

The Effects of Capital Structure (CS) and Growth of Firm (GOF) on Firm's value (FV): A Mediation Analysis

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Article Info	Abstract
<p>Article History</p> <p>Received: October 09, 2022</p> <p>Accepted: January 10, 2023</p> <p>Keywords : Firm's Value, Growth Of Firm, Capital Structure, Mediation</p> <p>DOI: 10.5281/zenodo.7521558</p>	<p><i>In today's competitive environment firm's capital structure is very important component in maximizing value of firms. The concept of capital structure was initially raised by Modigliani & Miller (1958), where they explained this term as the mix of deb & equity. Moreover, firm's growth also play a significant role for boosting the value of firm. Growth in firm directs to a certain increase in firm's turnover. This study intend to investigate the mediating effects of growth of firm on the relationship between capital structure and firm's value. The context of this study is 36 manufacturing firms (various sectors) which are listed at Pakistan stock Exchange (PSX) covering the time period from 2015 to 2019. Thus, 36 cross sections and 5 years' time series data included in this study. The hypotheses of this study are formulated following the suggested criteria of Barron & Kenny (1986). Furthermore, the positivist research philosophy has been taken in the study. Using SPSS v25, this study has used inferential statistics like descriptive statistics, correlation analysis and multiple regression analysis. The outcomes of the study revealed that CS has significant and positive relationship with FV listed at PSX, moreover, CS has also significant and positive relationship with GOF, and GOF has significant and positive relationship with FV. Finally, it is found that GOF mediates the relationship between CS and FV among listed manufacturing firms of Pakistan. Hence, financial managers may adjust the CS more frequently by focusing on the GOF. The study implications directs to financial managers and policy makers to adopt the study outcomes in making the optimumdegree of capital structure that emphasize to boost the value of firms.</i></p>

Introduction

In determining the available literature, there is a link between GOF, CS, and FV, where the intervening role of GOF has proved to be an important challenge for experts, researchers and policy makers. In this regard, the studies of Murekefu & Ouma, (2012) and Odongo, Thabang, & Leonard, (2012) have given tremendous attention on the components that help in determining the optimal capital structure. However, a strong gap is found because these studies have unnoticed the effect of GOF on CS and FV particularly among listed firms at PSX. Additionally, this study helps financial managers to develop such financing strategies which ensure the minimal risk and maximum return. Furthermore, FOF is considered and used by the assets transfers in a firm over several time (Gopinath, 2012). Although, these assets have significant status in shaping value of firm. In related studies, GOF has been reported as theoretically. However, this study contributed empirically GOF as mediating variable between CS and FV particularly having the context of listed non-financial firms of Pakistan. In spite of that few studies have been reported which investigated the components that determine significantly the value of firm along with growth in emerging markets. In this connection, Code (2009) revealed that it is not an ordinary or common to compare the firms because they follow diverse financing strategies in maximizing value of business. The outcomes of different studies vary with the nature and type of the each industry. In this manner, one cannot conceptualize a similar strategy in which all firms fall under the same roof. An investigation of Dutch firms stated that a strong growth can be compared to industry-sector risk. For instance, firms related with services sector may not be associated because they have relatively same attributes and characteristics (Audrits, 2004). This study observes a continuous variation in the total proportion of assets during the growth of firm. According to Penrose, (1959) growth can be simply explained as a net increase in the value of assets in a company and it has many factors that influences to appreciate assets' value. Further, the concept of wealth is alternative piece of the GOF, which also increases the FV. Therefore, businesses which have persistent growth directs certain opportunity, in case, if firms maintain their capital structures. An optimum degree of CS will empower the firms to frequently participate in competition and reap the investors' confidence by showing their strong financial position in the market. Moreover, if we see Firm's value, so, it refers to the total value of assets retained by a firm for a definite period, this period most probably should be at least a year (Leighton, 2002). Additional,

