Hungarian University of Agriculture and Life Sciences

THE CONTINGENT RELATIONSHIP BETWEEN CAPITAL STRUCTURE, INTENSITY OF AGENCY COSTS, AND CORPORATE PERFORMANCE: AN AGENCY THEORETIC APPROACH

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DECLARATION

I, Amanj Mohamed Ahmed, hereby declare that this dissertation entitled (THE CONTINGENT RELATIONSHIP BETWEEN CAPITAL STRUCTURE, INTENSITY OF AGENCY COSTS, AND CORPORATE PERFORMANCE: AN AGENCY THEORETIC APPROACH) has prepared by myself under the instruction and supervision of (Ass. Prof. Dr. Habil. Hágen István Zsombor, PhD) in partial fulfilment of the requirements for the degree of Doctor of Philosophy (PhD), Discipline: Management and Business Administration, Specialization: Accounting and Finance at Doctoral School of Economic and Regional Sciences, Hungarian University of Agriculture and Life Sciences.

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Sincerely,

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List of Abbreviations

AT	Agency Theory
AC	Agency Cost
AUTR	Assets Utilization Ratio
COD	Cost of Debt
COE	Cost of Equity
COPS	Cost of Preferred Stock
CAPM	Capital Asset Pricing Method
CS	Capital Structure
DTAR	Debt to Assets Ratio
DTER	Debt to Equity Ratio
EPS	Earnings Per Share
ESG	Environmental, Social, and Governance
EMR	Equity Multiplier Ratio
EU	European Union
FMS	Firm Size
FP	Firm Performance
FE	Fixed Effect
ADF	Augmented Dickey–Fuller
GCC	Gulf Cooperation Council
GDP	Gross Domestic Product
GMM	Generalized Method of Moments
GLS	Generalized Least Squares
HAT	Harris–Tzavalis
ITO	Investment Opportunities
INF	Inflation
IMF	International Monetary Fund
LIQ	Liquidity
LTD	Long-Term Debt
LM	Lagrange Multiplier
LLC	Levin–Lin–Chu

MM theory	Modigliani and Miller theory
MTBVE	Market-to-Book Value
MFI	Microfinance Institutions
OLS	Ordinary Least Squares
POT	Pecking Order Theory
PP	Phillips–Perron
ROA	Return on Assets
ROE	Return on Equity
RE	Random Effect
SDG	Sustainable Development Goal
SME	Small and Medium-Sized Enterprise
SEB	Small and Entrepreneurship Businesses
SIC	Schwarz Information Criterion
STDR	Short-Term Debt Ratio
SG&A	Selling, General, and Administrative Expenses
TOT	Trade-Off Theory
TANGI	Tangibility of Assets
VIF	Variation Inflation Factor
WACC	Weighted Average Cost of Capital

1. INTRODUCTION

1.1 Research background

The concept of capital structure and its connection with the firm's financial performance and value have been a confusing topic in the literature of corporate accounting and finance. Capital structure is often described as a combination of debt, common, and preferred stock to finance the firm's activities (ABDULLAH & TURSOY, 2021). The decision on the capital structure can be considered one of the most crucial strategies that should be taken into consideration by the firm's management (ALIPOUR ET AL., 2015). One of the serious issues that managers face during the decision on financing choice is determining the optimum capital structure. When the firms are formed or when they need funds immediately to cover investment decisions, the choice of capital structure must be made in advance (CHADHA & SHARMA, 2015). This is because choosing the right financing option is essential to the company's financial health. However, financial strain and finally bankruptcy are brought about by incorrect capital structure decisions.

The first theory developed to concern the issues of capital structure is the Modigliani and Miller, well known as the MM theory, which appeared at the end of the 1950s. According to this theory, the value of the company is unaffected by financial structure (MODIGLIANI & MILLER, 1958). This theory was reinforced based on a set of hypotheses regarding an entirely efficient market with no agency and transaction costs, no corporate taxes, no bankruptcy risks, and no information asymmetry (AHMED ET AL., 2023b; AHMED ET AL., 2023a; ALIPOUR ET AL., 2015; KYEREBOAH-COLEMAN, 2007; SDIQ & ABDULLAH, 2022), and all the reliable information is fully disclosed (CHADHA & SHARMA, 2015). However, the concept of perfect market efficiency does not exist in real life (LE & PHAN, 2017).

Five years later, Modigliani & Miller modified their prior investigations along with (KRAUS & LITZENBERGER, 1973) and developed a trade-off theory based on non-tax assumptions. According to this theory, even firms that show low-level debt on the balance sheet provide better performance compared with firms that use equity or other financing sources (LEGESSE & GUO, 2020). Companies frequently increase their debt (short and long-term) in order to achieve tax benefits (MODIGLIANI & MILLER, 1963). Nevertheless, the concept of pecking order, as educated by (MYERS, 1977; MYERS & MAJLUF, 1984), suggests a hierarchical approach for companies to fulfill their financial requirements and enhance their performance. Operational

earnings, which can be used as an indicator of internal finance, need to be utilized initially by the firms. Next, firms should use less risky loans, and when there is not enough debt to cover proactive or future investments, issuing new shares can be offered as an alternative.

In addition, the theory of agency cost, explained by (JENSEN & MECKLING, 1976) proposes an appropriate level of external financing to reduce the agency costs arising from conflicts of interest between managers and owners. The hypothesis behind agency theory also emphasizes that the shareholder (principal) and manager (agent) act in their own best interests, which leads to a conflict between competing interests and rising corporate costs, which are frequently referred to as "agency costs" (DAWAR, 2014; HOANG ET AL., 2019; FAZEKAS & BECSKY-NAGY, 2019). A study by DEMSETZ & LEHN (1985); ZAHID ET AL. (2024) argued that large publicly traded firms have a relatively diffused ownership structure that effectively separates residual right possession from corporate management. Ownership and control separation is a hotly contested issue in both neoclassical economics, "the theory of the firm" and the present conversation about how modern enterprises affect society. There are some reasons for the division of managerial duties and ownership in non-financial firms. Obtaining scale economies is a possible reason that requires substantial financial investments for several companies (DAWAR, 2014; HOANG ET AL., 2019). Effective managers might be more appropriate for running an enterprise because of their professional skills, competence, and personal attributes (SDIQ & ABDULLAH, 2022; ROSSA ET AL., 2025). For the advantage of major shareholders, on the other hand, the principals (owners) put pressure on the agents (managers) to refrain from expanding and attain a predetermined standard of satisfactory performance (THOMSEN & PEDERSEN, 2000). All these factors lead to conflicts of interest between the principal and agent.

The application of agency theory also describes the distinction between ownership and management and highlights the consequences of capital structure on firm performance. Gaining a deeper understanding of the implementation of agency theory in corporate finance and financial management is crucial for shareholders, investors, and other groups of stakeholders who are affected by the issues of agency cost. Additionally, when an excess amount of free cash flow is available, owners face agency disputes because their upper management might not act in their best interests and might be compensated generously and with incentives (ABDULLAH & TURSOY, 2023; BAYKARA & BAYKARA, 2021; DALTON ET AL., 2007; KALASH, 2019; WANG ET

AL., 2020). Thus, financing through equity increases agency costs because the interests of shareholders may not align with the interests of managers.

The above issues can only be eradicated by good planning (JENSEN & MECKLING, 1976), and financing through debt can be considered an effective plan to reduce agency costs and their issues (DAWAR, 2014; KONTUŠ, 2021; LEGESSE & GUO, 2020; SIDDIQUI & SHOAIB, 2011; SIMAMORA, 2021; YEH, 2011; TRAN ET AL., 2025). This is because regular repayment of debt is one way for managers to be disciplined. Debt also limits the agent's ability to decrease their interest through indifference or unnecessary spending. Hence, capital structure has a significant impact on balancing agency cost, asset utilization, and enhancing firm outcomes. The fundamental concepts of agency theory can significantly reduce agency expenses and eventually improve a company's financial performance by addressing the issues brought on by managers' and owners' diverging objectives (DAWAR, 2014; PANDA & LEEPSA, 2017; RASHID KHAN ET AL., 2020; RASHID, 2020; SDIQ, 2023).

The determinant of capital structure is influenced by several factors, such as market conditions, tax benefits, agency costs, growth, future productivity, and volatility risk. The financial manager of a company has to consider the merits and demerits of different sources of financing before choosing the most suitable method that serves the company to reduce the cost of capital, improve performance, and maximize the value of the firm in the market (ALIPOUR ET AL., 2015; CHADHA & SHARMA, 2015). Thus, efficient managers can make effective decisions to mitigate the negative factors, and firms can benefit from the positive outcomes

Building on the concept of establishing a balance between debt and agency expenses, the decision on capital structure becomes a continuous procedure and motivates the firms to finance their opportunities (AHMED ET AL., 2023b; CHADHA & SHARMA, 2015). Additionally, in order to maintain public trust, financial planning must minimize risk exposure by sustaining the ratio of debt to equity, as the decision to raise long-term debt exemplifies how management passes risk from the corporation to creditors or debtholders, which increases agency problems, and this becomes a stockholder's concern (CAMPBELL ET AL., 2016). Nevertheless, D'MELLO & GRUSKIN (2021) noted that agency costs are higher for companies that have smaller or non-debt tax shelters with less liquidity, and the issuance of stock during the debt reduction phase increases the risk of instant bankruptcy. From the perspective of agency theory, companies need to choose a proper balance between debt and equity financing to minimize the related agency costs and

improve firm performance. In other words, leverage is determined by comparing the benefits of a non-debt tax shield over the bankruptcy costs. Although the theory has been widely used in the literature on empirical studies, the topic has been examined rarely.

This topic has drawn attention due to its significance and relationship with the financial management goal of optimizing profitability, and the market value of stocks to increase the wealth of shareholders, which are the objectives of the majority of companies. Choosing a financing strategy is a crucial management activity that is likely to influence the value and performance of the company (SDIQ & ABDULLAH, 2022). When the firm's capital structure includes an extensive amount of equity, it causes a lower level of earnings per share (EPS) because of the existing large number of outstanding common stocks (LINGMIN, 2016). Similarly, high capital expenses decrease the current value of any projects in which a corporation aims to invest. For the intent of business growth, financial leverage has a crucial effect on firm financial performance and growth (SALEEM ET AL., 2021), specifically by assessing the benefits of tax shield related to debt over the cost of bankruptcy (SDIQ & ABDULLAH, 2023). However, reliance on a heavy debt burden can increase the risk of bankruptcy due to the high cost of capital, and the costs of financial distress exceed the benefits of increased leverage (LEGESSE ET AL., 2021; Fazekas & Becsky-Nagy, 2015). This can also happen when debt is not used efficiently. Therefore, a balanced capital structure can be seen as an efficient plan to decrease the inefficiency of the marginal plan, thereby reducing the related agency cost (LEGESSE & GUO, 2020; YEH, 2011; AKIN ET AL., 2025).

The firm's capital structure has been described previously by numerous traditional and contemporary theories. Prior empirical investigations have also provided some evidence or support to the theories for the concrete association between capital structure and financial performance in both emerged economies (ABDULLAH & TURSOY, 2021; ASAOLU, 2021; CHANG ET AL., 2019; HABIBNIYA ET AL., 2022; JOUIDA, 2018; LI ET AL., 2019; PHILLIPS & SIPAHIOGLU, 2004; VUONG ET AL., 2017), and less-developing economies (AHMED SHEIKH & WANG, 2013; AYAZ ET AL., 2021; MARDONES & CUNEO, 2020; VO & ELLIS, 2017). However, their findings are mixed between positive, negative, non-linear, and non-existing associations. For instance, (AHMED SHEIKH & WANG, 2013; CHANG ET AL., 2019; VO & ELLIS, 2017; VUONG ET AL., 2017) found that capital structure is inversely related to firm performance, while (ABDULLAH & TURSOY, 2021; ASAOLU, 2021; JOUIDA, 2018; LI ET

AL., 2019) reported a positive association, others such as (AHMED ET AL., 2023b; AYAZ ET AL., 2021; HABIBNIYA ET AL., 2022; MARDONES & CUNEO, 2020; SDIQ & ABDULLAH, 2022) noticed a non-linear connection and (PHILLIPS & SIPAHIOGLU, 2004) displayed a non-existing relationship.

Despite the previous hypotheses and studies, corporate finance researchers have not yet proposed a single answer to the association between capital structure and profitability. Further, the notion of determining capital structure and its effect on firm performance through agency cost reduction maintained the significant position of validity of agency theory in the modern management of finances. From the previous literature, HOANG ET AL. (2019); LEGESSE ET AL. (2021); LEGESSE & GUO (2020); MAO (2003) found that the optimum level of debt can be applied as a good strategy to reduce agency cost and SDIQ & ABDULLAH (2022) argued that firms incur agency expenses associated with equity due to the misalignment of incentives between shareholders, who aim for the highest profits, and managers, who have different objectives. Through diligent planning, these expenses may be decreased. Effective use of debt financing may be one strategy. It puts a strain on management to perform effectively since they must shoulder the added weight of repaying the debt, even though it might not mitigate the conflicts entirely. Their judgments may be more in line with optimizing the value of shareholders due to having stress to minimize the agency cost. However, there is still no clear answer to the question of whether the correlation between capital structure and firm performance is impacted by the level of agency cost.

1.2 Problem statement

The agency theory crucially explains the conflict of interest due to the separation of ownership and management. This distance increases the costs that are spent for monitoring managerial actions. According to this hypothesis, an optimum level of debt can be seen as a solution to mitigate these costs and eventually enhance firm financial performance. Since the Middle Eastern countries have a great proportion of market capitalization, the authentic effect of capital structure choice on firm financial performance and value is considered a significant issue among scholars, researchers, managers, and investors that remains unresolved. This highlights fundamental problems that a firm's financial managers must deal with. Moreover, according to (BOOTH ET AL., 2001; DHARWADKAR ET AL., 2000; ELDOMIATY, 2008; TURSHAN & KARIM, 2022) investors

suffer higher agency costs and asymmetric information from developing countries than developed countries. Therefore, it is essential to test whether agency theory, as predicted to have a favorable effect on firm performance, is still valid and pragmatic to alleviate agency costs among non-financial firms listed on the Middle Eastern stock markets. Many companies have failed for a variety of reasons, among which the financing option is most appropriate and significant, while the focus of the structure of a firm's capital has primarily investigated its impact on firm performance; hence, a unidirectional association has been established. According to AHMED ET AL. (2023b); SDIQ & ABDULLAH (2022) companies need to carefully analyze their financial outcomes in order to comprehend and estimate the possibilities of using the company's present assets to maintain and improve the level of profitability, as stated in the corporate objectives. This is because poor decisions about financing could lead to an increase in fixed expenses in the shape of a high cost of capital and high agency costs, which would lead to lower firm profitability (MANGESTI RAHAYU ET AL., 2020).

In developing countries, including Middle Eastern countries, investors and stockholders do not appear to pay particular attention to how financial structure diminishes agency problems, thereby affecting firm performance. This is because they may believe that the attribution of capital structure has no bearing on the value of the company. However, a properly allocated mixed capital structure will reduce the conflict of interest and contribute to firms' growth and success (THI VIET NGUYEN ET AL., 2021). Thus, it is necessary to address the capital structure issues that could affect the performance of non-financial companies that operate in Middle Eastern markets. Based on the above explanations, this study raised the following questions:

1. Is there any meaningful relationship exist between financial structure and performance of the firms among non-financial companies listed on the stock exchanges of Middle Eastern countries between 2010-2022?
2. Is there a significant relationship exist between agency cost and financial performance among non-financial firms listed on the stock exchanges of Middle Eastern countries between 2010-2022?
3. Does the efficiency of managerial decision-making significantly influence the performance of non-financial firms listed on stock exchanges of Middle Eastern countries between 2010-2022?

4. Does agency cost significantly moderate the link between capital structure and firm performance of non-financial companies listed on stock exchanges of Middle Eastern countries between 2010-2022?
5. Are the statements proposed by agency theory still a pragmatic and valid framework for making financial decisions by non-financial firms listed on stock exchanges in Middle Eastern countries between 2010-2022?

1.3 Motivation and contribution of the research

The irrelevant theory of capital structure that was developed by Modigliani-Miller in the 1950s and is well known as the "MM theory" established a conceptual framework for the issue of capital structure. After this development, the dynamic correlation between the decision on capital structure and financial performance has become the focus of significant scholarly research in the corporate finance field (ABDULLAH & TURSOY, 2021; AHMED SHEIKH & WANG, 2013; ASAOLU, 2021; AYAZ ET AL., 2021; BHADURI, 2002; CHADHA & SHARMA, 2015; CHANG ET AL., 2019; FEKADU AGMAS, 2020; JOUIDA, 2018; KYEREBOAH-COLEMAN, 2007; LI ET AL., 2019; VO & ELLIS, 2017). According to agency theory, conflict of interest arises between separate groups of stakeholders, specifically between the owner (principal) and manager (agent), and this creates such costs that are commonly known as agency costs (JENSEN & MECKLING, 1976). These issues have a considerable effect on decision-making processes and overall performance. However, the involvement of interacting these factors, especially in the existence of agency cost, remains an issue that needs further investigation. The idea that agency costs might act as a moderating factor in the relationship between financial structure and firm performance offers new insight that may enable an improved understanding of the connections seen in corporate finance and accounting literature.

Moreover, developing countries, including Middle Eastern countries, encounter numerous shortcomings in the corporate environment, such as high transaction costs, high agency costs, economic instability, poor corporate governance, and weak investor protection (BAJAHER ET AL., 2022; TURSHAN & KARIM, 2022). Therefore, it is expected that agency costs significantly affect corporate performance and significantly moderate the association between financial structure decisions and performance.

Overall, the recent developments have drawn attention to the necessity and significance of capital structure policy. However, studies examining the link between capital structure and firm performance among non-financial firms in Middle Eastern stock exchanges are very few. Additionally, there is a lack of empirical study on interacting agency costs with firms' financial choices on performance through the application of agency theory for non-financial firms listed on Middle Eastern markets to answer the open questions, such as what impact does capital structure have on non-financial firm performance listed on Middle Eastern stock markets? does agency cost significantly affect firm financial performance in these markets? Can efficiency in managerial decisions improve corporate performance? To what extent does agency cost influence the connection between a company's financial structure and its overall performance? Does agency theory still have power, and is it pragmatic to be applied in these markets? Finally, what impact can firm-specific factors have on firm performance in these markets? Therefore, by considering the above issues, this study empirically investigates the correlation between capital composition and financial performance. In addition, it explores the effect of agency cost and firm performance and seeks to examine the effect of agency cost on the connection between capital structure choices and firm performance of non-financial firms that are listed in Middle Eastern markets. Theoretically, the above relationships will be tested based on the application of agency theory.

The present study is one of the few studies addressing the aforementioned issues and provides new insight into the existing literature in corporate accounting and finance. The current study selected Middle Eastern countries as a sample for some reasons.

