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THE EFFECT OF FINANCIAL LEVERAGE ON SHAREHOLDER'S RETURN: A MODERATED AND MEDIATED MODEL

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Iman Shafique

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Dedication

My Father for all his support and motivation

And

My Mother for all her sacrifices and prayers.

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First and foremost, I am thankful to Allah Almighty for His blessings upon me.

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ABSTRACT

This research paper analyzes the impact of financial leverage on shareholder returns in Pakistan's real estate sector. This study considers the mediating role of cash holdings and the moderating effect of lending rates. It addresses a research gap by focusing on how these financial strategies affect small real estate firms, mainly during economic uncertainty caused by COVID-19.

Theoretical idea is established from the agency cost concept (conflict on risk preferences). This concept indicates that conflicts between managers and shareholders on financial strategies (debt and cash management), significantly impact returns on equity (ROE). The findings confirm three key hypotheses, considering a sample of seven small-sized firms listed on the PSX from 2018-2022: financial leverage has an insignificant direct impact on ROE, cash holdings mediate the relationship between financial leverage and ROE, and lending rates moderate this relationship.

The study contributes to the agency cost theory by explaining how strategic financial planning affect ROE in the real estate sector. This offers practical implications for firms to enhance their financial planning and strategic decision-making by exchanging valuable information in proper meetings and workshops.

This study provides insight for policymakers, investors, and managers. To enhance financial strategies in the context of Pakistan’s real estate market. Even though limitations are present, like small sample size and specific industry.

Further research should consider larger samples, different industries, and different mediators and moderators to further upgrade the findings.

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List of Abbreviations

Abbreviation	***Definition***
D_E	*Debt to Equity*
D_A	*Debt to Asset*
CH	*Cash Holdings*
LR	*Lending Rate*

Chapter 1

Introduction

1.1 Overview

This study will look at the financial choices of real estate firms that led to developments. And will also assist in creating better future laws and financial choices in Pakistan by using Agency Cost Concept. Considering the Agency Cost Concept, the paper examines how holding cash serves and how financing strategically may make a firm operate better and improve its return to shareholders. It investigates the subtle linkages between interest rates, financial leverage, reserves of cash, and shareholder returns in Pakistan's real estate market considering the changing macroeconomic situations. The long history of financial choices made in reaction to economic situations lays the foundation for a thorough examination of these complicated interactions.

1.2 Background

The real estate business in Pakistan has seen significant expansion and transformation in recent years(Khan et al., 2023). Real Estate Services increased by 3.9 %, with development representing 13.6% of this sector. The building and construction sector's labor share grew from 9 % in the fiscal year 2019 to 9.7% in the fiscal year 2022. Real estate operations make up 19% of the privately held GFCF and have gone up by 36%. Both building and manufacturing are recognized as the primary drivers of boost to the economy. By creating jobs and wealth. The real estate industry grew at a record-breaking pace of 65.5 % in the fiscal year 2021-22(Ghar, 2022.). Thanks to state and SBP initiatives to promote property and financing for development. The

implementation of the State Premium Discount Plan and SBP rules increased funding to the property and building industries even more. The trusts for real estate investments are getting popularity through plans and a combined capital valued at Rs 71.25 billion. The influence of the building and real estate industries on adjacent industries such as metals like steel and iron manufacturing is visible in increasing shipments.(*Chapter-01.Pdf*, 2021.) (A. Hussain et al., 2022)

This research explores the financial decision-making operations of Pakistani real estate firms. By emphasizing the complex relation between rates of lending, financial leverage, reserves of cash, and returns to shareholders. The study (Abdel-Aziz & Alrabba, 2023) based on the Agency Cost Concept, claims that using borrowed fund might reduce issues between managers and shareholders. Hence impacting returns across industries. Leverage is also considered as a way to prevent management from excessive cash holding. Hence, encouraging more smart investments. As, contractual costs like interest payments would be present. So, these would be covered by the excessive cash invested. The research (Okunlola et al., 2023) highlights the historical shift from firms depending on internal finances to the intentional usage of financial leverage. Shareholder return is a key measure driven by profitability and market conditions. It is examined (Arhinful & Radmehr, 2023) in the light of leveraging. Leveraging is a technique that has a chance for enhanced return but also a greater risk. This paper (Arianpoor & Mehrfard, 2023) also recognizes the importance of cash reserves. These reserves are considered as a form of security and issues firms deal with in finding the correct balance between benefiting on investment opportunities while handling financial risks (A. Hussain et al., 2023). This research tries to break down the decision-making processes of real estate firms in Pakistan under economic instability and shifts in the market. With the background of shifting lending rates formed by state initiatives. Recent, marginal lending rate in Pakistan has been observed at 13.63%. During times of higher interest rates, our selected small sized real-estate firms may choose to take on short-term debt (García-Teruel & Martínez-Solano, 2007). This means that they borrow money for a shorter duration, at

lower interest rates and higher payments, which can help reduce their interest costs in the short term. By opting for short-term debt during periods of high interest rates, these firms aim to reduce their financial burden caused by economic uncertainties (like-COVID-19). However, this debt-financing strategy also increases the risk of having to refinance their debt at higher rates if interest rates rise suddenly.

This research will look at the financial choices of real estate firms that led to developments. And will also assist in creating better future laws and financial choices in Pakistan by using Agency Cost Concept. Considering the Agency Cost Concept, the paper examines how holding cash works and how financing strategically may make a firm operate better and improve its return to shareholders. It investigates the subtle linkages between interest rates, financial leverage, reserves of cash, and shareholder returns in Pakistan's real estate market considering the changing macroeconomic situations. The long history of financial choices made in reaction to economic situations lays the foundation for a thorough examination of these complicated interactions.

1.3 Research Gap

There's a major gap in investigation (Mitra & Naik, 2021) regarding how Pakistani real estate businesses make financial choices. Such as, in identifying the intricate relationships between interest rates, financial leverage, funds on hand, and returns to shareholders. Researchers lack data on how these firms deal with these financial factors during difficult economic periods, such as lending rates instability after Covid-19. Regardless of significance and upward trend of the real estate sector.

Previous research (A. Hussain et al., 2022) generally concentrates on economic patterns such as spending gaps, GDP, exchange rates and inflation rates rather than the unique financial planning of Pakistani real estate companies especially small firms. Previous studies (Nazir et al., 2021) were extremely wide in scope and extended to the manufacturing as well as service

industries in Pakistan. They don't analyze how leverage impacts cash reserves and, as a result, shareholder returns in Pakistani Real Estate firms. This gap hinders an in-depth awareness of industrial operations and restricts the creation of better regulations for a sustainable future.

The problem is significant because investors, states, real estate corporations, and policymakers will need to explore future choices and techniques mainly during economic fluctuations. It's harder to understand and maintain cash balances necessary for financial stability during evolving lending rates(Nasir, 2022). This study examines the past financial decisions made by real estate corporations that resulted in growth. And it will also contribute to the creation of better future laws and financial decisions in Pakistan by investigating the relationships between interest rates, financial leverage, reserves of cash, and returns to shareholders.

1.4 Problem Statement

Despite the significant growth of the real estate sector in Pakistan, there is a research gap in understanding how small-sized real estate firms make financial decisions, particularly regarding the interplay between financial leverage, cash holdings, and shareholder returns. Previous research (A. Hussain et al., 2022) has mainly focused on broad economic indicators or other industries. This neglecting the unique financial planning challenges faced by these firms. This gap is especially crucial during and after the economic disruptions caused by the COVID-19 pandemic, which led to considerable instability in lending rates.

The existing literature (Nazir et al., 2021) lacks detailed analysis on how small-sized Pakistani real estate firms manage financial leverage and cash reserves to influence shareholder returns during uncertain economic conditions. This complexity and the absence of specific data on these financial decisions for real-estate sector during economic downturns hinder the

development of effective financial strategies, regulatory frameworks and reduction of conflict on risk preferences (Panda & Leepsa, 2017).

This study aims to fill this gap by investigating the impact of financial leverage on shareholder returns, with cash holdings as a mediating variable and lending rates as a moderating variable, within the context of small-sized real estate firms in Pakistan. Influenced by the Agency Cost of Capital and Risk concept(Guo et al., 2021), which addresses differing risk preferences in opting for different financial strategies between shareholders and agents, this research will provide insights into the financial strategies that promote growth and stability.

This research is significant as it will help reduce conflicts arising from different risk preferences between shareholders and agents, particularly during uncertain economic periods. The findings will contribute to the formulation of better financial practices, enhanced discussions on risk preferences, and improved regulatory frameworks, aiding investors, policymakers, and real estate firms in making informed decisions and maintaining financial stability during economic fluctuations.

1.5 Significance of Real Estate Sector

Real-Estate sector (*Chap-2.Pdf*, 2022.)serves as an important part of economic activity in Pakistan (Ghar, 2022.). It is building employment opportunities and encouraging building wealth. Also, it plays an important role in infrastructure development and providing important facilities(A. Hussain et al., 2022). Such as, housing solutions for the population under housing programs after merging with different financing banks. The sector's growth encourages different related sectors, such as construction and manufacturing. Their growth further influences Pakistan’s economy (*Chapter-01.Pdf*, 2021.). The state of Pakistan can improve stability, attract investors, and encourage sustainable development. In result upgrading the quality of life for citizens by supporting already progressing real estate sector.

1.6 Scope of The Study

The study intends to fill a critical gap in knowledge of financial patterns in Pakistan's real estate market. By analyzing the relationship between reserves of cash, financial leverage, and interest rates. It aims to investigate (Guo et al., 2021) how cash management mediates the link between financial leverage and shareholder profits in the setting of changing interest rates. The research intends to give findings that could act as a useful guide for policymakers, real estate businesses, and investors. Thus, leading to improved decision-making and encouraging economic progress in Pakistan.

1.7 Research Questions

On the base of research gap explained earlier, we have following research question:

- What is the impact of Financial leverage on the Shareholder's return in Pakistan's real estate sector?
- Does Cash holding mediate the relationship between Financial leverage and Shareholder's return in Pakistan's real estate sector?
- Does lending rates moderate the relationship between Financial leverage and shareholder's return in Pakistan's real estate sector?

1.8 Research Objectives

The purpose of study is to examine the Financial leverage impact on Shareholders return. We also investigated the mediating role of cash holdings between Financial leverage and Shareholders return. We concluded that lending rates has strong impact between Financial leverage and Shareholders return.

- To examine the relationship between Financial leverage and Shareholders return.
- To examine the mediating role of cash holdings in relationship between Financial leverage and Shareholders return.
- To examine the moderating role of lending rates on a relationship between Financial Leverage and Shareholder's return.