there is a robust investment theory which directs to certain achievement of a company associated with the stock prices (Brahm, & Gapinski, 2006). In this connection, Tobin-Q defines the degree of certain fluctuations in the firm's market capitalization. This equation is often used in the estimation of Tobin-Q ratio ($Tobin\ Q = (MVE + BVD) / BVA$). These assets may be measured by following: Assets associated with stock prices, which can be directly or indirectly linked to include certain degree of growth but limiting that growth rate (Penrose, 1959). Firm's effort in maximizing their value by assessing its capital structure. The optimal value is estimated from balance sheet which shows the value of the assets owned by the company in a specific period. Moreover, Modigliani and Miller (1958), Myers and Majlov, (1984) conducted several studies on capital structure, which shows a relevance between firm's value and its capital structure. Capital structure is simply a combination of corporate debt and equity that the firm considers to allocate tools for expanding its business operations that has been the subject of numerous studies in field of corporate finance and other finance related fields. The procedure to use the capital structure is considered to be an important strategy in the settlements of interest conflicts between management and firm's shareholders. Hence, the settlement between these two entities tend to increase the expectations for a better value of firm (Berger & Bonaccorsi, 2006). There are several theories of capital structure, however, pecking order theory (POT) has a central focus on debt financing and its impact on the value of firm. According to Donaldson (1961) and Myers (1984) there may be a negative relationship between DF (debt financing) and FV (Firm's value). There are several evidence which are consistent with capital structure in achieving firm's value, researchers also includes diverse economic factors in determining value of firm (Myers and Majlov, 1984; Tsarnaev, 1998; Rajan & Zingles, 1995; Friend & Hasbro, 1998). Consequently, in order to investigate the common claims made by these researchers, this study touched different economic sectors to give more generalized results.

1. Objectives of the Study

The chief objective of this study was to determine the intervening effect of GOF between CS and FV among the manufacturing firms listed at Pakistan Stock Exchange (PSX). Moreover, this study has followed Barron and Kenny (1986) suggested criteria to proof the mediating effect. Assessing this particular object, the researcher had initially investigated the direct relationship between CS and FV. These objectives have been achieved by observing a panel data of five years (2015 to 2019), the data is being collected from the official websites of firms and the website PSX.

2. Literature Review

There are numerous studies in which a positive relationship between CS, GOF, and FV have been revealed. According to Manson & Roof (2013), there is a significant and positive association between firms size, its debt ratio relating to firms asset size which reflects to growth of firm. Consequently, debt financing reaps the benefit of tax savings. In this regard, when additional debt increases the financial problems like liquidity risk, default risk etc., than, a firm may prefer by taking advantage from tax savings. Thus, the particular tax rate at that time will be considered effective and tend to be positively related with the debt ratio of firm (Fama and French, 2002). According to Pandey (2004) it is very important for firms to take decision regarding capital structure when the questions raised that how to maximize firm's equity mix and firm value. Moreover, Velnampy et al. (2011) conducted a study that observed optimal capital structure as causal effect to firm value. Their study outcomes revealed a significant relationship between equity and debt ratio at their nominal rates. Moreover, they recommended a nominal and efficient use of debt in the corporate capital structure may achieve the firm's value at its maximum level. Thus, it is mandatory for firms to have sufficient resources that lead a firm to its growth level. It is believed that a nominal growth is necessary for firm to survive in the market. On the other hand, firms face several financial constraints in collection of the funds. Therefore, financial managers of firms try to make a suitable balance in giving benefits to the provider of these resources (Debt holder and shareholder) and reaping benefits for user of these resource (firms). Debt holders expect a suitable market interest rates and shareholders demand capital gains (in terms of share price) and dividends (Zuniker, 2014). Moreover, in all of this scenario rate on which managers and stakeholders expect possible growth depends essentially on firm's capital structure (Zuniker, 2014).

