Academic Journal of Social Sciences (AJSS)
Vol. 6, Issue 1 (January – March 2022) PP. 070- 087
Doi: https://doi.org/10.54692/ajss.2022.611680

Role of Leverage in the Corporate Investment Decisions
Empirical Evidence of an Emerging Economy

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Abstract

In the instance of emerging economies, this research examines the firms' investment decision and leverage relationship. This study examines a sample Pakistan Stock Exchange (PSX) listed firms. Time period consists of six years from 2015 to 2020. To investigate the investment and leverage link Generalized Least Square (GLS) regression is used because of its more precise estimates than the ordinary least squares (OLS) estimator. Results reveal that leverage is negatively and significantly associated with the investment. In the case of Pakistan, this indicates that increased debt financing results in a decrease in company investment. Firms' investment decisions are also influenced by several other variables such as profitability, liquidity, and cash flows. Findings are in support of the corporate agency hypothesis, revealing that leverage plays a key role in the firm's growth. To solve the possible problem of endogeneity, the robustness of these results is cross-checked by using the Generalized Estimation Equation (GEE) method. The current paper adds to the existing body of knowledge in several ways. To begin, we contribute to the continuing discussion about whether corporate investment decisions are influenced by firm leverage. Second, in the context of emerging markets, we present an empirical study. Future research can be done with an evaluation between emerging and advanced countries, this study can be expanded across industry lines and at the country level. Because investment divergence from an ideal level is linked to the agency problem, these findings have important implications for corporate governance to protect shareholders' interests as well as in the context of emerging markets, this conclusion has significant implications.

Keywords: Equity Financing, Debt Financing, risk level, Investment decisions, Panel Data, Pakistan

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1. Introduction

Corporate organizations play a critical role in a nation's social and economic development. As a result, corporate entities are an integral part of the country's economic growth and success. Thus, the government should develop measures that encourage business growth. Corporations desire to manage their funds and make investment decisions effectively and efficiently to prosper their future growth potential. Investment decisions play a critical role in the economic stability of firms, as they directly influence the asset structure of an organization, its liquidity condition, and at the same time pattern of allocation of available financial funds to acquire various real and financial assets (Kannadhasan & Aramvalarthan, 2011). There are numerous ways to fund these investments (equity, leasing, loans, etc.) to meet the company's goal of boosting the company's wealth.

Leverage, often known as gearing ratio; method of boosting returns**.** Leverage is considered as one of the important features of capital structure along with retained earnings and equity (Ramli, Latan, & Solovida, 2019). The justifications for using the debt financing by companies for investment purposes it is viewed as expensive to issue shares for investment purposes and the expected earnings of existing shareholders may be diluted by this issuance of shares it also weakens the corporation's ownership structure, which could be a bad indicator for the company.

Leverage is thought to have both negative and beneficial aspects. The firm is considered highly leveraged if it has more debt financing than equity, the firm must commit the payment of principal and interest in the form of cash. Nevertheless, increased debt funding is seen as a major risk for the company. Leverage is advantageous to a corporation if the rate of return on investment is much higher than the rate of return on borrowings. Debt financing also assists businesses to save money on taxes by allowing them to deduct interest payments from their taxable income, resulting in increased cash flow. However, in that circumstance, the cost of financial distress outweighs the tax gain, and using more debt financing for the project will diminish the firm's value when the debt reaches a level where the likelihood of defaulting on debt commitments increases. It's also worth noting that in the presence of riskier debt financing, a company must pursue a less profitable investment strategy. As a result, it is possible to argue that leverage magnifies both the firm's losses and gains (Nazar & Studies, 2021).

Although, at present, briskly growing literature is available on the financing constraints of a firm's investment projects. However, this literature shows that most of the studies are done in the context of developed world

economies. Therefore, to improve the robustness of these studies and their results, empirical studies in the context of developing countries should also incorporate.

