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ORIGINAL PAPER

THE IMPACT OF CONCENTRATED LEVERAGE AND OWNERSHIP ON FIRM PERFORMANCE: A CASE IN PAKISTAN

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ABSTRACT. **Background:** The objective of this study is to determine the impact of concentrated leverage and ownership (high levels of control and power) on firm performance in the case of Pakistan's logistics sector separately in the presence and absence of growth options available to the firm. Both leverage and ownership concentration can have a significant influence on firm performance in either a positive or a negative way.

Methods: In the data sample of this study, 141 companies in Pakistan listed on the Karachi Stock Exchange were selected with a study window from 2008 to 2018. The selection criteria for our sample study are based on firms with the highest market capitalization. Using a Panel based regression methodology, Generalized Methods of Estimating Equations are applied, which cover for 1st and 2nd order serial correlation and controls for endogeneity and autocorrelation problems.

Results: The overall results indicate that the availability and non-availability of growth options to firms are very important factors in analyzing ownership concentration and debt influence on firm performance. This paper takes growth option availability and non-availability as dummy variables and finds that in the presence of growth options, non-linear relations are found between firm performance and ownership concentration and positive significant relations of debt with firm performance. Whereas, in the absence of growth opportunities, inverse parabola relations are depicted of ownership concentration and firm performance, and negative relations between debt and firm performance.

Conclusions: Financial leverage represents a two part structure, negative in the presence of growth options and positive in the absence of growth options. The study demonstrates that high levels of power concentrated in the hands of owners leads to a convergence and entrenchment effect depicting non-linear relations with financial performance in both the availability and non-availability of growth options. Furthermore, the study also revealed that the explanatory power of results with a sales rate of growth (as a growth options measurement proxy) is higher than the Price to Earnings Ratio measurement proxy.

Key words: growth opportunities, leverage, ownership concentration, firm value, underinvestment, overinvestment, Pakistan.

INTRODUCTION

The influence of concentrated leverage and ownership on firm performance has been a common topic for both academics and practitioners. In a frictionless world, both leverage and dividend policies are irrelevant as they do not alter the set of firm investment opportunities [Miller, Modigliani 1961]. However, conversely, when imperfections are included, this irrelevance proposition does not hold for long. Nowadays, lots of important research can be found on the influence of corporate leverage policy decisions on firm value creation [Barclay, Smith 1996, Mustafa et al. 2018, Khan et al. 2018]. Similarly, power and control in higher and lower management, in contrast to owners, also contribute to firm performance levels. The availability of firm investment opportunities (growth options) is found to have a strong influence on the alteration of corporate leverage policies [Wu, 2004]. Financial leverage presents a two part impact in the presence and absence of growth opportunities available to a firm. In the

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presence of growth opportunities, leverage has a negative impact on firm value due to a rise in underinvestment costs [Barclay et al. 2003]. Managers of firms who have high debt ratios and positive NPV projects available are more likely to forgo positive NPV projects if project earnings move into the hands of bondholders [Li, Cui 2003]. When good investment projects are not available, that is, in the absence of growth opportunities, leverage plays a positive role in the reduction of overinvestment costs by limiting the access of managers to the misuse of free cash flows in poor net present value projects [Bougatef, Chichti 2011].

Ownership concentration represents the proportion of shareholdings held by the majority shareholders. In this study, the proportion of shares held by the top one and the top five majority shareholders was taken to analyze the direct effects on firm performance. The higher the ownership concentration, the greater the extent of the owners would be to control and monitor managers in order to increase the firm's performance [Gursoy, Aydogan 2002]. Literature supports the positive effects of ownership concentration on firm performance. However, in addition to ownership concentration as an independent variable, this study also employs squares of ownership concentration. This leads to the fact that, no matter whether ownership concentration has a positive effect on firm value, if the concentration is squared, a negative impact on the firm's value occurs because of an excessive increase in the concentration of control in the hands of the owners, which leads to an entrenchment effect [Dyck, Zingales 2004]. With respect to growth options, in the presence of growth opportunities, non-linear effects of ownership concentration are found. At first, the relationship is positive with initial levels of concentration due to an alignment of interests between managers and owners due to increased control mechanisms, but negative with the concentration square (more than a threshold) variable, which means that too much power in the hands of owners leads to an entrenchment effect [Miguel et al. 2004, Pindado et al. 2008, Filatotchev et al. 2007]. In the absence of growth opportunities, ownership concentration has an inverse non-linear effect on firm value. This is because, in Pakistani firms with poor investment growth options, concentrated owner investments are diversified. Therefore, large controlling shareholders try to extract corporate resources if they do not expect high investment returns from firms with poor investment opportunities, and try to gain from firms with positive investment projects available [Demsetz, Villalonga 2001; Joh 2003]. Therefore, concentrated owners hedge their investment returns from the poor and high investment opportunities available. Ownership concentration square has a positive effect on firm value in the absence of growth options. This is because of the poor investment projects available, and their investment in particular firms becoming too high that they try to increase the value of the firm with control mechanisms to increase their wealth. In Pakistan, work was found by Javid, Iqbal [2008] who studies the relationships between corporate governance, firm value and its ownership structure. These things provide evidence that, in Pakistan, large firms with investment opportunities have adopted better governance structures to reduce agency conflicts, whereas the presence of good investment opportunities results in more highly concentrated ownership. Similarly, Din, Javid [2011] analyzed the impact of the family ownership structure on firm performance, where the performance level of a firm is measured by ROE, ROA and Tobin's Q. A Linear regression model is used for estimation where their results revealed a positive relationship between the concentration of family ownership and firm performance up to an optimal level, after which it began to decline with a negative relation. Overall, this implies the importance of studying the relationships between all these topics together. A joint relationship effect exists between investment opportunities, firm value, and corporate leverage policies and ownership control which holds when firms face positive NPV projects that is availability of growth opportunities and when they do not.