Consequently, financial managers need to give concentration on improving the target capital structure, as trade of theory (TOT) suggests a certain relationship of tax shield and debt ratio to achieve a target capital structure. According to Litzenberger (1973) the use of debt is further reinforced by the agency's theory, where it is explained that TOT as an efficient approach for corporations to reach on their optimal capital structure. Moreover, it is explained that TOT suitably chooses the degree on which debt and equity funds can be selected optimally and it maintains once again a balance between tax benefits and expenses. Ultimately, this equilibrium tend to increase the firm's value. Further, it is highlighted that this equilibrium sets a balance between tax benefits on certain use of debt and its degree of risk in terms of bankruptcy costs. Furthermore, a renowned study had focused on the effects of bankruptcy cost on firm's value (Graham, 2003). Additionally, he in his study referred that the financial sufferings (bankruptcy cost) is often considered as a dead weight that is imposed

from one shareholder to another in that period. According to Huan and Seibert (1988) this occurrence of bankruptcy cost is debatable due to variations in the nature of firms operations. Furthermore, it is observed that any form of bankruptcy cost should take on an explicit analytical status, which is reflected as a significant and dynamic component when it comes to the decision of financing for firms. Cabit, et al., 2011 (2011) examined that such particular usage of loans as a firm's financing leads to some conflicts of interest between agents and owners (shareholders), consequently, this type of conflicts further increases the degree of insolvency and financial distress that firms face in the market. However, debt financing increase rapid growth in firm's tangibility which leads to growth in firms ongoing operations. Thus, better the firm's operations builds more trust and confidence for shareholder which increase the wealth of shareholders because of positive speculation. This study has applied the TOT and POT in the context of Pakistan as it is seemed that debt equity ratio is positively related to firms. Therefore, it is likely for the firms to seek financial transactions from the capital market to finance their business operations as divergent in focusing short-term debt and bank over drafts (Cabit, et al., 2011). Moreover, according to Simbeswim & Isle (2013) a good financial environment is necessary for firms that determines how well a firm can perform. Furthermore, they revealed a positive and significant relationship between GOF and capital structure. Simultaneously, they elucidated that how a good financial environment allows firms in the use of external sources to finance their new and innovative business projects. Some related studies were also conducted by (Booth, Evazazin, Kant, & Maksimovich, 2001). The study of Abor (2005) investigated the effect of debt financing policy on the financial performance medium scale businesses, the outcomes showed that short-term debt has a negative relationships with financial performance. Furthermore, Simbesam and Isle (2013) advocated that, in the process to determine firm's growth the indicators like leverage, volume of capital mix, and liquidity are the considered as most important indicators in determining the growth of firm. Saleem and Yadav (2012) investigated significant and positive relationship between capital structures and value of firm.

3. Methodology

According to Yen (1994) research design is a methodical procedure that combines data to allow the exploration of research questions so as to draw conclusions based on available data (Yen, 1994). The study has adopted causal design as it investigates the causal relationships between the variables (CS, GOF, and FV).

4.1. Source of data

A secondary data source of the study has been used in this study. The data is collected from the official websites of firms and the website of PSX. This study includes panel data analysis, as it belongs to several cross sections and a time series of five years (2015-2019).

4.2. Sample size

This study has used purposive sampling technique, there are several economic sector in Pakistan which are currently giving the output in the country. Those firms have only be taken whose data is available for the selected time series of this study. Moreover, different companies have been selected because this study efforts to give generalized results. The firms whose scale of operation is large are been taken in the study because it covers the large economic interest in the market (Sanders, Lewis, & Thornell, (2007). In this regard, 36 listed manufacturing firms have been selected as the sample size of this study. These firms are listed in PSX.

4.3. Data analysis

This study has used descriptive statistics to summarize and interpret the whole data set. Moreover, this has used step wise multiple regression analysis to determine the direct and mediating effects of study variables. This study intend to investigate the direct relationship between CS \rightarrow FV (as path-c suggested by Barron & Kenny, 1986), CS \rightarrow GOF (as path-a suggested by Barron & Kenny, 1986), GOF \rightarrow FV (as path-b suggested by Barron & Kenny, 1986), and finally the mediating effect of GOF on the relationship between CS and FV. These relationship are investigated among the manufacturing firms which are listed in the Pakistan Stock Exchange (PSX) from 2015 to 2019. Moreover, there are control variables which are also used in this study.