Recently, the corporate component in growing economies faced several restrictions in terms of access to loan and equity markets. Resultantly, research into the interplay of a firm's capital structure and financial constraints is likely to have been heavily influenced by constraints and hence be less illuminating. Second, even as late as the late 1980s, a handful of emerging nations suffered from financial collapse due to greater levels of negative real interest rates and legislative preemption. However, the topic of interaction between corporate finance and financial restrictions has gained a lot of attention in recent years, especially considering the dynamic institutional structure that exists in such nations. Even though various studies have already been conducted to investigate this designed relationship, it is still debatable. Findings of previous research are not conclusive which weakens the arguments priorly made and required more empirical evidence. In the financial sector of emerging economies, market-related reforms have been implemented. More importantly, since the 1990s, the institutional arrangement among which the financial institutions used to function during the regulated period has undergone major changes.

1.1. Leverage and Investment

In corporate finance, the connection between leverage and investment is crucial. Several theories on capital structure and company investment behaviors have been presented. Modigliani and Miller (1958) claimed that the cost does not affect whether the leverage ratio is 0% or 100%. They also asserted that NPV seems to be the only factor that can affect the company's investment strategy. Moreover, the literature has questioned the M&M theory, claiming that liquidity limitations and asymmetric knowledge influence firms' investment decisions, leading to underinvestment or overinvestment (Ahmad, Hunjra, & Taskin, 2021; Peng, Johnstone, & Christodoulou, 2020). As per agency theory, the externalities induced by debt financing on a company's investment decisions. Companies may reject investment proposals with a favorable (positive) NPV due to the agency conflict. It was observed that organizations with high leverage ratios are less likely than firms with low leverage ratios to take advantage of valuable growth prospects.

According to the underinvestment theory, if a company has a large debt obligation, it will lower its investment regardless of the nature of its growth potential. As per this idea, if debt creates the possibility for underinvestment incentives, and the firm realizes this early enough to reduce its leverage by implementing remedial actions, the effect may be mitigated. As a firm's growth

is affected by leverage, management may minimize its leverage. Leverage is an indicator of management's purpose for investment opportunities (Farooq, Ahmed, & Saleem, 2014).

In contrast, according to the Over-investment theory defined by Jensen explain that there may be differences of opinions in management and shareholders in terms of financing projects, which is also perceived as an expense. The managers want to extend their commercial operations by taking advantage of possibilities, even if it means taking on initiatives with a negative net present value, which could lower shareholder wealth. The accessibility of cash flows may limit managers' strategy, which is exacerbated by debt financing (Bhuiyan & Hooks, 2019; Ding, Knight, & Zhang, 2019; Guo, Legesse, Tang, & Wu, 2021).

Parrino and Weisbach (1999) conclusively report that a large level of debt had distorted investment operations. As the leverage ratio increased, corporations' investment capability dropped. When companies don't have enough resources, they choose projects that will keep their cash flow consistent; thus, a lack of funding leads to underinvestment.

1.2. Q ratio and Investment

In microeconomic terms, the link in corporate leverage, Q ratio, and investment is as follows: Initiating with the capital supply-demand curve, the vertical axis represents the cost of capital (r), and the horizontal axis shows the amount of capital (K) that a company can use. The horizontal axis will display the invested capital if all the amounts are invested. Regardless of the source of cash, enterprises must pay the same cost of capital to finance (Eklund, 2007). As an outcome, the supply curve SK is constant under perfect competitive and information symmetry, and the slope of the capital demand curve DK0 is downward. The investment opportunity is the determinant of the demand curve (Figure 1). The demand curve will shift to DK1 on the right. The corporation can now borrow additional money to enhance its investment because the new equilibrium is E1.

Hence, the cost of capital fluctuates over time and cannot be maintained constant (Rui, 2004). Due to information asymmetry and liquidity limitations induced by increased loan financing, supply curves shift upward when debt is considered. Figure 2 shows the new capital supply curve SK and the demand curve DK_0. When enterprises have a limited number of investment possibilities, the equilibrium shifts from K_0 to K_0', indicating underinvestment. When the externality's cost is larger, the supply curve steepens with the same investment prospects. The equilibrium point has shifted from K_0 to K_0 in this circumstance."

