Structure? In order to search the answer of this question following five statements were developed.

- How does firm value effect by total profitability?
- Is direct effect of profitability on capital structure?
- Is capital structure has direct effect on the value of the firm with controlling the profitability?
- Is profitability has the direct effect on the value of the firm with controlling the capital structure?

After discussing the above four problems the study moves to fifth problem which is the core question of this research study that is.

- The effect of profitability on the value of firm through the use of capital structure as a mediating?

## **Literature Review**

### **Theoretical Construct**

There is no universal theory in the literature of the debt equity choice. There are several conditional theories. Some of the several capital structure theories explored the relationship among the firm's capital structure, firm's profitability and the firm's value. On the base of these theories and the literature, this study empirically investigates the relationship among these variables. Most important and effective theories supported to this study are such as Agency Theory, Modigliani and Miller's capital structure, Signaling Theory and Trade Off Theory.

MM theory stated by Modigliani and Miller (1958), ranked as a foundational theory on this issue. This theory created in 1958 pointed out that the value of a firm is not effected by combination of its capital structure. Particularly, firm value is determined by its assets and not the combination of debt equity proportions. However this theory is based on some unreal to this world assumptions of market perfection. The critical assumptions are such as no bankruptcy, no taxes and no transaction costs exist; symmetric information available to all investors; value enhancement and maximization is a common targeted goal among analyst; investor's lending and borrowing are at the same interest rate and they have homogeneous expectations about the firm's profits; and firms operating with similar conditions have the same risk level.

In the era of corporate taxes and cost of capital, it has been proved that there are benefits offered to using debt from tax saving for which the term tax shield is used due to the

nature of tax-deductibility of interest payments. Interest on debt as expense is deducted before the tax calculation which leads to an increase in the firm value.

The other three theories- trade off theory, pecking order theory and the agency theory considered for imperfection in alternative to MM theory.

Trade-off theory (Kraus and Litzenberger, 1973; Myers, 1984) pointed out that a firm will trade off costs and benefits of debt to maximize firm value. The benefit of debt enjoyed from the tax shield of reducing income through paying interest (Miller and Modigliani, 1963). The cost of debt is derived from direct and indirect bankruptcy costs through the increase in financial risk (Kim, 1978; Kraus and Litzenberger, 1973). There is a conflict among the theories explaining the best capital structure. This leads to the development of more moderate concept –tradeoff theory. This theory explains how a company determine its capital structure as optimal in composition to its equity and external financing (Myres & Majluf, 1984). Trade-off theory as reported by Brealey et al., 2011 trade off and balance the relationships among capital structure, firm value associated with taxes, risk, and proportion of debt taken by decision by the management. As per this theory it is possible to determine the optimal capital structure by balancing the tax saving benefits and bankruptcy cost for the use of debt. In case of leverage, the firm has the benefits of tax shield. On the other hand the cost of leverage in the form of financial distress and agency cost is also considered in an imperfect capital market (Keowen et al., 2014).

The pecking order theory (Myers and Majluf, 1984; Ross, 1977) explored that financing pattern of any firm follows hierarchy for the financing that is at priority the internal resources are used than move to external resources of financing. The hierarchy followed that at first retained earning if any are available are used that debt than financing through preferred stock and at the end financing through equity when no more option for debt is approached. The pecking order theory is contrary to the opinions of Modigliani and Miller (1963) and the Jensen (1986) agency theory as well with reference to the importance of debt in the capital structure. It shows as a bad news that due to asymmetry information and the interpretation, there is a problem between the management and the investors. Myers (1984) pointed out that the profitable firms have abundant internal funds resources which leads to low level of debt. Therefore, it is explored that there is no optimal capital structure in pecking order theory (Smart et al., 2004).

Agency theory, developed by Jensen and Meckling (1976), Jensen (1986) and Hart and Moore (1994), opposes that an optimal capital structure to maximize firm value must be the one which reduces conflicts of interest among stakeholders. It explained that it is accessible to control the use of free cash by the authority through the use of debt in order to avoid wasted investment. This practice to assume the use of debt make the administration more vigilant and active due to its ability to surge the risk of insolvency (Jensen, 1986). Moreover, this theory suggested that there should be larger the proportion of the debt in the capital structure design in order to take control by the management to behave opportunistically. Therefore arguments from the Jensen on agency theory shows that the larger use of debt leads to the ability to increase the value of the firm.

