



Impact of Financial Decisions on Firm Performance: Path Analysis Approach

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Abstract: *This study intended to explore causal relationships between the corporate performance and financial decisions of the firms which are listed on the Pakistan stock exchange (PSX). This study has used Return on assets and Tobin's Q as the measures of accounting performance and market performance respectively. To effectively examine the causal structure of corporate financing, investment, dividend payout decisions, and the firm performance simultaneously this study has used path analysis approach. The sample comprises 292 non-financial firms which are listed on the Pakistan Stock Exchange (PSX). The findings clearly show that debt financing has positive effect on the investment and dividend has negative effect on the investment decisions. The debt financing and investment has a negative impact on corporate performance while dividend decisions has a positive impact on corporate performance. This study helps to understand the corporate decision making process of Pakistani firms. To the author's knowledge this is the first study attempted to check the application of path analysis in emerging economies to study the causal structure of corporate financial decisions and corporate performance.*

Keywords: *Corporate Investment, financing, dividend, corporate performance, path analysis.*

Introduction

Corporate performance of the company is mainly affected by the three corporate decisions i.e. capital structure, investment and dividend payout decisions which are called trilogy of the corporate finance (Wang, 2010). These corporate decisions are being widely studied in the existing literature (Baker & Powell, 1999; Al Mutairi, Hasan, & Risik, 2011; Mercatanti, Mäkinen, & Silvestrini, 2019). Firms use both internal as well as external financing to fund the investment projects which maximize the value of the firms and shareholder's wealth. The source of Internal financing is retained earnings of the firm and the source of external financing is new debt and equity issues. Therefore, managers need to make two types of decisions mainly. The decisions regarding optimum level of investment which are called real decisions and the decisions regarding how to finance the desired investment, which are called financial decisions. Further financial decisions involve two types of choices. The choice regarding dividend payout and the choice regarding external financing.

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The theorems presented by [Miller and Rock \(1985\)](#) demonstrate that inside finance do not have cost advantage over outside finance in a capital market where there are no corporate taxation, exchange cost and information asymmetry, hence capital structure and dividend decisions are unimportant to the firm value. The value of the firm is solely affected by the investment decisions in a perfect market. These theorems suggest that there is no inter-dependencies among corporate financing, investment and dividend decisions in a perfect market. Much exertion has been committed by the researchers to empirically discover the relationship between firm's financing, investment and dividend decisions. The main motivation behind this research was the Modigliani and Miller theorems under perfect market assumption. Like many other researchers. [Wang \(2010\)](#) demonstrated that when the companies are operating in imperfect capital markets where external capital is costly than internal funds, the financial choices may be important to the investment decisions of the companies confronting uncertain prospects. Furthermore, the companies operating in different economic, political and cultural environments have their own way to make corporate financial decisions.

Most of the research to explore the causal relationship of corporate investment, financing and dividend decisions with corporate performance of the firms was conducted in the developed countries. As per researcher's knowledge no study has yet simultaneously explored the investment, financing and dividend decisions and their impact on firm performance. Thus, limited research on trilogy of corporate finance in Pakistan is an important reason that has evoked the need for this empirical study. It is important to note that even though Pakistan is an emerging economy but with underdeveloped capital market, weak investor protection, fragile governance mechanisms and precarious economic and political condition. This research attempts to dig out the causal relationships of the corporate investment, financing, dividend decisions with firm value of non-financial firms operating in Pakistan. To effectively examine the causal relationships between corporate financing, investment, dividend decisions and the firm performance this study has used the path analysis approach. To the best of our knowledge, this is the first study attempted to check the application of path analysis in emerging economies to study the causal structure of corporate financial decisions and corporate performance.

Literature Review

[Miller and Rock \(1985\)](#) provide the base for the advanced corporate finance literature. The main conclusion derived from Modigliani and Miller theorems is that, in an environment where capital markets are friction less a company's value is only affected by the decisions regarding investment. The financing from internal and external sources are perfect substitutes and firm value is only affected by its investment decisions and is unaffected by the financing decisions. This is named as capital structure irrelevance theorem and implies that there is no interdependence between financing and investment. The other theorem is dividend irrelevance theorem which implies that firm value is independent of dividend decisions in an environment of complete and perfect capital markets. The dividend decisions are not relevant to firm value because firstly only the investment decisions affect firm value

because cash flows are generated by the investment and secondly investment is not affected by the dividend payout. These two irrelevance theorems by Modigliani and Miller propose that investment, financing and dividend decisions of the firms are not interdependent on each other under the assumptions of perfect market.