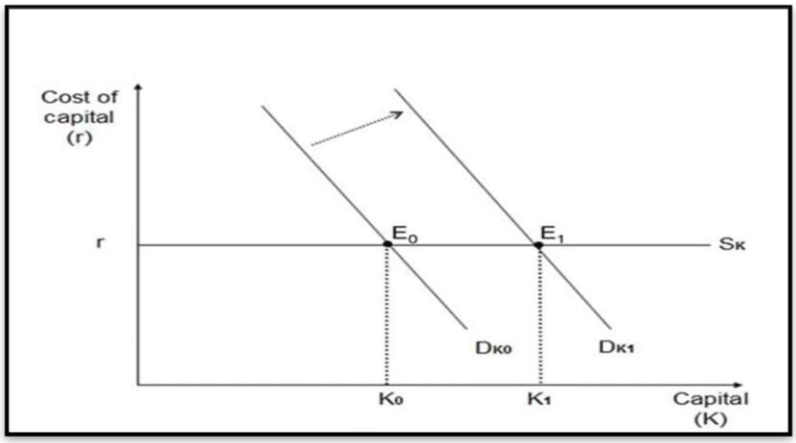

Figure 1: Effect of Q ratio on Investment

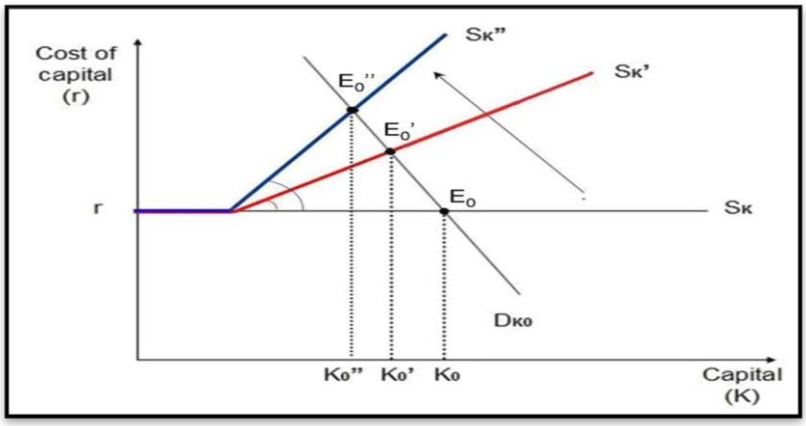

Figure 2: Link in Q ratio, Leverage, and Investment

Figure 3 depicts the scenario when the externality's cost is greater than the equilibrium position, which has shifted from E_0 to E_0". With the slope SK", the difference between K_0 and K_0" would be considerable. This demonstrates the detrimental impact of debt, which increases the degree of underinvestment.

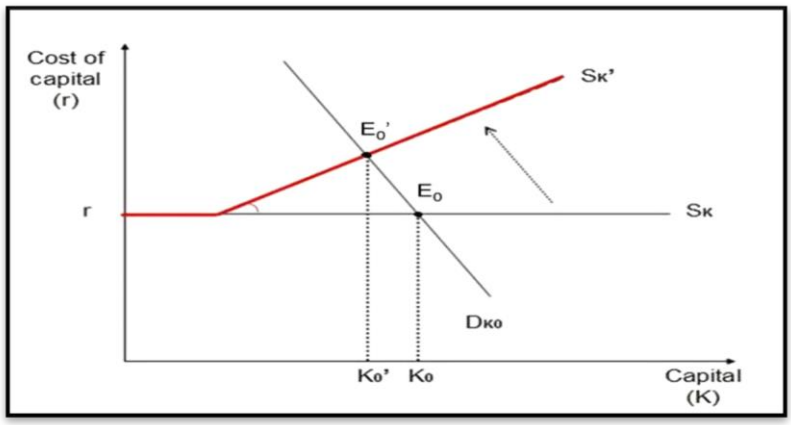

Figure 3: Leverage Negative effect on Investment

Figure 1, 2, and 3 shows that the investment opportunity is proportional to the amount of money invested. When there are liquidity limitations and

knowledge asymmetry, however, there is a negative relationship between leverage and investment. An empirical analysis was done to determine the link between leverage and investment.