First, this region has an underdeveloped market and economies that are dominated by family-controlled businesses. These family-owned businesses are frequently faced with agency issues caused by the separation of management and ownership. Thus, the widespread presence of entrenched ownership structures in this region may make agency conflicts stronger, affecting judgments regarding capital structure decisions.

Second, numerous non-financial firms operate in this region, and they require a large amount of capital. For growth, they mostly depend on either internal financing or external funding, or both, rather than equity issuance. Thus, examining certain problems from developing nations, such as Middle Eastern countries, could add significant perspective towards capital structure decisions and enrich the current literature around corporate finance and accounting.

Third, several Middle Eastern nations are still developing regulatory frameworks, which results in a range of corporate governance demands. This has an enormous effect on agency costs and, eventually, the correlation between the decisions on capital structure and firm performance can be served.

Finally, the particular socio-economic environment in these countries can exacerbate agency issues, commonly symbolized by focused ownership structures and varied cultural business practices. For instance, the process of conducting business through informal relationships and personal connections might increase agency costs because of possible moral hazards during the decision-making process and asymmetric information.

2. RESEARCH OBJECTIVES

In this section, the main and sub-research objectives, development of hypotheses, and preferred research framework are addressed.

2.1 Research aims and objectives

This thesis pursues three primary aims. Initially, it will investigate the effects of a company's financial structure on its financial performance in developing economies, with a focus on countries in the Middle Eastern financial markets. Secondly, it will examine how a company's financial health is impacted by agency costs or disputes between managers and shareholders. Lastly, the thesis is going to examine whether agency costs have an impact on how well a firm performs in regard to its financial structure, thereby adding new empirical results about the decisions on firms' capital structure to the existing literature on corporate finance. From the primary aims, the following specific objectives are developed:

1. This research reviews the related theories in the literature to support the proposed associations between agency cost, financial structure, and performance of the firms.
2. It investigates the direct effect of capital financing on the financial performance among non-financial companies that are listed on Middle Eastern stock markets between 2010 and 2022.
3. It examines the direct effect of agency cost on the performance of non-financial firms listed on the stock exchanges of Middle Eastern markets between 2010-2022.
4. It examines the direct connection between the effectiveness of managerial decisions and the performance of non-financial firms listed on stock exchanges of Middle Eastern markets between 2010-2022.
5. The study empirically examines whether agency costs as a moderator have any impact on the correlation between capital structure and the performance of non-financial firms listed on stock exchanges of Middle Eastern markets between 2010-2022.
6. It examines the validity of the application of agency theory on the connection between financial structure and firm performance of non-financial companies listed on stock exchanges of Middle Eastern markets between 2010-2022.

2.2 Research hypotheses

Based on the research questions and objectives, below are the study hypotheses that are proposed to conduct the study on the issue that is being investigated (see Table 1):

Table 1. Hypotheses of the study

Hypothesis 1 (H1). There exists a statistically significant relationship between a non-financial firm's capital structure and its financial performance on Middle Eastern stock exchanges.	
H1.1	A company's debt level (financial leverage) has a significant effect on its return on assets (ROA)
H1.2	A company's debt level (financial leverage) has a significant effect on its return on equity (ROE)
H1.3	A company's debt level (financial leverage) has a significant effect on its market-to-book value (MTBVE)
Hypothesis 2 (H2). There is a statistically significant connection between the intensity of agency costs and the performance of non-financial companies listed on stock exchanges in Middle Eastern markets.	
H2.1	Agency costs significantly impact return on assets (ROA).
H2.2	Agency costs significantly impact return on equity (ROE).
H2.3	Agency costs significantly impact market-to-book value (MTBVE).
Hypothesis 3 (H3). The efficiency of managerial decisions leads to improved performance for non-financial firms listed on Middle Eastern countries' stock markets.	
Hypothesis 4 (H4). The impact of capital structure on the financial performance of non-financial firms listed on Middle Eastern stock exchanges is not contingent on the level of agency costs.	
H4.1	Agency costs do not exert a moderating influence on the capital structure and return on assets (ROA) relationship.
H4.2	Agency costs do not exert a moderating influence on the capital structure and return on equity (ROE) relationship.
H4.3	Agency costs do not exert a moderating influence on the capital structure and market-to-book value (MTBVE) relationship.
Hypothesis 5 (H5). The propositions stated by agency theory are still applicable and valid for non-financial firms listed on Middle Eastern stock markets.	

Source: Author elaboration

2.3 Research framework

Based on the research objectives, research questions, and hypotheses, the study constructed the conceptual framework as shown in Figure 1.

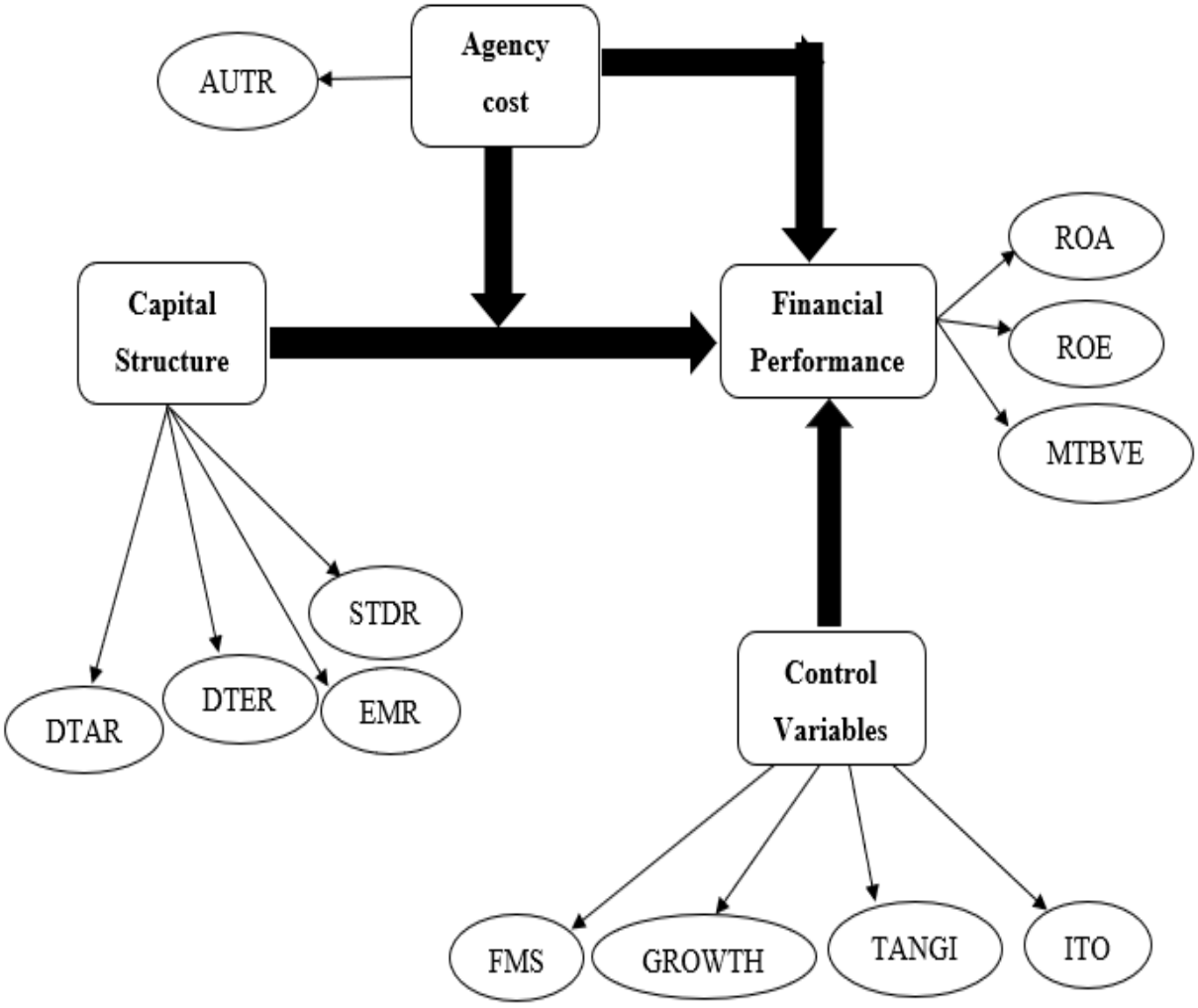

Figure 1. Research framework
Source: Author elaboration

3 LITERATURE REVIEW

This chapter attempts to illustrate the review of literature and is organized as follows. Section one focuses on defining the concept of the structure of firms' capital. Section two defines the concept of financial performance. Section three focuses on explaining the concept of agency cost along with its measurements. Section four discusses the theoretical literature related to the study variables and how they are associated. The decisions on capital structure, corporate performance and efficiency, and agency costs are the main topics in this part. Several associated theories that strengthen the connection between the above variables are also explained and examined. Later, a group of previously published studies that fulfilled a variety of selection criteria and related to the research topic are reviewed empirically in section five. Initially, newly published empirical studies from both developed and developing economies are selected and reviewed to provide a comparison with the Middle Eastern stock markets. Then, research articles published in highly regarded journals that have a crucial contribution to the literature around corporate finance and accounting are also concentrated. Section six focuses on reviewing the measurement of variables. Lastly, the research gap is presented in section seven. Therefore, this chapter provides a critical review of the available research in the literature to enable the researcher to lay the foundation for the recognition of significant research gaps and navigate the path that will serve the objectives of the current study.

3.1 The concept of capital structure

This section attempts to explain the concept of capital structure by defining the notion of capital structure, explaining the cost of capital, determining factors impacting capital structure, describing the concept of an optimal capital structure, and illustrating various methods to measure it.

3.1.1 Capital Structure: An overview

Capital structure is the method by which firms fund their resources through a mix of debt, equity, and hybrid financial instruments. Numerous efforts have been made to establish a definition for capital structure, but all efforts explain the various sorts of securities and the relative quantities that make up market capitalization. According to ABDULLAH & TURSOY (2021); BAKER & MARTIN (2011); NGUYEN ET AL. (2021); ROSHAN (2009); YILDIRIM ET AL. (2018), capital structure, often called financial leverage, or capital financing, or financial structure, can be defined as the combination of both debt and equity that a company uses to fund its activities,

profitable assets, and potential growth. This mixture includes short and long-term debt, common and preferred stock, and retained earnings (BUI ET AL., 2023; SIRO, 2013). (GITMAN & ZUTTER, 2012; ROSS ET AL., 2022) also defined capital structure as the particular combination of long-term debt and equity utilized to fund their business activities. KOCHHAR (1997) also identified capital structure as the mixture of financial resources (debt and equity) that are accessible to run the company. Hence, understanding the term itself helps the managers to make the necessary investments and sustainable business, not just growth.

In addition, in order to accomplish the goals of corporate funding, investments must be sufficiently financed. The assessment can be impacted by various approaches to financing due to the influence of free cash flow and interest. This means that funding may have an impact on the amount of risk to which the company is exposed. From this point of view, the managers need to make financial decisions to improve firm performance or maximize shareholder wealth. For companies, choosing the appropriate financing mix (debt versus equity) is an important financial choice. This decision affects a firm's overall finance plan cost and flexibility in addition to determining the different types of investments that the company may undertake (ALI & AHMED, 2021). As a result, the top management of the company determines the ratio of debt in a way that improves the financial health of the company. More specifically, financial structure outlines the strategy used by companies to fund their investments via the issuance of debt, equity, or hybrid financing.

On the other hand, as explained by agency theory, there are conflicting goals or competing interests among the managers and owners of the company due to the separation of management and ownership. The internal or external source of financing has some differences, and these differences can be observed in terms of the viewpoints of stakeholders, mainly shareholders, managers, and creditors. For instance, managers of companies tend to lean on outside funding as it is the cheapest choice and offers tax advantages to the company. They believe that when funding comes primarily from outside sources, they can meet their goals of raising firms' net earnings and improving the value market (ABDULLAH & TURSOY, 2021). Owners, however, favored the issuance of new equity because they assumed it might provide the business with an enormous flexible investment. They are probably going to escape the limitations established by the creditors. However, if a massive portion of the company's capital structure comprises equity, this lowers earnings per share (EPS) due to the substantial number of outstanding shares. This means that equity financing is

considered a costly method for obtaining a firm's capital structure and can be used as a last financing option (MYERS & MAJLUF, 1984).

Since the perspectives of managers and owners are different from each other regarding various financing sources, it brings conflict of interest and generates costs that are commonly known as agency costs, which may harm firm performance (AHMED ET AL., 2023a). These costs may be reduced, and efficiency can be improved when the companies choose an appropriate capital structure (ABDULLAH & TURSOY, 2021; MORTEZA ET AL., 2021). This is because enhancing the value of the firm and minimizing the total cost of funding can be achieved through a balanced capital structure. Although debt has tax benefits (AKIN ET AL., 2025), adopting excessive debt raises risk. Firms may find an optimal point at which they spend less for financing and invest by carefully managing this combination, strengthening their overall financial health.

3.1.2 Cost of capital

Cost of capital is the total amount of money that a company spends to obtain and use capital for activities. It is predicted as a return rate when the market needs to support an investment before it raises capital (PRATT & GRABOWSKI, 2014). The possible categories of funding sources are cost of debt, equity, and preferred stock. Companies can use the calculation of the weighted average cost of capital (WACC) to assess the total cost of their financial structure and make informed choices about project financing.

Cost of debt (COD)

A financial measure known as the "cost of debt" represents the cost a company pays when using borrowed funds, which are usually in the form of bonds, securities, or loans. It plays a crucial role in determining the total cost of capital for a company, influencing both its financial performance and strategic choices. This measure is used by shareholders and lenders to assess the risk involved in a firm’s debt commitments. The cost of debt is determined by annual payments of interest on total debt, reflecting the initial cost of lending and taking into consideration the tax advantages obtained from interest expense deduction (KRAUS & LITZENBERGER, 1973). This gives information about the cost and effectiveness of a firm's decision regarding debt. Thus, it may be viewed as an important aspect when companies are trying to optimize the structure of their

financial resources and decrease the cost of borrowing. The cost of debt can be calculated based on the following formula:

$$K_d = r_d \times (1 - TR)$$

Where, K_d represents the cost of debt; r_d indicates nominal interest rate; TR is the effective corporate tax rate.

Cost of Equity (COE)

Equity cost refers to the expected rate of return needed by shareholders to offset the risk of owning stock in a firm. It represents the potential cost of funding with capital from equity, along with a projected investment return for investors. The cost of equity is affected by some factors, including the condition of the market, firm efficiency, and the perceived risk of the available stock. One often-used technique for figuring out the cost of equity is the capital asset pricing method (CAPM) (BARINOV ET AL., 2020). According to CAPM, the cost of equity is determined by this formula:

$$K_e = R_f + \beta(E(R_m) - R_f)$$

Where K_e illustrates equity cost; R_f represents the risk-free rate; β indicates the beta of company stock; and $(E(R_m) - R_f)$ is a premium for equity risk.

Cost of preferred stock (COPS)

It is the rate of return that shareholders expect from preferred stock for owning the firm's preferred stock. In contrast to common stocks, the owners of preferred stock will obtain a fixed dividend payment, and the cost is valued at the dividend rate. Preferred stock is one kind of equity that combines aspects of both debt and equity. The cost can be calculated easily by dividing the amount of dividends per stock to the net proceeds per share. However, there are usually no tax benefits connected with the dividend of preferred shares because taxes are not deducted for the company that issues new shares (BAJAJ ET AL., 2002). Hence, tax benefits are not included in the computation of preferred stock cost. The cost of preferred stock can be calculated based on the following formula:

$$R_{ps} = \frac{D_{ps}}{P_{net}}$$

Where, R_{ps} is the cost of preferred stock; D_{ps} denotes dividend per share; P_{net} represents net proceeds per share (issue price).

Weighted average cost of capital (WACC)

The weighted average cost of capital (WACC) is a ratio used to determine a company's cost of capital, where each component of the company's financial resources is assigned a proportional weight (weighting the cost of debt and cost of equity). If the company has preferred stocks in its financial structure, the weighted cost of those shares can also be included in the WACC calculation (DAMODARAN, 2015). Therefore, WACC can be considered an essential indicator in establishing an investment strategy as it reflects the expected return on the investments that shareholders have in the company's operations (DOBROWOLSKI ET AL., 2022). It is also regarded as the average rate at which a company will reimburse its equity holders and debt holders for funding its activities. The calculation of WACC is presented as follows:

$$WACC = \left(\frac{E}{V} \times K_e\right) + \left(\frac{D}{V} \times K_d \times (1 - TR)\right)$$

Where, E denotes the market capitalization of equity; D represents the market capitalization of debt; V indicates total market capitalization of the firm's mix of debt and equity; $K_e$is cost equity; K_d is the cost of debt; TR is the firm tax rate.

In addition, WACC is determined by the outside market and can be set by managers (DAMODARAN, 2015). This is because it is impacted by some factors that are indexed by the external market, including expectations from investors, rate of interest, and the condition of economic trends (DROBETZ ET AL., 2018; KIM, 2022), which are difficult for managers to personally determine. The equity cost is determined by market risk appraisal, while the cost of debt is dependent on the present interest rate. Although managers can mitigate these expenses informally by enhancing the risk profile and financial stability of the firm, they have no control over the external market forces that dictate the real values. Figure 2 provides an extensive overview of the costs associated with debt, equity, and total capital.

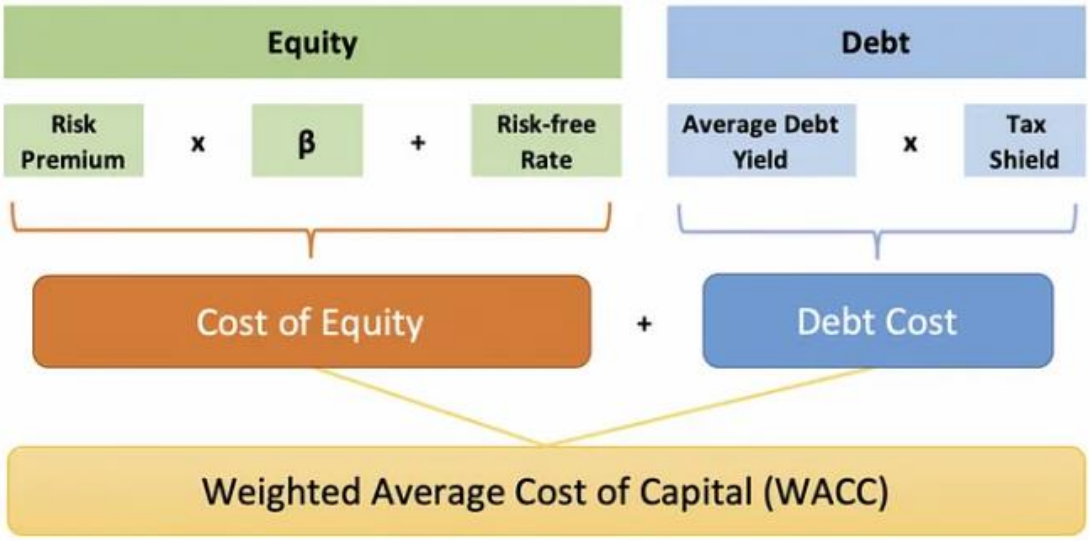

Figure 2. Calculating the cost of capital (HILLIER ET AL., 2010)

3.1.3 Determinants of capital structure

Following the initial printing of MM theory or "irrelevance theory" by (MODIGLIANI & MILLER, 1958), capital structure theories have offered several explanations for companies to make financial decisions. The majority of discussions of financial structure emphasize the key parameters that determine a company's financing composition, considering a projected cash flow stream. The decisions on firms' capital structure are impacted by their operating environment, including firm-specific factors, tax regime, and market conditions (BOOTH ET AL., 2001; NGUYEN KIM, 2023). The theories of agency cost and pecking order contend that a company's financing mix is influenced by its profitability (SDIQ & ABDULLAH, 2022).