Several empirical studies on the relationship between the profitability, capital structure and the firm value. Chen and Chen (2011) empirically tested the relationship between the

profitability, firm value, and the capital structure. The tested results concluded that profitability effects firm value directly and indirectly through the use of capital structure as playing the mediating role. The same results were also pointed out by Hermuningsih, 2012; Thaib & Dewantoro, 2017; Zuhroh, 2019.

### Hypothesis Development

The study led to the formulation of the following hypothesis.

- H1: Profitability has significant impact on Firm Value
- H2: Profitability has significant impact on Capital Structure
- H3: Capital Structure has significant impact on Firm Value
- H4: Profitability significantly affects the value of the firm with the use of capital structure as a mediating.

### Methodology

The study analyzed with the statistical analysis using the SPSS with secondary data of non-financial firms (sugar industry) listed in the Pakistan stock exchange. This is a descriptive research shepherded for the purpose to test the hypothesis established through a particular theory to support these hypothesis. And similarly to support the theory and hypothesis developed by several research studies, the analysis was conducted with the objective to foresee and analyze the direct and indirect effect of the profitability on firm value through capital structure as intervening.

The population of this study was non-financial firms listed in the PSX (Pakistan Stock Exchange). For the purpose sample is selected the sugar industry for a period of six years from 2014 to 2019. The purposive sampling technique was used to select the sample. 31 companies of the sugar industry were listed in the PSX. For the selected time span of six years from 2014 to 2019, 29 companies were selected with the complete financial statement fulfilling the study requirement for the six year period from 2014-2019 with 174 observations. Two firms were delisted from the study due to data incomplete and not fulfilling the study requirement.

The study used the capital structure as an intervening variable in constructing the relationship between the profitability and the firm value. Following is the table showing the variables used in the study with explaining their symbols and measures.

**Table 1**

**Dependent, Independent, and Intervening Variables with their measurements**

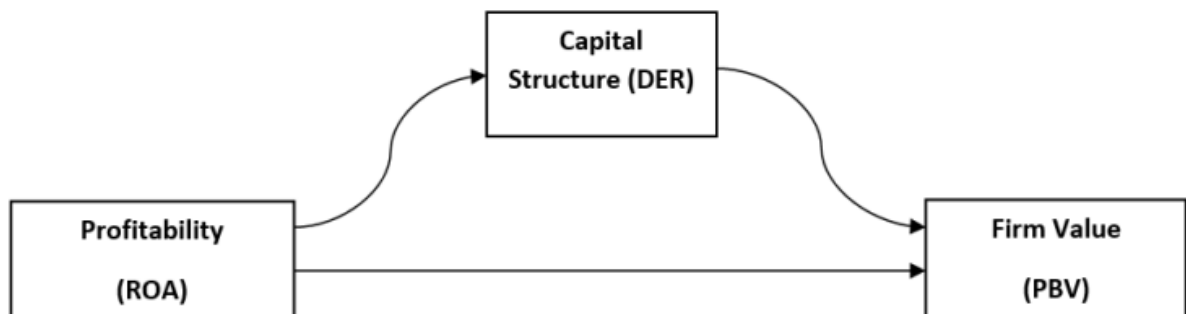
SR NO	VARIABLES		SYMBOLS	MEASUREMENT	REFERENCES
1	Dependent Variable	Firm Value	MBV	Market Value per share to Book Value per share	Brigham & Houston, 2012 Ohlson, 2001; Shittu et al., 2016; Ahmadi, 2017;

<b>C o n c e p t u a l 3 F</b>	Independent Variable	Profitability	ROA	Net Income / Total Assets	Cahyaningrum & Antikasari, 2017; Khairiyani, 2018; Khairiyani et al., 2019; Mubyarto, 2019; Mubyarto & Khairiyani, 2019
	Intervening/ Mediating Variable	Capital Structure	DER	Debt / Equity	Keown et al., 2014
					Soukotta & Chabachib, (2012)

**framework**

Following is the conceptual framework showing the direct and indirect path of profitability towards firm value. The profitability directly influence the firm value and indirectly through the capital structure that act as intervening variable. This conceptual framework was developed by Chen & Chen (2011).