After this fundamental work of Modigliani and Miller many researchers like Myers and Majluf (1984) documented the market imperfections caused by information asymmetry and tested the outcomes of financing and dividend decisions. Jensen and Meckling (1976); Bernanke and Gertler (1990) demonstrate that external finance cost more than internal finance because external capital providers demand high returns on their investment. The reason of demand of high returns by external capital providers is conflict of interest and expensive monitoring of management's actions. Thus the investment decisions of the firms operating in such environments are affected by how the projects are financed.

The effect of financing constraints on the corporate financial decisions has been a significant theme in corporate finance literature. Bond and Meghir (1994); Fazzari, Hubbard, and Petersen (1988) studied that how corporate investment decisions are affected by the financial constraints. They have documented the findings that the corporate investment decisions are touchier to the internal reserves when firms are more externally financially constrained due to information asymmetry. They have concluded that external funds are expensive than internal finance. When the firms are externally financially constrained then they would not be able to invest efficiently. Guariglia (2008) who use panel data set from UK firms indicates that firm's investment decisions are more sensitive to the internal finance when firms are externally financially constrained and also profitable. Because when the firms are relatively more profitable and produce high cash flows these can rely on internal funds for their investment projects and avoid costly external finance. Recent work of Goenawan and Wasistha (2019) provide the evidence that external financial constraints influence the funding behavior of the companies. They have found that the relationship between internal and external finance is negative when corporations are externally financially constrained and hence follow pecking order.

The work of Dhrymes and Kurz (1967) highlighted the interdependencies among the corporate financial decisions by modeling them in a simultaneous equation system under flow of funds approach and reject independence hypothesis. They argue that corporate financing, investment and dividend decisions are interdependent and overriding constraint is flow of funds identities which means that if firms adjust one policy they have to adjust other policies as well. Fama, Miller, and Miller (1972) renamed MM theorems as separation principle. Many studies have attempted to empirically test the validity of separation principle. Peterson and Benesh (1983) found the interdependencies between corporate financial decisions that violate the separation principle. Partington (1985) found that most frequently the dividend and investment policies are independently determined but financing policies are residual of investment and dividend policies. But when the firms are externally financially constrained, the dividend and investment are simultaneously determined and dividends are given priority over investment. Fama et al. (1972); McDonald, Jacquilat, and Nussenbaum (1975) have found that corporate investment and dividend payout decisions are independent from each other and support the separation principle.

Peterson and Benesh (1983) also conducted a cross sectional analysis of the investment,

dividend and financing strategies by using different techniques like seemingly unrelated regression (SUR) and Vector autoregressive model (VAR)) that were not used by previous studies. The findings of these studies revealed that investment, dividend and financing decisions are jointly determined. DeAngelo, DeAngelo, and Stulz (2006); Dunham (2008) also suggest that dividend payout and investment decisions are interdependent. Gatchev, Pulvino, and Tarhan (2010) argued that financial decisions should also be considered alongside investment decisions.

Wang (2010) tried to examine complete causal relationship between financing, investment, dividend payout policies and the corporate performance. The findings suggest that decision patterns of financing, investment and dividend are different in Taiwan and China. In sum, findings of earlier empirical studies like Qi, Roth, and Wald (2017); Wang (2010) clearly indicate that firms operating in different economic, political and cultural environments have their own way to make the financing, investment and dividend decisions. Kouki (2017) studied the dynamic interactions between investment and dividend of Tunisian listed firms and found one-way dependency where dividend is influenced by the investment but investment is independent of dividend. These findings are in contrast to Fama et al. (1972) and confirmed by agency conflict hypothesis which indicates that due to the over-investment risk, dividend is dependent on investment. Yuminingsih, Pertiwi, and Purwanto (2019) states that the dividend payout and investment decisions of the firms are important as they are related to increase the firm's value but leverage did not affect company value. This happens because investment and dividend increase the firm's ability to generate more profits and ease of access to external capital markets for non-debt financing of investment projects. So company's ability to make investment and dividend decisions will be a signal for investors to assess company's value.

In summary there are two implications of separation principle, one is that the corporate investment decisions are not impacted by the financing decisions and other is that the investment decisions are not impacted by the dividend decisions. The firm value is not influenced by how the investment projects are financed when there are no frictions in the capital markets. Firms decide the optimal level of investment and investment decisions precede dividend decisions. when the capital markets are imperfect the corporate financial decisions should be determined simultaneously and before making any financial policy corporate managers should be aware of its impact on other policies and ultimately on the firm value.

Data and Methodology

Data

The sample used in the study includes the non-financial firms which are listed on Pakistan stock exchange. The data from balance sheet analysis published by the State bank of Pakistan during the period of 2013-2018 were taken. Final sample consists of 1752 firm-year observations.