The study contributes in multiple ways; firstly, although there is similar research for countries with developed capital markets, the evidence from underdeveloped markets is still scarce and is absent in Pakistan. Secondly, immense research can be found on the influence of corporate leverage on firm

performance, but little work can be found on determining how the availability and non-availability of growth opportunities directly alters firm important corporate leverage structure decisions, especially in firms with concentrated ownership. Thirdly, the study helps management to build financial policies with objectives of the maximization of firm long-term performance differently in the presence of good investment projects (availability of growth options) and differently in the absence of investment options (non-availability of growth options). Furthermore, in order to measure growth options, this study contributes a comparison between Price Earnings Ratio and Sales Rate of Growth as the growth options measurement proxy of the firm. The comparison contributes to revealing which measurement proxy revealed the highest explanatory power of results. The objective of this study is to analyze the interrelationship between corporate leverage policies, ownership control and firm performance in the presence and absence of good investment opportunities. This study used a sample of 141 non-financial Pakistani firms listed from 2008-2018 on te Karachi Stock Exchange to examine how leverage and ownership concentration affect firm value based on the availability of growth opportunities. In order to control for heterogeneity and biased results, the firm's control variables are also included. These include asset tangibility, dividend policies, depreciation, size and profitability.

The rest of this paper is structured as follows: The second part provides a framework of theoretical background and evidence based on relationships between firm financial decisions, ownership concentration and firm performance with respect to the availability of growth opportunities. The third part documents research design and methodology, while the fourth part presents results and empirical findings. The final part consists of conclusions, recommendations and limitations.

LITERATURE REVIEW

Leverage and Growth opportunities

A theoretical background provides evidence on the importance and influence of corporate financial decisions and ownership concentration on firm performance. Therefore, to shed light on how the availability of growth opportunities can cause conflicts of interest between managers and shareholders, the role of debt, dividends and ownership concentration is reviewed via studies of research both in the absence and in the presence of growth opportunities. Ndubuisi et al., [2019] selected data form 2000-2015 for the examination of a leverage effect on firm growth in the stock market of Nigeria. They chose the panel data regression model, along with the fixed effect model, pooled regression model and the random effect model. According to their research, financial leverage shows a significant positive effect on the profit growth of firms. López-de-Foronda [2019] worked on the examination of corporate leverage on firm overinvestment along with the analysis of system liquidity. They used the data of 124,000 companies for the sample years 2003-2014. They found a significant positive relation between corporate leverage and overinvestment.

Iqbal and Usman [2018] worked on 5-year data of the Pakistan stock exchange from 2011-2015 for the examination of leverage impact on firm performance. They used descriptive analysis and correlation analysis along with regression to depict the conclusion of their selected data. The results showed a significant negative effect of financial leverage on firm ROE, whereas there is a significant positive effect of financial leverage on firm ROA. The high rate of interest, along with more debt contributes to lowering the firm's value and has a negative impact on firm performance. In addition, debt has a positive effect on firm performance and ROA when it doesn't become more than the value of equity.

Hamouri [2018] worked on Amman stock markets to determine the impact of financial leverage on firm growth opportunities. They analyzed a sample consisting of 91 firms for their research work by using the panel data regression method. The results showed an insignificance between the financial leverage and growth of assets of a firm. In contrast, growth of sales is positively correlated with the size of a firm. Farrukh et al. [2017] selected

the Pakistan stock market for determining the impact of dividend policy on shareholder wealth and firm performance. Dividend policy showed a significant positive impact on shareholder wealth and firm performance with regression results in the emerging market of Pakistan. It suggested that the implementation of effective, stable and target oriented dividend policies, along with a well supervised framework would be helpful in increasing shareholder wealth and firm performance in Pakistan. Rahman [2017] selected the Bangladesh stock market for his research in order to determine the impact of financial leverage on firm market value and also to enrich his research work with an analysis of Tobin's Q ratio. He wanted to investigate the effects of financial leverage on both firm market value and on Tobin's Q ratio on the Bangladesh stock exchange with sample data of a 20-year period from 1996-2015. According to his results, MV/BV ratio showed a negative relationship with firm leverage.

Ishari and Abeyrathna [2016] did 50 observations of the selected data of ten companies on the Sri Lanka stock exchange for the sample years 2011-2015. Regression analysis, descriptive analysis and Pearson's correlation were used in this work. The results revealed a significant relation between debt equity ratio and ROA. However, according to Pearson's correlation, a weak negative relationship, and not a significant one, was found between debt equity ratio and ROA. Furthermore, this study suggested the need for more empirical studies to investigate how financial leverage might impact firm value.

De Jong and Van Dijk [2007] examined the relation between leverage and four agency problems i.e. asset substitution, wealth transfers, overinvestment and underinvestment. Using structural equations models with sample data from non-financial, listed Dutch firms for a period from 1992 to 1997, the simultaneous nature of the relationship was tested between leverage and Tobin's Q (firm performance measure). Overinvestment behavior was explicitly tested by measuring the excess investment and its determinant as leverage. The result confirmed a significant negative effect of leverage on Tobin's Q. The determinants of the investment results showed that leverage reduces investment. However, in determinants of leverage for Dutch firms, low leverage was found for overinvestment firms i.e. the firms with high free cash flows and low Tobin's Q.