1.9 Significance of The Research Contribution

The purpose of this research is to look into the impact of cash holdings on the link between financial leverage and returns to shareholders in Pakistan's real estate sector as influenced by lending rates. It has broad implications (Mitra & Naik, 2021) for a wide range of stakeholders. Knowing how cash holdings impact the relationship between borrowings and returns to shareholders is critical for better risk handling and choice of portfolio for investors(Panda & Leepsa, 2017). Particularly since the real estate sector's vulnerability to interest rates during and after the COVID-19 years. This research would help policymakers develop specific strategies (optimizing cash management methods and improved measures that address the influence of interest rates on these movements) and policies that create a healthy financial setting. This encourages sustainability and long-term growth (*Chapter-01.Pdf*, 2021). Scholars will find academic significance in gaining a better knowledge of the fluctuations of the real estate market. With possible options for further investigation and policies inspection. Furthermore, the study's findings have larger economic impacts(*Chap-2.Pdf*, 2022). Notably for growth in GDP and the creation of jobs because better financial choices result in more these improvements. Possible economic risks would also be avoided. Real estate firms may use this researched data to make leverage decisions, handle cash balances on the basis of risk preferences required. Also, share and discuss them with investors and manages returns to shareholders. Thus, leading to smart

decision-making and risk mitigation techniques. In a setting where the property industry is already advancing, as evidenced by a higher proportion of construction labor in 2021-22. And a 5.7% increase in GDP(Khan et al., 2023). These implications act as an essential resource for dealing with shifts in the market while making informed, strategic choices for the future.

- **Outline of The Study**

The study's goal is to analyze "How Cash Holdings Affect the Relationship Between Financial Leverage and Shareholder's Return: A Study in Pakistan's Property Sector Moderated by Lending Rates" in an in-depth approach. The analysis starts with an overview of the study's problem. Its significance and its specific goals. The review of the literature examines previous research findings on the topic. It highlights gaps that need to be explored further. The study's methodology chapter describes the research design, data gathering and method of analysis.

The study then illustrates the findings and analysis. It highlights the facts gained through empirical investigation. The discussion explains the findings by connecting them to the study's questions and associated literature. Study limitations are recognized and suggestions for further research are made. In the end, the conclusion highlights the major results, their implications for society, and the research's general role in the subject.

Chapter 2

Literature Review

2.1 Overview

This thesis explores how financial decisions in Pakistan's real estate sector impact shareholders. It looks at the connection between cash reserves, financial leverage (evaluated through debt-equity and debt-assets ratios), and shareholder returns. The study also considers lending rates as a moderating factor. This research investigates how these factors work in the real estate by using agency cost concept. The objective is to provide a clear analysis of how financial choices related to leverage and cash holdings influence returns to shareholders in Pakistan's real estate industry. This structured method will serve as a theoretical foundation.

2.2 Main Variables

In the real estate industry(Mitra & Naik, 2021), financial leverage relates to the usage of borrowed funds to boost the future return on investing. Rather than depending just on equity, it means using loans, to pay a certain amount of the land purchase or construction costs.

The Debt-to-Equity rate (D/E) (Tran Minh et al., 2022) is an important indicator for determining the amount of a funding that comes from debt versus equity. In a similar way the Debt-to-Assets rate (D/A) is an important proxy indicator for financial leverage. It reflects the proportion of a firm's assets that are financed by loan. Researchers(Tran Minh et al., 2022) have used D/A to investigate the impact of financing leverage on business performance.

It provides information about a business's risk associated with its debt commitments.

The total value of cash and its equivalents that a real estate business or investor has in its financial balance is referred to as the holdings of cash in the property industry. It (Alnori & Bugshan, 2023) reflects instantly readily available and useful assets that are liquid. Such as cash on hand and savings in the bank. Cash holding is an important financing approach for real estate businesses and investors. Because it provides protection against insecurity and unexpected costs.

The monetary profits or losses incurred by investors in property-related assets are referred to as the return to shareholder (ROE). It is a complete study (Giacomini et al., 2015) which includes income, capital gain, and other cash advantages gained from owning real estate properties. Shareholder return is an important indicator for determining the earnings and value of real estate investments.

Lending rates is a key component of financial literature. It describes the cost of lending money and perform an essential role in driving economic conditions. Research study (Sharma, 2018) have found that shifts in interest rates have a major impact on investment choices. It impacts firms' decisions. Researchers have analyzed the link between lending rates and economic factors like GDP and inflation. It highlighted their importance in changing monetary policies and also effecting industries such as property. Managing finances properly is important for developing and investing plans in this sector.

2.3 Financial Leverage and Shareholder's Return

Financial leverage is defined as the debt-to-equity and debt-to-asset ratios. In finance field different studies have discussed this. It is because of the high impact it has on shareholder's value and performance of the firm. The link (Giacomini et al., 2015) (Tran Minh et al., 2022) between financial leverage and profit for shareholders is a major problem that has been discussed by

previous researchers from different industries and nations. A thorough examination of this link is still required to be done under property sector of Pakistan. To understand the industry's specific factors. The goal of increasing financial leverage is to build profits for a property investor.

According to past literature (Mitra & Naik, 2021), researchers have examined factors impacting shareholder return in the real estate sector. It is showing the significance of proper management of cash and smart investments. Return on Equity(Tran Minh et al., 2022) has been a focus of research on performance of firm. For example, studied (Nguyen et al., 2023) the factors impacting ROE in several firms. It (Sari et al., 2023) emphasizes the importance of monetary leverage and the effectiveness of assets investments for deciding returns. According to the Past literature(Sharma, 2018), shareholder returns in the real estate business are dependent on how well it operates but also by economic factors such as interest rates, inflation, and market trends.

The past empirical analysis about the influence of monetary leverage on shareholder return has produced conflicting results. Some past scholars (Akhtar et al., 2021) think that greater financial leverage can boost shareholder returns by focusing on smart investment opportunities. Others, on the other hand,(Chauhan, 2023) discussed that increasing financial leverage may result in financial challenges. This lowering the firm's capacity to meet its contractual obligations. As a result, reducing the value of shareholders.

Real estate investors and builders thoroughly evaluate the appropriate degree of financial leverage. (Sahni & Kulkarni, 2018) Depending on their level of risk acceptance, marketplace conditions, and the possibility of higher profits. The link between borrowing leverage and real estate performance is a topic that is investigated in financial and real estate studies (Sahni & Kulkarni, 2018). With the goal of determining how the utilization of debt affects earnings, property prices, and general investment results.

In light of Pakistan's real estate market, little study has been conducted on the particular connection between monetary leverage and return to shareholders. It is critical to analyze how monetary leverage relates with

returns to shareholders in this business. Given the property sector's unique traits such as volatility, reliance on economic factors, and regulatory impacts.

Hypothesis 1: *The significant relationship between Financial leverage and Shareholders return exist*

2.4 Financial Leverage and Cash Holdings

The quantity of cash and its equivalent in a company's control at any particular moment is referred to as its cash holding. It (Sahni & Kulkarni, 2018) denotes the liquid assets easily available to a company for satisfying short-term commitments. It capitalizes on investment possibilities, or acting as a means of protection against unforeseen expenses. Cash handling is critical to a firm's adaptability and financial health.

In the property sector,(Luo et al., 2021) where investments can be heavy on capital and sensitive to market changes. Keeping cash on hand gives adaptability and strength. Real estate companies frequently have to deal with fluctuating markets, development delays, or unforeseen repairs and operational expenditures. Cash holdings act as a preventative measure. It is allowing businesses to pay urgent costs without depending primarily on outside funding.

The primary concept behind the link between monetary leverage and cash reserves in the firm's capacity to manage its capital framework in order to maximize its liquidity and minimize risk.

However, agency cost concept (Mitra & Naik, 2021) poses possible conflicts of interest between shareholders and management (Jensen & Meckling, 1976). Higher financial leverage might lead to increased agency costs such as contractual obligations (interest payments and principal payments), prompting firms to hold excess cash as a precautionary measure to mitigate potential agency conflicts. While, higher financial leverage leads to agency costs, making firms to hold excess cash and invest in short term investments and meeting other needs, in result these benefits plus investment returns covers agency costs.

On the other hand, higher leverage means indirect agency costs, as firms decides to hold less cash. Because, agents can be interested in more long-term investments and returns (Baykara & Baykara, 2021), while principals would want to build more value through highly liquid assets and attracts more investors.

This can be particularly relevant in the real estate sector, where the cyclical nature of the industry and dependency on external factors may heighten the need for financial flexibility.

Contrary to this, previous literatures(Arfan et al., 2017) also show higher financial leverage may lead to less cash holdings because of the positive cautious investments done by the firms. It is important to investigate how financial leverage interacts with cash holdings in this particular industry. Past papers discussed that according to pecking order theory(Guo et al., 2021), if financial leverage is high, then internal cash must be exhausted due to previous excessive use. As, it suggests internal cash over debt and debt over equity (Badri & Yohanson, 2023).

The empirical data on the link between monetary leverage and reserves of cash is unclear. Some research (Arfan et al., 2017) shows a positive association between leverage in finance and holdings of cash, whereas other studies (Guo et al., 2021) show an opposite relationship. These changes show the need for considering Pakistan’s property sector variables.

There is a significant gap in the research about the relationship between borrowings and holdings of cash in the Pakistan’s property sector. Real estate is dependent on capital. Here, borrowing plays an important role in construction and handling different portfolios. Knowing how monetary leverage effects real estate firms' cash-holding choices in Pakistan is important for both theoretical understanding and practical implementations in the sector.

Hypothesis 4: *The significant relationship between Financial leverage and cash holdings exist*

2.5 Cash Holdings and Shareholder's Return

Past study (Sulistiawati & Fitdiarini, 2020) on the existence of link between shareholder's return (ROE) and holdings of cash provide helpful information. Previous study(Sahni & Kulkarni, 2018) analyzed the impact of cash holdings on business shareholder's value. It focuses on the importance of liquidity in changing returns. According to the past research (Arianpoor & Mehrfard, 2023), real estate firms with enough cash reserves have a greater power to handle risks and benefit through investments. It results in higher shareholder returns.

According to the data (Alnori & Bugshan, 2023), high cash holdings positively affect ROE. This indicates that having enough cash on hand enables real estate firms to make smart short-term investments and earn larger profits. This benefits shareholders.

However, the past literature (Seger et al., 2020) also suggests the need of an equitable strategy for cash holdings. High cash reserves may suggest inadequate use of capital. This resulting in lower ROE and consequently worse shareholder returns. Previous study(Seger et al., 2020) talks about the need of managing cash in the property industry in order to achieve the correct balance between liquidity and proper capital investment.