**Fig.1**



The panel data construction in the analysis for every firm included in the study used the proxies such as Price to Book value (PBV) for firm valuation, Return on assets (ROA) for profitability, and Debt to Equity ratio (DER) for as a proxy for capital structure. The economics equations used in the analysis as:

$$PBV_{it} = \alpha + \beta_1 ROA_{it} + \varepsilon \dots\dots\dots (1)$$

$$DER_{it} = \alpha + \beta_2 ROA_{it} + \varepsilon \dots\dots\dots (2)$$

$$PBV_{it} = \alpha + \beta_3 ROA_{it} + \beta_4 DER_{it} + \varepsilon \dots\dots\dots (3)$$

There are two methods to conduct the mediation analysis using the SPSS.

- Baron and Keny Method-traditional method
- Hayes Process Macro-Model 4 method

The most recent method is 2<sup>nd</sup> method. Therefore the second method that is Hyes Process Macro method being used in this study which showed the following results.

## Results and Discussion

### Descriptive Statistics

The descriptive statistics analysis shows the nature of the data about all the variables selected in the sample study. The average mean value of ROA is 0.7714 with a minimum of -17.28 and a maximum value of 18.83. Such values minimum and maximum indicate generous variations in the valuation of performance of the selected firms. The mean value of capital structure showing the proportion of debt to equity ratio. The average mean of the firm value is 0.7182 with a minimum of -2.36 and maximum of 3.80 value. 174 are the observation for each variable. Table 2 shows minimum values, maximum values, average mean, and the standard deviation values of every variable.

**Table 2: Descriptive Statistics**

	N	Range	Minimu m	Maximu m	Mean	Std. Deviation
ROA	174	36.11	-17.28	18.83	.7714	6.96305
DER	174	60.84	-29.40	31.44	1.0134	11.72801
PBV	174	6.16	-2.36	3.80	.7182	1.18886
Valid N (listwise)	174					

### Correlation Matrix

The following table 3 indicates the correlation analysis of the variables taken in the sample to ensure no significant issues with the multicollinearity test. The table shows that there is no high correlation among the predictors therefore no issue of multicollinearity exists.

**Table 3: Correlations**

	ROA	DER	PBV
ROA Pearson Correlation	1		
ROA Sig. (2-tailed)			
ROA N	174		
DER Pearson Correlation	-.214**	1	
DER Sig. (2-tailed)	.005		
DER N	174	174	
PBV Pearson Correlation	.471**	.365**	1
PBV Sig. (2-tailed)	.000	.000	
PBV N	174	174	174

\*\* . Correlation is significant at the 0.01 level (2-tailed).



## Data Normality

Table 4 shows the normality output of the sample variables included in the study. The output table shows the insignificant values of the Kolmogorov-Smirnov and Shapiro-Wilk test. It means the data fulfill the normality assumption of the analysis.

**Table 4**  
**Tests of Normality**

	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
	Statistic	Df	Sig.	Statistic	Df	Sig.
ROA	.012	174	.199*	.999	174	.9900
PBV	.012	174	.200*	.999	174	1.000
DER	.010	174	.197*	.999	174	.9800

\*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

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## Regression Analysis

The following table 5 shows the results of the analysis using Hyes Process Macro method 4 with the help of SPSS,26. The tool process macro is not build in in SPSS but it is added by an installation procedure. The table shows two model summary as there are two outcomes included in the study-firm value and capital structure. After that, table showed the total effect, direct effect and indirect effect of the independent variable to the dependent variable which is explained in detail as under.

**Table 5**  
**Hyes Process Macro Model 4 Method**

Model : 4  
Y : PBV\_Norm  
X : ROA\_Norm  
M : DER\_Norm  
Sample Size : 174

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**OUTCOME VARIABLE:**

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DER\_Norm

**Model Summary**

	R	R-Sq	MSE	F	Df1	Df2	P
	.2138	.0457	132.0199	8.2418	1.0000	172.0000	.0046

**Model**

	Coeff	se	T	p	LLCI	ULCI
Constant	1.2912	.8764	1.4733	.1425	-.4387	3.0212
ROA_Norm	-.3602	.1255	-2.8709	.0046	-.6078	-.1125