The initial assumption implies that companies would rather use their internal source, such as "retained earnings" to fund investment opportunities, and they would only increase debt financing if their internal funds were not sufficient (ANTONIOU ET AL., 2008). Since profitability is a prerequisite for being able to retain earnings, it is predicted that leverage and performance will have an inverse relationship. JENSEN (1986) also argued that when firms increase free cash flow, agency costs increase too. Debt can decrease the agency's cost of free cash flow by guaranteeing that managers follow procedures, choose intelligently when making investments, and avoid pursuing personal benefits, which raises the risk of bankruptcy (SDIQ & ABDULLAH, 2022). Rising debt ratios indicate creditworthiness and lenders' willingness to provide financing. Thus, it

is expected that agency cost affects firm performance and moderate the relationship between financial structure and firm financial performance.

A study by AHMED (2019) argued that growth possibilities are capital assets that boost the value of a business but are unable to generate taxable current earnings or be guaranteed. Firms that exhibit significant growth prospects typically preserve their financial flexibility in order to increase borrowing in subsequent years (LA ROCCA ET AL., 2009). However, companies with significant growth prospects are unlikely to fund their investments primarily with borrowing because the probability of financial collapse is higher in those situations, and intangible asset values would plummet in the event of insolvency (HARRIS & RAVIV, 1991). For firms that have more potential for growth than other firms with less growth potential, the asset replacement issue is becoming more and more significant. As a result, this pushes lenders to charge higher financing costs. This suggests that firms with lots of space to grow should rely on low levels of debt (ANTONIOU ET AL., 2008).

Moreover, CHEN ET AL. (2021); DANSO ET AL. (2020) discovered that one significant factor influencing capital structure is firm size. Larger companies typically have greater liquidity and more resources that can be collateralized. Therefore, the likelihood of a company defaulting is generally correlated with its size, indicating that larger companies are likely to have higher debt levels (LA ROCCA ET AL., 2009). JERMIAS & YIGIT (2019) also indicated that large companies have greater trustworthiness in the financial markets, and they rely on debt when it is necessary. Thus, growth and size can be considered as two factors that have a significant effect on choosing capital structure.

Further, according to (MODIGLIANI & MILLER, 1963) firm's capital structure decision is also affected by the tax regime because of tax deductions for paying interest on debt. Companies are encouraged to use financing through debt because it lowers their tax liability under a system of taxes that permits interest payments to be subtracted from income before calculating taxes (ALI ET AL., 2022). The reduction essentially lowers the cost of borrowing after taxes, which makes debt be attractive funding option compared to equity. Thus, in order to optimize their tax benefits, firms frequently choose a combination of equity and debt financing, which ultimately shapes their financial structure (GREGOVA ET AL., 2021).

Based on the above arguments, it is obvious that the determinants of capital structure are influenced by firm-specific factors, taxation, and market conditions. It attempts to achieve a goal that reflects the bankruptcy cost, risk, categories of assets, economic viability, and taxes.

3.1.4 Optimum capital structure

The literature on corporate finance indicates that every company has an intended capital structure. Theoretically, this sort of optimum capital structure is that, under all circumstances, the debt and equity ratio maximizes shareholder wealth and firm performance. Based on the conventional framework, optimum capital structure is the point at which the firm's market capitalization is at its highest point, and the value of the weighted average cost of capital (WACC) is at its lowest point (BRUSOV & FILATOVA, 2023). As presented in Figure 3, there are three phases in which adjustments to the capital structure interplay with the weighted average cost of capital (WACC) (GITMAN & ZUTTER, 2012).

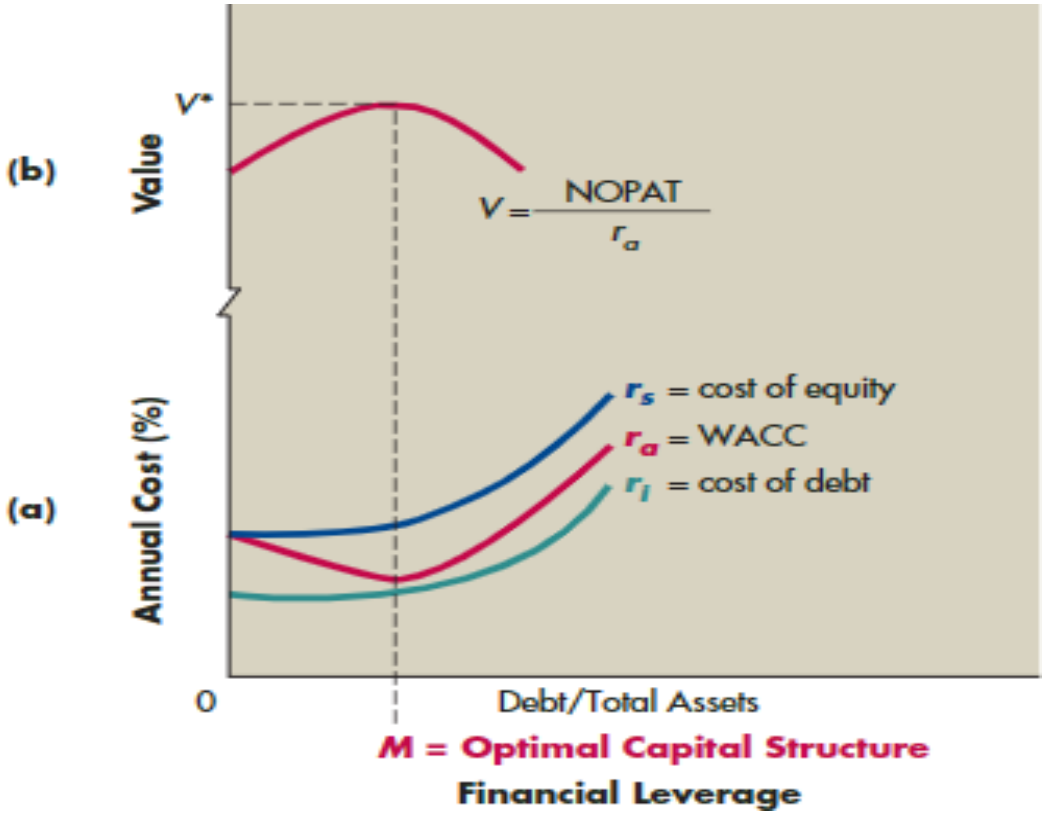

Figure 3. Optimal capital structure (GITMAN AND ZUTTER, 2012)

- The rate of a firm's market value either maintains the same level or steadily increases with an increasing debt ratio. The total cost of capital (WACC) decreases as debt levels rise, even though the cost of borrowing stays equal. Consequently, the company's value increases.
- When a firm increases the debt level in its financial structure, the related financial risk may increase. Hence, the optimal financial structure contains the lowest possible WACC along with the highest corporate value.
- A firm's market capitalization starts to decrease when the cost of capital begins to increase.

In addition, both debt and equity financing have equal marginal costs during the optimum capital structure. However, before the optimal level, equity has a higher marginal cost compared to debt, and after passing the optimal point, equity has a lower marginal cost compared to the debt marginal cost (CHANDRA, 2019). Financial managers sometimes can observe the impact of updating capital structure decisions on the weighted average cost of capital (WACC), which is simpler than predicting the market price. This means that when capital structure reduces WACC, the market price will be reduced too (BRIGHAM & HOUSTON, 2021).

3.1.5 Measurements of capital structure

The capital structure metrics of the company can be called capital gearing or financial leverage. The debt ratio, debt-to-equity ratio, debt-to-capital ratio, and equity multiplier ratio are crucial ratios to estimate the capital structure.

Debt ratio

The association between total debt (short + long term debt) and total assets serves as one of the most important concepts of capital structure (BUI ET AL., 2023) because companies can access a variety of financial sources. Practically, this ratio assesses the financial position of the corporation. When the ratio is high, it suggests a stronger reliance on financing through debt, which might increase profits but also raise risk.

In contrast, a lower ratio denotes a more cautious capital structure where equity is responsible for a significant share of the firm's resources. Thus, the debt ratio is essential for evaluating the level of risk and financial stability of companies, assisting investors and financial analysts in assessing

the company's capacity to pay debt and survive financial difficulties. The debt ratio can be calculated using the following formula:

$$Debt\ ratio = \frac{Total\ debt}{Total\ assets}$$

Debt to equity ratio

This ratio is also known as capital gearing and is a financial indicator that assesses how the corporate financing debt and equity elements relate to each other. It can be calculated by dividing total debt (short and long-term debt) by total shareholders' equity (DAOUD & KAMMOUN, 2017). A higher debt-to-equity ratio indicates a higher reliance on debt financing, which might increase firm profitability but also increase the related risk, while a smaller debt ratio demonstrates more dependence on equity financing. As a result, the debt-to-equity or capital gearing ratio can assist in making smart decisions regarding investments by serving as a useful instrument for assessing a firm's risk profile and financial condition. The debt-to-equity ratio can be calculated based on the following formula:

$$Debt\ to\ equity\ ratio = \frac{Total\ debt}{Total\ shareholders\ equity}$$

Equity ratio

A financial metric called equity ratio evaluates the extent to which the assets of a firm are funded by equity and can be calculated by dividing total equity by total assets (SDIQ & ABDULLAH, 2022). It also reveals how much a company depends on financing from equity, indicating both its risk tolerance and sustainability. When the ratio is high, it suggests a stronger reliance on financing through the owner's equity. On the other hand, a lower ratio demonstrates more dependence on debt financing, which might increase profits but also may increase the related risk as well. Thus, the ratio is a key measure in financial evaluation because it is used by both analysts and investors to assess the reliability of a company, resilience to market fluctuations, and overall financial health. The calculation of the equity ratio is presented as follows:

$$Equity\ ratio = \frac{Total\ shareholders\ equity}{Total\ assets}$$

Equity multiplier ratio

This metric shows how much of the firm's assets are funded by its shareholders' equity and is measured by dividing total assets by total shareholders' equity (DAOUD & KAMMOUN, 2017). A higher ratio denotes a higher reliance on debt financing, which might increase firm profitability

but also increase the related risk. However, a smaller ratio shows more reliance on equity financing. Both investors and financial analysts can use this ratio to assess the firm's risk profile and financial condition in order to make reliable and accurate decisions toward future investments. It can be calculated using the following formula:

$$Equity\ multiplier\ ratio = \frac{Total\ assets}{Total\ shareholders\ equity}$$

3.2 Corporate financial performance

In the dynamic business environment, where companies deal with pressure from competitors and economic uncertainty, the notion of company financial performance is a lighthouse directing operational decisions. As the foundation of any company, the firm's financial outcome is the culmination of the careful balance that occurs between fundamental financial sustainability, cost control, and generating income. Essentially, a company's financial performance acts as a guide to help the broader group of stakeholders, but mainly shareholders, investors, and managers. to navigate the intricate details of various economic environments and highly competitive markets. To understand this approach, it is critical to gain an extensive understanding of what makes a company successful, flexible, and innovative in the dynamic domain of business.

According to KUSUMAWARDANI ET AL. (2021) financial performance can be described as an indicator of a company's capacity to meet its goals. MILLER & BROMILEY (1990) also contribute by defining it as an indication of how the company allocates its financial and human capital to help the business achieve its objectives. In other words, it displays the organization's capacity to produce earnings, manage financial resources, and add value for its interested parties. NAZ ET AL. (2016) emphasizes performance as an economic indicator of a company's ability to achieve both short- and long-term goals through its operations over a particular period. TAOUAB & ISSOR (2019) also believed that performance is the capability of the company to meet its long-term objectives. Thus, companies might have goals for the short-term as well as the long-term period. The aforementioned perspectives highlight how business performance is dynamic and recognize its value as an extensive assessment that reaches beyond profitability. For companies that seek long-term success, comprehending financial performance holistically is vital because it highlights the decision-making processes and methods of managing resources that support the accomplishment of both short-term and long-term corporate objectives.

3.2.1 Factors affecting firm financial performance

Firm financial performance is affected by several factors, which in turn shape a company's overall stability and satisfaction. According to Modigliani and Miller's seminal work from 1958, the decision of a company's capital structure does not affect its value. By considering tax benefits on debt interest, information asymmetry, and agency costs, further hypotheses of financial structure, on the other hand, imply that capital structure can significantly affect a company's performance (BANDYOPADHYAY & BARUA, 2016). According to agency theory, as educated by JENSEN & MECKLING (1976), agency cost can be reduced by increasing firm leverage, thereby decreasing inefficiency and improving firm performance. Thus, the firm’s capital structure serves as a significant factor in determining financial performance. Even though a high debt level may result in financial instability, an optimum capital structure (combination of debt and equity) and strategies for controlling debt can assist firms to secure sustainability in the long run.

Other variables, such as operational efficiency, effective decision-making, and management competence, are also significant factors that determine firm financial performance. From this perspective. When the firms are applying a cost management system, strong corporate governance mechanisms, and excellent strategies, they can overcome obstacles and capture opportunities (BAZHAIR, 2023). This is because the firm's assets can be used efficiently, then productivity can be enhanced, which positively influences financial performance.

Moreover, the financial achievement of every company can also be impacted by the current condition of the economy, which includes interest rates, inflation, and gross domestic product (GDP) growth (BANDYOPADHYAY & BARUA, 2016). For example, customer purchases may decline throughout economic downturns, which could have an impact on firm profitability. Competition in the market is another crucial factor that may influence financial performance. The intensity of competition in a specific sector can have an impact on a firm's capacity to retain or grow its client base, as well as pricing methods and position in the market (AHMED & AFZA, 2019). Thus, firms that successfully set themselves apart from the competition or adjust to shifting market conditions are more inclined to experience profitable outcomes.

3.2.2 Firm Financial Analysis

Understanding the firm's financial performance essentially involves examining the data and information that is provided in the annual report, which includes assessing and comparing the current and past performance, industry benchmarks, and the performance of competitors. The context provided by this comparison helps to identify the advantages, disadvantages, and areas for future enhancement. Hence, financial analysis could be defined as a systematic gathering of methods and instruments that help financial managers explore, evaluate, define, optimize, and risk-orient their operations (ZAHARIEV, 2022). FRIDSON & ALVAREZ (2022) also defined it as several financial techniques that could be applied to assess the company's performance in terms of strengths or weaknesses.

An essential component of financial analysis involves interpreting corporate financial statements, which generally comprise statements of comprehensive income, statements of financial position (balance sheet), and statements of cash flow. The annual report provides historical data and contains both quantitative and qualitative data (KOTHARI & BARONE, 2006). The statement of income presents the company's earnings over a specified time, covering sales, expenses, and net income. On the other hand, the balance sheet displays the company's total resources, liabilities, and owner’s equity as of a particular date. The cash flow statement shows the inflows and outflows of cash for the company, thereby providing information about its liquidity and capacity to produce cash flow from operations.

Examining historical data is only one element of financial analysis. It includes the computation and interpretation of several financial metrics, including profitability ratios, financial leverage ratios, and liquidity ratios. These ratios act as quantitative labels, permitting experts, analysts, and researchers to evaluate the firm's financial performance in comparison to past results, assess the sector benchmarks, and establish financial targets. Proper financial analysis also includes qualitative evaluation to assess financial performance through investor relations, market position, risk management, expansion plans, market trends, and market perception (CARROLL, 2004). The reliability of the data and information provided in the annual report affects how accurate the outcomes of financial analysis are. Accounting and finance information must be reliable, accurate, relevant, comparable, and accessible on time (SOCEA, 2012) to ensure that the results are clear and beneficial; hence, unbiased financial statement analysis can be achieved.

3.2.3 Measurements of financial performance

Since the firm's financial performance is determined by assessing the ability to use assets to generate income, it can be measured through both accounting indicators and market indices. These measurements include firm efficiency, managerial efficiency, profitability, growth opportunities, market effectiveness, market trend movement, shareholders' return, investor relations, market perception, and planned expansion following the demands of the stakeholders (CARROLL, 2004). The procedure is crucial for the long-term survival of every company. It is also known as the company's real output compared to its planned results.

Moreover, financial performance metrics are those that show how well a company is performing overall through the lens of financial signals alongside how well it can generate value (GALEAZZO & FURLAN, 2018). They are also regarded as an assessment of the effectiveness and efficiency of the company's activities both inside and outside. From the practical perspective, accounting ratios evaluate a company's performance from the inside using book value ratios, while stock market indices evaluate a company's performance from the outside by using the actual achievements in the marketplace (ABDULLAH & TURSOY, 2021). These ratios make it simpler for various accounting users to comprehend the firm's actual financial achievements.

Based on the previous studies, financial performance was evaluated through both accounting and market indicators (AHMED ET AL., 2023a; ANOZIE ET AL., 2023; AYAZ ET AL., 2021; BAWUAH, 2024; BOSHNAK, 2023; ESSEL, 2023; IIOKA & YAMADA, 2023; KHUONG ET AL., 2022; MATHUR ET AL., 2021; MATHUR ET AL., 2023; T. H. NGUYEN ET AL., 2023; ROY & CHAKRABORTY, 2023; YAN ET AL., 2023). These measurements have been performed based on the annual report and reliable metrics derived from data on financial statements. A study by (MASA'DEH ET AL., 2015) argued that return on assets (ROA) and return on equity (ROE) are two financial ratios that are commonly used to measure firm performance for internal purposes, and market-to-book value (MTBVE) is a crucial indicator for estimating market performance (ABDULLAH & TURSOY, 2021; AHMED ET AL., 2023a; IBHAGUI & OLOKOYO, 2018).

Financial performance assessment based on the accounting indicators

Evaluating firm financial performance based on accounting measurements is utilized to evaluate the effectiveness and efficiency of companies by methodically analyzing and interpreting a range of information and financial indicators to determine how profitable and efficient the company performs. These indicators are essential instruments as an internal accounting assessment that stakeholders, such as managers, investors, lenders, and legal agencies, use to assess an organization's overall health and make well-informed decisions. Achieving the maximum level of profitability, efficiency, financial stability, and growth are four main objectives that companies aim to accomplish. Profitability and efficiency are the result of many procedures and choices associated with a company's operations. A company's profitability can be determined through some ratios that take into consideration its financial statements (DIESTE ET AL., 2021).