Many empirical studies have gained conflicting results about the relationship between holdings of cash and returns to shareholders. According to some study(Seger et al., 2020), increased cash holdings may contribute to poorer shareholder returns since the real-estate firm is seen as not using its finances efficiently to gain profit. Other past research(Alnori & Bugshan, 2023), on the other hand, suggest a positive relationship, stressing the risk mitigation and liquidity benefits of having additional funds.

There have been few studies on how holdings of cash impact shareholder returns in the property sector of Pakistan. This gap is important to be discussed. As the property firms face uncertainty relating to economic factors, project schedules, demand from the market, and changes in regulations.

Studying the influence of holdings of cash on shareholder returns in Pakistani property is important for theoretical and firm's goals.

Hypothesis 5: *The significant relationship between Cash Holdings and Shareholders return exist*

2.6 Cash Holdings as Mediator

The effect of holdings of cash on returns to shareholders has also been discussed previously. It has been found through empirical analysis that cash holdings had a positive impact on shareholder returns. It is functions as a risk management approach. Past studies (Sahni & Kulkarni, 2018) also found that cash holding companies are likely to have more long-run shareholder returns in India. This shows that cash holdings have a significant impact on corporate performance.

Several past studies(Guo et al., 2021) have discussed the link between monetary leverage, holdings of cash, and shareholder return. According to those studies (Arfan et al., 2017), firms intentionally store cash in order to offset financial risk related to increasing financial debt. (Almagribi et al., 2023) Keeping cash on hand provides protection against possible financial difficulties during economic uncertainty.

According to study(Theissen et al., 2023), firms with high cash holdings have a more ability to take benefit from short strategic investments. It results in higher returns to shareholders. This shows that cash holding firms can quickly take benefit when market conditions are good. These findings might not align with this research findings as economic uncertainty is being discussed here.

Literature discovered that cash holdings had a substantial mediating influence between monetary leverage and company performance in empirical investigations. According to these research(Theissen et al., 2023), the firm's capacity to handle its financial hazards and capture proper investment

possibilities mediates the link between monetary leverage and shareholder return.

Past research (A. Hussain et al., 2023), highlights the importance of cash management in reducing direct and indirect agency expenses due to leverage as well as data imbalance between managers and shareholders. Holding cash in conditions with increasing financial leverage might communicate to shareholders that the business is less likely to experience financial hardship but it might reduce return.

On the other hand alignment of interests can happen (Schell et al., 2024), minimal cash holdings also mediate between leverage and returns. As, managers interest can lie in holding less cash and investing more. less leverage decreases agency costs because of managers interest in return and satisfying current shareholder's return demand.

Based on these data, we propose that holdings of cash mediate the link between monetary leverage and shareholder return in Pakistan's property market. The costly nature of property projects can increase the requirement for financial flexibility. So, making cash holdings an important element in affecting total shareholder returns in a situation of various levels of financial leverage.

Hypothesis 2: *Cash holdings Mediates the Relation between Financial Leverage and Shareholder's Return.*

2.7 Lending Rates as Moderator

In the setting of lending rates, the study (Ullah et al., 2023) was done in Pakistan to explore the influence of interest rates on business financial performance. According to researcher (García-Teruel & Martínez-Solano, 2007) different lending rates influence different debt types, either long or short-term debts. Past paper (McCann et al., 2023) suggests in economic crisis like high lending rates and uncertainty small-sized firms opt for more short-term debt. According to past discussions, when lending rates are high, short-term

debts are preferred as cost of borrowing reduce at 1% but payments would be increased.

According to the report, higher loan rates might put pressure on enterprises. This resulting in greater financial expenditures and potentially impacting shareholder returns. Furthermore, research (Sharma, 2018) in India on the link between the rate of lending and financial performance. This revealing that changes in rates of interest may affect the cost of capital and, as a result, shareholder returns across a variety of industries.

According to previous study (Stirling et al., 2023), lending rates have a direct impact on the cost of funding for property-related enterprises. Financial leverage grows as corporations frequently borrow. The cost of debt based on interest rates is an important consideration. Higher loan rates can raise the cost of debt payments. This reducing project profitability and decreasing shareholder returns.

According to the study(Sharma, 2018), changes in rates of lending can have huge influence on the returns. Firms with more financial leverage face higher costs during increasing interest rates. Thus, reducing their total return to shareholders.

Past data analysis (Stirling et al., 2023) from research reveals that loan rates have a significant impact on property's financial choices. Managers frequently change their borrowing capacity based on current rates of lending. In order to reduce the cost of debt and increase shareholder returns. As a result, the link between monetary leverage and shareholder return is impacted by market borrowing circumstances.

According to the research(S. Hussain et al., 2020), the moderating impact of interest rates is linked to the risk-return trade-off in the property sector. Higher loan rates could increase the financial hazards associated with increased financial leverage. This alters the risk-to-return ratio of property investments and, as a result, shareholder returns.

A hypothesis can be formed based on these relationships: We assume that loan rates influence the link between monetary leverage and shareholder profits in the Pakistani property market. As financial leverage grows.

So, organizations may face increased financial costs possibly affecting shareholder returns.

Hypothesis 3: *Lending Rates Moderates the Relation between Financial Leverage and Shareholder's Return*

2.8 Agency Cost Concept

According to agency cost concept(Guo et al., 2021), disagreements of interest arise between investors (principals) and executives (agents) due to differences in knowledge and the possibility of opportunity seeking by management. Executives and managers seek their interest in respect to this theory. Agency conflicts (different risk preferences) (Panda & Leepsa, 2017) about the use of monetary leverage and holdings of cash may occur in the setting of the property industry. Here developments are usually heavy on capital and prone to market insecurity.

Increasing short-term financial leverage (Arfan et al., 2017), may result in impacting agency costs because managers could choose their own interests such as contractual obligations of interest and principal payments over shareholder value. So, they would invest excess cash to short term investments which will benefit in covering the contractual obligations. In this research, as economic instability is present managers might be interested in covering operations along with debt costs. While on the other hand (Schell et al., 2024), agents might hold less cash to focus on their interest of generating more return after gaining long term leverage on low Possibility for conflicts between agents and shareholder's is increased in Pakistan's real estate market if it's not benefiting investors. Here, borrowing money is a usual approach for project finance. The study aims to investigate how reserves of cash affect the impact of monetary leverage on the return on shareholders while handling agency costs.

Firms may store extra cash as a preventive step to reduce agency conflicts, based on agency cost concept(Guo et al., 2021). Cash serves as a

management tool. It lowers the agency expenses associated with financial strain and bad spending and investments. Recognizing how cash holdings mediate the link between monetary leverage and return on investment is critical in the property sector. Previous studies(Schell et al., 2024) (Guo et al., 2021) provide empirical data highlighting the different findings on the association between monetary leverage and holdings of cash. It is highlighting the need for industry-specific research.

Lending costs(Sharma, 2018) as a moderator give another element to the connection. Property businesses may incur greater financing expenses during periods of higher interest rates. It is affecting the appropriate amount of borrowing capacity and cash reserves. The study is consistent with previous research (Stirling et al., 2023) which acknowledges the impact of financing constraints on financial choices in the property industry. This aligns with the agency cost concept where managers look out for their interest in every situation which might reduce the conflict between investors and executives too. The study intends to discover how other variables influence the interaction between monetary leverage, reserves of cash, and returns to shareholders by investigating the moderating impact of loan rates.

The examination into how cash on hands affect the relationship between financial leverage and shareholder's return which is moderated by interest rates within Pakistan's property sector. Agency cost concept gives a theoretical lens to understand the complexity of this relationship.

2.9 Theoretical Framework

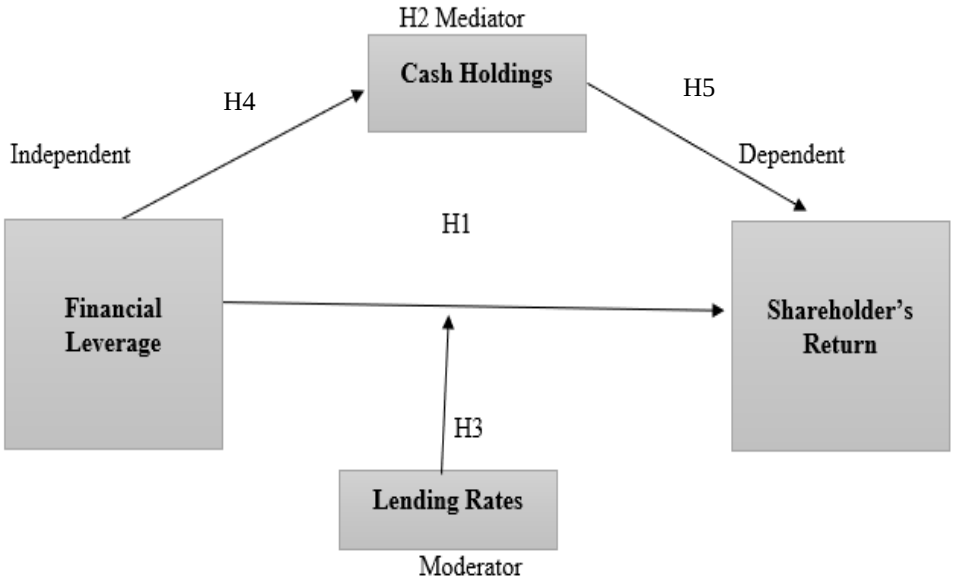

***Figure 0-1**: Conceptual Framework*

Chapter 3

Methodology

3.1 Overview

In this chapter, the methods and approaches used to investigate the problems are discussed. First is the research philosophy on which this study will be based upon is explained, second is the research approach that we followed. Then we will talk about the sample from where the data will be collected for the study. Then the measurement for each variable will be discussed that how we are going to measure each variable used in the model. Last is the data analysis technique that we are going to use to analyze the data and test our hypothesis.

3.2 Research Methodology

The research means carefully studying various aspects. Such as, peeling an onion to find insights. The research onion model (Melnikovas, 2018) works like peeling an onion layer by layer. Making sure each step is methodical and goal-oriented. This results in a more thorough exploration, like peeling an onion to its core.