2. Literature review and Hypothesis Development

A growing body of work in the corporate finance literature studies linkages between the investment decisions and leverage using the methodology where the companies flexibly eventually adjust their policies.

Myers (1977) has developed an agency model that emphasizes relations among growth opportunities, debt maturity, and leverage. He has also concluded that the principal-agent alliance managing the potential high growth opportunities of the company might reject positive NPV projects because of the agency cost. Because the high-risk debt repayment of such projects accrues largely to the shareholders rather than wholly to the manager, the problem of underinvestment arises (Trong & Nguyen, 2020; Wei, Wang & Guo, 2019). Aggarwal, Kyaw, and Zhao (2011) exposed that there is a significant and positive association between leverage and the firm that has a low q ratio. According to the researchers, leverage creates value for organizations with limited growth potential while lowering the value for firms with great growth potential. The cost of risky debt might be reduced by lowering the leverage ratio and that would firm to avail the valuable growth opportunities. The use of debt financing with shorter maturities can enable the shareholders to gain from the new projects by reorganizing the debt agreements to alleviate the underinvestment problem.

Ahn and Denis (2006) revealed that debt ratios of diversified organizations are more likely to be higher and they tend to make larger investments. They also posited that the debt ratio influences management's investment choices and that this barrier will be removed by the dispersion of obligations across corporate managers (Chi &Chau, 2019).

Lately, Lang, Ofek, and Stulz (1996) and Lei, Chen, and Trade (2019) studied that if the firm has good investment opportunities then the debt financing does not reduce the firm’s growth, but the debt financing has a negative effect on the firms those do not have better opportunities for growth in the industry. Childs, Mauer, and Ott (2005) and Jiang, Liu, and Yang (2019) reveal that financial flexibility encourages the use of loans with shorter maturities, which lowers agency costs by dramatically reducing underinvestment and overinvestment. Ahn et al. (2006) and Guo et al. (2021) reveal that significantly stronger negative linkages exist between the leverage ratio and investment in diversified companies that have a higher Q ratio than for the firm's lower Q ratio and that is dramatically stronger for non-core

segments of the business. A significantly weaker positive association between firm value and the leverage of the low growth diversified companies than in the focused companies. The findings suggest that with a varied organizational structure, managerial discretion would partially counteract the disciplinary benefits of debt in debt allocation to various business units of the firm. In China, Firth, Lin, and Wong (2008) researched the association between leverage and investment, and their findings revealed that there is a negative association between the two. The author also investigated the fact that this negative association appears to be weak for enterprises experiencing low growth and bad operating performance, and vice versa.

Recently, Trong and Nguyen (2020) investigated the relationship between debt financing, firm growth, and investment. They found that the debt financing and agency problem causes under-investment or overinvestment which negatively influences the corporate investment, firm value, and growth. Similarly, the results of Eda and Mehmet (2009) and Vo (2019) also proved an inverse relationship between leverage and investment but it is only for the firms that have low growth. The results of Lei et al. (2019) and Yu and Chen (1999) explain that leverage influences a firm's investment, the researchers found that if the q ratio is less than one, leverage is negatively connected with the firm, and if the q ratio is larger than one, leverage is favorably correlated with the firm. González and González (2008), Firth, Lin, and Wong (2008) and Shi and Gao (2018) argued that the leverage of a firm increased as a result of better creditor rights protection and more bank intervention.

Mykhayliv and Zauner (2017) concluded the investment significantly affected by profitability of the company. They specified that "the higher profitability is not always a necessary, let alone a sufficient condition for increased investment". Bhattacharyya (2008) discovered that investment decisions have a variable impact on a firm's short-term profitability; this means that the firm should also focus on long-term profitability. It stated that profitability is a key factor in deciding whether to invest. When it comes to company investment decisions, the author, on the other hand, suggests that profitability is less significant than liquidity.

Jia (2020) inspected the significance of the sales level for the firms' investment decisions. They found that the relationship of sales with investment is significantly positive. Further, recently, Alam, Uddin, Yazdifar, Shafique, and Lartey (2020) and Devereux and Schiantarelli (1990) studied the impact of cash flows on investment spending was investigated. They discovered that larger organizations' cash flow has a greater impact on investment than small businesses. It also shows that organizations with a more varied ownership structure are more influenced by the agency problem.