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**OUTCOME VARIABLE:**

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PBV\_Norm

**Model Summary**

	R	R-Sq	MSE	F	Df1	Df2	P
	.6704	.4494	.7873	69.7785	2.0000	171.0000	.0000

**Model**

	Coeff	se	T	P	LLCI	ULCI
Constant	.5923	.0681	8.6960	.0000	.4578	.7267
ROA_Norm	.0982	.0099	9.9032	.0000	.0786	.1178
DER_Norm	.0495	.0059	8.4095	.0000	.0379	.0611

**Total Effect Model**

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**OUTCOME VARIABLE:**

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PBV\_Norm

**Model Summary**

	R	R-Sq	MSE	F	Df1	Df2	P
	.4708	.2217	1.1065	48.9829	1.0000	172.0000	.0000

**Model**

	coeff	se	T	P	LLCI	ULCI
Constant	.6562	.0802	8.1786	.0000	.4978	.8146
ROA_Norm	.0804	.0115	6.9988	.0000	.0577	.1031

**Total, Direct, and Indirect Effect of X on Y****Total effect of X on Y**

	Effect	se	T	P	LLCI	ULCI
	.0804	.0115	6.9988	.0000	.0577	.1031

**Direct effect of X on Y**

	Effect	se	T	P	LLCI	ULCI
	.0982	.0099	9.9032	.0000	.0786	.1178

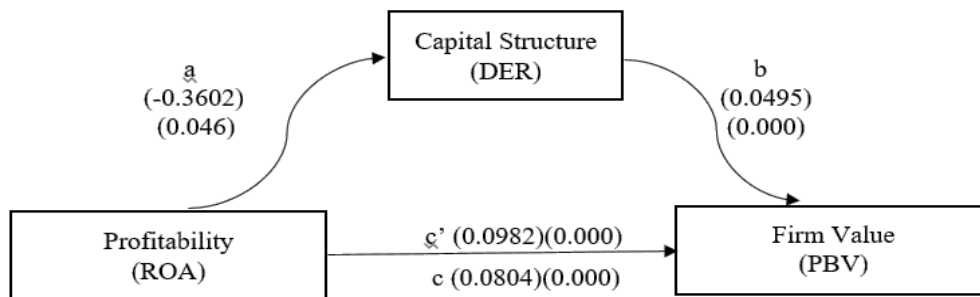
**Indirect effect(s) of X on Y:**

	Effect	BootSE	BootLLCI	BootULCI
DER_Norm	-.0178	.0077	-.0325	-.0025

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The table 5 shows that Y is the dependent variable, X is the independent variable and M is the mediating variable. The model 4 is selected for the mediation in the Hyes Process of mediation analysis. The sample size 174 shows the number of observations included in the study. The model summary provides the summary of the model with R, R-square, F statistics and the P value of the overall model. Next is the coefficient with the impact of profitability on the capital structure. This impact is significant as the p value is less than 0.05. This model is represented by path a as shown in the figure. Results shows that R-square is 0.0457 which explains that only 4.57 percent change in capital structure is being accounted by profitability. As this path is significant so there will be a mediation effect in the study. This is a clue for the study to go ahead.

**Fig. 2**



Conceptual Framework with Values

The other outcome variable in the model is the firm value. This variable is influenced by capital structure and the profitability. The profitability has a significant impact on firm value. This is the direct effect of profitability on the firm value as this is in the presence of mediator variable. So when the effect is in the presence of mediator it is considered the direct effect. So this is the case that the direct effect is the significant with the p value 0.000 and there is no involvement of zero in between the lower and upper level of confidence intervals and the t-statistics is greater than 1.96. Overall this model is significant and R-square shows that there is 44.94 percent change in firm value is accounted by profitability and the capital structure.

Capital structure also has a significant impact on the firm value as the p value is less than 0.05 the t-statistics is greater than 1.96 value. There is no inclusion of zero in between the values of lower and upper level of confidence intervals.

Therefore the direct effect is from profitability to firm vale and indirect effect is from profitability to capital structure than capital structure to firm value. That is

Indirect effect = coefficient of path a X coefficient of path b

Direct effect = coefficient of c`

Total effect = coefficient of c

= c` + a \* b

Path a : Profitability → Capital Structure

Path b : Capital Structure → Firm Value

Path c' : Profitability → Capital structure → Firm Value

Path c : Profitability → Firm Value

The following table shows the summary of the results of direct and total effect of the profitability on capital structure and firm value for better understanding.