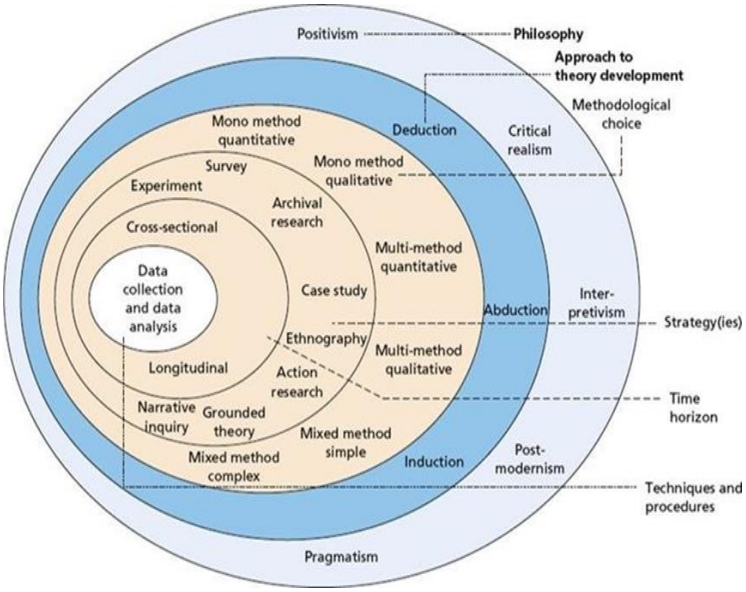

***Figure 3.2-1**: Research Onion Model*

This study's **philosophy** is positivism. This emphasized a dedication to data and facts for hypotheses creation and evaluation. This is in accordance with the deductive **study approach** used. This begins with existing ideas and proceeds to build and evaluate quantitative hypotheses. Because of the use of financial information from secondary sources such as using Pakistan Stock exchange, and State Bank of Pakistan the choices for **methodology** (Dolnicar et al., 2023) include a dependence on the quantitative research technique. Especially adopting the deductive method. The **study's strategy** (Ventresca & Mohr, 2017) is based on archival with emphasis on systematic review of historical information (before and after Covid-19). To acquire knowledge about the real estate business. **The time-based span** (Parkhi et al., 2023) is diverse. This including cross-sectional and longitudinal studies with a particular emphasis on data collected in panels. This method provides a complete knowledge of the real estate market by immediately recording details of many firms and evaluating shifts and trends over the last few years (2015-2022). Secondary quantitative data from reliable financial statements

(financial year July-June), including Pakistan Stock Exchange, and SBP. These are used for **data gathering and the analytical approach** is using GMM Panel Data Analysis(Pham & Nguyen, 2020). This was chosen for its efficiency in investigating complicated correlations and reducing autocorrelations. The **Real Estate sector's** major contributions are emphasized. For example, 36% to private sector GFCF, 9.7% to services, or 5.7% to gross domestic product with a capitalist nature and dependence on borrowing. Investigating this industrial setting requires looking into the nature of real estate activities. The influence of the financial structure, and evaluating the function of borrowing and reserves in promoting industry progress. The **target population** comprises both listed and non-listed real estate enterprises in Pakistan. **Purposive sampling** (Guarte & Barrios, 2006) focuses on certain public listed companies on the PSX which are small sized, such as Javedan Group Ltd., Pace Pakistan Limited., and TPL Properties Ltd., Husein Industries Ltd., Dolmen City REIT, Globe Residency REITand ISE Tower REIT. This method allows for an in-depth investigation of financial trends within the listed real estate industry. Supporting the extensive research design according to the study's unique aims and structure.

3.3 Panel Data Model

The panel data models (Dodoo et al., 2020) are used to test the hypotheses. The panel data models (PDM) are beneficial for time-series or cross-sectional models. PDMs include the features of both cross-sectional (i.e., seven firms in this study) and time periods (i.e., eight years (2015-2022). So, PDMs provide more data of unbiased results. Also, the PDMs are less prone to biasedness through endogeneity issues. PDM consist of four types: fixed effect model, random effect model, pooled OLS model and dynamic panel data model. The Generalized Method of Moments (GMM) (S. Hussain et al., 2019) dynamic panel data regression model is perfect for analyzing financial patterns in Pakistan's real estate sector due to its efficiency in managing both time-series and cross-sectional dimensions. GMM can capture the complexities of the real

estate sector with data period consisting of 2015-2022 (before, during and after COVID-19) and a focus on strong relationships such as mediated and moderated relations. Also, GMM is used to record unobserved individual effects, autocorrelation and heterogeneity, which makes it perfect for this study(Zeitun & Goaied, 2022). GMM offers a complete plan for understanding the financial patterns of Pakistan's real estate sector and building better financial strategies to influence agency costs accordingly. This is done by exploring the mediating and moderating effects of cash holdings and lending rates on the relationship between financial leverage and shareholder returns.

The researcher (James et al., 1984) emphasized simple relationship between X and Y is as direct effect and represented by c, and it define the impact of X on Y. However, when the relation between X and Y is mediated by M, the influence of X (independent variable) on Y (dependent variable) is known as the direct effect denoted by c'. The indirect impact of X on Y is defined as the product of the X M path (a) and the M Y path (b), or ab.

The regression model (Diskin, 1970) for the study, incorporating the main direct paths, mediating effect of Cash Holdings, and moderating role of Lending Rates, is expressed as follows:

The regression Model (equations) which will be used is following:

$$Y=\beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + e$$

Financial leverage and Shareholder's Return:

In the study, the regression equation for Financial leverage (proxy variables: Debt to Equity, Debt to Asset) and Shareholder's Return is following:

$$Y= \beta_0 + \beta_1 X_1 + e$$

$$SR = \beta_0 + \beta_1(DTE) + \beta_2(DTA) + e \qquad (1)$$

In the above equation, independent variable (Financial Leverage) is regressed on the dependent variable Shareholder's Return in which β_0 is the

intercept coefficient and β_1, β_2 is the coefficient of variable Financial Leverage and e is the error term.

Financial Leverage and Cash Holdings:

The regression equation for the variables of Financial Leverage and Cash Holdings is following:

$Y = \beta_0 + \beta_1 M + e$

$CH = \beta_0 + \beta_1(DTE) + \beta_2(DTA) + e$ (2)

The above equation shows that the mediating variable Cash Holding is regressed on the independent variable financial leverage in which β_0 is the intercept coefficient and β_1, β_2 is the coefficient of variable and e is the error term

Cash Holdings and Shareholder's Return:

The regression equation for the variables of Cash Holding and Shareholder's Return is following:

$Y = \beta_0 + \beta_1 M + e$

$SR = \beta_0 + \beta_1(CH) + e$ (3)

The above equation shows that the dependent variable Shareholder's Return is regressed on the mediating variable Cash Holdings in which β_0 is the intercept coefficient and β_1 is the coefficient of variable and e is the error term.

The mediating role of Cash Holdings between Financial Leverage and Shareholder's Return:

In the study, organizational learning has been used as an independent variable to find its impact on the dependent variable career success where career motivation is mediator.

$Y = \beta_0 + \beta_1 X_1 + \beta_2 M + \beta_3(X_1 \times M) + e$

$$SR = \beta_0 + \beta_1 DTE + \beta_2 DTA + \beta_3 CH + \beta_4 (DTE * CH) + \beta_5 (DTA * CH) + e \quad (4)$$

In the above equation, the independent variable Financial Variable (DTA, DTE) multiplied by the mediating variable Cash Holdings. $\beta_3(X_1 \times M)$ is the interaction term. In the regression equation, β_0 is the intercept coefficient, β_1, β_2 and β_3 are the coefficient of variables and e is the error term.

The moderating role of Lending Rate between Financial leverage and Shareholder's Return:

In the study, lending Rate is used as a moderator between Financial leverage and Shareholder's Return. The regression equation is as follows:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 Z + \beta_3 (X_1 \times Z) + e$$

$$SR = \beta_0 + \beta_1 DTE + \beta_2 DTA + \beta_3 LR + \beta_4 (DTE * LR) + \beta_5 (DTA * LR) + e \quad (5)$$

In the above equation, the independent variable is Financial Leverage. The mediating variable is Cash Holding and Moderating variable is Lending Rate. So, we multiple β_3 $(X_1 \times Z)$. In the regression equation also known as interaction term, β_0 is the intercept coefficient, β_1, β_2, β_3 are the coefficient of variables and e is the error term.

Table 3.3-1: *Variable Measure & Definition*

Variable	**Abbreviation**	**Measure & Definition**
Dependent: Shareholder's Return **Proxy:** Return on Equity	SR ROE	ROE= Net income/ Total Equity *100
Independent:	FL	DTE = Debt/Equity

Financial Leverage **Proxy:** Debt to Equity Debt to Asset	DTE DTA	DTA= Debt/Asset (Essel, 2024)
Mediating: Cash Holdings	CH	Cash and its Equivalent/Asset
Moderating: Lending Rates	LR	The marginal interest rates are cost of borrowing.
Control: GDP Inflation	GDP I	GDP measures the total worth of all goods and services produced within the country over a specific period.(Mahmood et al., 2022) High prices: Inflation reflects the increase in the overall cost of living over time.

The regression equation captures the complex relationships between Financial Leverage, Cash Holdings, Lending Rates, and Shareholder's Return. This including the various paths and interactions discussed in the study. The proxy variables DTE and DTA for Financial Leverage provide a detailed understanding. It offers a strong base for examining the mediating and moderating effects in the context of the research goals.

Such as; the independent variable Financial Leverage (FL) is dependent on the dependent variable Shareholder's Return (SR). The mediating variable Cash holdings (CH) is dependent on independent variable Financial Leverage (FL). The dependent variable Shareholder's Return (SR) is dependent on

mediating variable Cash holdings (CH). The independent proxy variables of Financial Leverage (FL) multiplied by the mediating variable Cash holdings (CH) β_4 ($DTE * M$), β_5 ($DTA * M$) are the interaction terms. β_7 ($DTE *$ LR), β_8 ($DTA *$ LR), the interaction terms for independent proxy variables of Financial Leverage (FL) and moderating variable Lending Rates (LR).

Chapter 4

Data Analysis

4.1 Overview

The main aim of this research is to study how financial leverage has an impact on roe in the real estate sector in the presence of mediating variable cash holdings and moderating lending rate. In this chapter, we analyze the data collected from PSX using specialized software like EViews. We discussed related to the real estate firms background, unit root test, cointegration test descriptive statistics, normality test, Durbin-Watson (autocorrelation test) and GMM panel data model.

4.2 Firms Background

The data was gathered from the financial statements in Real Estate sector of Pakistan. The firms were selected using purposive sampling method and PSX website is used to collect the data from the target sample. The data is collected from 2015-2022 financial statements of the 7 real estate firms listed on PSX. To better understand the data, we evaluated firms to gather some basic information about them. This included details like GDP, inflation, lending rates, firm size, short-term and long-term debts. These details are important for our research analysis.