Description of Variables

There are four variables used to proxy the financing, investment, dividend decisions and firm value. The Table 1 presents the proxies of the variables used in this study.

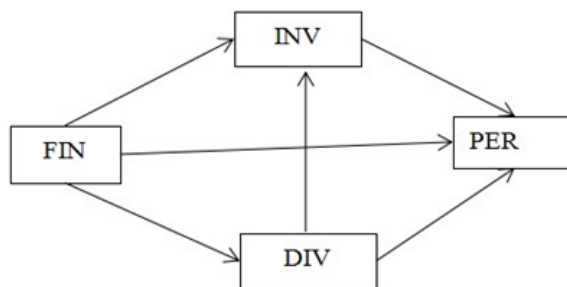
Table 1
Proxies of the Variables

Variable	Proxy
INV	Operating fixed assets / Total assets
FIN	The ratio of total liabilities to the total assets
DIV	The ratio of the total dividends paid to the total number of shares outstanding
ROA	The ratio of net profit to the total assets
Tobin' sQ	The ratio of the market price per share to the book value per share.

Methodology

Path analysis is used to estimate the causal relationships between corporate financing, investment and dividend decisions. It also estimates the causal relationships between corporate financial decisions and the firm performance. Path analysis is an advance technique and it is a kind of multiple regression models. It is used to evaluate the causal relationships between variables. Path analysis results in a model in which some variables (independent variables) affects directly and indirectly the dependent variable. The path analysis model can be taken as a special case of SEM (Structural Equation Modelling) in which only single indicators for the variables are employed. The parameters are estimated by maximum likelihood methods in a path analysis. Figure 1 shows the conceptual framework of the study. The variable (PER) represents firm performance. The proxy (ROA) and (Tobin's Q) are used as an accounting performance indicator and market performance indicator respectively.

Figure 1
Conceptual Framework



Empirical Results and Discussion

Table 2 presents the summary statistics of the variables. The average value for the ROA was 3.91% which shows low accounting performance. The average Tobin's Q was 2053.2% which shows high market performance. The measure of market performance showed very high percentage as compared to accounting performance measure. The high market performance value could be because of increase in stock price only and without an increase in the performance of real operations of the firm. The accounting performance of the firms might be impacted by the high percentage of leverage i.e. 56.89%.

Table 2
Descriptive Statistics

Variable	N	Mean	SD	Min	Max
INV	1752	0.4457	0.2206	0.0004	0.9829
FIN	1752	0.5689	0.288	0.0681	2.6917
DIV	1752	0.8085	2.8887	0.0000	47
ROA	1752	0.0391	0.1222	-1.9068	0.6696
Tobin' sQ	1752	20.532	63.03	-287.67	1233.9

Table 3
Correlation Matrix

Variable	FIN	DIV	INV	ROA	Tobin' sQ
FIN	1				
DIV	-0.106***	1			
INV	0.198***	-0.174***	1		
ROA	-0.445***	0.256***	-0.262***	1	
Tobin' sQ	0.017	0.268***	-0.095***	0.231***	1

Note: ***, **, * indicates the significance level at 1.0 %, 5.0 % and 10.0 % respectively.

To examine the correlation between variables Table 3 presents the pairwise correlation matrix. The results show that financing and dividend are negatively correlated and financing and investment are positively correlated. The negative association exists between dividend payout and investment decisions. This implies that corporate financing, investment and dividend payout decisions are correlated with each other. Furthermore financing has negative correlation with ROA and positive correlation with Tobin's Q. A positive correlation of dividend with ROA and Tobin's Q is observed while investment is negatively correlated with ROA and Tobin's Q.

Table 4 and 5 shows the results of the models (path analysis). The results produced by path analysis indicated that all the paths between the corporate financial decisions are significant. Financing is the positive significant predictor of the investment decisions. It means Pakistani firms rely on external debt to finance the investment opportunities. Pakistani firms follow pecking order suggested by Myers and Majluf (1984) in which the preference is given to the debt over equity. The coefficient of the path of dividend to investment is negative and significant. It shows that dividend has constraining effect on capital investment. In order to pay dividends Companies, have to miss valuable investment opportunities. Dividend and investment are competing with each other for funds. And

financing is negative and significant predictor of dividends. It means highly levered firms pay low dividends because they have to pay interest expense.