The purpose of this study is to determine the extent to which leverage influences investment decisions, as well as other factors that may influence investment decisions made by Pakistani enterprises. For the period 2015-2020, the panel data covers 75 Pakistan stock exchange-listed companies. Based on the literature review, we propose our hypothesis as:

H_1: The use of debt financing negatively affects the firm's investment decisions.

3. Methodology

3.1. Sample

In the Pakistani context, to analyze the linkage between leverage and investment, this study includes panel data of 75 companies selected from the PSX listed companies from six sectors (beverages, pharma, and biotech, construction and material, oil and gas, automobile, and chemical) of Pakistan. Our data include six years (2015 - 2020) to obtain a sample of 450 firm years. Our sample study's selection criteria are focused on companies with the biggest market capitalization.

3.2. Measures

The dependent variable in this study is Investment while independent variables are leverage, cash flows, sales, Tobin Q, ROA, Liquidity, and retained earnings.

3.2.1. Dependent Variable

Investment is defined to be capital expenditures divided by the total assets of the company each year.

3.2.2. Independent Variable

We define our independent variables used in the study as:

Leverage: Total liabilities / Total Assets Ratio.

3.2.3. Control variables

Cash flows: EBITDA + dividend and depreciation divided by Net fixed assets

Liquidity: Current Assets / Current Liabilities

Sales: Net Sales / Net Fixed Asset.

Tobin Q: Market Value of Equity / Total Assets

Retained earnings: Amount of Business Savings

Profitability (ROA): EBITDA / Total Assets

The leverage is the principal variable of this study. The leverage's book value is used to define our variable.

Lang (1996) highlighted that the equity values are too much weighted by the leverage's market value. The book value cannot reflect market value's deviations of the company. If the investment is negatively significantly affected by leverage this indicates that: First, for a firm's investment policies, the capital structure is one the important components. Secondly, it would also explicate via an agency problem of the principal and agent. If the firm is an overburden of debt, it might quit the positive NPV projects. It furthermore supports the theories of overinvestment and underinvestment.

The cash flow of the firm is a paramount determinant of the growth of the firm. If the firm has enough cash flows, it can use that for further investment purposes and it also provides evidence that internal funds are reflected in the investment of the firm. Cash flow is the excess amount of money available to invest in profitable projects. The amount utilized in projects would also generate future inflows significantly greater than the original amount. This measure is normalized by taking the book value of fixed assets.

Liquidity measures the ability of firms to meet their commitments. Assuming that the firms have a bad liquidity position it might bring financial distress. Bernanke and Gertler (1990) contended that "both the quantity of investment spending and its expected return will be sensitive to the creditworthiness of borrowers". The firm's investment decisions are sensitive to its liquidity position.

Sales measure the effectiveness of the firm's fixed assets. A high ratio reflects the efficient use of assets in business operations and vice versa.

Tobin Q measures the opportunities of growth and contrasts the association's market values and the book value of assets of the firm. If the value of Tobin q is 1 subsequently it reflects the market value of the company's assets is equal to book value. If it is more than 1 it indicates that the market value of assets is higher than the asset's book value. High q proportions sway organizations to put progressively in the capital on the opportunities that they have more worth than the cost paid by the organization and if the Tobin Q's value is not exactly 1 the market value of the asset is less than the book value of assets.

Retained Earnings is the amount that is not paid as a dividend and held for further operations and anticipated investments. This is also an important determinant of investment. Some literature shows that an overabundance of retained earnings would cause less profitable opportunities for business. The other school of thought has an inverse conclusion about retained earnings. The retained earnings ensured capital interest that is essential for business operations, and it stimulates the investment strategy of firms.

Profitability is an important variable to measure growth it clarifies what amount of the assets is contributing towards absolute benefit.