Ghalandari [2013] worked on Tehran security exchanges for the examination of moderating the effects of growth opportunities on the relationship between ownership structure and financial decisions, including dividend policies and capital structure, with firm value. He selected 121 firms for investigation for the sample period of 2007 to 2011. He concluded that there is a positive relationship between leverage and dividend and firm value. This relation shows a significant and negative effect with growth opportunities. In contrast, it shows a positive and significant effect without growth opportunities. Ownership structure and the value of a firm have a non-linear significant relation when investment opportunities exhibit a significant impact on this relationship. Alonso et al. [2005] give an insight into the joint effects of leverage, dividends and ownership concentration effects on the value of a firm in the presence and absence of growth opportunities. With 101 samples of non-financial Spanish firms from 1991 to 1995, multivariate regression analysis was applied, indicating the dual role of leverage and dividends pay-outs, conditional on the absence and presence of growth opportunities. This study provides evidence for the positive effects of leverage and dividends in the absence of growth opportunities and negative effects in the presence of growth opportunities. Furthermore, it also reveals how different majority controlled shareholders (institutional, family and financial intermediaries) influence firm value with a majority ownership concentration. The results illustrate that firm value is higher if the majority shareholder is a bank or any other financial intermediary. Barclay et al. [2003] found that the underinvestment costs of debt increase with additional growth opportunities using compustat data of US companies for a period from 1950 to 1999 with 109,000 firm year observations. The results indicate that, with increased growth opportunities, not only does firm leverage decline, but its optimal debt level also decreases. It presents a negative

relationship between book leverage and growth options.

Iturriaga and Crisostomo [2010] did research work on the influence of leverage, dividend pay-out and ownership concentration on firm value creation in the Brazilian market. They used the data of 213 firms with sample years 1995-2014. The results showed that leverage possesses a dual character. It shows a positive relation with firm value in the absence of growth opportunities (overinvestment). Whereas, it shows a negative relation with firm value in the presence of growth opportunities (underinvestment). Dividend exhibits a disciplinary role in firms with fewer growth opportunities as it helps in the reduction of free cash flow under managerial controls. The ownership structure showed a non-linear effect with firm value in the Brazilian market.

Lyandres and Zhdanov [2005] found that, besides underinvestment, there exists an opposite effect of overinvestment which significantly dominates underinvestment effects in their data. With application of a generalized method of moments in 52 years of Compustat data, the results indicate a non-linear relationship with firm investment policies. They illustrate that there exists an optimal point of leverage as well as a level of investment beyond which overinvestment takes place and before underinvestment takes place. Secondly, they also examine the role of debt in changes in the intensity of firm investment provided with high and low growth opportunities where they demonstrate an overinvestment role to be more severely played rather than an underinvestment one. Johnsons [2003] investigates simultaneous equations of models with leverage and debt maturity structure on growth options. Sample data includes non-financial Compustat firms from 1986 to 1995. It indicates the positive impact of use of short-term debt on growth options, implying that short-term debt reduces the negative effects of growth opportunities on leverage. The results indicate that firms that use short-term debt reduce the negative effects of growth opportunities on leverage by six times compared to firms that use long-term debt. However, short-term debt also causes a liquidity risk for firms. It provides evidence that firm trade-off between underinvestment costs and liquidity risk increases the value of the firm.

Wu [2004] analyzed the role of growth opportunities, free cash flow and ownership structure on corporate financial policy decisions. With leverage as a dependent variable, OLS regression of Japanese firms was estimated from 1992 to 2000. The results provide evidence that leverage has a positive impact on free cash flow, whereas, when considered growth opportunities is a dummy variable, leverage shows positive behavior in low growth opportunity firms and negative behavior with high growth opportunity firms. D'Mello and Miranda [2010] analyzed the effects of long-term debt behavior on the degree of firm overinvestment. They examined overinvestment patterns with new debt issues by unlevered firms. With a sample of 366 debt issues from 1968 to 2001 for unlevered firms, the results indicate that high debt issues lead to decreased overinvestment. This relation is found to be more significant for firms with low growth opportunities, indicating a positive role of debt with high agency problems and low investment firms. Dang [2011] examined the influence of the relationship between investment decisions and the presence of conflicts of interest incentive problems on corporate financing decisions. With a system-based panel approach towards UK firms from 1996 to 2003, the findings showed that a reduction of leverage in high growth firms controlled underinvestment problems. However, this study contributes more with the inclusion of debt maturity in the model. It shows a positive relationship between debt maturity and leverage due to the presence of high liquidity risk, and a positive relationship of debt maturity and firm value. It also supports the positive role of leverage on controlling the overinvestment process.

Ownership Concentration and Growth Opportunities

In determining how to increase firm performance with maximization of shareholder wealth, debt and dividends are not the only mechanisms that influence firm investment opportunities. It also highly depends on how firm control mechanisms are defined. In

Pakistan, mostly family-oriented business structures exist, as along with a poor corporate governance system and a lack of legal protection for investors. This highlights the importance of the impact of ownership concentration on firm value in the absence and presence of growth opportunities shedding light on the problem of agency costs.

Ciftci et al., [2019] analyzed the relationship between firm performance and internal corporate governance by considering firms operating in Turkey. They found that concentrated ownership in family-based firms leads to better performance and better control. Similarly, Wu [2019] examined internationalization performance by analyzing a sample of 217 firms operating in China from 2009 to 2016. By using fixed-effect regression, the study found that the performance of non-state-owned firms is positively increased by increasing short-term loans. However, Abdullah et al. [2019] provide a seminal study regarding the impact of owner concentration on a firms' performance by analyzing 36 listed firms on the Karachi stock exchange (KSE) from 2007 to 2011. They applied correlation matrix and regression models. They found significant and negative effects of family-based owner concentration on return on assets (ROA) and a negative effect of non-family-based owner concentration on ROA. Likewise, Saidat et al. [2019] have studied the relationship between the financial performance of firms (family based and non-family based) and corporate governance. They analyzed a sample of non-financial firms listed on the Amman Stock Exchange (ASE) from 2009-2015. They found ROA and Tobin's Q share a negative effect on the family firms' performance and found no relationship between non-family firms. Furthermore, Ahmad et al. (2019) explored the effect of institutional ownership on the performance of non-financial firms in Pakistan for a period from 2007 to 2011. They used the ordinary least square model for estimating the link between variables. They found negative effects of ROA on institutional ownership.