**Table 6**

**Summary of the Results of Direct and Total Effects**

	Coeff	s.e	T	Sig
b(YX)	0.0804	0.0115	6.9988	0.0000
b(MX)	-0.3602	0.1255	-2.8709	0.0046
b(YM.X)	0.0495	0.0059	8.4095	0.0000
b(YX.M)	0.0982	0.0099	9.9032	0.0000

**Total effect of Profitability on Firm Value**

Results from the table 6 shows that the analysis of the study shows the coefficient value b for (YX) is 0.0804 at a significant level of 0.000 which is lower than 0.05 and this shows that profitability has a positive and significant effect on the firm value. It means that 1 percent increase in the profitability produces a 8.04 percent increase in the firm value. This shows that sugar industry in Pakistan on average are profitable and have a positive effect on firm value. It also shows that the sugar industry are able to manage their assets to generate the profits and this is in line with the provision of signaling theory that the information signal provided to show the increase in the profitability and reflect in the value of the return on assets that is a good signal for the investors. Further this positive increasing ROA effect give the signal to the investors that encourage to invest their investment through securities and stocks.

Sujoko & Soebiantoro (2007), explored that high opportunity indicates good prospects for a company and to these signals the investors respond positively that resultant to increase in the firm` value. These results also supported by the previous studies such as Chen & Chen, 2011; Haugen & Baker, 1996; Lopez Iturriaga & Rodríguez Sanz, 2001; Sabrin et al., 2016; Safitri et al., 2014; Sucuahi & Cambarihan, 2016; Tui et al., 2017; Weston & Copeland, 2008; Yang et al., 2010. These results pointed out that greater the company's profitability generates the more revenue that are distributed to the shareholders and for the business expansion that leads to higher expectation of the firm value.

**Direct effect of Profitability (ROA) on Capital Structure (DER)**

Table 6 shows the results that in the direct effect of profitability on the capital structure, the b coefficient value (MX) is -0.3602 at a significant value of 0.0046 which is less than p value i.e 0.05. This proves that there is a negative and significant direct effect of the profitability (independent variable) on the capital structure (mediating variable). It means that 1 percent increase in the profitability reduces the 36.02 percent portion of the debt in

its capital structure. Therefore it is concluded that to generate more profit it is compulsory to reduce the portion of the debt in the combination of capital structure. These finding shows that the formation of the capital structure design of the sugar industry in the Pakistan is not optimal for leverage for the study span. These results are in the opposite to the Mayer (1984) pecking order theory which states that high level of profitability actually have low debt due to the availability of abundant internal sources of funds. As there are two kinds of funds-internal and external. And the pecking order theory give the ranking from internal to external sources.

The theory explain the more use of retained earnings than to debt and further it proves less use of debt when there is more profit especially with internal equity derived from retained earnings.

Therefore, sugar industry in Pakistan averagely tend to formulate policies to reduce the composition of debt in capital structure in line with an increase in the profitability during study span. The management mostly focus their efforts towards utilizing the internal sources of funding such as retained earnings for sustaining and expansion of the business.

#### **Direct effect of Capital Structure (DER) on Firm Value (PBV) when controlled by Profitability (ROA)**

The table 6 shows the b coefficient (YM.X) value 0.0495 and the significant value 0.0000 which is less than p value 0.05. This proves that the direct effect of capital structure on firm value is positive and significant when controlled by profitability. It means an increase in amount of 1 percent debt in capital structure increases the 4.95 percent in firm value. The management policy has to focus that the positive response of firm value to an increase in the debt portion of capital structure is inseparable from the profitability control level. Therefore the policies and decision towards optimal capital structure are supported in line with the trade-off theory from Myers & Majluf (1984) based on the well define and well developed financial markets.

This study also supported by previously conducted several studies such as Anton, 2016; Cheng & Tzeng, 2011; Putri & Ukhriyawati, 2016. These studies have the same results of positive and significant effect of capital structure on the firm value. Further, Welley & Untu, (2015) pointed out that the additional debt is also used as tool to control the free cash by the decision maker in certain circumstances and this further shows the important role of leverage in increasing the firm value. Meidiawati & Mildawati, (2016) explored that an increase in the control of funds leads to maximizing the productivity and performance of a company which strengthen the firm value through an increase in stock market price.