Following are the basic details collected;

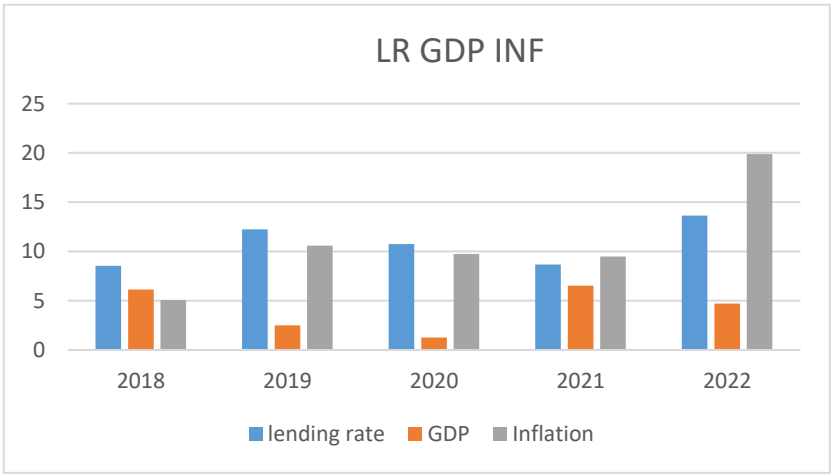

***Figure 4.2-1**: Lending Rtae GDP Inflation*

As, ***Figure 4.2-1*** suggests Lending rates, GDP and inflation had drastic impact during COVID-2019. These fluctuations show economic uncertainty in Pakistan which has hiked during and after Covid-19. During 2021 slight betterment could be seen, but it again hiked at high level during 2022. This happened due to both economic and political uncertainties faced by Pakistan at a same time(McCann et al., 2023).

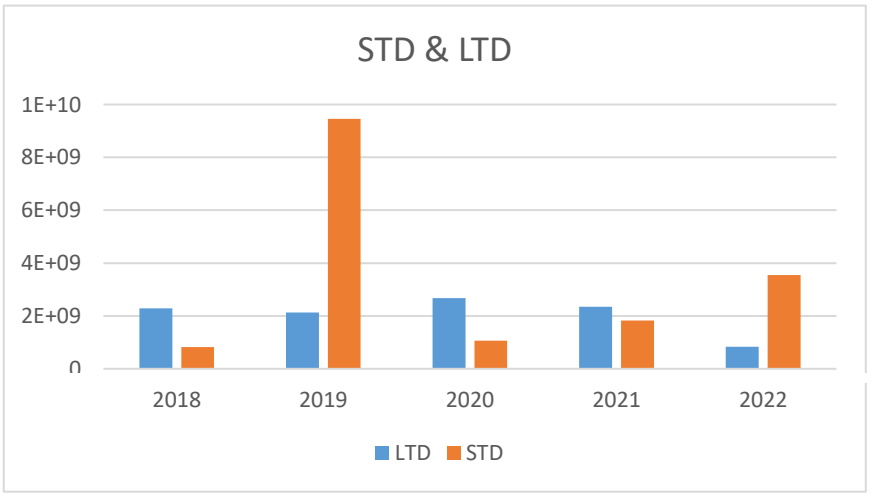

***Figure 4.2-2**: Short-Term & Long-Term Debts*

As, ***Figure 4.2-2*** suggests firms have taken more short-term debt during 2019 than long term debt. We analyzed with drastic decrease in Short-term debt, long-term debt is increasing slightly. While when short-term debt is increasing drastically in 2019 and 2020, we can see a small decrease in long-term debt.

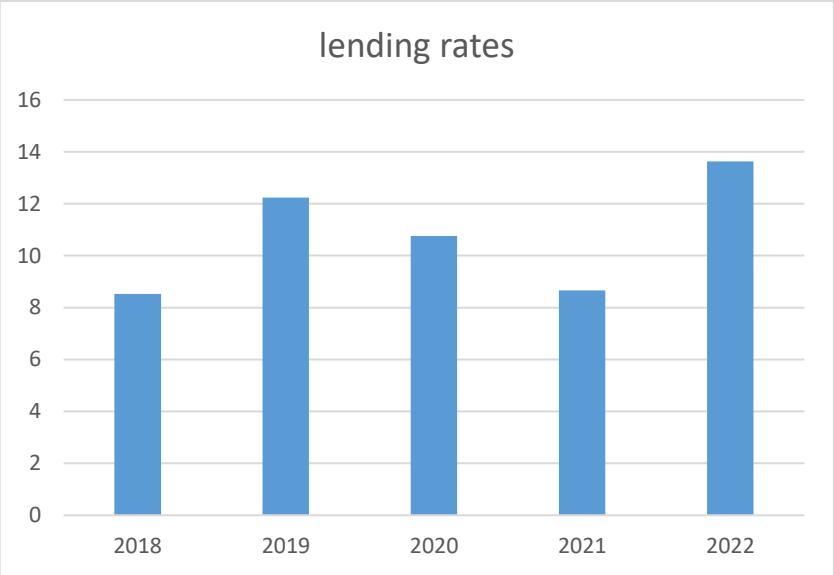

Figure 4.2-3: *Lending Rates*

As, ***Figure 4.2-3*** suggests in 2019 lending rates increased to 12% from 8.5% and in 2022 it again raised to 13.6% from 8.6%. This suggest fluctuation in lending rates.

As, we consider both Debts & lending rates figs we can evaluate their relation to each other. During 2019 as lending rate increased to 12% from 2018's 8.5% rate, we can see the fluctuations in debts accordingly. Short-term debt has increased too during 2019 in comparison to 2018's Short-term debt. Same short-term debt increased fluctuation was observed as 2022 lending rate increased to 13.6% from 2021's rate of 8.6%. While long-term debt has drastically reduced during 2019 and 2022.

While, on the other hand when lending rates reduce in comparison to previous years such as, 2019's 12% to 2020-21's 10% and 8.5%, we can see

fluctuations in debts. This indicates short-term debt reduced in comparison to long-term debt which has increased slightly.

As, both ***Figures 4.2-2 and 4.2-3*** suggests changes in short-term debt will mean change in debt which is being discussed in our paper because it has shown drastic fluctuations in comparison to long-term debt which has shown slight fluctuations even though its present in debt-financing. Real-estate sector comes under those sectors which are required to finance their operations through debt and equity both.

As, Selected firms have small firm size compared to other well-established firms because they have average assets of almost 10 million (43,126,194). While, big firms have assets of almost 100 million to billion. So, to run their real estate operations like investing acquiring, other financial activities and to tackle economic uncertainty like COVID-19 and its after effects. They have chosen debt financing and during 2019 and 2022's high lending rates they opted for short term debts.(McCann et al., 2023).

4.3 Missing Values

We checked the missing values in our data before proceeding with the analysis of data. It is crucial to check that there is any missing value present in our data or not because it might deduce confusing results. In this study, data was collected from secondary source of financial statements and researcher did initial ratio analysis manually using Excel. Fortunately, among the 56 observations which belong to the 7 real estate firms during 2015-2022 time period for 5 research variables, there are no missing values. This means the data is valid and can be used for analysis which will resultantly give accurate results.

4.4 Unit Root Test

A unit root test (Pesaran, 2012) is done to check whether a time series variable is non-stationary which indicates it has a unit root. Model built on non-stationary (stable) data may generate wrong forecasts as the statistical properties such as central tendency, variability of the series changes over time. Augmented Dickey-Fuller (ADF) test was used (Herranz, 2017). This test has both the ADF Fisher Chi-square and Choi Z-stat tests. The null hypothesis for this test is that the time series has a non-stationarity (unit root). If the ADF p-value is less than 5%, it means there is not any unit root in the data.

Table 4.4-1: *Unit Root Test*

Null Hypothesis: Unit root

Series: ROE D_E D_A CH LR

	Method	Statistic	Prob.**
ROE	ADF - Fisher Chi-square	29.4512	0.0091
	ADF - Choi Z-stat	-2.65423	0.0040
D_E	ADF - Fisher Chi-square	32.5234	0.0034
	ADF - Choi Z-stat	-2.13131	0.0165
D_A	ADF - Fisher Chi-square	26.9223	0.0197
	ADF - Choi Z-stat	-1.76353	0.0389
CH	ADF - Fisher Chi-square	26.2268	0.0242
	ADF - Choi Z-stat	-1.75755	0.0394
LR	ADF - Fisher Chi-square	31.0318	0.0055
	ADF - Choi Z-stat	-3.25944	0.0006

There's strong evidence to reject the null hypothesis as P-value<0.05. This indicates no presence of a unit root in

the time series of ROE D_A CH LR and D_E. This implies the data has long-term stability (stationarity).

4.5 Multicollinearity

In a regression model, the issue of multicollinearity can cause higher coefficient standard error which may produce biased inference due to high intercorrelation among two independent variables. To deal with multicollinearity (Daoud, 2017), researcher uses techniques of Variance Inflation Factor (VIF). If the VIF value is less than 5, it means there is not any multicollinearity problem in the data. So, the data is more reliable for analysis in this case.

Table 4.5-1: *Variable Inflation Factor*

Variable	Centered VIF
D/A	0.290697674
D/E	0.280667775
CH	1.041666667
LR	0.832639467

The result shows that all the variables have VIF values under 5 (Ahmad, Adnan, & Norliza, 2006). Consequently, we can confidently conclude that there is no issue of multicollinearity in our dataset.

4.6 Descriptive Statistics

Descriptive statistics serve to provide an overview of a dataset and summarize its key characteristics. These statistics (George & Mallery, 2018) include measures like mean, median of the variables in our research model and a comprehensive summary of the data (Marshall & Jonker, 2010).

Additionally, the table displays results for various statistical measures such as the maximum and minimum values, standard deviation, skewness, and kurtosis. Observations show the number of time periods and cross-sections (firms) included. Such as 5*7=35 observations.

Below ***Table 4.6-1*** shows the mean which is average of each variable data. Also, median which is middle value of each variable data. Maximum means to show highest value present in the variable data. Minimum means to show lowest value present in the variable data. Skewness indicates whether data points tend to lean more towards the left or right of the mean. Kurtosis reveals how much of the data is in the tails compared to a normal distribution. Standard deviation measures the amount of variation in variable data.