Zraiq and Fadzil [2018] researched the effect of ownership structures on the performance of firms in Jordan. Their sample data was comprised of 228 firms, including industrial and service sectors. They reported a significant positive relationship between ownership concentration and firm performance. Yasser and Mamun [2017] studied the impact of ownership concentration on firm performance in the emerging market of Pakistan. Their research analysis was linked among eight categories, Gini index, Hirschman–Herfindahl index (HHI) and firm performance in the developing stock market of Pakistan. In the results, the ownership structure exhibited a positive relationship in both economic profits and market-based performance measures. Also, the contribution of institutional shareholders and foreign shareholders shows a positive relationship with firm performance. Najjar [2016] investigated the influence of ownership concentration and leverage on firm value by adopting panel data in Jordan. His research was based on the examination of 83 non-financial firms listed on the Amman Stock Exchange for the sample years 2005-2013. The results were in favour of prior studies and indicated the existence of a relationship between leverage and corporate ownership and firm value on the Jordan stock market.

Mighuel et.al. [2004] examined how ownership concentration and insider ownership have a direct effect on firm investment cash flow sensitivity. Applying generalized methods of moments on a panel data set of 135 Spanish firms, they found that managerial entrenchment above an optimal point worsens underinvestment and overinvestment processes and this is more prominent in the presence of growth opportunities. Filatotchy et al. [2007] examined debt to investment ratio with the control of a dominant firm owner explaining how corporate resources are expropriated at the expense of minority shareholders. They found a significant, negative role of entrenched ownership concentration which leads to less efficient use of firm financial resources (measured as firm debt to investment ratio). This indicates that entrenched dominant shareholders extract the 'control premium' from fixed claim holders for their personal interests. Joh [2003] studied the relation between ownership structure and shareholder conflicts of interest on firm performance with respect to growth opportunities in a sample of 5829 Korean firms from 1993 to 1997. Their

study indicates that firms that have low ownership concentration in turn have low profitability with controlled industry and firm characteristics. Their main findings revealed an expropriation of resources by majority shareholders, even with a small ownership concentration.

Javaid and Iqbal [2008] considered 60 listed nonfinancial companies of Pakistan with more than 80% capitalization from 2003 to 2008 to study the relation between corporate governance, firm valuation and ownership structure. The results confirmed the evidence that firms with better investment opportunities and a large size have adopted better governance structures to reduce agency conflicts, whereas the presence of good investment opportunities also results in more ownership concentration. Driffield et al. [2007] estimated the 3SLS model with leverage, ownership concentration and the value of a firm to analyse the effects of ownership structure on firm financial policy. The study took non-financial listed firms of Korea, Thailand, Malaysia and Indonesia where results demonstrate that, with high ownership concentration, costs of debt are reduced. This indicates the positive effects of ownership concentration on firm financial policy and value. Chen and Austin [2007] examined the reduction of underinvestment costs, poor asset utilization efficacy and agency costs of debt and equity with ownership rights in the hands of large block holders. With a sample of large public traded companies from 1996 to 2001, they demonstrated that large controlling outside block holders are more efficient and effective in the maximization of firm value and shareholder wealth. They also demonstrate that insider controlling block holders are more effective with the high efficiency of firm asset utilization ratio because only managerial ownership is able to reduce underinvestment, which is possible due to their dual roles. Based on the literature review we developed our hypothesis below.

Hypothesis to be tested:

Price Earnings Ratio: Growth Options measure proxy

Hypothesis 1a: A negative relation exists between long term debt and firm performance in presence of growth opportunities.

Hypothesis 1b: A positive relation exists between long term debt and firm performance in absence of growth opportunities.

Hypothesis 2a: A non-linear relation exists between ownership concentration and firm performance in presence of growth opportunities.

Hypothesis 2b: An inverse nonlinear relation exists between ownership concentration and firm performance in absence of growth opportunities.

METHODOLOGY

The representation of dependent and independent variables definitions, measure ratios, estimation techniques and model specification is provided in this section.

Data Sample

In the data sample of this study, 141 listed companies of Pakistan on the Karachi Stock Exchange with a study window from 2008 to 2018 were taken. The selection criterion for our sample study was based on firms with the highest market capitalization. The financial sector is not included in the sample study because these sectors require different accounting and financial treatment for study. In addition, the same statistical estimations and techniques could not be applied for both financial and manufacturing sector firms. The service sector was also not taken due to its small sample size as the ratio of total service firms represents a very small percentage of the total listed companies.

Variables Measure Explanation

The dependent variable is Market to Book Assets ratio, whereas independent variables include corporate debt, ownership concentration and ownership concentration square to check for non-linearity. The dividends paid, depreciation, asset tangibility and size and profitability are taken as control

variables. For growth options availability, Price Earnings ratio and Sales Rate of Growth are taken as dummy variables.

Growth Opportunities Proxy As Dummy Variables

Price Earnings Ratio (PER)

We define PER as the ratio of the firm's Market Value per share divided by Earnings per share, where Earnings per share is measured by adding Net Income divided by total outstanding shares. The market value per share is defined as the market price outstanding per share.

PER ratio = Market Value per shares / Earnings per share,

where, Earnings per share is measured by adding Net Income divided by total outstanding shares.