The most frequent ratios used to measure profitability in the literature are, first, return on assets (ROA). This ratio is utilized to assess the extent to which a company condenses its assets efficiently to create value, that is, how profitable concerning the resources that the firms use in its operations (AHMED, 2022). When conducting a comparison analysis, ROA is commonly applied to compare the achievements of an organization to rivals or the average of the sector. A greater ROA indicates effective use of resources. Hence, it is considered an essential measure of management effectiveness. A lower ROA, however, could indicate that the firm is having difficulties in using assets efficiently and effectively. Therefore, ROA can be seen as a significant indicator for evaluating the performance of different firms in a similar sector or monitoring firm improvement through the years. ROA can be calculated as follows:

$$Return\ on\ assets\ = \frac{Net\ income}{Total\ assets}$$

The second profitability ratio used frequently as an internal assessment is return on equity (ROE). It assesses the return on investments that investors receive from the company. In fact, it depends on several factors, including how a firm efficiently utilizes its resources, firm profitability, and level of leverage as indicated capital gearing ratio (FIRER ET AL., 2012). Good management is usually regarded as a benefit since it suggests an organization is making efficient use of equity to make profits. Consequently, it is a vital measurement for evaluating a firm’s profitability and financial performance because it shows the return on every dollar that is invested by shareholders. ROE can be formulated as follows:

$$Return\ on\ equity\ = \frac{Net\ income}{Total\ shareholders\ equity}$$

Although experts, managers, and investors often rely on both profitability ratios (ROA and ROE) as a standard to assess how effectively companies perform their operations and to compare with other firms within the same industry, they may provide an undesirable signal if the ratio declined compared to the prior time frame or lower than the mean value for the sector (HORNGREN ET AL., 2015). In light of that, the company's management needs to rethink its strategies and guidelines.

Financial performance assessment based on the market indicator

An outside indication that is frequently monitored and can reveal information about a company's future profitability and market value is the performance of the stock market. Investors and other groups of stakeholders often consider this indicator for evaluating stock market performance. This measurement is obtained from the stock market, where shares or assets of a firm are exchanged. Stock market indices, total market equity, earnings per share (EPS), trading volume, and other indicators are commonly utilized to evaluate the efficiency of the stock market performance. A firm that performs satisfactorily in the market is typically considered to have strong financial standing and excellent management (ABDULLAH & TURSOY, 2021). For this reason, stock market performance acts as a benchmark from outside that gives stockholders useful information about how a business operates in connection with the overall economy and assists in their decision-making. One popular measure for determining the firm's market valuation is the market-to-book ratio (MBVE). It can be formulated as follows:

$$Market\ to\ book\ value\ = \frac{Market\ capitalization}{Total\ book\ value}$$

Where, $Market\ capitalization$ is the number of shares outstanding multiplied by the current price of the stock; and $Total\ book\ value$ is the total assets minus total liabilities.

3.3 Agency cost dynamics in the corporate environment

The conflict of interests and the related costs were introduced by the hypothesis of agency cost (RASHID KHAN ET AL., 2020). Agency expenses can be considered as an internal cost associated with stockholders (mainly managers and owners) that arises from the imbalance in

incentives and asymmetric information. It includes the cost of identifying and choosing an appropriate agent, gathering data to establish goals for achievement, monitoring to regulate bonding expenses, loss resulting from the agent's poor choices, and the behavior of agent.

3.3.1 The concept of agency cost

The agency cost theory is educated by (JENSEN & MECKLING, 1976) and describes the impact of a company that is entirely controlled by a managing owner offering equity to investors from the outside on motivations. A firm asset will be used by executives in a senior management role to reach the point where the marginal gain is higher than the marginal cost. When executives own all or most of a company's assets, they will be able to cover all expenses as a result of a decreased return on equity, which will lead to the successful use of resources by managers. Conversely, if an external investor obtains stock in the company, only the percentage of the company's assets consumed by managers that corresponds to their ownership interest will be covered by them. The costs of using company assets can be incurred by managers under their ownership. As a result, their motivation to use company assets for personal gain at the cost of the owners grows as their stake in the company decreases. These conflicts of interest increase such business costs. (LEGESSE ET AL., 2021).

Furthermore, in an ideal scenario, the value represents the distinction between a company's real worth and an imagined company's worth where the interests of the agent (manager) and principal (shareholder) are entirely compatible. In other words, there is no conflict of interest between the agent and principal. However, JENSEN & MECKLING (1976) mentioned two kinds of agency costs in reality. The agency's cost of debt emerges because of increasing conflict of interest between shareholders and debtholders, and the agency costs associated with equity due to rising conflict of interest between agent and principal. Additionally, internal expenses that happen due to inconsistent behavior among stockholders are described as agency costs. It consists of the monitoring cost by principal, bonding cost by agent, and residual loss (GARANINA & KAIKOVA, 2016). Figure 4 denotes different types of agency costs that are proposed by (JENSEN & MECKLING, 1976).

Managers are obligated to focus on investments that are more profitable with the goal of producing enough free cash flow to cover debt interest. JENSEN (1986) contended that when the firm increases the level of debt, managers are obligated to focus on investments that are more profitable

with the goal of producing enough free cash flow to cover debt interest. LEGESSE ET AL. (2021); LEGESSE & GUO (2020); MAO (2003); THI VIET NGUYEN ET AL. (2021) contended that debt financing is essential for improving company efficiency because limitations imposed in loan agreements can track managers' spending habits and force firms to implement more effective management techniques. MARGARITIS & PSILLAKI (2010) also argued that one important strategy for mediating conflicts between agents and shareholders is funding through debt, as it greatly reduces agency equity costs. However, companies with prominent levels of cash flow usually employ fewer loans for financing due to relying on internal financing, and this increases agency costs, particularly in companies with insufficient management systems (LEGESSE & GUO, 2020).

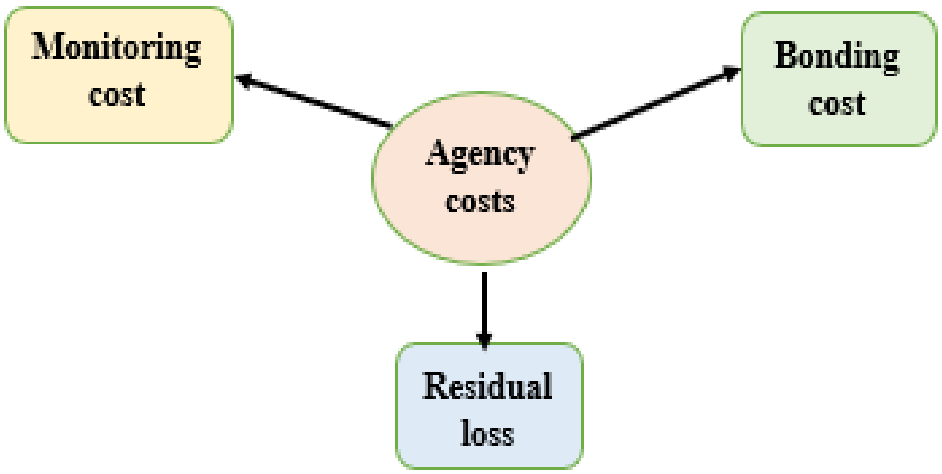

Figure 4. Different kinds of agency costs

Source: Author elaboration

3.3.2 Types of agency costs

Monitoring expenses

Monitoring costs are those incurred when the agent's performance is observed and evaluated within the company. Evaluating the manager's behavior and remuneration are the main expenses that are included in the monitoring costs. Since the supervisory boards are appointed by shareholders to supervise the executives, board maintenance expenses are also part of monitoring expenditure (PANDA & LEEPSA, 2017). The costs of monitoring are initially borne by the owners, but over

time, they are shifted to managers because they are paid to handle these costs. Hence, a crucial component of business governance involves establishing a balance between the necessity of monitoring and cost-effectiveness.

Bonding expenses

This kind of agency expense describes the costs a company incurs to show stakeholders, especially bondholders and investors, that management is operating according to the best interests of the firm and its shareholders. These expenses have been made to build confidence and credibility and show that the executive team is dedicated to making decisions that increase shareholder wealth (JENSEN & MECKLING, 1976). Maintaining an excellent connection between agent and principal, lowering the possibility of agency issues, and eventually enhancing the general well-being and long-term sustainability of the company all decrease bonding costs.

Residual loss

This relates to the financial losses that owners suffer as a result of decisions made by managers that fail to maximize the value of shareholders (ZHOU ET AL., 2021). Therefore, when the conflict of interest between managers and shareholders increases, the residual loss increases too. When managers prioritize their own benefits or seek objectives in contrast with maximizing shareholder return, additional losses happen, which affects shareholders economically. The result of these poor decisions by managers is a loss referred to by the term "residual loss". The shareholders must be responsible for minimizing this loss, as it constitutes the main part of the agency's costs. To alleviate the residual loss, bonding and monitoring expenses are incurred by the shareholders (PANDA & LEEPSA, 2017).

3.3.3 Agency dilemma

The theory was initially set by (JENSEN & MECKLING, 1976) and aims to analyze the conflict that arises between principals. The background of the agency issue begins with modern civilization's attempt at self-maximization through business practices. The agency problem represents one of the long-standing issues that has existed throughout the development of joint stock corporations (BENDICKSON ET AL., 2016). The principal-agent conflict has changed over time, and there is proof in the literature to support these changes (PANDA & LEEPSA, 2017;

TAYEH ET AL., 2023; THI VIET NGUYEN ET AL., 2021; ZHOU ET AL., 2021). To minimize agency issues, it is important to comprehend their causes, the different forms they require, and the associated expenses.

Moreover, CHOWDHURY (2004) argued that agency problems appear as a result of the separation between management and ownership, asymmetrical information, integrity challenges, and inappropriate agent compensation schemes. The owner of the business assigned managers to direct the company with the expectation that they would perform their duties according to the owner's interests. However, managers tend to concentrate on increasing their own wealth (PANDA & LEEPSA, 2017). The agency dilemma has spread the manager-shareholder connection to include other stockholder groups, such as creditors, and major and minor owners. Figure 5 depicts the agency problems in three distinct categories.

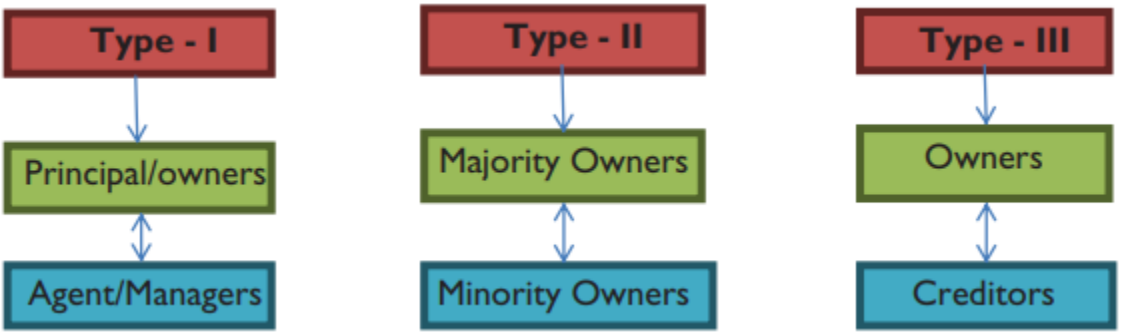

Figure 5. Classifications of agency issues (PANDA & LEEPSA, 2017)

The first category is due to asymmetrical information between the manager (agent) and the owner (principal). The next category is between the majority and minority of owners, where major owners undertake actions that are beneficial to themselves at the cost of minor owners. The last category is related to intensifying the conflict of interest between the lenders and shareholders. This conflict occurs once shareholders decide to make riskier investments over the preferences of their lenders. In all of the aforementioned issues, it is more difficult to ensure agents' reactivity when there are several shareholders involved, particularly when those shareholders have different interests, or what accountants describe as "Heterogeneous tastes" (ARMOUR ET AL., 2017). Subsequently, it will be difficult for several shareholders to work together because of the costs associated with collaboration and knowledge sharing. This will have two interactions with agency issues. In the beginning, when shareholders understand the issues to coordinate, they are going to delegate

managers to make decisions about the firm's strategy. Next, it becomes more challenging to ensure that the manager executes the correct action when shareholders find it harder to agree on one particular set of objectives for the manager (KANDA, 1992). Agency issues thus become worse due to communication expenses among shareholders.

3.3.4 Measurements of agency cost

After the pioneering work of (JENSEN & MECKLING, 1976), agency costs have been measured differently. Both the asset utilization ratio and operating expenses ratio are the most common metrics (GARANINA & KAIKOVA, 2016; MITRA & NAIK, 2021). First, the asset utilization ratio is an accounting measure that evaluates how well a firm uses its resources to generate income. A greater ratio suggests that assets (resources) are being used more effectively by managers to create profits, whereas a smaller ratio might point to inefficiency in the utilization of assets (resources) by managers. Based on the perspective of agency costs, decreasing this ratio can be a sign that managers are not making optimal use of corporate assets for the benefit of owners, which might end up with increased agency expenses. The asset utilization ratio is calculated as follows:

$$Asset\ utilization\ ratio = \frac{Annual\ sales}{Total\ assets}$$

Second, the ratio of operating expenses assesses the manner in which a corporation manages its selling and administrative costs in relation to its sales revenue. It assists in determining how economically viable a firm's operations are. Effective cost control is indicated by a smaller ratio, while a large ratio could indicate ineffective control of expenses by executives, which could result in increased agency expenses. Alternatively, the agent is benefiting at the cost of the owner. The operating expenses ratio is calculated as follows (SDIQ & ABDULLAH, 2023):

$$Operating\ expenses\ ratio = \frac{Operating\ expenses}{Total\ sales}$$

Where, $Operating\ expenses$ is selling, general and administrative expenses (SG&A).

3.4 Theoretical paradigm

This section aims to review the theoretical foundation, which could describe the associations that the present investigation will examine. The common theories are Modigliani–Miller (MM) theory, agency theory (AT), trade-off theory (TOT), and pecking order theory (POT).

3.4.1 Modigliani–Miller (MM) theory

The first and widely acknowledged theory of capital structure was developed by (MODIGLIANI & MILLER, 1958), establishing them as the pioneers of the field. Since 1958, the original hypothesis has evolved and continues to influence recent studies. The theory is also called "MM theory" or "irrelevance theory" and has been applied by several empirical investigations that attempted to clarify the connection between capital financing and corporate performance metrics, such as financial and stock market outcomes (CHANG ET AL., 2019; BAKER & MARTIN, 2011; KRAUS & LITZENBERGER, 1973; NGUYEN ET AL., 2021; PHILLIPS & SIPAHIOGLU, 2004; ROSHAN, 2009; SQUIRES & ELNAHLA, 2020; THI VIET NGUYEN ET AL., 2021). This theory has been recognized as the cornerstone of contemporary business financing. The hypothesis clearly showed that a company's capital structure is independent and not related to profitability or performance (MODIGLIANI & MILLER, 1958). Under the supposition of an ideal capital market, their claim of irrelevance is predicated on two initial assumptions.

The first statement of the Modigliani-Miller (MM) theorem argues that a company's resources determine its value instead of its capital structure. As a result, a firm's financing structure has no impact on the value of the firm. In simpler terms, financing through equity issuance or debt does not influence the value of the business. Nonetheless, this argument is predicated on several presumptions about an ideal efficient market, such as the absence of regulatory constraints, asymmetric information, risk of bankruptcy, agency costs, transaction costs, corporate taxes, and the assumption that maximization is a common objective shared by every manager.

The second statement of the MM theorem states that the weighted average cost of capital (WACC) is significantly impacted by the level of firm leverage. Hence, the cost of capital and leverage ratio have consistent and proportional change. This means that for every unit change in the cost of capital, the financial leverage changes by a constant unit. In particular, compared to companies that have little or no loans, those having a substantial amount of borrowing in their

financial makeup are more likely to experience bankruptcy. Owners typically request a greater return on investment because they want to be rewarded for taking on additional risk (ALGHAMDI ET AL., 2019). Based on the second preposition, it is clear that the profits generated by the resources of the company can be discounted using an appropriate rate to determine the company's worth. To clarify, the company's total value is determined by the revenue flow that is produced by the firm's assets (MODIGLIANI & MILLER, 1958).

Figure 6 illustrates that when firm financial leverage increases, the anticipated equity return increases because debt is related to free risk and tax shield in this stage. Conversely, an excessive increase in financial leverage leads to an increase in the cost of debt and related risks, which will eventually decrease equity return.

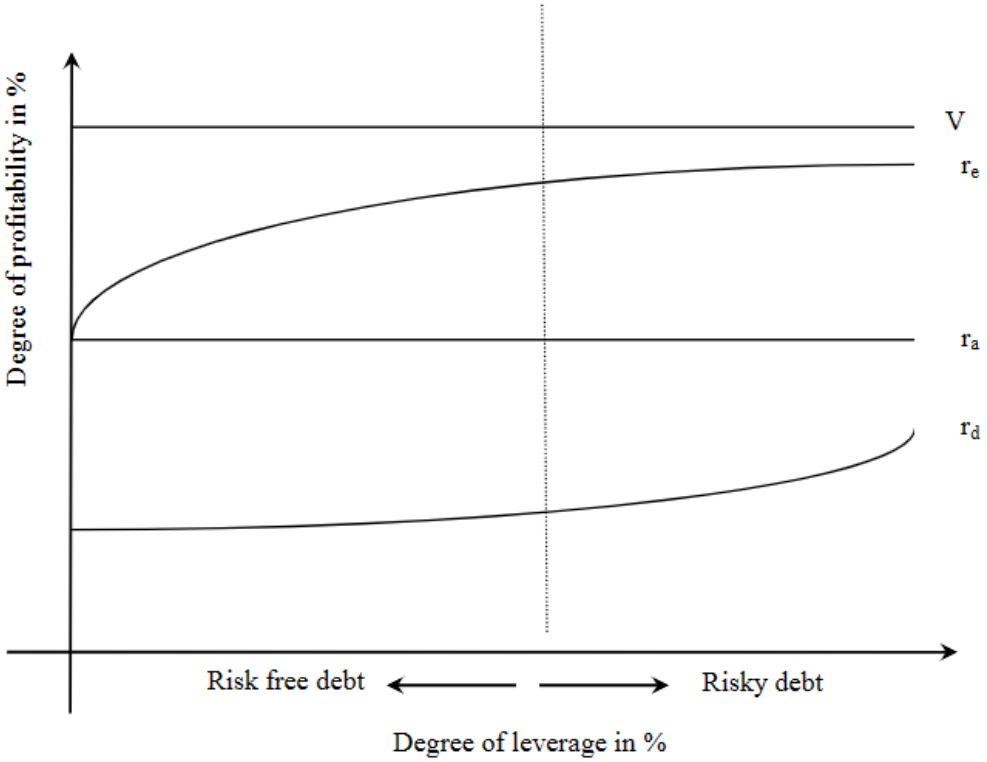

Figure 6. MM theory second statement (JAROS & BARTOSOVA, 2015)

Where, V displays the market value of the company; r_e denotes costs related to equity; r_a illustrates the cost of capital in total; r_d shows costs related to the debt; $\frac{D}{E}$ denotes debt to equity ratio.