Table 1: Variable Description

Dependent Variable	Definitions	Measurement
Investments	An investment entails putting money to work today in the hopes of increasing its worth over time.	Capital Expenditures / Total Assets
Independent Variables		
Leverage	The utilization of debt (borrowed cash) to boost the rewards on an investment or project is known as leverage.	Total liabilities / Total Assets Ratio.
Control Variables		
Cashflow	Cash flow is the excess amount of money available to invest in profitable projects.	EBITDA + dividend and depreciation divided by Net fixed assets
Sales	Sales measure the effectiveness of the firm's fixed assets	Net Sales / Net Fixed Asset
Tobin Q	Tobin Q measures the opportunities for growth and contrasts the association's market values and the book value of assets of the firm	Market Value of Equity / Total Assets
Liquidity	Liquidity measures the ability of firms to meet their commitments	Current Assets / Current Liabilities
Retained earnings	Retained Earnings is the amount that is not paid as a dividend and held for further operations and anticipated investments	Amount of Business Savings
ROA	ROA is a profitability ratio that measures, what amount of the assets is contributing towards absolute benefit.	EBITDA / Total Assets

3.3. Model Specification

Using Panel-based GLS regression fixed effects methodology and the generalized least square Equations for robustness are applied in which investment depends on leverage, cash flows, Tobin Q, sales, profitability, liquidity, and retained earnings. The generalized least squares (GLS) are more precise estimates than the ordinary least squares (OLS) estimator because the OLS does not utilize the information that contains the information about heteroscedasticity and autocorrelation, whereas the GLS estimator does. During the econometric analysis, the initial step is to distinguish between random effect estimates and fixed effect estimates. A fixed-effect model represents quantities observed treated explanatory variables if they were nonrandom. It enabled the use of changes in variables eventually to estimate the effects of independent variables on the dependent variables. The random effect model is a hierarchical linear model that implies the examined datasets are made up of panel data from distinct populations whose differences are related to the hierarchy. To check the appropriateness of random or fixed effects estimates for the study Hausman test is used. The test examines the null hypothesis that coefficients estimated by fixed effects estimator are the same as estimated by the random-effects model. If the results are insignificant p-value, Prob>chi2 larger than .05 then the random-effects model is suitable and if a significant p-value is calculated then the fixed effects model is appropriate.

The effect of leverage on investment estimated by following equation the model has been adopted from (Franklin & Muthusamy, 2011):

$$INV_{it} = \alpha + \beta 1\ LEV_{t-1} + \beta 2\ CF_{it}/K_{t-1} + \beta 3\ Q_{t-1} + \beta 4\ S_{it}/Kt\text{-}1 + \beta 5\ ROA_{t-1} + \beta 6\ LIQ_{t-1} + \beta 7\ RE_{t-1} + \varepsilon it$$

Where: INV_{it} represents a net investment of firm i at time t, LEVt-1 : leverage ratio at time t-1, CFit cash flows of firm i at time t, Kt-1 net fixed assets at time t-1,Sit sales at of firm i at time t, LIQt-1 liquidity at time t-1,REt-1 retained earnings at time t-1, ROAt-1 profitability at time t-1, Qt-1 Tobin q at time t-1 and εit random error.

4. Results

4.1. Descriptive Statistics

The mean of investment is 1.60 whereas the standard deviation is 1.52. The average of the Tobin Q of 17.91 reflects expectations of strong opportunities for market growth and has a large variation in growth for Pakistani companies over the selected sample period. The mean of the leverage is 0.60 this value suggests that Pakistani companies have significant reliance on debt financing.

The average debt to total assets ratio is 60%. With average annual sales growth of 4.8%, the variable's spread is wide, as can be seen by the minimum (0) and maximum (28) changes in sales growth. Finally, the average cash flow is 83 % assets, and the minimum cash flow, like the dependent variable investment, is negative, indicating a negative net cash flow from operations.