Sales rate of Growth

We define SRG as:

$$SRG = \frac{P_2 - P_1}{P_1}$$

where, P2 is present annual sales and P1 is past annual sales

Independent Variable Measures

We define our independent variables as:

Total debt (DTA): Long term debt divided by total assets ratio.

Dividend Payouts (DP): Dividend payouts divided by total assets ratio.

Ownership concentration (C1): Proportion of shares held by top largest majority shareholder.

Ownership concentration square $(C1)^2$: To check non-linear relation of ownership concentration square of proportion of shares held by top largest majority shareholder.

Ownership concentration (C5): Proportion of shares held by top five majority shareholders.

Ownership concentration square $(C5)^2$: To check non-linear relation of ownership concentration square of proportion of shares held by top five majority shareholders.

Tangibility (TANG): Total fixed assets to total assets ratio.

Dividends (DIV): Total dividends paid to total assets ratio.

Depreciation (DEP): Total depreciation paid to total fixed assets ratio.

Size (control variable): Log of total assets.

Profitability (ROA): Earnings before interest and tax divided by net income.

Table 1. Variables Operationalization

Variables	Sign	Definition	Formula
Market to Book Assets Ratio (Firm Performance)	MBA	Market Value /Book value of Asset, Where Market Value of Equity is measured by adding Book Value of Debt to Market Value of Equity	(MVE+D)/BVA
Total Debt	DTA	Total Debt/Total Assets(Book Value)	TD/(TA)
Dividend Payouts	DP/TA	Dividends/Total assets	DP/TA
Ownership Concentration	CONC1	Ownership Proportion of Top One and Top Five Shareholders	C1, C5
Ownership Concentration Square	$CONC^2$	Square of Ownership Proportion of Top One and Top Five Shareholders	C1 square, C5 square
Size	SIZE	Natural Logarithm of Total Assets	Log TA
Return on Assets	ROA	Earnings before Interest and Tax/Total assets	EBIT/TA
Price Earnings Ratio (Growth Opportunity Proxy)	PER	Market Value per share/Earning per share, Where Earnings per share is measured by adding Net Income divided by total outstanding shares	(MVPS/EPS)
Sales Rate of Growth (Growth Opportunity Proxy)	SRG	Present annual sales- Past annual sales /Past Annual Sales	P2-P1/P1

Table 1 shows a summarized view of the operation of dependent and independent variables. The key valuation of this study is to measure growth opportunities according to

which our growth option variables (both Price to Earnings ratio and Sales Rate of Growth ratio) are each taken separately to allow us to compare which growth options proxy ratio yields the highest explanatory power. The growth options variables are taken as dummy variables with 0 as the absence and 1 as the presence of growth opportunities. The median value of both PER and SRG growth options variables are taken to identify that the values greater than the median value indicates the presence of growth options available to the firms. The values of PER and SRG ratio below their median values would be taken as 0, indicating the absence of growth opportunities.

In the data sample, 141 listed companies of Pakistan on the Karachi Stock Exchange with a study window from 2008 to 2018 were taken, giving 1551 observations. Thus, our panel-based data is both strong and balanced. Generalized least square regression does not cover for serial 1st and 2nd order correlation. In order to cover for endogeneity and autocorrelation, the generalized method of estimating equations is used, which covers for 1st and 2nd order serial correlation. Using Panel based regression methodology; Generalized methods of Estimating Equations is applied in which total debt, ownership concentration, ownership concentration square, dividends, depreciation, tangibility, size and profitability are regressed on firm performance calculated with Market to Book Assets Ratio.

Model Specifications

A total of five regressions were applied for the analysis. In regression 1, debt and ownership concentration was regressed on firm performance. Here, the availability and non-availability of growth opportunities was not taken. Here, the combined impact was evaluated without considering growth options proxy (price to earnings ratio or sales growth ratio). In regression 2, the presence of growth options measured with (PERP) Price to Earnings ratio is included as a dummy variable (1) to find the impact of debt and ownership concentration on firm performance when positive NPV investment projects are available to the firm. In regression 3, the absence of growth option variables, (PERA) Price to Earnings ratio in the absence of growth opportunities is included as a dummy variable (0). Here, the impact of debt and ownership concentration on firm performance in absence of growth opportunities was evaluated. In robust analysis, regression 4 and 5 were regressed similar to regression 3 and 4 only with the difference that, except for Price Earnings Ratio, the Sales Rate of Growth ratio is taken as a dummy variable for growth option proxy variable. The SRGP represents the presence of growth options and SRGA represents the absence of growth options available to the firm.

Regression 1:

$$MBA_{it} = \beta_0 + \beta_1 TDTA + \beta_2 C1 + \beta_3 (C1)^2 + \beta_4 C5 + \beta_5 (C5)^2 + \beta_6 DEP + \beta_7 TANG + \beta_8 DIV + \beta_9 SIZE + \beta_{10} ROA + \varepsilon_{it}$$

Regression 2:

$$MBA_{it} = \beta_0 + \beta_1 TDTA + \beta_2 C1 + \beta_3 (C1)^2 + \beta_4 C5 + \beta_5 (C5)^2 + \beta_6 PERP + \beta_7 DEP + \beta_8 TANG + \beta_9 DIV + \beta_{10} SIZE + \beta_{11} ROA + \varepsilon_{it}$$

Regression 3:

$$MBA_{it} = \beta_0 + \beta_1 TDTA + \beta_2 C1 + \beta_3 (C1)^2 + \beta_4 C5 + \beta_5 (C5)^2 + \beta_6 PERA + \beta_7 DEP + \beta_8 TANG + \beta_9 DIV + \beta_{10} SIZE + \beta_{11} ROA + \varepsilon_{it}$$