Considering the limitations and inconsistencies that arise from agency costs, transaction costs, information asymmetry, and regulatory constraints in real-world financial markets, the MM theory tends to diminish its ability to clarify actual situations.

3.4.2 Agency theory (AT)

In the scientific community, the theory of agency is commonly used as a conceptual paradigm that explains the existence of binding contracts between managers (agents) and shareholders (principals). Agency theory is educated through some studies (EISENHARDT, 1989; JENSEN, 1986; JENSEN & MECKLING, 1976; WILLIAMSON, 1988). JENSEN & MECKLING (1976) argued that an agency issue occurs when an individual or a number of individuals have been permitted to make decisions and carry out a particular function or activity in the name of the shareholders, who are the owners of the company. In other words, the agent has the authority to make decisions regarding how to run the company under an agreement between the managers and shareholders.

It is supposed that the manager pursues goals that will optimize the value of the company and shareholders' wealth. Nonetheless, the manager can decide to disregard the owner's interests in favor of pursuing his own opportunistic aims (JENSEN & MECKLING, 1976). Agents pursue activities that enhance personal benefits and help them to remain in their position, whereas principals seek activities that increase investment return in the company and eliminate the asymmetrical information between agent and principal, whereby the principal is unable to verify that the manager is operating for the shareholders' interests (SQUIRES & ELNAHLA, 2020).

The idea behind the agency conflict, also known as the problem between manager and owner, is that the manager's personal goals will inevitably influence the choice of governance, accounting, investment, risk management, and financial strategies. Although agents (managers) may have an unbiased dedication to giving a precise narrative of occurrences and processes, their objectives tend to conflict or be contradictory with other stakeholder groups. When there is imbalanced information, the shareholder is unable to prevent the manager from engaging in detrimental actions. Due to the conflict of interest between managers and shareholders and also the issues of asymmetrical information, agency expenses occur and could be a primary factor in determining the financial structure of a company (HARRIS & RAVIV, 1991). Therefore, as proposed by the theory of agency, a company's structure of capital must be established with the primary goal of

reducing the chance of opportunistic behaviors by its managers (JENSEN & MECKLING, 1976). One of the objectives of the current study is to test the validity of agency theory towards the above statement among non-financial firms that are listed on Middle Eastern stock markets.

The theory of agency proposed two primary forms of conflicts, principal-agent conflict from the agency cost of equity due to the distinction between management and ownership, and owner-creditor conflict from the agency cost of debt. The agency cost associated with equity for the company is due to the fact that divergent interests arise when agents (managers) prioritize their personal objectives over those of the owners of the company (SQUIRES & ELNAHLA, 2020). It may be logical to assume that managers might fail to act in the best interests of shareholders if both sides of the agency connection are trying to optimize their resources at the same time. This happens as a result of their various utility roles. The manager's utility value combines intangible elements such as professional opportunities, job stability, status, and credibility, along with financial advantages involving compensation (both fixed and variable). The shareholder's utility role appears to be easier, consisting of two financial elements (payments of dividends and stock price fluctuations).

Considering how the financial structure affects a company's performance, it is stated that a mixture of debt and equity (ideal capital structure) that may decrease agency expenses can improve firm value and efficacy (ABDULLAH & TURSOY, 2021). According to Jensen (1986); JENSEN & MECKLING (1976), when a company increases the debt amount in its capital structure, managers face stress to provide enough cash flow to cover interest costs. As a result, they seek to allocate their assets to extremely beneficial activities. A significant level of debt incentivizes managers to behave in shareholders' best interests, which minimizes agency costs related to equity (SAVITRI ET AL., 2017). Consequently, the manager will be unable to focus on their own objectives. According to this argument, a useful level of debt lowers agency costs, which benefits the company's efficiency and enhances firm performance.

The other phenomenon of conflict that is introduced by (JENSEN, 1986; JENSEN & MECKLING, 1976) is the agency cost of debt. The problem arises because using financial leverage to alleviate agency costs gives owners the opportunity to make inadequate investments, which could lead to risk transmission. The shift in risk comes when agents who are supposed to act on behalf of principals undertake highly dangerous investments that increase the value of investors at the cost

of the goals of lenders. Thus, the elevated level of debt in a company's capital structure may be detrimental to the value and performance of the company.

BECKER & STROMBERG (2012) claimed that higher financial leverage could result in an intensification of the duality of interests that exists between creditors and owners, or a higher agency expense associated with debt. Debtholders also demand higher rates of interest in order to offset the substantial risk (MYERS, 1977). Accordingly, the agency theory forecasts an adverse association between financial leverage and business outcomes. From the above perspectives, financial structure has a non-linear effect on agency costs. Figure 7 illustrates this unidirectional interaction.

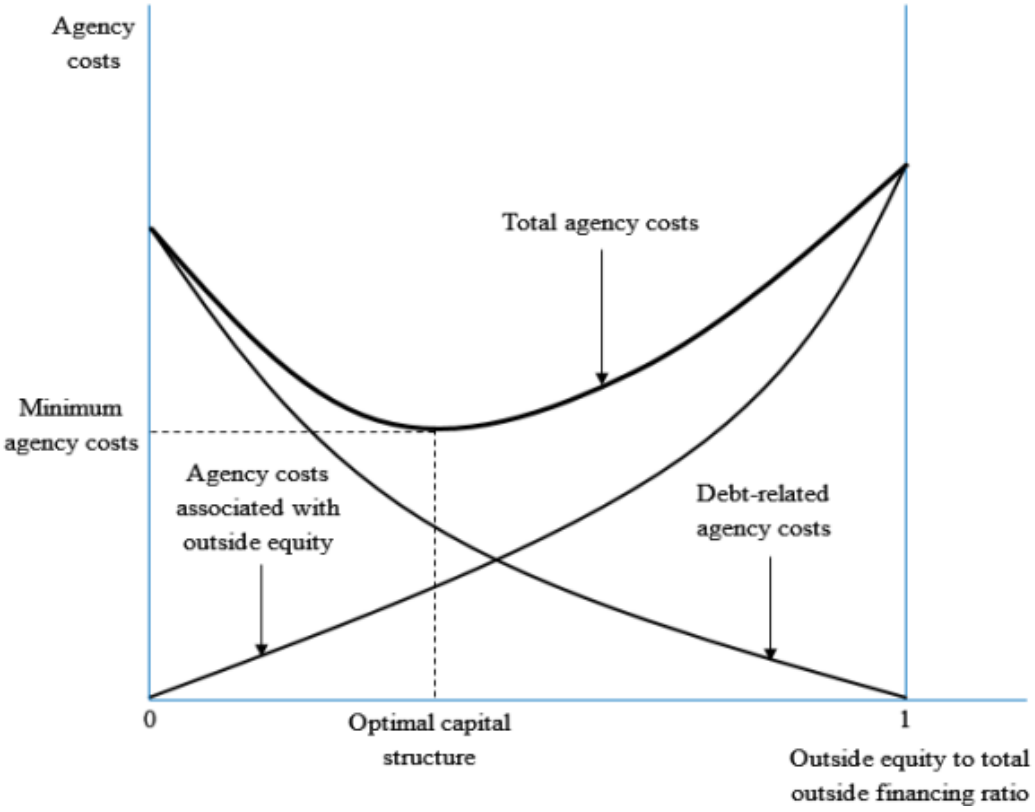

Figure 7. The proportion of external financing generated from equity (HOAI, 2020)

From the above figure, it is obvious that high reliance on equity financing increases the conflict of interest between manager and shareholder due to agency cost of equity, and high reliance on debt financing increases the conflict of interest between creditors and owners due to agency cost associated with debt. However, the optimal capital structure that consists of a combination of debt and equity could lower agency costs and increase the value and effectiveness of the company.

Hence, funding through debt until the optimum level is necessary to increase business efficiency as debt commitment can monitor and restrict managers' spending, reduce agency costs, and encourage companies to adopt more efficient management plans.

3.4.3 Trade-off theory (TOT)

The aim of this model is to provide a rational explanation for the correlation between optimum capital structure (mixture of debt and equity) and business performance by emphasizing the advantages of tax shields. The assumption originated in reply to (MODIGLIANI & MILLER, 1958) initial hypothesis. After some modifications of irrelevance theory and based on tax assumption (KRAUS & LITZENBERGER, 1973; MODIGLIANI & MILLER, 1963) expanded trade-off theory and according to this theory firm leverage is calculated by balancing the advantages of tax reductions in debt versus the expenses associated with bankruptcy. In order to minimize costs and maximize the value of firms, companies will consider the advantages and disadvantages of borrowing in relation to tax savings (AHMED ET AL., 2023a; ANOZIE ET AL., 2023; DUASA ET AL., 2014). From this perspective, (ABDULLAH & TURSOY, 2021) argued that debt financing can be seen as an economical option than funding through equity due to tax benefits related to debt. As a result, financial leverage is predicted to significantly affect firm performance.

In addition, effective cost balancing of elements of financial structure is necessary for companies to attain a satisfactory structure for capital. This could be accomplished by establishing the right balance between the tax benefits of borrowing and agency expenses, which reduces the financial difficulties and bankruptcy risks (CHANG ET AL., 2019; DUASA ET AL., 2014). In other words, an ideal capital structure will maximize the company's potential value. Figure 8 demonstrates the model for trade-off theory and explains when capital structure reaches the optimum level, the weighted average cost of capital (WACC) achieves the minimum level and firm value increases. However, when debt increases beyond the optimum level, WACC is predicted to rise due to financial distress associated with the cost of debt, and consequently, firm value declines.

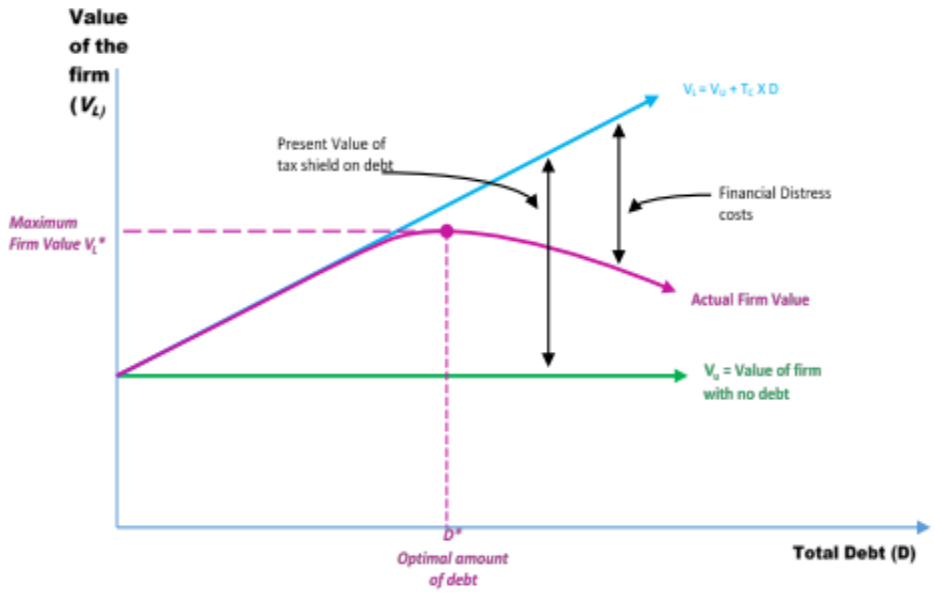

Figure 8. Debt to equity trade-off model (HILLIER ET AL., 2017)

Based on the above explanation of trade-off theory, it is obvious that excessive or insufficient amounts of debt may reduce a company's value. This is because a low level of debt cannot maximize the tax-shielding advantage, while a high level of debt would raise the risk of bankruptcy and increase such expenses associated with financial collapse. Therefore, an optimum capital structure (a combination of debt and equity) can be a good solution for firms as it boosts firm performance and their value (MORTEZA ET AL., 2021).

3.4.4 Pecking order theory (POT)

The purpose of this framework is to assign a particular hierarchy to the company's source of funding. The theory was first announced by (DONALDSON, 1961), who argued that managers would rather obtain funding from inside than outside sources because of the variation in costs among the funds that are accessible. After two decades, MYERS & MAJLUF (1984); MYERS (1984) developed the pecking order theory and offered a scientific justification for the findings of (DONALDSON, 1961) by emphasizing the problem of asymmetric information. They maintained that investors and managers make decisions about financing through debt or equity based on primarily information. If managers believe the stock market underestimates their stock, they are unlikely to announce it. Investors, on the other hand, are aware that managers are going to be

unwilling to issue new shares at a discount rate. Hence, both investors and managers respond in accordance with the information at their disposal.

The pecking order theory asserts that companies fund their assets according to a specific structure wherein equity is issued after debt, and internal sources of funding are given priority over outside funding (KIMUAM ET AL., 2025). In other words, as shown in Figure 9, firms should use internal funds, which are reflected by operational income. Next, debt is used, and at some point, when the debt is not enough, equity may be issued as a replacement. In this scenario, a preference will be given to internal finances and borrowing over equity. The logic behind this priority is that debt issuance results in cheaper costs than stock issuance. Additionally, the issuance of stock allows the company to have more shareholders, which lowers earnings per share (EPS) (FRANK ET AL., 2020).

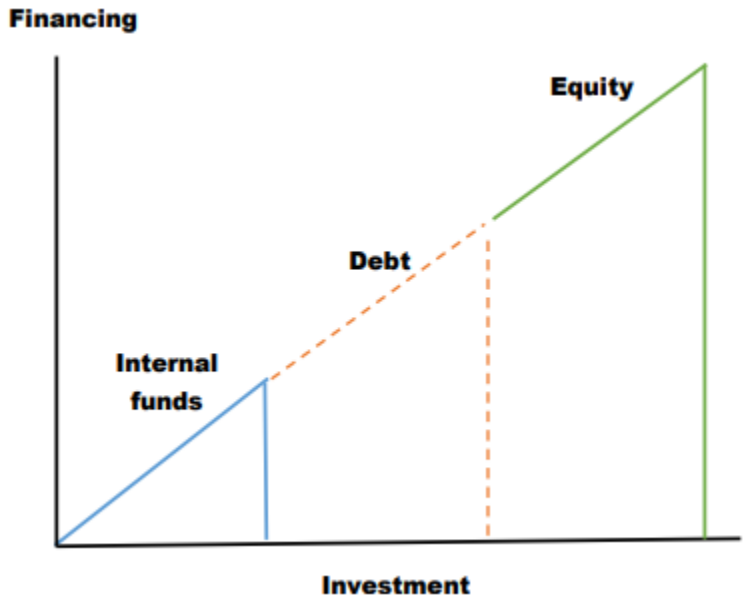

Figure 9. Structure of pecking order hypothesis (LEARY & ROBERTS, 2010)

Further, the theory of pecking order also claims that a company's excessive debt levels raise the perspective of market price, which might boost the value of the company. From the perspective of this theory, firms have no choice of ideal optimum capital structure since equity is divided into two categories: retained earnings as an internal source and stock issuance as an external source of financing (MYERS, 1984). In summary, the hypothesis proposes that companies weigh all accessible funding choices and select the cheapest one. This provides a hierarchy that indicates

companies elect first retained earnings as internal financing, then debt, and finally issuing new stock.

3.5 Empirical studies

This part seeks to offer an informative perspective on the recognition of the research gap. This can be achieved by analyzing the most relevant and recent empirical research on the possible relationship between the study variables, such as agency costs and financial structure, along with corporate performance. In this part, an empirical review is conducted on a set of previously released articles that met certain selection criteria and were relevant to the study issue. The first step involves the selection and review of recently released empirical research from both developed and developing economies in order to provide a comparison with the stock markets in the Middle East. After that, a special focus is given to research papers that were published in high-quality journals and make a significant contribution to the existing body of knowledge about corporate finance and accounting.

3.5.1 Capital structure and firm performance link (CS-FM)

After the seminal work of MM theory as a theoretical foundation for capital structure and value of the firms, several researchers have tried to investigate the association between the gearing level and firm financial performance. However, there is no solid conclusion about the above connection. The results of previous studies are mixed, including positive relationships, negative relationships, non-linear relationships, and no significant association. According to AHMED ET AL. (2023c) managerial efficiency, agency costs, firm-specific characteristics, the country's economic development, and market efficiency level are the main factors to determine the association between the structure of a firm's capital and corporate efficiency.

By applying an explanatory research approach, BOSHNAK (2023) examined the correlation between capital financing and financial success among 70 non-financial firms that were listed on the Saudi Stock Exchange (Tadawul) during (2016-2020). The study used a Generalized Method of Moments (GMM) to estimate the above relationship and test the study hypotheses. Findings from this study illustrated that financial structure is inversely correlated with financial efficiency. The study finally concluded that if the cost of debt is higher than the equity cost, managers need

to reduce the level of debt and apply an optimum capital structure to improve the value of shareholders. In a similar finding, the most recent study by (AHMED ET AL., 2024) assessed the influence of COVID-19 on the financial leverage composition of 208 GCC-based companies. Their investigation showed that low and high debt financing is inversely related to profitability. However, optimum debt levels will improve firm efficiency.

ABU-ABBAS ET AL. (2019) also studied the correlation between financial leverage and corporate performance. Panel data was used in this study and collected from 56 manufacturing firms listed on the Amman stock exchange between (2011-2014). In total, there were 224 firm-year observations. For the purpose of data analysis, Generalized Least Squares (GLS) was applied in this study. Their findings demonstrated that financial performance that is indicated by return on assets (ROA) and economic value added (EVA), is negatively impacted by financial leverage. Moreover, they also found that these negative associations became stronger when companies used high levels of competition and expensive methods to differentiate products.

Using panel data analysis, XU ET AL. (2021) focused on the agricultural industry in China and explored the link between capital financing and corporate outcomes. Data was obtained from 39 agricultural companies that were traded on the Shanghai Stock Exchange and the Shenzhen Stock Market over the period (2013-2019). Corporate performance is a dependent factor and is measured by return on assets (ROA) and return on equity (ROE). Capital structure is an explanatory variable and indicated by the leverage ratio (LEV), short-term debt ratio (SLEV), and long-term debt ratio (LLEV). Based on the outputs of the regression model, the findings confirm that firm financial performance is negatively influenced by debt financing. However, the result is not significant in the case of long-term debt. They also found that the performance of privately-owned firms is more affected by financial structure than government-owned firms.

Using comparative analysis, RIAZ ET AL. (2023) investigated the determinants of capital structure around G-20 companies. The study aimed to clarify the factors that influence the utilization of capital and the choices made about leverage that follow the G-20 economies. The data was collected from the reports of 519 manufacturing companies between (2007-2018) and was obtained from different financial data streams, such as the World Stock Exchange and Thomson Reuters. The results supported by the pecking order theory claim that investments and long-term assets have a positive and significant effect on total debt, while profitability is negatively impacted by the changes in debt level in all regions. Similarly, BRENDEA ET AL. (2022) noticed

a contrary relationship between leverage ratio and firm performance, using data from 828 non-financial firms listed on the stock exchanges of eight European countries between (2008-2017).