4.4 Study hypothesis

Hypothesis 1 (H1): There is significant and positive relationship between CS and FV.

Hypothesis 2 (H2): There is significant and positive relationship between CS and GOF.

Hypothesis 3 (H3): There is significant and positive relationship between GOF and CS.

Hypothesis 4 (H4): GOF partially mediates on the relationship between CS and FV.

5.Data Analysis and Interpretation

Table 5-1
Descriptive Statistics

Variable	N	Mean	Std. Dev.	Min	Max	SK	KU
TQ (Tobin's Q as firm's Value)	180	2.341	3.136	-0.018	34.157	7.011	71.146
LTDTA (Long term debt to total assets)	180	0.221	0.211	0.000	4.143	3.291	30.013
STDTA (Short term debt to total assets)	180	0.836	2.154	0.000	22.063	7.110	66.710
DERatio (Debt to equity)	180	1.154	2.240	0.000	21.041	7.320	63.319
RE (Retained earnings)	180	-0.117	0.773	-2.122	6.112	4.434	34.166
GOF (Growth of firm)	180	-0.074	0.634	-1.000	6.420	3.714	36.711
RRateInt (Real rate of interest)	180	8.062	2.621	2.740	11.014	-0.668	3.388
RGDP (RealGross domestic product rate)	180	5.013	1.201	3.414	7.120	0.823	3.622
EXR (Exchange rate)	180	0.034	0.055	-0.028	0.121	-0.051	2.341

The above table 5-1 illustrates the outcomes of descriptive statistics. It includes number of observations, mean, std. deviation, minimum, maximum, skewness, and kurtosis as the columns of the table. It should be notice here that this has used Tobin-Q as a parameter to measure firm's value. On the next side, CS is measured through LTDTA and STDTA. Moreover, some control variables were also measured in the study. Table 5-1 shows suitable results for Tobin-Q as measure of FV among the listed PSX manufacturing firms. The results revealed that the mean and std. deviation of 2.34 and 3.13 respectively. Furthermore, TQ shows the SK of 7.01 and KU 71.14. STDTA, LTDTA, debt ratio, and retained earnings are considered as the measures for capital structure both have good mean and std. deviation values. Last but not least, GOF is measured as the rate of growth which has mean value of -.07 and std. deviations shows .63, however, suitable values were seen in the columns of skewness and kurtosis.

Table 5-2
Regression Results Path- C (CS→FV)
Goodness of Fit Results

Variable	R	R ²	Adjusted R ²	B	Sig
CS	.61	.37	.35	.39	.000

DV: "FV"

Table 5-2 shows the regression results for path CS → FV to prove H1. The outcomes revealed that the r^2 has a value of .37 with its p-value less than 0.01 level of significance. Moreover, it is seen that the beta coefficient shows a positive value of .39, which directs to a positive 39% of magnitude that creates an impact on FV. On the basis of these evidences H1 is being retained.

Table 5-3

Regression Results Path- A (CS → GOF)

Variable	R	R ²	Adjusted R ²	B	Sig
CS <i>DV: GOF</i>	.73	.53	.52	.49	.000

Table 5-3 shows once again the outcomes of regression to prove the path-A which is CS → GOF. The results revealed the CS has a positive impact of .49 on GOF with the significance of $p < .01$. Moreover, squared correlation shows .53 or 53 significant change due to the CS. Hence, on the basis of these outcomes, H2 surely be retained.