Regression 4:

$$MBA_{it} = \beta_0 + \beta_1 TDTA + \beta_2 C1 + \beta_3 (C1)^2 + \beta_4 C5 + \beta_5 (C5)^2 + \beta_6 SRGP + \beta_7 DEP + \beta_8 TANG + \beta_9 DIV + \beta_{10} SIZE + \beta_{11} ROA + \varepsilon_{it}$$

Regression 5:

$$MBA_{it} = \beta_0 + \beta_1 TDTA + \beta_2 C1 + \beta_3 (C1)^2 + \beta_4 C5 + \beta_5 (C5)^2 + \beta_6 SRGA + \beta_7 DEP + \beta_8 TANG + \beta_9 DIV + \beta_{10} SIZE + \beta_{11} ROA + \varepsilon_{it}$$

RESULTS & DISCUSSION

Table 2 shows the descriptive statistics. The average mean value of corporate leverage is 0.252, but the deviation is a minimum of 0.229. Amongst ownership concentration variables, minimum and maximum values are depicted between C1SQ of 0 to 63.261 and of C5SQ of 0.002 TO 78.734. Deviation is the highest in C5SQ of 20.856. Amongst other variables, the highest difference in minimum and maximum values is found in the

Depreciation variable, that is from 0 to 151.271. The summary statistics demonstrate that in Pakistan non debt companies also exist with 0 debt level. Depreciation minimum and maximum values represent the highest difference in size of firms with big and small assets and the opportunities available to them.

Table 3 demonstrates correlation coefficients amongst all variables. Sales rate of growth (SRG) is negatively correlated to MBA, whereas PER has a positive correlation with MBA indicating that a high PER ratio leads to an increase in firm performance.

Table 2. Descriptive Statistics

Variable	Obs.	Mean	Std. Dev	Min	Max
MBA	1540	2.027	3.885	0.085	41.171
PER	1535	40,026	727,976	-11055	19,661
SRG	1544	5.860	161.880	-1.000	5,949
TDTA	1551	0.252	0.229	0.000	2.073
C1	1551	0.380	0.296	0.017	7.954
C5	1551	0.677	0.287	0.043	8.873
C1SQ	1551	0.232	1.616	0.000	63.261
C5SQ	1551	0.540	20..856	0.002	78.734
TANG	1551	0.424	0.224	0.001	0.981
DIV	1551	0.033	0.067	-0.041	1.685
DEP	1551	0.350	4.728	0.000	151.271
SIZE	1551	15.411	0.629	10.348	19.386
ROA	1551	0.732	0.092	-0.335	0.552

Table 3. Correlation Coefficients

	MBA	PER	SRG	TDTA	C1	C1SQ	C5	C5SQ	TANG	DIV	DEP	SIZE	ROA
MBA	1.000												
PER	0.266	1.000											
SRG	-0.008	-0.006	1.000										
TDTA	-0.025	-0.010	-0.037	1.000									
C1	0.021	0.019	-0.020	-0.168	1.000								
C1SQ	-0.003	0.001	-0.004	-0.051	0.743	1.000							
C5	0.022	0.021	0.009	-0.158	0.875	0.782	1.000						
C5SQ	-0.003	0.002	0.001	-0.055	0.724	0.994	0.813	1.000					
TANG	0.120	0.024	-0.016	0.437	-0.101	-0.006	-0.093	-0.009	1.000				
DIV	-0.006	-0.052	-0.016	-0.226	0.224	0.069	0.154	0.059	-0.153	1.000			
DEP	-0.006	-0.002	-0.002	-0.033	-0.003	-0.002	0.010	0.001	-0.042	0.006	1.000		
SIZE	-0.029	0.027	-0.053	0.064	0.208	0.084	0.119	0.069	-0.061	0.067	-0.041	1.000	
ROA	-0.036	-0.021	-0.051	-0.425	0.144	0.060	0.079	0.046	-0.321	0.468	0.035	0.046	1.000

Table 4 represents regression results. As shown in table 3, five regression results are presented. In regression 1, debt, ownership concentration and control variables are regressed on (MBA) that is on firm performance without consideration of growth options variables. Here, debt has a positive relation with firm performance. C1, largest shareholder concentration, has a 2.416 relation with firm performance, whereas in C5, the largest 5 shareholder concentration has a -1.78 coefficient with firm performance. This indicates that, when power is distributed in more hands, then, due to their self-interests, the performance level declines. However, to check this, non-linearity concentration variables square were taken. This shows the exact opposite effect, where C1 first increases but then decreases, indicating that power in the hands of the largest shareholder increases firm values to an optimal point but then decreases. In C5, the opposite happens. In control variables, SIZE is significant at 1% but has a negative relation with firm performance of -0.733.

Regression 2 represents regression results with growth options available in the form of price to earnings ratio. Here, it is represented with PERP in the presence of growth opportunities. With this factor, debt and concentration becomes more significant at 5% and 10%. It is important to note that PERP has a positive relation with firm performance, indicating the availability of high NPV investment projects leading to high firm performance. It has a beta coefficient of 1.113 at 1% significance level. Long-term debt has a significant positive effect on firm value in the

absence of growth options similar to the proposed hypothesis. Issuing Debt controls and limits their excess to free cash flow available, therefore, in the absence of growth opportunities, long-term debt acts as a disciplinary mechanism to reduce agency costs and increase firm value. The negative effect of long-term debt is high and more significant in the presence of growth opportunities, demonstrating that debt has a negative impact on the presence of good investment projects (Fatma andChichti, 2011; D'Mello and Miranda, 2010; Zhang and Li, 2008; Li and Cui, 2003). Ownership concentration variables are slightly increased, that is, with more growth options available, C1 has a positive relation with firm performance. This is due to the convergence effect. In C1 square, when concentration exceeds the optimal point, then it leads to an entrenchment effect (non-linear) and when power is increased from the optimal point, then owners begin to use their power for their own self-interest. In the presence of growth options, especially in ownership concentration square, it has a more negative significant impact on firm performance. This means that the availability of growth options leads to an expropriation of resources from powerful owners.