SHOAIB & SIDDIQUI (2022) investigated the correlation between performance and financial structure through the effect of management earnings. The study focused on the Asia Pacific countries and collected data about 802 firms in 5 different countries. Findings illustrated that the pecking order or trade-off theory may serve as a framework to understand the capital structure-firm performance link when earnings management is absent.

FONCHAMNYO ET AL. (2023) also assessed the link between capital structure and financial stability. Data was collected from audited annual reports of 15 Microfinance Institutions (MFIs) in Cameroon over the period (2014-2020). Using Generalized Least Squares (GLS), the study revealed an opposite connection between grants, level of debt, and long-term financial stability, while the direction between internal financing, such as retained earnings, and financial stability was statistically significant and positive among MFIs in Cameroon. However, no significant relationship was found between the equity ratio and financial stability. Finally, the study recommended that the government should put in place a maximum debt ceiling on each deposit-taking microfinance institution.

KALASH (2021) examined the correlation between debt financing and firm financial performance through the modulated effect of currency crisis and financial distress. The study aimed to answer the questions of whether the leverage ratio has any effect on corporate performance and what impact the financial crisis and currency issues have on the above relationship. Data was obtained from 200 companies listed in Borsa Istanbul during (2009-2019). To answer the research questions, both the Generalized Method of Moments (GMM) and Ordinary Least Squares (OLS) have been applied. The study found that debt financing has a determinant impact on firm performance and this negative connection is more severe for companies with high financial difficulties and during the currency crisis.

MATHUR ET AL. (2021) investigated the connection between financial leverage and firm performance through the moderating role of market competition. The study achieved balanced panel data about 25 pharmaceutical firms that were listed on the Bombay Stock Exchange over the period (2000-2018). Using the Ordinary Least Squares (OLS) method, the results indicated that a higher leverage ratio negatively and significantly affects firm performance, which is measured by return on assets (ROA) and return on equity (ROE). Further, competitive intensity significantly

moderates the connection between financial leverage and performance. In a similar context, BHATIA & SINGH (2021) also evidenced that firm value is unfavorably affected by debt financing using data about 1,089 Indian-listed companies between (2013-2017). Likewise, ESSEL (2023) also found a non-linear association between financial leverage and the performance of 36 listed companies on the Ghana stock market during (2010-2020). The study applied GMM techniques, and the outcomes evidenced that a high level of debt in capital structure negatively affects firm performance and suggests that the listed companies in Ghana to rely less on external financing and use internal financing instead.

Using multiple regression analysis for 90 textile companies that were listed on the Pakistan stock exchange between (2008-2017), ULLAH ET AL. (2020) examined the association between financial structure and corporate performance. Their findings illustrated that the capital structure that is indicated by the debt-to-equity ratio (DTER) and debt-to-assets ratio (DTAR) has a negative influence on financial performance, but the result is not statistically significant in the case of DTAR. Likewise, AHMED & AFZA (2019) investigated the effect of market competition on the correlation between capital structure and firm performance for 396 non-financial companies across 14 different industries that listed on the Pakistan stock exchange. Using the Ordinary Least Squares technique, the findings demonstrate that firm financial performance is inversely affected by debt financing, and competition in the marketplace might be utilized in place of debt funding to alleviate the conflict of interest between ownership and management.

ANOZIE ET AL. (2023) studied the relationship of capital financing to firm financial performance. The study used data from 5 oil and gas corporations listed on the Nigerian Stock Exchange over the period (2011-2020). The results indicated that return on assets (ROA) as an indicator of financial performance is oppositely impacted by long-term debt, while debt to equity and short-term debt ratios have a positive but insignificant relation. The study concluded that managers of the petroleum industry ought to minimize the level of long-term debt and proceed cautiously when deciding on capital composition. TRAN ET AL. (2023) also investigated the above relationship for 631 non-financial firms during (2016-2020). The results of regression analysis revealed an opposite correlation between financial leverage and profitability.

Another study by SAIF-ALYOUSFI ET AL. (2020) examined the factors affecting capital structure decisions. The study used data from 827 non-financial companies that were listed on the Malaysian Bursa over the period (2008-2017). Using different panel estimations, such as OLS,

GLS, and GMM, to test the relationships between variables, they found that corporate leverage has negative consequences on performance. However, debt financing is significantly affected by both earnings' volatility and non-debt tax. The findings also illustrated that interest rate, inflation, firm size, and age play a significant role in determining the current value of borrowing.

A recent study by NEVES ET AL. (2024) investigated factors that affect capital structure decisions among 514 firms in the health industry between (2011-2020) in a developed country such as Portugal. Using the GMM technique for the purpose of data analysis, the findings demonstrated that firms that operate in this industry adhere to a hierarchy system, giving preference to internal financing and outside debt as a second choice. By collecting data about 50 public companies that were listed on the Helsinki stock market between (2011-2017), HUNDAL ET AL. (2020) explored the effect of financial leverage on corporate performance and risk relationship. The study used accounting, market, and nonfinancial indicators to measure firm performance. Using OLS regression analysis, the results show that both accounting and market performance metrics are negatively affected by debt financing, while capital structure does not influence nonfinancial indicators of firm performance. Finally, their study concluded that a high debt level brings financial risk. However, by applying a comprehensive research approach to companies in industrialized countries, such as Germany, ABDULLAH & TURSOY (2021) examined the dynamic relationship between capital structure and firm financial performance for 102 non-financial companies listed on the Frankfurt stock exchange over the period (1993-2016). Using the GMM estimator to examine the above relationship, the findings illustrated that non-financial companies in Germany are heavily leveraged, and their substantial level of financial leverage has improved their performance. The study also concluded that non-financial companies in Germany maintain significant amounts of borrowing to minimize corporate taxes and the expense of granting new shares.

NGUYEN ET AL. (2023) explored the association between capital financing and firm performance by collecting data from 300 companies listed on the Vietnam stock exchange between (2012-2018). Using triple analysis (pooled OLS, fixed and random effect), the findings indicated that capital structure proxies, short-term debt (STD), long-term debt (LTD), and liquidity (LIQ), have a crucial impact on firm performance but in the opposite order, in a way that STD and LIQ increase firm profitability, while LTD decreases profit maximization. In a similar context, BUI ET AL. (2021) examined the effect of capital structure on firm performance for small and midsize

enterprises (SMEs) in Vietnam. The results disclose a non-linear relationship and suggest an optimal capital structure for SMEs. They also found that firm performance started to decrease when the level of debt passed the optimum stage. Likewise, DINH & PHAM (2020) explored the association between debt and firm performance by collecting data about 30 pharmaceutical companies that were listed on the Vietnam stock exchange from (2015-2019). Using econometric modeling and running regression through the OLS method, the findings indicated that capital structure measurements, such as equity multiplier ratio, total debt, and long-term ratio, have significant and positive effects on firm financial performance that is proxied by return on equity (ROE). However, ROE is inversely affected by the equity ratio.

NGATNO ET AL. (2021) examined the nexus between capital structure and financial performance through the moderation of corporate governance. The study collected data from 506 Indonesian banks. Using a multiple linear regression model, the results show that total debt and short-term ratio are positively associated with performance; however, long-term debt is negatively and insignificantly linked to performance. The study concluded that corporate governance, as an internal and external mechanism, which is measured by board size, significantly moderates the aforementioned linkage. Similar findings are also evidenced by (BHATIA & KUMARI, 2024).

Using panel data as proof for 16 Ethiopian private financial institutions over the 7 years (2013-2019), AMARE (2021) examined the capital structure and profitability relationship and found that profitability is favorably impacted by both total debt and short-term debt ratio. MUHAMMED ET AL., (2024) also observed a favorable association between financial leverage and the performance of commercial banks in Ethiopia.

RAMLI ET AL. (2019) used cross-country analysis to examine the financial structure determinants and performance. Data were gathered in both the Indonesian and Malaysian stock exchanges. The outcomes of the study demonstrated that the performance of Malaysian firms is significantly affected by debt financing; however, this effect could not be seen among Indonesian firms.

IIOKA & YAMADA (2023) employed an ordinary least squares (OLS) approach to assess 110 companies among 521 private equity-backed enterprises in Japan. Their findings discussed that the capital component of post-acquisition firms transferred to have more debt. they also observed that having sufficient resources for an invested company could support management strategies that eventually improve the post-buyout profits for the private equity company.

Using a global perspective, THI MAI NGUYEN ET AL. (2023) studied the significance of managing the financial structure in preserving the soundness of the financial system. The study targeted the hospitality and tourism sector and collected data from 196 hotel companies in 30 countries across the globe. Using multiple analyses, the outputs show that during the global epidemic, the negative effects of financial soundness are lessened by the optimum level of debt in hotel companies. RUSU & ROMAN (2022) also found that the decisions on capital structure are essential for attaining sustainable performance. Their findings illustrated that an optimal level of debt in capital structure can improve the efficiency of a company.

POURSOLEYMAN ET AL. (2023) examined the financial framework, unraveling the capital composition puzzle among 106 companies that were listed on the Tehran stock market from (2009-2018). Using the OLS regression method, the findings indicated that a positive financial outcome may ultimately result from debt and equity financing for upcoming funding and investments. However, prospective financial outcomes are worsened by uncollateralized borrowing.

ATTIA ET AL. (2023) focused on the Middle East and North Africa region (MENA) and collected data from 499 listed companies between (2007–2020). The purpose of this study is to examine the correlation between financial leverage and financial performance under the lens of firm size. The findings demonstrate a non-monotonic association. According to their findings, debt has a positive effect on market performance among low-firm-size companies; however, this relationship is opposite in the case of high-firm size. Moreover, performance that is measured by accounting indicators, such as (ROE and ROA), declines when leverage increases in the case of low firm size; however, this connection tended to be favorable in terms of high firm size.

Last but not least, MATHUR ET AL. (2023) investigated the effect of financial leverage on corporate performance among 56 firms that were listed on the Indian stock market between (2013-2015). The results are different from the above findings and show that capital financing has no relation to firm value. Similarly, a non-existing connection between the structure of firms' capital and performance has been noticed by (MAHIRAH ET AL., 2023) among 16 listed Indonesian telecommunications companies. Table 2 summarizes the most recent empirical studies that investigated the capital structure (CS) and firm performance (FM) linkage.

Table 2. Summary of the most recent empirical research on CS-FP linkage

Contributor(s)	Scope	Country	Period	Results
(NEVES ET AL., 2024)	514 firms in the health sector	Portugal	2011-2020	Firms in this industry first prefer internal funding then outside funding as a second choice.
(BHATIA & KUMARI, 2024)	500 firms	India	2009-2018	The negative connection between CS-FP is observed, and corporate governance has a significant moderating effect on this linkage.
(BOSHNAK, 2023)	70 non-financial firms	Saudi Arabia	2016-2020	The negative relationship between CS-FP.
(RIAZ ET AL., 2023)	519 manufacturing firm	G-20	2007-2018	* Profitability is negatively related to changes in debt. * Long-term assets and investments are positively related to debt.
(SHOAIB & SIDDIQUI, 2022)	802 non-financial companies	5 Asia Pacific Countries	2001-2018	Earnings manipulation brings an inverse association between CS-FP.
(FONCHAMNYO ET AL., 2023)	15 MIFs	Cameroon	2014-2020	* Debt to assets and grants have a negative effect on performance. * Retained earnings, as internal financing, have a positive effect on performance.
(ANOZIE ET AL., 2023)	5 oil and gas firms	Nigeria	2011-2020	* Long-term debt harms performance. * Short-term debt and debt to assets have a positive but insignificant association with performance.
(TRAN ET AL., 2023)	631 non-financial firms	Vietnam	2016-2020	The negative relationship between CS-FP.
(IIOKA & YAMADA, 2023)	110 firms	Japan	2005-2018	Post-acquisition companies experience a shift in their financial structure to greater leverage.
(NGUYEN ET AL., 2023)	300 companies	Vietnam	2012-2018	Liquidity and short-term debt have a favorable influence on profitability.
(THI MAI NGUYEN ET AL., 2023)	196 hotel companies	30 countries worldwide	2018-2021	The negative effects of financial soundness are lessened by the optimum level of debt in hotel companies during the global epidemic.
(ESSEL, 2023)	36 firms	Ghana	2010-2020	Negative correlation between debt ratios and financial performance, while a positive connection between equity ratios and firm performance.
				Both debt and equity ratios have a significant influence on achieving

(POURSOLEYMAN ET AL., 2023)	106 firms	Iran	2009-2018	future investments. However, prospective financial outcomes are worsened by uncollateralized borrowing.
(MATHUR ET AL., 2023)	56 firms	India	2006-2020	No significant association exists between CS-FP.
(ATTIA ET AL., 2023)	499 companies	MENA region	2007–2020	* Debt ratio has a positive effect on market performance. * ROE and ROA decline when leverage levels increase.
(BRENDEA ET AL., 2022)	828 non-financial firms	8 European countries	2008-2017	Firm financial performance is inversely affected by capital structure.
(XU ET AL., 2021)	39 agriculture companies	China	2013-2019	Financial leverage has a negative impact on performance. However, this relationship turned out to be insignificant in the case of long-term debt.
(KALASH, 2021)	200 firms	Turkey	2009-2019	Debt financing has a determinant impact on firm performance and this negative connection is more severe during the currency crisis and financial difficulties.
(MATHUR ET AL., 2021)	25 paratheatrical companies	India	2000-2018	Firm financial performance is oppositely affected by leverage ratios.
(BHATIA & SINGH, 2021)	1,089 firms	India	2013-2017	Firm value is unfavorably affected by debt financing.
(BUI ET AL., 2021)	5,000 SMEs	Vietnam	2008-2016	The results disclose a non-linear relationship and suggest an optimal capital structure for SMEs.
(AMARE, 2021)	16 financial institutions	Ethiopia	2013-2019	Profitability is positively affected by debt ratios.
(NGATNO ET AL., 2021)	506 financial institutions	Indonesia	2019	* Capital structure indicators have a positive and significant effect on firm performance, except for long-term debt which has a negative and insignificant relation.

Source: Author elaboration

Opinion from the author

Building upon the foundation laid by previous research, it is evident that a company's financial performance serves as a health check. It evaluates the firm's financial management for operations, finance, and investments using a range of measures. Robust financial results point to effective utilization of resources and possible cost savings. The past findings show mixed results through

applying different indicators and from multiple sectors. It is still unclear how a company's capital structure (debt and equity) relates to its financial achievements. To fully comprehend the effects of a company's financing source on its overall performance and worth, further study is required.

3.5.2 Effect of agency cost (AC) on firm performance (FP)

Numerous studies have linked lower agency costs with high managerial efficiency and firm performance improvement. However, others believe that agency costs may have an inconsequential association with firm outcomes.

Using panel data of 1,911 manufacturing companies that were listed on the Indian stock market from (2001-2020), ROY & CHAKRABORTY (2023) conducted a study on the relationship between market competition, agency costs, and firm outcomes. The study used econometric models through the GMM technique, and the outputs indicated that strong financial results can be hindered by agency costs, and when Indian firms rely more on market power concentration, profitability tends to reduce because of high agency costs.

HOUQE ET AL. (2022) conducted a study to examine how carbon emissions and agency costs influence corporate outcomes. The study collected 2,323-year observation data about 10 different sectors listed on the United States stock markets. After applying multiple regression analysis, the study provides evidence that corporate performance is inversely impacted by high agency costs and the negative effect of carbon emission on the performance of the firm is more severe when the company suffers from high agency costs. Correspondingly, ESPINOSA-MÉNDEZ ET AL. (2023) used sample data from 254 companies among the 500 biggest family-owned enterprises globally between 2015 and 2021. The results displayed that when agency costs are present, the effect of Environmental, Social, and Governance (ESG) performance on firm value is extremely low.

The most recent study by YAN ET AL. (2023) explored the relationship between large equity holders and the performance of the company by collecting data about 9,072-year observations among the listed firms on the Chinese stock exchange over the period (2010-2018). The ordinary Least Squares (OLS) method was employed for the regression analysis and the findings demonstrated that by reducing the conflict of interests between principal-principal and principal-agent, large equity holders can improve the efficiency of the company.

New research by KALASH (2024) focused on building the relationship between firm sustainability and performance through business risk and agency costs. The study collected data from 83 non-

financial companies listed on the Turkish stock market from (2014-2021). The findings demonstrated that companies could increase their profitability by becoming more involved in projects that promote sustainability. In addition, the study also found that lower risk and agency cost have significant effects on sustaining the aforementioned finding.

IMENI ET AL. (2021) focused on 125 listed companies on the Tehran stock market between (2005-2019) to investigate the correlation between the ability of the managers, agency costs, and earnings manipulation. The study employed multivariate regression and the outcomes illustrated that experienced managers could mitigate the detrimental effects of controlling earnings on future results. Their results also demonstrated a strong inverse relationship between outstanding managers and agency costs. Thus, executive competence lessens the effect that earnings management has on agency expenses.

NGUYEN ET AL. (2023) studied the interplay dynamic between corporate efficiency and performance of 259 non-financial companies listed on the Malaysian stock market during (2015-2019). The study used multivariate regression analysis. The results displayed that the profitability of the company is significantly affected by efficiency and the controlling shareholder has a crucial role in sustaining the above connection. RASHID KHAN ET AL. (2020) also investigated the link between agency costs (conflict of interests) and corporate performance through corporate governance mechanisms and ownership composition in China. The study obtained sample data from 2,248 listed non-financial companies over a span of 8 years (2008-2016). The findings demonstrated that firm performance is inversely impacted by agency costs and this observed relationship is significantly moderated by both ownership structure and effective monitoring. Similarly, TAYEH ET AL. (2023) investigated the role of ownership composition and its effect on agency costs for 23 listed insurance firms on the Jordan stock market between (2010-2019). Using a multiple-panel regression model, the results indicated that executive ownership has a significant effect on agency costs whether positively or negatively, meaning that uncontrolled managers behave in manners that promote their personal agenda over the goals of shareholders. The study also found that agency costs will be low when corporate ownership includes a significant number of shareholders with no managerial position.