#### **Direct effect of Profitability (ROA) on Firm Value (PBV) when controlled by Capital Structure (DER)**

The direct effect of profitability on firm value when controlled by capital structure shows the results that the b coefficient (YX.M) value is 0.0982 at a significant level of 0.000. This proves that there is a positive and significant effect of the profitability on the firm value when controlled by capital structure. This means that an increase in 1 percent change in profitability accounted for an increases 9.82 percent in the firm value. It reflects the ability of sugar industry that the fixed profit is a necessary condition to

increase firm value with the debt proportion as much needed to strength the relationship between profitability and the firm value.

This result is in line with the signaling theory that the firm report of performance by an increase of profitability by return on assets give the good signal in the market to the investors. These signals built the image of trust among the investors. These results indicate two aspects of the decision policy which generate the ability of profitability and the debt management to fulfil the corporate needs.

These results are supported by previous several studies such as Chen & Chen, 2011; Haugen & Baker, 1996; Lopez-Iturriaga & Rodríguez-Sanz, 2001; Sabrin et al., 2016; Safitri et al., 2014; Sucuahi & Cambarihan, 2016; Tui et al., 2017; Weston & Copeland, 2008). These results shows that greater the profitability leads to grater the income which are distributed among the shareholders and the business expansion of its retained earning part which subsequently increase the firm value. It also guide effectively the sugar industry decision makers in Pakistan to manage company’s assets efficiently to increase profit level.

**Indirect effect of profitability on firm value using capital structure as mediating variable**

Now to check the indirect effect the there is a significant impact as there is no involvement of zero in between the lower level and the upper level of confidence interval. The indirect effect value is -0.0178 and this negative effect is due to the mediation by the capital structure as shown in table 5. So this shows that there is a mediating effect of the capital structure of profitability on firm value. The results implemented in line with Myers (1984) pecking order theory which revealed that greater profit leads to less likelihood of using debt in capital proportion caused by the availability of internal equity from retained earnings.

Now to ensure whether there is a partial or full mediation. To test this have a one look on the impact of profitability on firm value in indirect case. As it has the significant impact that means in the presence of mediator the profitability also has some directly influence on firm value in addition to mediator. So this conclude that there is partially mediation effect in the study.

**Conclusion**

This study assess the role of capital structure on the relationship between the profitability and the firm value. The table shows the overall required results of the analysis.

**Table 7**

**Summary of the Results of Mediation**

Relationship	Total Effect	Direct Effect	Indirect Effect	Confidence Interval		Conclusion
				Lower Bound	Upper	
Profitability → Capital Structure → Firm Value	0.0804 (0.000)	0.0982 (0.000)	-0.0178	-0.0325	-0.0025	Partial Mediation

From the above table 7, results revealed a significant indirect effect of impact of profitability on firm value. Furthermore, the direct effect of profitability in presence of capital structure as mediator also found significant. Hence capital structure partially mediate the effect of profitability on firm value with competitive mediation as shown by the mediation analysis summary in the table.

The results of the study concluded that the profitability is directly able to increase the firm value. Whereas it is found that the debt has a negative effect. It means that it is the policy of the management to reduce the portion of the debt in the capital structure in order to increase the profitability. The company's capital structure policy which does not lead to an optimal capital structure found to be less precise. Therefore it is recommended that the company's ability to generate the profitability should be continuously increased as a necessary to increase the firm value due to possibility of increasing earnings per share through greater profit and ultimately better image to investors.

Further, an effective managerial ability to determine the proportion of debt in the optimal capital structure is a sufficient condition to maintain a positive effect otherwise due to huge amount debt leads to high distress cost and that leads to negative effect. As in the light of trade off theory, designing a capital structure as optimal is crucial to the effort towards increasing firm value. Therefore, it is much important to design a best composition of the proportion of debt and the equity for each capital structure on the profitability and its influence on the firm value. Debt does not always has a negative effect. It might be positive and good when the goal is productive. A professional management of productive debt has capacity to create financial leverage and make the company to enjoy greater in future.

Further it is suggested that the each and every company should publish its financial statements and financial reports for the purpose to give a signal to the market investors in intention towards continuous provision of information about the profitability through return on assets. This will give the signal to investors and has a further positive impact on firm value.

This study was conducted by using only one sector that is sugar and ignoring the other sectors of the non-financial firms. In future the study may be conducted to check the overall effects by considering all the sectors of the non-financial firms. Further this study included only a single intervening variable that can be enhanced by using the effect of multiple mediating variable effects.

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