Table 4. Regression Results

	Reg 1		**Reg 2**		**Reg 3**		**Reg 4**		**Reg 5**	
Intercept	**12.771*** **	6.51	**11.250*** **	5.83	**12.363*** **	6.43	**11.902*** **	5.92	12.152	6.13
TDTA	**0.911***	1.74	**0.980** **	1.9	**0.980** **	1.90	**0.872***	1.67	0.872	1.67
C1	2.416	1.40	**2.908***	1.71	**2.908***	1.71	2.457	1.42	2.457	1.42
C5	-1.780	-0.77	-1.787	-0.78	-1.787	-0.78	-1.918	-0.83	-1.918	-0.83
C1SQ	-0.795	-0.69	-0.805	-0.71	-0.805	-0.71	-0.857	-0.74	-0.857	-0.74
C5SQ	0.594	0.59	0.568	0.57	0.568	0.57	0.652	0.64	0.652	0.64
PERP	-		**1.113*** **	6.82	-		-		-	
PERA	-		-		**-1.113*** **	-6.82	-		-	
SRGP	-		-		-		**0.250***	1.75	-	
SRGA	-		-		-		-		**-0.250***	-1.75
DEP	-0.006	-0.43	-0.006	-0.49	-0.006	-0.49	-0.005	-0.41	-0.005	-0.41
TANG	1.069	1.58	**1.214***	1.82	**1.214***	1.82	1.05	1.55	1.050	1.55
DIV	-7.480	-0.60	-0.361	-0.29	-0.361	-0.29	-0.766	-0.61	-0.766	-0.61
SIZE	**-0.733*** **	-6.38	**-0.683*** **	-6.08	**-0.683*** **	-6.08	**-0.683*** **	-5.82	**-0.683*** **	-5.82
ROA	0.569	0.50	-0.209	-0.19	-0.209	-0.19	0.629	0.55	0.629	0.55
N	1540		1540		1540		1540		1540	
Wald chi2	51.03		98.11		98.11		53.88		53.88	
Prob > chi2	0.00		0.00		0.00		0.00		0.00	
Method	GEE		GEE		GEE		GEE		GEE	

Note: GEE is Generalized Estimating Equations method, ***,**,* denotes significance level at 1%, 5% and 10% levels respectively. T-statistics values are presented in parentheses

Regression 3 presents the absence of growth opportunities with the variable PERA. Here it is important to note that PERA has a -1.113 relation with firm performance at 1% significance level. This indicates that the absence of growth options reduces firm performance. In the absence of growth options, debt and concentration variables results almost remain the same as regression 1. This indicates that, without growth options, there are no resources for self-interest which managers and owners can exploit, therefore firm performance increases. Tangibility becomes significant at 10% in the presence of growth opportunities that are 1.214 in value. Depreciation and dividends pay-outs show the same pattern in

overall regression models, whereas ROA reduces PER, though not with SRG growth options models. Regression 4 and 5 represent Sales rate of growth SRG taken as a dummy variable as proxy for growth opportunities available and not available. In regression 4, SRGP represents the presence of growth opportunities and, in regression 5, SRGPA represents the absence of growth opportunities. The overall results are similar to PER ratio. However, the significance level has declined, indicating the PER to be a better indicator of growth opportunities. In addition, beta values have also slightly increased compared to ownership concentration variables but declined of debt variable. There is no change in the sign of any variable between SRG method and PER ratio. The estimated results gave higher explanatory power results with PER ratio than with SRG ratio. Here in the presence of growth opportunities, a non-linear effect is demonstrated with positive and negative signs of C1 and C1 square. However, in the absence of growth opportunities, the opposite reaction occurs, where, with an initial rise in concentration, a negative effect is demonstrated on firm value and, with a high level of concentration, a positive effect is seen on firm value, giving an inverse, non-linear effect in the absence of growth opportunities. The inverse, non-linear effect takes place in the absence of growth opportunities, as firms that lack good investment opportunities are more transparent. Due to visible transparency, the entrenchment effect is reduced, and a high concentration effect becomes positive for firm value. This is also supported and consistent with other studies [Javid, Iqbal 2008].

CONCLUSION

This research analyzed the dual effects of a firm's important financial decisions, that is corporate leverage impact, on a firm's value in the presence of good investment opportunities and without the presence of good investment opportunities. Price to Earnings Ratio & Sales Rate of Growth were utilized to seek firms with division in the presence of firms with the highest and lowest growth opportunities. These ratios are shown to be the most popular firm performance indicators which take firm earnings and sales rates into account to increase firm value with increased growth of firms because This research took 141 non-financial Pakistani companies listed on the Karachi stock Exchange from 2008 to 2018. The Generalized Estimation Equations Technique was applied for panel data sets, with results indicating the positive effects of corporate debt and dividends in the absence of growth opportunities and the negative effect of corporate debt and dividends in the presence of growth opportunities. Ownership concentration demonstrates a non-linear effect in the presence of growth opportunities and an inverse non-linear effect in the absence of growth opportunities.