Table 3. Summary of the most recent empirical findings on the AC-FP relationship

Contributor(s)	Scope	Country	Period	Results
(KALASH, 2024)	83 non-financial firms	Turkey	2014-2021	* Engaging in more sustainable projects might help firms become more profitable over time. * Both lower risk and agency cost have significant effects on the aforementioned findings.
(ROY & CHAKRABORTY, 2023)	1911 manufacturing companies	India	2001-2020	Financial performance is negatively affected by agency costs and this relationship is stronger when Indian firms rely more on market power concentration.
(ESPINOSA-MÉNDEZ ET AL., 2023)	968 firm-year observations	38 countries in the world	2015-2021	Elevated agency conflicts attenuate the positive association between ESG performance and firm value.
(TAYEH ET AL., 2023)	23 insurance companies	Jordan	2010-2019	Uncontrolled managers behave in manners that promote their personal interests rather than the shareholders' interests.
(NGUYEN ET AL., 2023)	259 non-financial companies	Malaysia	2015-2019	Profitability has a negative relation with inefficiency, and this becomes stronger when shareholders have no control over the management.
(KASBAR, 2023)	76 listed non-financial companies	UK	1999-2014	Agency conflict is positively related to performance, and this applies only to firms that have strong corporate governance mechanisms.
(HOUQE ET AL., 2022)	2,323-year observations of listed firms	US	2007-2016	* High agency costs have an adverse effect on the performance of the company. * The negative impact of carbon emissions on firm performance is increased when agency costs are high.
(KHUONG ET AL., 2022)	406 listed non-financial firms	Vietnam	2015–2019	Agency cost changes the positive direction of gender diversity on firm performance to weak or negative.
(IMENI ET AL., 2021)	76 companies	Iran	2005-2019	Agency costs are related to managerial efficiency in the opposite order and when efficient decisions are made by managers, earnings management has little to no impact on agency costs.

(RASHID KHAN ET AL., 2020)	2,248 listed companies	China	2008-2016	Firm performance is damped by high agency costs, and this relationship is significantly moderated by both ownership structure and effective monitoring.
(HUU NGUYEN ET AL., 2020)	281 companies	Vietnam	2013-2018	Efficient corporate governance practices could help to control the interests of managers.

Source: Author elaboration

Moreover, KHUONG ET AL. (2022) also examined the inclusion of women on a company's supervisory board, agency costs, and performance of the firm among 406 listed non-financial firms on the Vietnam stock market between (2015-2019). Using both GLS and GMM techniques, the results demonstrated that the performance of the company is positively correlated with gender diversity, such as the number of females on the corporate board. However, this favorable relationship is reduced or tends to be negative when agency costs are considered. Thus, agency costs conversely affect firm performance.

HUU NGUYEN ET AL. (2020) examined the connection between corporate governance mechanisms and agency cost by applying sample data from 281 listed companies on the Vietnam stock market. Using panel econometric modeling, the output evidenced that efficient corporate governance practices could help to control the interests of managers. Consequently, this mitigates agency issues and enhances firm performance. However, KASBAR ET AL. (2023) empirically examined the connection between governance structure and corporate performance through the role of principal-agent conflicts. The study collected data from 76 listed non-financial companies on the London stock market from (1999-2014). Using the OLS estimator, the study illustrated that firms with higher principal-agent conflicts perform better compared to those with lower agency conflicts, but the former can only be achieved when stronger corporate governance is adopted. Table 3 summarizes the most recent empirical studies that investigated the association between AC-FP.

3.5.3 Agency costs concerning the capital structure and firm performance link

Agency costs have a direct effect on agent-principal interests, and as an essential expense for every kind of business, can significantly influence how capital structure and firm performance are related, either by increasing or decreasing the effect that debt utilization has on different performance indicators. According to agency theory, the association between agency costs and

debt funding implies that when agency costs are high, firms rely on an increase in debt financing as a method for discipline, balancing the interests between the principal and agent (BAWUAH, 2024).

From the previous literature, HARVEY ET AL. (2004) documented that debt increases in companies that have substantially predicted agency expenses. This is also more inclined to experience excessive investment issues as a consequence of a high level of capital already maintained or constrained for future development. ANKAMAH-YEBOAH ET AL. (2021); LEGESSE & GUO (2020) also argued that financial leverage is impacted by a variety of factors, such as a company's efficiency. Thus, managers who make funding decisions should pay attention to the firm's efficiency in addition to other factors.

HOANG ET AL. (2019) assessed the correlation between agency costs and the performance of the company. Using sample data from 736 firms in an emerging economy between (2010-2015), the outcomes displayed that the performance of the company is oppositely impacted by high agency costs. Finally, the study concluded that using debt instruments may be a helpful strategy to lessen the detrimental effect that agency costs have on corporate performance.

Using cross-sector analysis, AHMED ET AL. (2023a) focused on the association between financial structure and performance through the role of agency costs among 156 non-financial enterprises on the Tehran stock market between (2011-2019). The findings illustrated that efficiency has a positive effect on financial performance. The research finally concluded that the incorporation of an appropriate debt level within a firm's capital structure presents a potential mechanism to mitigate agency conflicts and enhance overall corporate performance. Likewise, SDIQ & ABDULLAH (2022) show that agency theory has a significant role in explaining the determinants of firm financial policy, using data from 11 manufacturing firms that were listed on the Iraqi stock market between (2004-2020).

KONTUŠ (2021) examined the effect of capital financing on agency costs and the effect of agency costs on firm value. The study collected data from 143 firms listed on the stock market of 3 Eastern European countries. Using the OLS method for the data analysis, the findings show that equity issuance towards capital financing has a positive and significant effect on agency cost, while debt financing has an opposite relationship with agency cost in the Republic of Czech and Slovenia. The study also demonstrated that agency cost has no direct relation to performance, but an adequate amount of debt minimizes agency expenses and consequently improves firm value.

ZAMAN ET AL. (2020) explored the association between management proficiency and capital structure decisions among 249 listed companies on the Pakistan Stock Exchange over the period (1999-2018). The econometric panel approach is applied to assess the above description, and the results displayed that debt ratios are associated with high management efficiency. Correspondingly, ANKAMAH-YEBOAH ET AL. (2021) applied the agency theory to examine the effect of capital financing on firm efficiency in the case of Mediterranean fish farming companies. The unbalanced panel data of 91 enterprises engaged in the farming sector was selected from 5 European countries from (2008-2016). The GMM was utilized to run the regression and the outcomes endorse the optimal debt level, attributing its enhancement of firm efficiency, potentially resulting from the reduction of agency costs. However, an increase in leverage beyond an optimum level causes efficiency to decline.

In a similar finding, the most recent study by STOILJKOVIĆ ET AL. (2024) examined the link between capital financing and corporate efficiency from the perspective of agency theory by using sample data from 57 listed manufacturing companies from (2005-2020) in the Republic of Serbia. Using Least squares regression analysis, the results displayed that capital structure at an optimum level is a significant determinant of minimizing conflict of interests, encouraging managers of the firm to utilize the assets effectively, and boosting corporate outcomes.

LEGESSE ET AL. (2021) examined the correlation between capital structure, investment opportunities, and the return on invested capital. The study collected data from the three largest manufacturing economies, totaling 56,842 observations, over ten years between (2007-2017). Employing regression analysis with dynamic panel data, the outcomes exhibited that first, the efficiency of invested capital is positively influenced by a sufficient level of debt. However, insufficient investment is more likely in situations with limited cash flow and substantial debt levels. Second, using an ideal debt level could reduce agency costs related to spending on investments and consequently improve firm performance.

LEGESSE & GUO (2020) investigated the link between business efficiency and funding through debt among 5 leading producers except the United States. Using multiple regression analysis, the findings indicated that managerial efficiency has an adverse connection with long-term borrowing and a favorable relationship with short-term borrowing. Moreover, long-term debt is linked with inefficiency because internal funding and short-term loans can replace long-term borrowing.

By implementing a dynamic panel regression, BAZHAIR (2023) studied the relationship between corporate governance and capital financing for 100 Saudi-listed non-financial companies from (2010-2019). The findings illustrated that Saudi companies preferred to have small but independent supervisory boards because they attract the attention of lenders to secure a sufficient level of debt until the optimum level and improve firm performance. The study concluded that when firms determine the optimal level of debt, both managers and the supervisory board of the company should consider costs associated with debt, equity, as well as different types of market barriers. The most recent study by BAWUAH (2024) has examined the effect of capital financing on corporate performance from the perspective of governance mechanisms among 100 listed non-financial companies in seven nations in Sub-Saharan Africa over eleven years (2010-2020). The study employed the dynamic GMM technique, and the outcomes indicated that optimum capital structure could improve firm performance in the presence of high-quality corporate governance and control systems. Similar findings were also noted by (RONOOWAH & SEETANAH, 2023) in the case of testing 38 companies listed on the stock exchange of Mauritius during the period of (2009-2019) that operate in non-financial sectors.

AYAZ ET AL. (2021) explored the effect of debt financing on corporate performance efficiency in the context of Malaysian non-financial companies. The study used data from 528 non-financial companies that were listed on the Malaysian stock market over the period (2005-2016). Using multivariate regression analysis, the outcomes documented that the optimum level of debt reduces agency costs, thereby improving corporate performance. However, above the ideal level of debt, the positive impact shifted to negative. SIMAMORA (2021) also found that effective decisions made by managers toward debt financing have a significant effect on minimizing agency problems and enhancing the performance of the company.

DORUK & ERGÜN (2023) also examined the correlation between agency cost and the trend towards financialization among 112 listed Turkish manufacturing companies and their work indicated that companies utilize financialization as a suitable way to minimize agency cost rather than covering actual investments.

Table 4. The most recent empirical findings concerning AC, CS, and FP

Contributor(s)	Scope	Country	Period	Results
(STOILJKOVIĆ ET AL., 2024)	57 manufacturing firms	Republic of Serbia	2005-2020	An optimum level of debt plays a significant role in determining a company's efficiency by reducing agency problems.
(BAWUAH, 2024)	100 non-financial companies	7 nations in Sub-Saharan Africa	2010-2020	When firms follow high-quality corporate governance, balancing between debt and equity could improve firm performance.
(AHMED ET AL., 2023a)	156 companies	Iran	2011-2019	Inefficiency has a negative impact on financial performance and this effect becomes stronger when agency costs are high.
(RONOOWAH & SEETANAH, 2023)	38 non-financial companies	Mauritius	2009-2019	Strong governance and control systems along with capital structure improve firm efficiency.
(YAN ET AL., 2023)	9,072-year observations	China	2010-2018	Large equity holders could improve the efficiency of the company when the conflict of interest between the principal-principal and principal agent is mitigated.
(BAZHAIR, 2023)	100 non-financial companies	Saudi Arabia	2010-2019	When firms determine the optimal level of debt, both managers and the supervisory board of the company can consider costs associated with debt and equity as well as different types of market barriers.
(DORUK & ERGÜN, 2023)	112 companies	Turkey	1990-2017	Companies utilize financialization as a suitable means to minimize agency costs rather than making actual investments.
(SDIQ & ABDULLAH, 2022)	11 manufacturing firms	Iraq	2004-2020	Agency theory plays a significant role in explaining the determinants of a firm's financial policy.
(KONTUŠ, 2021)	143 firms	3 Eastern European countries	2009-2013	Equity issuance towards capital financing has a positive and significant effect on agency costs, while debt financing has the opposite relationship. Thus, an adequate level of debt minimizes agency expenses and enhances firm performance.
(TING ET AL., 2021)	456 electronic companies	Taiwan	2005-2018	Managers with high (low) capacity are associated with firms that have smaller (higher) borrowing scales. Moreover, the above relationship is

				proven to be significantly influenced by the ability of managers.
(ANKAMAH-YEBOAH ET AL., 2021)	91 enterprises engaged in farming	5 European countries	2008-2016	The findings support the agency theory that an optimal level of debt enhances firm efficiency and increases profitability.
(MITRA & NAIK, 2021)	11 real estate companies	India	2011-2018	High levels of debt are associated with high agency costs, thereby decreasing profitability.
(LEGESSE ET AL., 2021)	56,842-year observations	3 largest manufacturing economies in the world	2007-2017	The efficiency of invested capital is positively influenced by a sufficient level of debt due to low agency costs.
(SIMAMORA, 2021)	383 firm-year observations	Indonesia	2012-2015	Efficient managerial decisions toward debt financing have a favorable impact on reducing agency problems and, accordingly, firm performance is served.
(AYAZ ET AL., 2021)	528 non-financial firms	Malaysia	2005-2016	Balancing between debt and equity can reduce agency costs and improve corporate performance. However, a higher level of debt diminishes firm performance.
(ZAMAN ET AL., 2020)	249 non-financial companies	Pakistan	1999-2018	Financial leverage is positively related to managerial efficiency.
(LEGESSE & GUO, 2020)	27,260 firm-year observations	The 5 largest producers in the world	2007-2017	Both internal financing and short-term debt have a favorable influence on managerial efficiency.

Source: Author elaboration

Further, using an experimental research method, MITRA & NAIK (2021) collected data from 8 years (2011-2018) for 11 real estate companies on the Indian stock exchange to investigate the impact of agency cost and borrowing on firm profitability. The study used an OLS estimator and the findings documented that a high level of debt is associated with high agency costs, thereby decreasing profitability. Similarly, PANDEY & SAHU (2019) studied the relationship between financial leverage, agency cost, and corporate performance among 200 Indian manufacturing listed firms on the Bombay stock market from (2009-2016). Based on the results, the findings illustrated that agency cost is positively related to high levels of debt ratio, and the detrimental impact of external funding on company efficiency is emphasized and justified, as debt can increase agency expenses.

TING ET AL. (2021) examined the role of capital financing as a mediator in the relationship between managerial competence and corporate outcomes. The study employed data from more than 450 electronic companies listed on the Taiwan stock market between (2005-2018). Using panel regression analysis, the results indicated that firm financial performance is favorably affected by the ability of the managers, and managers with high (low) capacity are probably associated with firms that have smaller (higher) borrowing scales. Moreover, the above relationship is proven to be significantly influenced by the ability of managers.

Based on the previous empirical findings, it can be observed that the relationship between financial decisions and firm outcomes is dynamic and can be significantly influenced by fluctuations in agency costs. Table 4 summarizes the most recent empirical studies that investigated the AC concerning the CS-FP link.

Opinion from the author

In a perfectly attainable market, which is not realistic, agents (managers) and principals (owners) would both behave ethically to optimize corporate profits, balancing their personal interests with the organization's financial stability. Management is strongly motivated to increase the business's worth, thereby benefiting the shareholders as well as themselves; consequently, holding shares in the company may help close this gap even further. Therefore, the author believes that agency costs have an enormous effect on how the structure of firms' capital and corporate outcomes interact. Agency theory suggests that a certain amount of funding through debt might serve as an instrument for discipline by aligning managers' and shareholders' interests. This might raise the effectiveness and productivity of the company. However, this may be achieved only with an optimum level of debt. According to previous investigations, high dependence on debt "above the optimum level" may have unfavorable effects, including higher agency expenses, ineffective investments, and a drop in efficiency.

3.6 Review of variable measurement

Prior studies utilized a variety of measures to assess firm performance, capital structure, and agency cost. For firm financial performance, the metrics are including both financial indicators (accounting ratios), such as return on assets, return on equity, return on sales, gross profit margin,

and return on capital employed (ANOZIE ET AL., 2023; AYAZ ET AL., 2021; BOSHNAK, 2023; BRENDEA ET AL., 2022; FONCHAMNYO ET AL., 2023; IIOKA & YAMADA, 2023; KALASH, 2024; KHUONG ET AL., 2022; MATHUR ET AL., 2023; NGUYEN ET AL., 2023; ROY & CHAKRABORTY, 2023; TRAN ET AL., 2023; XU ET AL., 2021) and market performance indicators, such as market to book value, stock price, Tobin's Q, and earnings per share (AHMED ET AL., 2023a; BAWUAH, 2024; ESPINOSA-MÉNDEZ ET AL., 2023; ESSEL, 2023; HOUQE ET AL., 2022; HUNDAL ET AL., 2020; MATHUR ET AL., 2021; NGUYEN ET AL., 2023; ROY & CHAKRABORTY, 2023; YAN ET AL., 2023).

Previous investigations have also operationalized capital structure through various ratios of financial leverage, such as debt-to-asset ratio, debt-to-equity ratio, short-term debt ratio, long-term debt ratio, market leverage ratio, equity ratio, and equity multiplier ratio (ANOZIE ET AL., 2023; BAWUAH, 2024; BOSHNAK, 2023; BRENDEA ET AL., 2022; BUI ET AL., 2021; DUASA ET AL., 2014; MUHAMMED ET AL., 2024; DINH & PHAM, 2020; ESSEL, 2023; FONCHAMNYO ET AL., 2023; MATHUR ET AL., 2021; RIAZ ET AL., 2023; NEVES ET AL., 2024; POURSOLEYMAN ET AL., 2023; SIMAMORA, 2021; XU ET AL., 2021; AHMED ET AL., 2024).

Moreover, agency cost, which can be considered a significant factor that influences both corporate efficiency and financial structure, has been operationalized through different proxies, such as asset utilization ratio, operating expense ratio, and free cash flow (AHMED ET AL., 2023a; GARANINA & KAIKOVA, 2016; HUU NGUYEN ET AL., 2020; KHUONG ET AL., 2022; PANDEY & SAHU, 2019; RASHID KHAN ET AL., 2020; TAYEH ET AL., 2023). The asset utilization ratio is an accounting measure that evaluates how well a firm uses its resources to generate income. A greater ratio suggests that assets (resources) are being used more effectively to create profits, whereas a smaller ratio might point to inefficiency in the utilization of assets (resources). However, the ratio of operating expenses assesses the manner in which a corporation manages its selling and administrative costs in relation to its sales revenue. It assists in determining how economically viable a firm's operations are. Effective cost control is indicated by a smaller ratio, while a large ratio could indicate ineffective control of expenses by executives. Free cash flow refers to the cash generated by a company after deducting expenses associated with maintaining or growing its asset base. According to HIJAZI & CONOVER (2011) asset utilization ratio (AUTR) stands out as a particularly valuable indicator in gauging agency costs.

To consider firm-specific characteristics and increase model flexibility, previous studies have employed various control variables, such as firm size, asset tangibility, firm age, liquidity, sales growth, investment opportunities, assets growth, and earnings volatility (ABU-ABBAS ET AL., 2019; AHMED ET AL., 2023b; AYAZ ET AL., 2021; BAZHAIR, 2023; ESSEL, 2023; HOANG ET AL., 2019; KALASH, 2021, 2024; LEGESSE & GUO, 2020; SDIQ & ABDULLAH, 2022; SHOAIB & SIDDIQUI, 2022; THI MAI NGUYEN ET AL., 2023).

3.7 Research gap

Through careful exploration of the extensive body of empirical and theoretical literature, an in-depth awareness of the complex correlation between the structure of capital and firm performance has been revealed. Numerous studies in both industrialized and emerging markets have investigated the direct impacts of different capital structure decisions on a variety of performance indicators, including profitability, risk, and growth. These studies have clarified the dynamic relationship between funding methods and the development of corporate value, bringing out the positive and negative aspects of components of capital structures. Nevertheless, there are still significant knowledge gaps that need to be filled, requiring additional studies. These gaps provide intriguing prospects for strengthening the current knowledge in the literature and illuminating unexamined aspects of this dynamic association. Therefore, the current study addressed the following research gaps:

1. Although theoretically relevant, previous studies have shown mixed findings on the financial decision-performance correlation. Furthermore, studies examining this link among non-financial firms in the Middle Eastern markets are very few. This left a gap in our knowledge of regional trends and possibly different connections in comparison to other economies.
2. To the best of our knowledge, no comprehensive research has yet explored the role of agency cost on the link between capital financing and corporate performance among non-financial firms in the Middle Eastern region.
3. Previous studies have solely relied on quantitative data to examine the above connection. However, this study has the potential to provide a richer understanding because it uses combined or mixed methods (qualitative and quantitative). The qualitative data analysis supports and complements the main quantitative results, offering a deeper understanding of the concept.