Table 4.6-1: *Descriptive Statistics*

	ROE	CH	D_A	D_E	LR
Mean	-1.06039	-1.67898	-0.59137	-0.60041	1.02451
Median	-0.92189	-1.55543	-0.44999	-0.55967	1.03172
Maximum	0.12117	-0.40713	0.54227	0.52357	1.13449
Minimum	-2.58263	-2.90955	-1.94440	-1.93943	0.93099
Std. Dev.	0.60099	0.61189	0.75119	0.8689	0.08165
Skewness	-0.50263	-0.32940	-0.43151	-0.42902	0.04280
Kurtosis	3.02409	2.25743	2.11070	2.06119	1.40702

The average in the dataset indicating that, on average, companies in the dataset have a negative ROE, CH, D_E, D_A and positive LR. The median suggesting that the middle value of ROE, CH, D_E, D_A are slightly less negative than the mean and LR are slightly more positive. The maximum ROE, CH, D_E, D_A and LR values indicating the highest values observed in the dataset. The minimum ROE, CH, D_E, D_A and LR values indicating the lowest values observed in the dataset. The standard deviation<1 of ROE, CH, D_E, D_A and LR indicating values are spread near the mean. The skewness almost = 0 of ROE, CH, D_E, D_A and LR indicating normal skewness. The companies in dataset have kurtosis almost = 3 of ROE indicating normal distribution, kurtosis almost < 3 of CH, D_E, D_A and LR indicating less extreme positive and negative values means thin tail.

4.7 Normality Test

Normal distribution is important for regression estimation as it allows for reliable predictions and hypothesis testing. It also assesses accurate regression coefficients' significance. So, normality test (Yazici & Yolacan, 2007) is important to ensure that the data follows normal distribution using tests like Jarque-Bera. Under this test null hypothesis indicates normal distribution. In this test p-value is less than 5%, indicates to reject the null hypothesis.

***Table 4.7-1**: Normality Test*

	ROE	CH	D_A	D_E	LR
Jarque-Bera	1.474592	1.437083	2.239520	2.359019	3.711308
Probability	0.478406	0.487463	0.326358	0.307430	0.156351

The above ***Table 4.7-1*** shows that all the variable series follow a normal distribution accepting null hypothesis. Since, P-values of all variables are greater than 5%. In ***Annexure-I***, the graphical representation of all residuals is shown. The graph (Larson, 2006)shows that all the residual series follow a normal distribution accepting null hypothesis. Since, P-value is greater than 5%.

4.8 Correlation

This correlation represents the connection between two variables, which is determined by the significance level and the direction of the relationship. The direction is symbolized by plus (+) and minus (-) signs. A positive sign signifies that both variables move in the same direction, while a negative sign indicates that the variables move in opposite directions. Pearson correlation (Gogtay & Thatte, 2017) is a commonly utilized analysis technique to determine the relationship between two variables. Correlation values can range from -1.00 to +1.00. In the case of a positive correlation, the values tend towards +1.00, and for a negative correlation, the values shift towards -1.00. A correlation value of 0 indicates that there is no discernible relationship between the variables. (Hair, Black, Babin, & Anderson, 2010).

Table 4.8-1: *Correlation Analysis*

	ROE	D_E	D_A	LR	CH
ROE	1.000000	0.120375	0.140490	-0.073922	0.142854
D_E	0.120375	1.000000	0.477313	0.137247	0.100078
D_A	0.140490	0.477313	1.000000	0.197706	0.072440
LR	-0.073922	0.137247	0.197706	1.000000	0.023600
CH	-0.142854	0.100078	0.072440	0.023600	1.000000

Table 4.8-1 displays the correlation matrix. D_A and D_E exhibits a significant positive correlation with ROE (r=0.1404) and (r=0.1203) respectively. Furthermore, D_A and D_E also displays a significant positive

correlation with CH (r=0.07) and (r=0.10) respectively. Similarly, the connection between CH and ROE demonstrates a significant positive correlation with values (r=0.142). Additionally, LR exhibits significant negative correlation with ROE (r=-0.073).

4.9 Autocorrelation

Autocorrelation in evaluation of data can occur when there's a relation between the residuals/error terms of observations within the same group over time. This can occur from different factors like reducing variables or model misspecification issue. Removing autocorrelation is important because it affects the reliability of statistical tests such as, p-value and estimates. The Durbin-Watson statistic (White, 1992) is used here as it helps capture autocorrelation by evaluating the independence of error terms. A value close to 2 suggests no autocorrelation, while variations indicate it is present.

Table 4.9-1: *Durbin-Watson Stat*

R-squared	0.778996	Mean dependent var	-1.060394
Adjusted R-squared	0.582548	S.D. dependent var	0.600995
S.E. of regression	0.388306	Sum squared resid	2.714072
Durbin-Watson stat	2.076902	J-statistic	1.15E-21
Instrument rank	17		

The above ***Table 4.9-1*** shows there is no autocorrelation because Durbin Watson stat = 2.07, indicating no relationship between the error terms of observations within the same group over time. On the other hand, this table displays R-squared =0.77, indicating this GMM regression explains 77% of variation in ROE. S.E of regression being closer to 0 indicates estimated value is closer to true population value. These tests suggest the accuracy of data.

4.10 Heteroskedasticity-Residual Plots

Heteroskedasticity occurs when the variance of error terms in a GMM model is not consistent along all levels of the independent variables. In a residual plot, this looks like a specific shape where the scatter of the residual's changes with the fitted values. This does not form a random scatter. Finding heteroskedasticity is important because it impacts GMM model. This leads to inefficient coefficient estimates and wrong standard errors, in result which impacts hypothesis results. It can be found using visual analysis of residual plots or statistical tests such as the Breusch-Pagan test. This selected GMM model only allowed residual plots inspection.

In ***Annexure-I,*** the graphical representation of residual plot is shown at y-axis and fitted values is shown at x-axis. The random spread from 1 to 0 and 0 to -5 indicates fitted linear model. This shows no heteroskedasticity is present as no specific pattern formed.

4.11 Panel Generalized Method of Moments

The evaluation of the GMM model (Zeitun & Goaied, 2022) involves examining the the values of beta (β), which are also referred to as path coefficients (C) for each individual path. These beta (β) values indicate whether the relationships are positive or negative. In this particular model, we conducted an analysis of path coefficients (C), t-statistics, Standard Errors as well as the effects of mediation and moderation. R-squared, and S.E of Regression will be checked too. To assess the model, a significance level of 5% (i.e., $p<0.05$) was set.

4.11.1 Coefficient

The beta values (β) or path coefficients "C" reveal the influence of one variable on another predicted value, representing the expected impact. To

estimate these path coefficients (Engelhart, 1936), we assess path coefficients within a model, all the paths in the GMM model are compared to their respective beta (β) values. When a path coefficient is present and high, it signifies that the effect on the predicted value is significant. Path coefficients within the GMM model shows direct and indirect effects of either positive or negative. (Mertler et al., 2021).

Following are the steps to be followed for running regression analysis for mediated and moderated variable:

First step; To check direct relation between D_E, D_A as independent variable and ROE as dependent variable.

Table 4.11.1-1: *Path Coefficient*

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D_A	1.774464	0.033304	2.999192	0.0227
D_E	1.255123	0.015833	2.478510	0.0117

Second step; To check direct relation between D_A, D_E as independent proxy variables and CH as dependent variable.

Table 4.11.1-2: *Path Coefficient*

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D_A	0.370473	0.122204	3.002351	0.0123
D_E	0.340161	0.327845	3.394522	0.0055

Third step; To check relation between CH as independent variable and ROE as dependent variable.

Table 4.11.1-3: *Path Coefficient*

Variable	Coefficient	Std. Error	t-Statistic	Prob.
CH	-0.270473	0.089904	2.989192	0.0137

Fourth step; To check indirect relation between FL as independent variable and ROE as dependent variable which is mediated by CH.

Fifth step; To check relation between FL as independent variable and ROE as dependent variable which is moderated by LR.

Table 4.11.1-4: *Path Coefficient*

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-1.540631	0.432810	3.559598	0.0222
D_A	1.170473	0.504304	-1.994191	0.0727
LR	-0.340161	0.805845	-1.375518	0.5117
CH	-0.261605	0.095338	2.743972	0.0133
D_E	1.443412	0.388606	1.971616	0.0618
D_A_CH	-0.171207	0.054402	3.147060	0.0056
D_A_LR	-1.008235	0.391288	2.705152	0.0454
D_E_CH	-0.626013	0.246455	2.540064	0.0205
D_E_LR	-1.421834	0.349287	4.070670	0.0007
GDP	-0.199430	0.312201	2.638788	0.5310
INF	0.876899	0.396532	2.211419	0.0402

4.11.2 Direct Effects

First, Second and Third Step: Before Mediation or moderation analysis

Table 4.11.2-1: *Direct Effects*

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D_A	1.774464	0.033304	2.999192	0.0227
D_E	1.255123	0.015833	2.478510	0.0117

Independent and mediator variables relation:

Table 4.11.2-2: *Direct Effects*

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D_A	0.370473	0.122204	3.002351	0.0123
D_E	0.340161	0.327845	3.394522	0.0055

Mediator as independent and ROE as dependent variables relation:

Table 4.11.2-3: *Direct Effects*

Variable	Coefficient	Std. Error	t-Statistic	Prob.
CH	-0.270473	0.089904	2.989192	0.0137

Fourth and Fifth step:

Table 4.11.2-4: *Direct Effects*

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-1.540631	0.432810	-3.559598	.0222
D_A	1.170473	0.604304	-1.994191	.0727
D_E	1.443412	0.588606	1.971616	.0618
LR	-0.340161	0.805845	-1.375518	.5117
CH	-0.261605	0.095338	2.743972	.0133

The ***Table 4.11.2-2*** displays the results of Direct Effect in Panel GMM Estimation (Igartua & Hayes, 2021). To assess all paths in GMM model, cross-section fixed effects, 2SLS instrument weighting matrix and white period standard errors & covariance were used with a 5% significance.

All paths exhibit t-statistics almost greater than 2, indicating their statistical significance except LR, D_A and D_E after mediation and moderation analysis. Also, all paths show Standard Error almost closer to 0 indicating almost all estimated values being true to population.

The first hypothesis focuses on the direct, insignificant positive impact of D_A and D_E on ROE. The results reveal a coefficient of 1.1704 and 1.1443 respectively for testing this hypothesis, with a corresponding p-value of 0.07 and 0.06 respectively. This p-value signifies the insignificance of the results, suggesting that an increase/decrease in D_E and D_A is not directly associated with ROE. These direct effects changed to insignificance when mediating and moderating interaction terms were added in equation. Initially, D_E and D_A

had significant impact on ROE. So, the first hypothesis would be accepted as it shows the full effect. But for mediated moderated model it shows first hypothesis is rejected.