Table 5-4
Regression Results Path-B and Mediation
GOF → FV
CS → GOF → FV

Variable	R	R ²	Adjusted R ²	B	Sig
Model-1 (Path C)	.61	.37	.35		
CS				.39	.000
Model-2	.73	.53	.52		
CS				.49	.000
GOF(Path B)				.34	.03

DV: FV

Table 5-4 shows the comprehensive results. In the start of the above mentioned table, the results of first model is presented which helps in making comparison to second model. It is observed that Model-1 shows squared correlation of .37 which was statistically significant in its model summery. Moreover, Model-1 shows that CS is positively and significantly related with FV, showing the coefficient of .39 or 39% at < 0.01 level of significance. Furthermore, Model-2 outcomes revealed a positive and significant relationship between CS and GOF, the squared correlation shows .53 or 53% change in the GOF. The beta coefficient for model-2 shows .49 or 49% positive and significant impact on GOF. Lastly, it is seen that in the presence of GOF as a mediator the significance level tend move and ranging towards the significance level of .05, however, in the previous model it was less than .01 level of significance. Thus, it is observed that the significance level didn't become fully insignificant, so, in this case it is considered as partial mediation of GOF on the relationship between CS and FV. Hence, on the basis of these outcomes H3 and H4 stay retained.

5.1 Summary of Study Outcomes

The stern objective of this study was to explore the existence of intervening effect of GOF in between CS and FV, particularly, in the context of manufacturing or non-financial firms which are were listed in PSX. The outcomes of this study in table 5-2 shows the regression results for path CS → FV. The square correlation was seen as .37 with its p-value less than 0.01 level of significance. Moreover, it was examined that the coefficient had a positive value of .39, which refers to a positive 39% impact on FV. Moreover, table 5-3 shows the outcomes of regression for path-A which was CS → GOF. The results revealed the CS had a positive impact of .49 or 49% on GOF with the significance of $p < .01$. Table 5-4 was the last and final table of this study where partial mediation had been examined, it includes the outcomes for Path-C, Path-A, Path-B with mediation. In this regard, table 5-4 had shown the results of first model and observed that squared correlation refers to .37 which was statistically significant. Furthermore, Model-2 outcomes revealed a positive and significant relationship between CS and GOF, the squared correlation shows .53 or 53% change in the GOF. The beta coefficient for model-2 shows .49 or 49% positive and significant impact on GOF. Lastly, it is seen that in the presence of GOF as a mediator the significance level tend move and ranging towards the significance level of .05, however, in the previous model it was less than .01 level of significance. Thus, it is observed that the significance level didn't become fully insignificant, so, in this case it is considered as partial mediation of GOF on the relationship between CS and FV. Meanwhile, on the basis of study outcomes, H1, H2, H3, and H4 had been retained.

6. Conclusion & Recommendations

This study had observed key variables of corporate finance. This study had taken capital structure (CS) as independent variable, growth of firm (GOF) as mediating variable, and Firm's value (FV) as outcome/dependent variable. This study has observed the non-financial sector of PSX. The research design of this study was causal and based on panel data structure. In this regard, the sample size of this study was (N=36) non-financial firms and a time series of five years (2015-2019). The hypotheses of this study had been developed on the basis of available literature and Barron and Kenny (1986) suggested hypotheses structure have been followed. Moreover, in getting the study outcomes this study has used regression analysis as inferential tool to prove the study hypotheses. It is observed that CS has a significant and positive relationship with FV (Path-C). CS has also significant and positive relationship with GOF (Path-A) and GOF has a significant and positive relationship with FV (Path-B). Finally, it was observed that GOF partially mediates the relationship between CS and FV. The study outcomes are very useful for financial managers, specially, the managers of manufacturing firms. The implications of this study helps the manufacturing firms in making appropriate decision regarding their capital structure which increases the growth of firm, and when there is growth in the firm ultimately it would increase the overall firm's value.

7. Limitations

Study limitations are as follow.

- This study is limited in the sample size which is (N=36).
- Study is limited in its time series which is only five years (2015-2019)
- Study has chosen only CS and GOF to determine the effect on FV, however, more variables could be added into study, but due to limitations of time only three variables had been taken in this study.

8. Future suggestions

Following suggestions can be contributed into the future research studies.

- More firms can be included to have much generalized outcomes.
- A time series of 20 years would have been better to understand the historical data sets.
- Variables like profitability, tangibility, and size of firm can be added to determine firm's value in a comprehensive manners.

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