Table 4

Results of the path analysis with ROA as performance measure

Structural Path	Coefficient	Standard Error	Z-Value	P-Value
INV←FIN	0.139	0.017	-6.67	0.000
INV←DIV	-0.011	0.001	7.82	0.000
CONS.	0.376	0.011	32.49	0.000
DIV←FIN	-1.072	0.238	-4.5	0.000
CONS.	1.418	0.151	9.34	0.000
ROA←FIN	-0.167	0.011	-7.15	0.000
ROA←INV	-0.007	0.000	9	0.000
ROA←DIV	0.008	0.008	-18.83	0.000
CONS.	0.165	0.007	23	0.000

Table 5

Results of the path analysis with Tobin's Q as performance measure

Structural Path	Coefficient	Standard Error	Z-Value	P-Value
INV←FIN	0.139	0.017	-6.67	0.000
INV←DIV	-0.011	0.001	7.82	0.000
CONS.	0.376	0.011	32.49	0.000
DIV←FIN	-1.072	0.238	-4.5	0.000
CONS.	1.418	0.151	9.34	0.000
Tobin's Q←FIN	12.542	5.137	2.44	0.015
Tobin's Q←INV	-17.358	6.77	-2.56	0.01
Tobin's Q←DIV	5.756	0.509	11.29	0.000
CONS.	16.479	4.152	3.97	0.000

Moreover, financing has negative significant effect on ROA and positive significant effect on Tobin's Q. Increased use of debt would weaken the company's profitability. These findings show consistency with the findings of [Al Mutairi et al. \(2011\)](#). [Myers and Majluf \(1984\)](#) suggested that capital structure of the firms has negative effect on firm performance because firms depend on the internal sources of finance for expansion to reduce their costs. The results of this study has revealed that in emerging markets debt financing affect negatively the firm's profitability. Another explanation is given by the agency theory, which states that firms use debt as monitoring device and over-leverage themselves which negatively affects their performance.

Investment also has negative significant effect on accounting performance and market performance of the firms. The positive effect of investment in tangible assets on financial performance is not proven by the results of this study. This negative relationship presents a huge puzzle for theoretical as well as empirical literature. The results are in contrast to most of the empirical literature like [Al Mutairi et al. \(2011\)](#). Capital markets are not well developed in Pakistan, due to which Pakistani companies depend on the banks for the debt financing. The interest charge on the bank loans is high in Pakistan in comparison to developed western countries. Due to high interest expense companies perform well at the level of operating income but shows poor financial performance at the level of net income. There can be another outcome of external financial constraints that due to limited access to external funds firms are unable to make sufficient investment which in turn constrain the firm performance in short term. The linkage between dividend and

return on assets (ROA) is positive and significant and dividend payout policy also has positive and significant effect on Tobin's Q (Tobin's Q). The finding is consistent with the findings of [Amidu \(2007\)](#); [Irfan, Nishat, and Sharif \(2002\)](#); [Baker and Powell \(1999\)](#); [Kim, Yang, Yang, and Koveos \(2021\)](#). The results are in support of [Lintner \(1962\)](#)'s bird in hand theory which argues that shareholders will prefer dividends because these are certain while future returns from reinvestment are more uncertain. Hence high dividends reduce required return by investors and effect the corporate performance and firm value positively. These results also succeed to support signaling theory presented by [Miller and Rock \(1985\)](#) which suggests that the association between corporate dividend payout decisions and the firm performance is positive.

Conclusion

The past evidence on the causal structure of the corporate financial decisions and corporate performance is mixed and inconsistent. To the best of author's knowledge, there was not a single study found in Pakistan that investigated the impact of capital structure, investment and dividend decisions jointly on the firm's performance. And not a single study found that have used path analysis to study the impact of the financial decisions on the firm performance from emerging markets. To fill this gape and in order to explore the complete and dynamic structure of corporate performance and financial decisions of the firms this study have used advance models which tried to find out the interrelationships between financing, investment and dividend payout decisions and the corporate performance of firms which are listed on Pakistan stock exchange. The sample consists of 292 non-financial corporations which are listed on the Pakistan stock exchange. Data was collected for the period of 2013-2018 and the final sample consists of 1752 observations. The results of the path analysis show that these corporate financial decisions are correlated with each other. Where financing affect positively and dividend affect negatively the investment decisions. Debt financing has negative impact on the firm's accounting performance and positive impact on firm's stock market performance and dividend has positive impact on both measures of performance. Moreover investment is negatively affecting the accounting and market performance of the firms.

Furthermore when we compare the results with the findings of the existing studies clearly shows that non financial firms of Pakistan show different patterns of corporate financial decisions. Corporate performance is correlated with the corporate financing, investment and dividend decisions. The results of the study will help in the understanding of the corporate decision making behavior of the non-financial firms which are listed on Pakistan stock Exchange. The findings of the study has significant implications and contributions in understanding of corporate decisions making process. Corporate managers can understand that how they can make better financing, investment and dividend decisions to create the value for the shareholders. By replicating the study in other emerging economies the results can be generalized.

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