Similarly, direct effects between LR and ROE is insignificant because p-value>0.05. While, direct significant relation of D_A, D_E with CH exists. On the other hand, direct relation between CH and ROE is significant due to p-value<0.05. So, regression estimation including intercept (constant), indicates that a one percent increase in CH results in a substantial -decrease in ROE. Respectively, a one percent decrease in CH results in a substantial increase in ROE.

4.11.3 Mediation Effect

Table 4.11.3-1: *Mediation Effect*

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D_A_CH	-0.171207	0.054402	3.147060	0.0056
D_E_CH	-0.626013	0.246455	2.540064	0.0205

In the mediation effects(Igartua & Hayes, 2021), the influence of an independent variable is conveyed to the dependent variable through the mediating variable. There are two primary types of mediation: Full and Partial mediation. Full mediation is characterized by the absence of a direct, significant relationship between the independent (IV) and dependent variables (DV). Instead, the mediating variable completely accounts for the effect. In contrast, in cases of partial mediation, the mediating variable exerts a partial impact on the dependent variable. This means that the relationship between the

independent variable (IV) and the dependent variable (DV) remains significant even in the presence of the mediating variable.

The second hypothesis proposed that CH acts as a mediator in the substantial relationship between D_E, D_A and ROE. In the case of partial mediation, it is necessary for D_E, D_A to have a significant effect on ROE. D_E and D_A has insignificant impact on ROE (β=1.44, p=0.06), (β=1.17, p=0.07) respectively. The second criterion states that for partial mediation, the effect of D_E and D_A on ROE should be significant but becomes insignificant in the case of full mediation. The data in ***Table 4.11.3-2*** supports this. Additionally, the effect of D_E and D_A on ROE remains insignificant (β=1.44, p=0.06), (β=1.17, p=0.07), indicating the presence of full mediation. The values in ***Table 4.11.3-3*** explain the indirect effect when the mediator is present, with D_A_CH and D_E_CH coefficients of -0.17, -0.62 and a p-value of 0.005, 0.02 respectively. This p-value shows the significance of the results, signifying that when CH is in place, there is a negative impact of D_A and D_E on ROE.

4.11.4 Moderation Effect

Table 4.11.4-1: *Moderation Effect*

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D_A_LR	-1.008235	0.391288	2.705152	0.0454
D_E_LR	-1.421834	0.349287	-4.070670	0.0007

In the moderation effects, the strength or direction of an independent variable is conveyed to the dependent variable through the moderating variable(Igartua & Hayes, 2021). Moderation is of three types; First is

enhancing effect (positive moderation effect): The presence of a moderator variable strengthens the effect of the IV on the DV. Second is buffering effect (negative moderation effect): The presence of a moderator weakens the effect of the IV on the DV. Third is antagonistic effect (opposite moderation direction than direct effect direction): The presence of a moderator changes the direction of the IV on the DV.

The third hypothesis proposed that LR acts as a moderator in the substantial relationship between D_E, D_A and ROE. Under these cases especially in case of antagonistic effect, it is not necessary for D_E, D_A to have a significant effect on ROE. The effect of D_E and D_A on ROE remains insignificant (β=1.44, p=0.06), (β=1.17, p=0.07). The data in ***Table 4.11.4-2*** supports this. Additionally, the effect of D_A and D_E on ROE remains insignificant (β= 1.44, p=0.07), (β= 1.17, p=0.06), indicating the presence of antagonistic effect as the interaction term is negatively moderated and significant while direct effect has become positively insignificant. The values in ***Table 4.11.4-3*** explain the moderator effect when the moderating variable LR is present, with D_A_LR and D_E_LR coefficients of -1.00, -1.42 and a p-value of 0.045, 0.0007 respectively. This p-value shows the significance of the results, signifying that when LR is high, there is a negative impact of D_A and D_E on ROE.

4.11.5 Summary of the Hypothesis

Table 4.11.5-1: *Hypothesis Table*

	Hypothesis	**Status**
H1	*The Significant Relationship between Financial leverage and Shareholder's Return Exist.*	*Accepted*
H2	*Cash holdings Mediates the Relation between Financial Leverage and Shareholder's Return*	*Accepted*
H3	*Lending Rate Moderates the Relation between Financial Leverage and Shareholder's Return*	*Accepted*
H4	*The Significant Relation Between Financial leverage and Cash Holdings*	*Accepted*
H5	*The Significant Relation Between Financial leverage and Shareholder's Return*	*Accepted*

Chapter 5

Discussion

5.1 Summary

The aim of the study is to investigate the influence of Financial leverage on Shareholder's return with mediating role of Cash holding and moderating role of lending rate in the real estate sector of Pakistan. After outlining the underlying problem and the reasons for conducting the research, as well as defining the research goals and questions, the researcher studied existing literature concerning the individual variables and how they are interconnected. After that, the researcher explained the complete research design in depth, emphasizing details about how the study selected firms, the target population, the method for gathering data, and the technique used to analyze the data. Then, the researcher examined the data that was gathered, provided explanations, and interpreted the results. The main aim of this chapter is to present a summary of all the findings made during the current research.

5.2 Discussion

As discussed earlier, the three hypotheses have been developed by the researcher which were based on the literature review and theoretical background. The results for each of these statements are now summarized below:

5.2.1 Financial Leverage and Shareholder's Return

Our first hypothesis was that "Financial leverage has an insignificant impact on roe". The results discussed in chapter 4 confirm that financial leverage has an insignificant impact, as indicated by a coefficient of D_A=1.17, p>0.05 and D_E=1.44, p=0.05. The direct effect, indicating that a one percent increase in financial leverage results in no impact in ROE after considering mediator variable CH. But initially, Financial leverage had significant impact on ROE. Many previous studies in the literature have mentioned that the agency cost concept can be valuable for making better financial strategies by firms. In a similar way, these findings can be understood by looking at the agency cost concept(Guo et al., 2021), which suggests that managers should play with debt and investments together and in result roe is generated. Managers play to fulfill their interests. Managers interest might align with shareholder's interest or not. Previous research(Mitra & Naik, 2021) in this aspect has also shown similar results, which reinforce the findings of this study. Past researcher (Sari et al., 2023) as discussed earlier emphasizes the importance of monetary leverage and the effectiveness of assets for determining returns to shareholders. (Mitra & Naik, 2021), as discussed earlier researchers have investigated factors impacting shareholder return in the real estate sector which highlights the significance of suitable handling of finances and smart investment decisions. According to the literature(Sharma, 2018). Moreover, the first objective of the study has achieved by the acceptance of first hypothesis i-e., The Significant Relationship between Financial leverage and Shareholders Return Exist in the Real-Estate Sector of Pakistan. i-e., Does financial leverage affect ROE in the Real-Estate sector of Pakistan? Therefore, we have obtained a result that aligns with previous research which indicates that if the small firms in the real-estate sector have more financing incentives, financial strategies and more agents and shareholder's trainings or workshops on one centered goal which discusses agency cost conflicts under risk preferences during different situation such as, economic downturn of COVID-19, they will tend to grow more and achieve success in the real-estate sector.

5.2.2 Mediation of Cash holding

The second hypothesis showed the mediation role of Cash holding between Financial leverage and ROE. It was stated that "Cash holdings Mediates the Relation between Financial Leverage and Shareholder's Return." The result for this hypothesis is not only significant but also negative, with a p-value<0.05, indicating the perfect significance of the findings. Initially, Fourth and fifth hypothesis was accepted covering second and third steps before performing mediation. This showing direct relation between FL and CH as independent variable. Also, shows the direct relation between CH as dependent variable and ROE as independent variable. According to (A. Hussain et al., 2023) agency cost concept, the conflicts between managers and shareholders, and how financial strategies (such as debt and cash holding proper management) can influence these costs (in this case ROE). According to previous research (Guo et al., 2021) discussed cash holdings also mediate between leverage and returns. As, scenario 1 result suggested holding less cash, as short-term debt is less, and investing more using long-term debt in long run investments result in generating more ROE. While, on the other hand scenario 2 result suggested holding more cash, as short-term debt is high, and investing more short-term debt for short run investments (highly liquid) in result reducing ROE. As, our firms different debt types and overall lending rates are shown in ***Figures 4.2-2 and 4.2-3***, indicating with lending rate increase during economic uncertainty (during and after COVID-19) more short-term debt abruptly hiked (McCann et al., 2023). These ***Figures 4.2-2 and 4.2-3*** show when our estimation results indicate debts are less it would mean short-term debt has reduced abruptly, as this short-term debt being the major part of overall debt taken by the firms. While long-term debt has fluctuated a little, indicating increase/decrease in long-term debt and more long run investments indicating less cash on hand. Also, the constant ROE has shown reduction means loss which shows firms increased cash-holdings after increasing short-term debts during crisis period, adding to reduction of ROE due to negative coefficients of interaction terms. According to agency cost concept (Schell et

al., 2024), Agents have less cash on hand for non-strategic uses, aligning their actions (interests) more closely with shareholder interests of better return. By focusing on long-run success and strategic investments (to build reputation and firm expansion through ROE), the firm can generate higher returns on equity. Agents have more cash on hand to possibly invest in projects that may not align with shareholder interests, increasing the risk of inefficiencies and misalignment of interests(A. Hussain et al., 2023). The focus on liquidity and short-term investments (to cover costs faced during economic uncertainty) limits the high returns.

Cash holding becomes the bridge that connects the two aspects. These findings are in line with the literature results. In addition, the second objective of the study has achieved by the acceptance of second hypothesis i-e., To examine the mediating role of cash holding in the relationship between financial leverage and roe in the real-estate industry of Pakistan i-e., Does Cash holding mediate the relation between financial leverage and ROE in the Real-Estate sector of Pakistan? The findings in this research, which mostly match previous studies, can be explained by highlighting the importance of proper financing strategies to influence agency costs. As, agency cost conflicts are present for risk preferences during different situation such as, economic downturn of COVID-19.

5.2.3 Moderation of Lending Rate

The third hypothesis showed the moderation effect of lending rate between financial leverage and roe. It was stated that "Lending Rate Moderates the Relation between Financial Leverage and Shareholder's Return." The result for this hypothesis is not only significant but also negative, with a p-value<0.05, indicating the perfect significance of the findings. According to agency cost concept(A. Hussain et al., 2023), the conflicts between managers and shareholders, and how financial strategies (such as lending rates and in result financial adaptabilities) can influence these costs (in this case ROE).