Long-term debt is found to have a negative impact on firm value in the presence of growth opportunities due to underinvestment costs borne by the firm with the presence of agency conflicts between managers and bondholders of the company. Managers do not find it worthwhile to fund risky investment projects if project earnings go to bondholders in the case that investment in a risky project leads to a loss. This leads managers to avail themselves of the option of not investing. Therefore long-term debt has a negative impact on firm value. In the absence of growth opportunities, short-term debt and long-term debt have positive effects on firm value due to its disciplinary mechanism in limiting access to free cash flow in the hands of managers, which can lead to overinvestment problems. Managers expand firms unnecessarily, sometimes to increase their prestige, and also make bad investments. With access to free cash flows, they even invest in poor NPV given projects, therefore, it is preferable to issue debt in the absence of growth opportunities. Pakistan firm's estimation depicts positive and significant effects of debt on firm value in the absence of growth opportunities. Total debt effect was checked with a negative term which gives negative effects of overall debt on firm value in the presence of growth opportunities at 0.01%.

Dividends relations are uncertain in Pakistan as they give out negative effects with MBA ratio, positive effects with SMBA ratio and again negative effects with MBE ratio. Ownership concentration gives non-linear relations in all scenarios and cases. However,

in Pakistan, for firms with poor NPV projects, ownership concentration has an inverse non-linear effect on firm value. Size and ROA act fully as control variables with the highest significance level with SMBA as dependent variable.

Firm growth opportunities reflect a firm's high value on the market and an increased market price. The main focus of this study was to check the joint effects of corporate debt and dividends and their different roles played differently in the presence and absence of growth opportunities. This reflects how much a firm's policy on financial decisions is fully affected by good investment opportunities. Due to the presence of agency costs and conflicts of interest, a firm's management sometimes designs corporate financial policies according to their own interests. Ownership concentration sometimes becomes beneficial in removal of these conflicts of interest and increase firm value. However, sometimes high ownership concentrations also implement their force to build firm financial policies according to their own interests. This thesis provides insight with replacement models as well as with interacted models of independent variables to demonstrate how different beneficial financial policies could be designed and implemented to help reduce underinvestment and overinvestment costs and increase firm value in the presence absence of growth opportunities.

In Pakistan, mostly family-oriented businesses exist. Therefore, Pakistani companies are mostly very highly concentrated with few or one as the largest main shareholder. This thesis shows that, with concentrated ownership control, growth opportunities could be availed or exploited due to increased agency conflicts. In replacement model results, when only one ownership concentration variable is used, excluding second ownership concentration variables, there is a positive effect on firm value in all three cases. However, inclusion of high and low concentration with concentration square taken, depicts a non-linear effect on firm value. Concentration interactions revealed useful insights into different independent variables giving insights again into a firm's policy on financial decision with different levels of concentration present in the firm. Size depicts asset utilization of firms in good investment projects. With sector, adjusted MBA ratio size shows highly significant positive values in the presence of growth opportunities and highly significant negative values in absence of them. In the absence of growth opportunities, size has a negative effect because small sized firms mostly have a lower availability of good investment projects or might be too costly and expensive. Therefore, size has a negative effect on firm value in the absence of growth opportunities, whereas it is positive in the presence of growth opportunities and full sample data. Return on assets depicts the profitability generated by a firm with efficient utilization of its assets. There is a positive relation between return on assets and PER but a negative one with SRG.

IMPLICATIONS

This paper has important implications for majority shareholders, debt holders, and investors. A firm's majority shareholders are concerned with maximization of shareholder wealth. This article would benefit them to analyze the situations and alter the financial policies built by management where, with the use of more control and power, agency costs could be reduced and wealth could be maximized. Debt holders could act as intermediaries and could help to reduce the problem of adverse selection of investment projects by management with their knowledge of company debt policies and risks to be employed. Investors could trade off against their risk and return investment projects and portfolios to design and accomplish an idea of the return of a different kind of firm based on their availability and the used proportion of good and bad investment opportunities.

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WPŁYW STRUKTURY WŁASNOŚCI NA EFEKTYWNOŚĆ FIRM NA PRZYKŁADZIE PAKISTANU

STRESZCZENIE. **Wstęp:** Celem pracy jest określenie wpływu struktury własnościowej firmy na efekty jej działalności w obszarze sektora logistycznego w Pakistanie w przypadku opcji możliwości rozwojowych firmy oraz jej braku. Struktura własnościowa ma istotny wpływ zarówno pozytywny jak i negatywny na efekty działalności firmy.
Metody: W celu uzyskania danych do analizy, wybrano 141 firm pakistańskich, będących obecnych na giełdzie w Karachi. Dane pochodziły z okresu 2008-2018. Kryterium wyboru tych firm była najwyższa rynkowa kapitalizacja. Dane poddano analizie statystycznej za pomocą metody GEE (generalized estimating equation) stosowanej dla problemów endogeniczności i autokorelacji.
Wyniki: Uzyskane wyniki pokazują możliwości i ich brak dla różnych opcji wzrostu firm jako bardzo ważny czynnik wpływu struktury własnościowej oraz zadłużenia na efekty działalności firmy. W przypadku istnienia możliwości rozwoju dla firmy, wykryto zależność pomiędzy efektami działalności firmy and pozytywną istotną zależność pomiędzy zadłużeniem a efektami działalności firmy. W przypadku braku możliwości rozwoju zaobserwowane negatywną zależność pomiędzy strukturą własnościową a efektywnością firmy jak również negatywną zależność pomiędzy zadłużeniem a efektami działalności firmy.
Wnioski: Dźwignia finansowa ma dodatni wpływ w przypadku istnienia możliwości rozwoju i negatywny w przypadku jego braku. Uzyskane wyniki wskazują, że skupienie władzy w małym gronie właścicieli prowadzi do konwergencji i efektu „okopania się" w połączeniu z nieliniową zależnością od wyników finansowym w przypadku zarówno brak jak i występowania możliwości rozwoju firmy.

Słowa kluczowe: możliwości rozwoju, dźwignia finansowa, struktura własności, wartość firmy, niedoinwestowanie, przeinwestowanie, Pakistan

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