Table 2: Results of Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Inv	450	1.60	1.52	-0.79	7.87
cfitkit1	450	0.83	0.787	-0.415	5.691
levt1	450	0.60	0.28	0.015	1.813
liqt1	450	1.51	1.34	0	7.97
salet1	450	4.88	4.798	0	28.34
roat1	450	0.06	0.08	-0.16	0.31
Re	450	965	1847	-5193	8725
qt1	450	17.91	115.5	0	1336.6

4.2. Pearson's Correlation Results

Table 2 provides the correlation (Pearson's) results between leverage (LEV), cash flows (CF), sales, liquidity (LIQ), profitability (ROA), Tobin q (Q), and retained earnings (RE). The correlation among the variables the correlation of the results between our main variables investment and leverage showed a significant negative linkage between the investment and leverage (-0.411, $p < 0.01$).

The empirical results have intimated that firm reduces the debt level when they will find valuable growth opportunities in the future (Trong & Nguyen, 2020). If the debt creates incentives for the management to over-invest or under-invest managers lower the debt level so that interest payments are attenuated to mitigate the leverage's effect on the growth of the company. The debt level indicates how optimistic management is about future investment prospects; this circumstance implies a negative relationship between Tobin Q and leverage, as well as a negative relationship between leverage and investment that cannot be explained by agency issues. The correlation between leverage and Tobin Q is significantly negative (-0.226, $p <0.01$) in the situation where managers consider leverage as a signal for future growth opportunities and adjust in debt level to anticipate future growth opportunities. This specifies that firms must take corrective actions when they foresee valuable opportunities. The relationship between sales and leverage is significant but

negative. The non-significant negative relationship proposes that companies take on corrective actions when they realize valuable growth opportunities.

Table 3: Pearson's Correlation Matrices: Correlations with Investment, Leverage, and variables

Variables	INV	CFit / Ki, t-1	lev t-1	sale t-1	liq t-1	roa t-1	qt-1	RE
INV	1	.701**	-.411**	.206**	.315**	.176**	.139**	.302**
CFit / Ki, t-1		1	-.212**	.114*	.271**	.209**	0.082	.271**
lev t-1			1	-.134**	-0.09	-.159*	-.226**	-.203**
sale t-1				1	.163**	.213**	-0.041	0.081
liq t-1					1	.532**	0.031	.145**
roa t-1						1	-.161**	.134*
qt-1							1	-0.041
RE								1

Note: ***. Correlation is significant at the 0.01 level (2-tailed).*
**. Correlation is significant at the 0.05 level (2-tailed).*

4.3. Generalized Least Square Fixed Effect regression

Table 3 reports the regression results for the investment equation using the two alternative methodologies. The calculated F value (8.97) is greater than the p-value which shows that variables are significantly associated with investment during the period of study.

The result indicates that the investment is negatively affected by the leverage at a 0.01 level of significance. This negative relationship between leverage and investment is robust for different empirical studies. The estimate (β -1.36, $p < 0.00$) suggests that investment decreases by a ratio of 0.0136 when the level of leverage increases by 0.1.

Tobin Q (β 0.034, $p < 0.05$) which is the measure of growth opportunities for firms has a positive significant effect on investment and the cash flow is statistically significant at 1% that indicates the firms mostly relies on the free cash flows investment purpose because it is the cheapest form of financing. The lagged sale has a negative but insignificant impact on the investment. It reveals that firms are under-utilizing the fixed assets that would affect the ability to sell.

The coefficient of determination (R2) is 0.55 for the model which means that the variation in the investment is 46% explained by leverage, cash flows, Tobin Q, liquidity, sales, and ROA, and retained earnings significantly influence the investment. The fixed effect test is more suitable for studying the relation between investment and leverage than the random effects confirmed by the Hausman test whose result is significant. The value of Durbin Watson

is 1.31 which lies within the range of 0-4 confirming that the autocorrelation between variables doesn't exist.

Table 4: Results of Generalized Least Square Fixed Effect regression analysis using Investment as a response variable and Leverage as independent predictor variable

Variables	Coefficient	P>|t|
cfitkit1	0.45784	0.00
levt1	-1.361	0.00
salet1	-0.001	0.71
liqt1	0.041	0.45
roat1	0.211	0.81
Re	0.003	0.01
qt1	0.034	0.05

Note: **p < 0.10; **p < 0.05; ***p < 0.00; Panel Data Model Type is fixed, Hausman Test is 56.58**, Durbin Watson is 1.31; P (x^2) indicates the significance level of F statistics; R-Square is 0.55, F value is 8.97 and P(x^2) is at 0.000***

4.4. Robustness Test

We conducted an additional robustness test of our empirical findings for linkage between leverage and investment by using alternative methodologies. We tested the robustness of the results using the generalized estimating equation methodology.