According to previous research (Ullah et al., 2023). discussed lending rates moderates between leverage and returns. As, scenario 1 result suggested lower lending rate, short-term debt will be lowered, and investing more using long-term debt in long run investments result in generating more ROE. While, on the other hand scenario 2 result suggested higher lending rate, short-term debt will increase, and investing more short-term debt for short run investments (highly liquid) in result reducing ROE. As, our firms different debt types and overall lending rates are shown in ***Figures 4.2-2 and 4.2-3***, indicating with lending rate increase during economic uncertainty (during and after COVID-19) more short-term debt hiked (McCann et al., 2023). These ***Figures 4.2-2 and 4.2-3*** show when our estimation results indicate debts are less it would mean short-term debt has reduced, as this short-term debt being the huge part of overall debt taken by the firms. While long-term debt has fluctuated a little, indicating increase/decrease in long-term debt and more long run investments indicating less cash on hand. Also, the constant ROE has shown reduction means loss which shows firms increased short-term debts during crisis period after lending rates hiked abruptly, adding to reduction of ROE due to negative coefficients of interaction terms. According to agency cost concept, Managers have less cash on hand for non-strategic uses, aligning their actions more closely with shareholder interests of better return. By focusing on long-term growth, strategic investments and lower borrowing costs (to build reputation and firm expansion through ROE), the firm can achieve higher returns on equity. Empirical data (Stirling et al., 2023) from research reveals that loan rates have a significant impact on property financing choices. Property owners frequently change their type of borrowing and its capacity based on current rates of lending. In order to reduce the expense of capital and increase shareholder returns. As a result, the link between monetary leverage and shareholder return is impacted by market borrowing circumstances.

According to the research(S. Hussain et al., 2020), Higher loan rates could increase the financial hazards associated with increased financial leverage. This alters the risk-to-return ratio of property investments and, as a result, shareholder returns. Managers have more cash on hand to potentially

invest in projects that may not align with shareholder interests, increasing the risk of inefficiencies. The focus on liquidity and short-term investments (to cover costs faced during economic uncertainty) under 1% lower borrowing costs in comparison to normal high lending rate that reduces high returns, resulting in lower ROE.

Lending rate becomes the bridge that connects the two aspects. These findings are in line with the literature results. In addition, the third objective of the study has achieved by the acceptance of third hypothesis i-e., To examine the moderating role of lending rate in the relationship between financial leverage and roe in the real-estate industry of Pakistan i-e., Does lending rate moderate the relation between financial leverage and ROE in the Real-Estate sector of Pakistan? The findings in this research, which mostly match previous studies, can be explained by highlighting the importance of proper financing strategies to influence agency costs. As, agency cost conflicts are present for risk preferences during different situation such as, economic downturn of COVID-19

5.3 Theoretical Contribution

The present research makes theoretical contributions, particularly by addressing the gaps identified in the literature review. The current research has explored the influence of financial leverage on the roe of Real Estate firms, considering the mediation of cash holding and the moderating effect of lending rate and aspects which were previously identified and studied in the existing literature and discussed in various prior research studies. This study shows the influence of Financial leverage towards the ROE in the real estate industry of Pakistan(Nazir et al., 2021). Therefore, the firms are required to implement financing strategies in such a way which influence the roe (agency costs) of the real estate sector as it is significant in that time period (Guo et al., 2021). This aspect has been theoretically proved in this research. The current study will add more knowledge in the Agency Cost Concept as well as in the variable's literature. The major strength of this study is quantitative analysis for the

determinants and their influence on roe. Furthermore, this research is new because it examines the real-estate sector in Pakistan. It contributes to theory by being the first study, to the best of the scholar's knowledge and to explore how financial leverage affects roe in this specific context. The association has been theoretical proposed by this research between the targeted independent variables, moderating, mediating, and dependent variables based on the previous theories and studies which enhances the literature in the influence of roe. Finally, this research will inspire students to investigate additional factors that have a direct or indirect connection to the roe of real-estate sector in Pakistan.

5.4 Practical Implication

The present study offers practical implications and recommendations that can be readily applied in the Real Estate Sector of Pakistan to influence the financial strategies of firms by handling leverage, cash on hand and in result returns. This has the potential to yield numerous advantages for practitioners in addressing real-world challenges. Most of the investments in the real estate industry are achieved through the better financing strategies of the firms due to which real estate firms could help to improve the economy of Pakistan by increasing its GDP(*Chap-2.Pdf*, n.d.). Moreover, the youth can also be motivated to pursue their career in the real estate industry. Through this research, firms can focus more on influencing the ROE by building better planning and financial strategies. The findings show that to increase in financial leverage has significantly decreased the roe of small-sized real-estate firms from 2018-2022 period. Therefore, the results of this research will assist these small real-estate firms to continuously change their financial strategies according to time and demand. The real firms can think out of the box in order to gain competitive advantage among other real-estate companies. In addition, the findings of this research reveal that financial leverage along with cash holding plays a crucial role in influencing roe. This research will also help real estate firms to look out for lending rates which possibly moderated firms

returns(Sharma, 2018). Therefore, the agents or managers can also get the guidance from this research regarding to improve the performance of the real - estate firms in Pakistan, as it would guide on which financial strategy would be best of interest for both shareholders and firm. This study helps understand the short and long-term debts play which would be benefitting to firms in making financial decisions and better returns. Lastly, the results of this study may assist both practitioners and academics in discovering optimal practices that can impact roe of real estate firms as well as play a beneficial role in improving the GDP of Pakistan through real-estate sector.

5.5 Limitations and Future Directions

Despite the practical contribution of this study for practitioners, there are several limitations that need to be addressed. A significant limitation in the current research is the relatively small sample size. With data gathered of 7 small sized real-estate firms, it may not be sufficient to accurately represent the entire population, including real-estate sector firms in Pakistan. Therefore, the large sample size is recommended to select in the future study. Since the research design is already longitudinal, consisting of 2018-2022 time period. Hence, to enhance the findings of this research, a longitudinal research model for more time period can be considered. Furthermore, the focus of the present research is primarily within Pakistan, as the majority of the data was of small-sized real-estate firms on PSX. It is advisable to enhance the diversity of data by including various real-estate firms from different cities and extending the research to other countries to gain a broader perspective. Moreover, the current study concentrates on the Real-Estate sector, and its findings are primarily applicable within this sector. It is also suggested that other sectors in Pakistan should be investigated in a similar context to enhance the roe of firms which can be beneficial for Pakistan's GDP as well. The current research is restricted to examine the influence of financial leverage with cash-holding as a mediator and lending rate as a moderator. Moreover, it has been recommended to explore alternative mediators (e.g., asset turnover, tax) and moderators (e.g., firm size,

inflation and GDP) to make firms more successful. Also, further work can be done by using short-term debt and long-term debt as proxy variables. Lastly, for the small sized real-estate firms a better financial management plan must be introduced. Different financial incentives must be introduced to these firms. A better check and balance on agents must be kept to make sure they align their interests with shareholder's and give a thought to shareholder's interest if it's better for firm or not.

5.6 Conclusion

This study has been performed in the real estate industry of Pakistan to check the impact of financial leverage on the roe of employees. The research has proved that changes in financial leverage is important for the roe of real-estate firms. If firms provide proper financial strategies for agency costs of risk preferences such as ROE being shareholder's preference, looking out for whether it's important to align manager's interest with investor's interest or not. These decisions will help build firm value, expansion, attract investors and face economic uncertainties. To sum up the result of the current study, it is concluded that real-estate firm must develop proper financing strategies, agents and investors proper workshops will be held to make them understand each other's risk preferences and economic perspective better and financial incentives plan should be maintained for small-sized real-estate firms. Give them a chance to flourish without looking out for too much economic distress.

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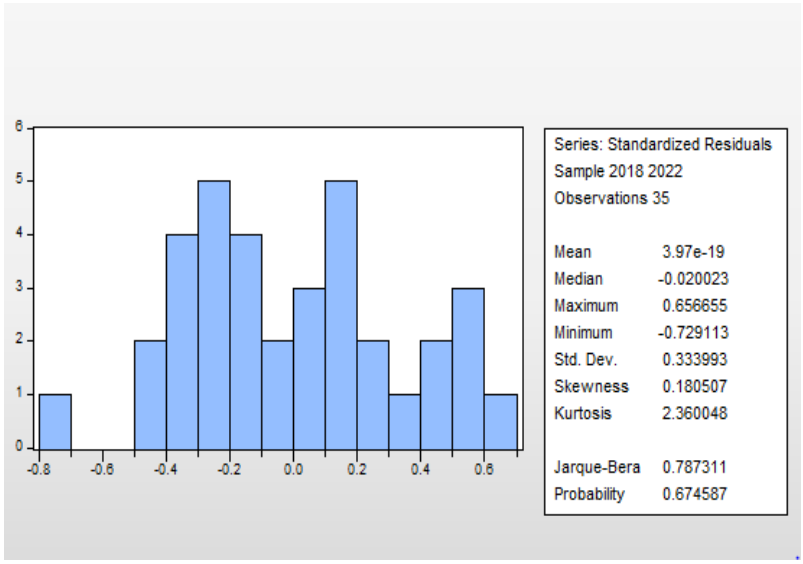
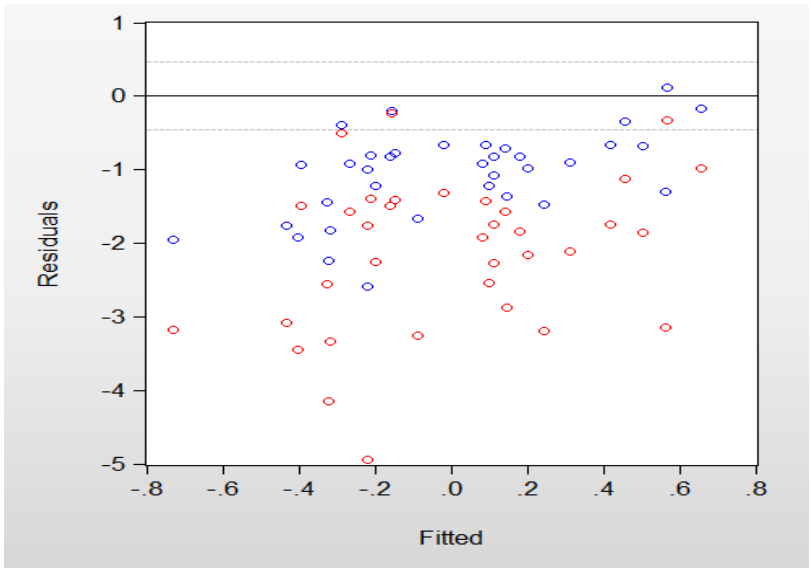
Annexure-I

Graphical Representation of Residuals





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