Table 4 represents the results of sample data it demonstrates that leverage is negatively and significantly related to the investment (β -1.414, p-value > 0.00). The cash flow is significantly positively related to investment (β 0.712; -value >0.00). Liquidity has an overall insignificant positive effect on investment. When firms fail to meet their obligations due to the bad liquidity position that would result in the reduction confidence of creditors and poor creditworthiness. This is not in our case as shown by the results.

Tobin q has a positive significant impact on firm investment (β .031, p-value > 0.05). For the firms that have a propensity to expand business the availability of free cash flows would also constraints the management by achieving their objectives and it can be further tightened due to debt covenants imposed by lending institutions. The retained earnings is a positive and significant determinant of firm investment and it depicts the dependence of investment on the availability of internal funds. The value of the Wald chi-square (178.71) is significant for the model and hence proved the validity of the model. The model is significant at (p < .05). The explained variance (R2) of 58% indicates that leverage, cash flows, Tobin Q, liquidity, sales, ROA, and retained earnings significantly influence the investment.

Table 5: Results of Generalized Estimation Equation using Investment as a response variable and Leverage as a predictor variable

Variable	Coefficient	P>z
cfitkit1	0.712	0.00
levt1	-1.424	0.00
salet1	0.009	0.51
liqt1	0.060	0.32
roat1	0.074	0.89
Re	0.002	0.00
qt1	0.031	0.04

Note: *R square is 0.58; Wald-chi Square is 178.71**; P(x2) is 0.000**; p < 0.10; *p < 0.05; **p < 0.01; ***p < 0.001 and P (x^2) indicates the significance level of Wald-Chi Square*

5. Conclusion

In this paper, we have shown the association of investment with leverage. This study examined this association for Pakistani firms. We looked at whether leverage affects investment using panel data of Pakistani publicly traded enterprises between 2015 and 2020. The findings of this study revealed that leverage is considerably negatively associated with company investment, implying that a firm's capital structure is critical to its investment strategies. More factors than only leverage influence investment, including firm strategy, cash flows, profitability, sales, liquidity, and Tobin q. A company's internal operations should be strong enough to allow it to invest more because of these influencing aspects. According to the findings of this study, businesses may change their leverage levels to predict future investment opportunities. The findings of this study support the corporate agency hypothesis, revealing that leverage plays a key role in the firm's growth. The findings of this study also imply that, as compared to enterprises with a low Q ratio, a larger leverage ratio appears to impose stronger limits on investments. The findings suggest that the leverage's disciplinary role would be partially countered by more diversified businesses. The unfavorable connection between the Tobin Q and leverage predicts a low firm value and fewer investments, confirming that higher debt financing encourages underinvestment and has a detrimental impact on a firm's growth.

Leverage has a negative influence on a company's investment, and this result is robust when employing multiple econometric approaches. Using other approaches, the results show that the negative impact of leverage on investment remains consistent, confirming our hypothesis. Our results are consistent with the study of (Aivazian, Ge, & Qiu, 2005) and (Franklin & Muthusamy, 2011). Although our study has several limitations, it does provide useful information for future research. The current study is limited to Pakistani

firms only with focused empirical testing of six years. Moderated mediating analysis and comparative studies with other developing nations would be valuable for future research. Also, incorporating different variables (asset efficiency), targeting SMEs, and involving most recent years would provide new avenues for future researchers. Because investment divergence from an ideal level is linked to the agency problem, these findings have important implications for corporate governance to protect shareholders' interests as well as in context of emerging markets, this conclusion has significant implications. Moreover, the findings aid strategic management in determining whether to take on long-term debt for financing purposes. With a comparison between developing and developed countries, this study can be expanded across industry lines and at the country level.

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