4. According to agency theory, there is a conflict of interests between managers (agents) and shareholders (principals) as uncontrolled managers follow their personal goals rather than the shareholders' goals. The theory proposes an optimum level of debt to minimize agency problems and subsequently enhance firm efficiency. However, a theoretical gap exists because this hypothesis has not been empirically tested in the environment of non-financial firms in the Middle East.

Based on the above research gaps and considering the suggestions of (AHMED ET AL., 2023a; AYAZ ET AL., 2021; BHATIA & KUMARI, 2024; DORUK & ERGÜN, 2023; KONTUŠ, 2021; MITRA & NAIK, 2021; POURSOLEYMAN ET AL., 2023; RONOOWAH & SEETANAH, 2023; SDIQ & ABDULLAH, 2022; STOILJKOVIĆ ET AL., 2024; ZAMAN ET AL., 2020), this study fills the knowledge gaps and enriches the corporate finance and accounting literature, and also offers empirical evidence for the correlations between AC, CS and FP in the context of Middle Eastern stock market. Moreover, non-financial firms in Middle Eastern markets boast substantial market capitalization, playing a significant role in driving economic development. Recent information indicates that firms in emerging markets tend to utilize greater amounts of debt as a form of financing. They increased their liquid assets and reduced their tangible assets (AHMED ET AL., 2023b,c). However, developing countries are recognized by comparatively weak corporate governance standards, unpredictable economic circumstances, risky business, inadequate investor protections, and unstable political environments (DUQUE-GRISALES & AGUILERA-CARACUEL, 2021).

Moreover, given our limited understanding of the AC in the CS-FP connection, further investigation is needed. AHMED, ET AL. (2023a) illustrate that agency problems may hurt the performance of firms, and AYAZ ET AL. (2021); STOILJKOVIĆ ET AL. (2024); ZAMAN ET AL. (2020) demonstrates that firm efficiency improved through the optimum level of debt. However, MITRA & NAIK (2021) show that a high level of risky debt increases agency costs, and KONTUŠ (2021) documents that agency cost has no direct relation with performance. Hence, examining certain problems from the Middle Eastern financial market can add significant value and enhance the existing literature. Several unique characteristics distinguish the Middle East from other areas: first, diverse ownership structures, second, Islamic finance principles, third, rapid economic growth, fourth, attracting foreign investors in some areas, fifth, a diverse socio-

economic environment, and sixth, infrastructure development. Therefore, this region serves as a valuable research sample.

4 MATERIAL AND METHOD

This chapter is the methodology of the thesis. It will attempt to build the method that this study will use to empirically investigate the objectives of the study. The chapter is split into four major sections. The first section addresses the Middle Eastern economy and capital market. In the second section, the research sample and data gathering procedure are identified and explained. The variables of the research are determined and described in the third section. The last section outlines and defines the research design, methods, and models that this study endeavors to apply.

4.1 The financial and economic climate in the Middle East

The Middle East's economy is an interconnected system of varied industries. Even though the area is extremely wealthy, it was not dispersed similarly, and the economies of some Middle Eastern nations are undiversified and plagued by poverty. Hydrocarbons and agriculture have historically dominated the narrative. Numerous Middle Eastern economies have relied heavily on oil production and exports, which have contributed significantly to wealth (projected at 35% of GDP in 2023) and influenced labor markets across the region as a whole (IMF, 2023). The Middle East also makes up about 5% of the world's GDP (WORLD ECONOMICS, 2024).

In terms of trade, the Middle East's strong trade partnerships with the world, particularly the European Union (EU), serve as a driving force for its economy. Despite the mainstay of this agreement being Middle Eastern energy exports, specifically gas and oil, which meet a large amount of the European Union's energy requirements, the picture goes beyond energy to imports of agricultural products, manufactured goods, and textiles from the region; thus, the EU also diversifies its imports. This complex trade connection demonstrates the two regions' mutual financial dependence and future opportunities for cooperation. The total trade in goods between the Middle East and the EU averaged €600 billion per year. EU-Middle East trade is booming, experiencing a 23% surge in the value of goods exchanged between the Gulf Cooperation Council (GCC) and the EU from 2020 to 2022 (€151.5 billion just in 2021) (EUROPEAN COMMISSION, 2022). In addition to trade, Middle Eastern countries are investing more in the EU, especially in fields such as creativity, technology, renewable energy sources, and infrastructure.

Figure 10 illustrates the ratio of stock market capitalization to GDP for the Middle East from 2010 to 2022. Between 2010 and 2022, the ratio increased gradually to more than 1%. This indicates a rise in the value of all the stocks traded on Middle Eastern stock exchanges compared to the

region's overall GDP during that time. Despite the increase in the market capitalization to GDP ratio, the Middle East's overall stock market capitalization still lags behind some other regions.

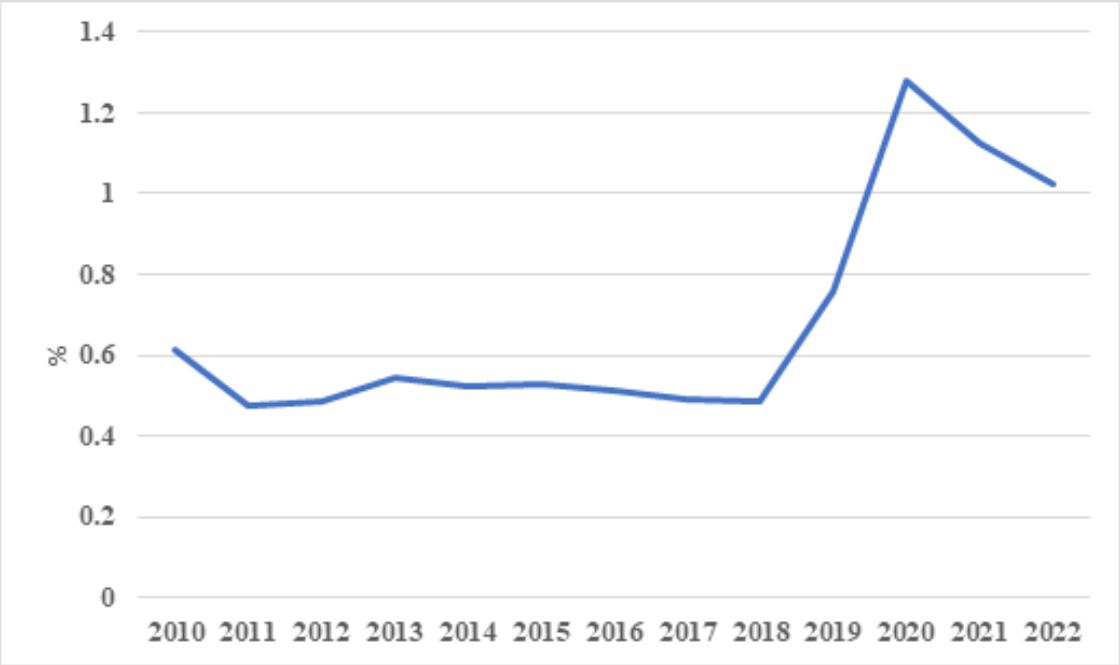

Figure 10. Market capitalization to GDP for the Middle East (WORLD BANK DATA, 2024a)

Moreover, the necessity of diversification is becoming increasingly apparent in this region and governments are taking steps to diversify their economies. The financial systems that this region adopted reflect the attempt at diversification. Middle Eastern countries are coming to realize progressively how important non-financial enterprises are to the region's economic growth. These countries have launched concerted efforts to increase the proportion of this sector in their stock markets. They realize that non-financial companies generate revenues in addition to providing a wide range of products and services to customers, which supports the expansion of the economy as a whole (AKKAS & ALTIPARMAK, 2023; KINGDOM OF SAUDI ARABIA VISION (2030), 2018; MINISTRY OF INFORMATION KUWAIT-STATE OF KUWAIT, 2020; SUPREME COUNCIL FOR PLANNING OF OMAN, 2016). Companies remain the majority of important economic resources of capital demand. Their requirement for financial resources fuels the expansion and diversification of financial tasks, enhancing the financial sector in the market. Non-financial enterprises not only establish the framework that ensures the effective operation of the entire economic system, but they also enhance the working environment of financial organizations and reduce potential risks (SAIF-ALYOUSFI ET AL., 2020). Figure 11 displays the

value of Middle Eastern stocks traded between 2010 and 2022. The total value began at around $70 billion in 2010 and fluctuated somewhat over the next few years. In 2022, it reached a high amount of around $160 billion.

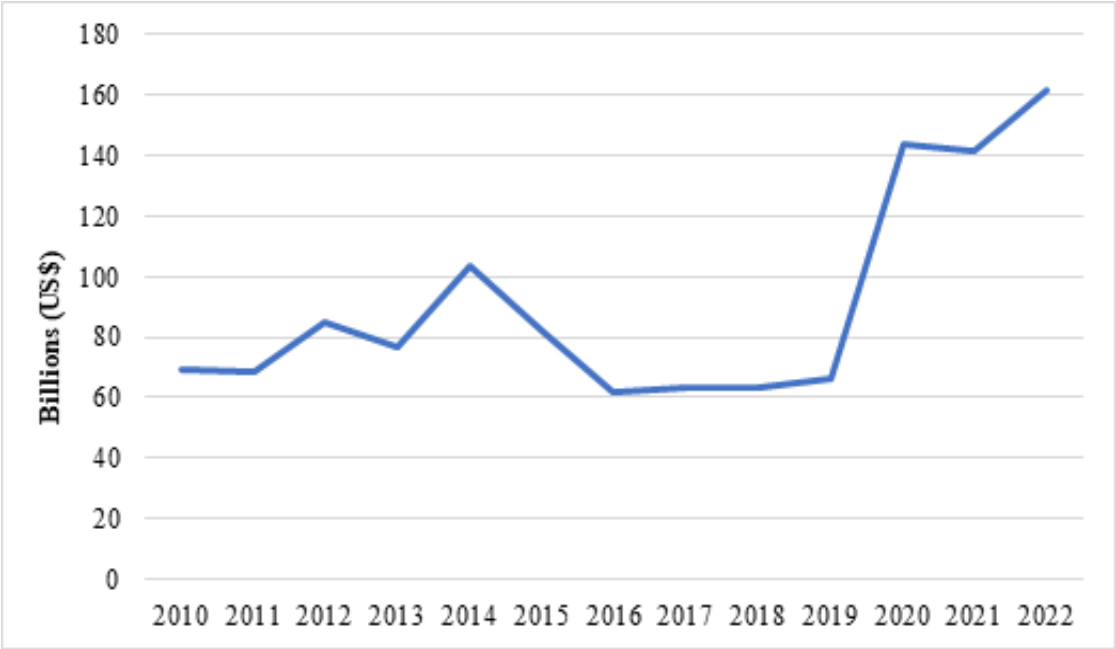

Figure 11. Middle East stocks traded, total value (WORLD BANK DATA, 2024b)

4.2 Sample and data

4.2.1 Sample selection

This study examines the dynamic interactions that exist between agency cost, capital structure, and performance among non-financial companies that are listed on Middle Eastern stock exchanges. Furthermore, it investigates how agency costs, viewed through the lens of agency theory, influence the aforementioned connection. Several criteria were applied to select the sample countries from the Middle East. These included the availability of financial data, active stock markets for accurate performance measurement, government control on the stock market, and a degree of economic stability and development.

The final sample consists of data collected from 433 non-financial companies spread across seven Middle Eastern countries (Saudi Arabia, Turkey, Jordan, Kuwait, Qatar, Bahrain, and Oman). As illustrated in Table 5, these nations were selected using a purposive sample procedure. Iraq, Syria, Yemen and Egypt, and Palestine are examples of nations with inactive stock markets and unstable economies that were not included in this analysis. In addition, the absence of data on non-

financial companies led to the exclusion of the United Arab Emirates, Israel, and Lebanon. Iran was excluded as well because of government control over the country's stock market.

Table 5. Purposive sample selection for countries in the Middle East

Criteria	Sample selection
Total Middle Eastern countries	16 countries
Non-availability of financial data	3 countries
Not active stock markets	3 countries
Economic instability	2 countries
Government control on the stock market	1 country
Final sample selection	**7 countries**

Source: Author elaboration

Furthermore, financial organizations, such as banks, insurance providers, brokerage firms, and microfinance institutions, are also excluded because these organizations are subject to different regulatory environments that have a significant impact on their investment and funding choices (JENA ET AL.,2020; LE & PHAN, 2017; VO & ELLIS, 2017; ZEITUN & TIAN, 2007).

4.2.2 Data collection

This study adopts a mixed methods approach, drawing on both quantitative and qualitative data collection techniques. The primary method of providing evidence for addressing research questions and testing study hypotheses is the quantitative data underpinning the core analysis. Qualitative data complements quantitative analysis by providing additional context and in-depth insights that enhance the comprehension of the results. In corporate finance and accounting research, the integration of two or more collecting and analyzing data techniques creates a "mixed" or "combined" method (DEWASIRI ET AL., 2018a; DEWASIRI ET AL., 2018b; GRAFTON ET AL., 2011; MBITHI ET AL., 2023; SCHOONENBOOM, 2018). Mixed methods can be seen as an effective strategy that allows data to be validated by cross-checking it using more than one technique (SCHOONENBOOM, 2018; TIMANS ET AL., 2019). This type of methodology is also applied by (ASSENGA ET AL., 2018; BAKER ET AL., 2020; BARROS ET AL., 2020;

BUFERNA, 2005; AFRIFA, 2013; IBRAHIM & FARAHIYAH, 2021; MBITHI ET AL., 2023; MWENDA ET AL., 2021; TAURINGANA & CHITHAMBO, 2016; OLÁH ET AL., 2019).

Quantitative data for this research is based on secondary data and collected from reputable financial databases such as Thomson Reuters Eikon, and also from audited annual reports of 433 non-financial companies listed on the Middle Eastern stock markets. The data covers a period of thirteen years, from (2010-2022). To ensure the robustness of our findings, this study first added more control variables to the models, which were obtained from the World Bank open data source. Secondly, an alternative agency cost measure based on industry average deviation is used. The study's timeline was chosen for two main factors. First, restricted credit markets brought about by the global financial crisis of 2007–2008 forced firms to reevaluate their financial choices. This period allows us to analyze how firms adapted to those challenges. Additionally, the period selected in this study contains economic growth in most Middle Eastern countries. Due to this, the expansion funding source for companies needs to be adjusted.

Further, in order to prepare the final sample in this study, some companies were excluded because they did not meet the criteria of data collection. For instance, firms that delisted from the stock market due to the effect of COVID-19 from 2020-2022 are not included in the analysis. Hence, the study used a completely balanced panel data set. Additionally, when companies are not registered in the stock market, they use different criteria to prepare their financial reports and do not follow the domestic or international accounting rules. Hence, the study excluded them and left for future research to compare the results of the current study. Last but not least, the study excluded firms that did not have year-end accounting or/and market data at that time. Table 6 illustrates the number of firms for each country. By using all the above criteria, the current research uses data of 433 non-financial firms that registered on the seven Middle Eastern capital markets during 2010-2022. In total, there were 5,629 observations.

To further explore the intricate relationship between agency costs, capital structure, and firm performance, the research employed a qualitative case study approach in conjunction with quantitative analysis to complement and support the quantitative results. From this perspective, fourteen companies were selected for this study. These companies were chosen to ensure a representative sample across firm sizes within each country. Seven companies were large-sized firms, and seven were small-sized firms. The same companies were drawn that were used in the quantitative analysis. According to KOTHARI & BARONE (2006), the firm’s annual report

provides and contains both quantitative and qualitative data. Therefore, data for the qualitative analysis were collected from the companies' audited annual reports for the same period (2010-2022) used in the quantitative data collection. Specifically, the researcher focused on the chairman's statements, board of directors' statements, shareholders' opinions, independent auditors' opinions, corporate governance reports, and notes to the consolidated financial statements. These sections were chosen because they typically contain insights into the company's strategic decision-making process, including its approach to financing. A coding scheme using a 0-2 scale (0 = Information not available, 1 = No, and 2 = Yes) was then applied to the information that was observed. This approach is proposed and accepted by (SALDAÑA, 2013; LINNEBERG & KORSGAARD, 2019), who argue that coding is suitable for numerous qualitative investigations, but especially for case studies and content analysis.

Table 6. Number of observations per country in the Middle Eastern market

Country	Number of firms	Observations	Percentage
Saudi Arabia	82	1066	29.79
Turkey	129	1677	14.78
Jordan	64	832	18.94
Kuwait	75	975	17.32
Qatar	25	325	5.77
Bahrain	19	247	4.39
Oman	39	507	9.01
Total	**433**	**5,629**	**100**

Source: Author elaboration

4.3 Selection of variables

4.3.1 Dependent variables

This study uses firm performance as a dependent (explained) variable. It is predicted by a number of theoretical frameworks to be impacted by internal characteristics, including capital structure and agency costs. The literature employs a variety of company performance metrics. In order to determine the achievement of a company, researchers typically utilize accounting data to develop metrics such as efficiency and profitability indices. Furthermore, some other studies determine company performance by using market metrics such as market-to-book value.

Consistent with previous studies, this investigation measures company performance considering both financial measurements, such as returns on assets (ROA), returns on equity (ROE), and market measurements, such as market-to-book value (MTBVE).

4.3.2 Independent variables

One of the primary independent (explanatory) variables in this research that is predicted to have an impact on company performance is the structure of capital. capital structure is the combination of debt and equity that it is going to use by firms to fund their operations (AHMED ET AL., 2023b; KONTUŠ, 2021). Following the direction of previous studies, this study proxied capital structure by the debt-to-asset ratio (DTAR), debt-to-equity ratio (DTER), short-term debt ratio (STDR), and equity multiplier ratio (EMR).

Moreover, drawing on agency theory, this study acknowledges the potential conflict of interest between the manager (agent) and the shareholder (principal). This potential clash can lead to agency costs, which act as an independent and moderating variable in our research. This study uses the asset utilization ratio (AUTR) as a measure of agency costs. Additionally, during the second robustness test, an alternative agency cost measure based on industry average deviation is also used. Table 7 summarizes the variables used in this study along with their definitions and measurements.

4.3.3 Control variables

In this study, several control variables were employed and added to the models during analysis to determine the correlations between agency costs, capital financing, and corporate performance. These control variables serve three key purposes, minimizing selection bias, controlling for firm-specific characteristics, and increasing model flexibility. Consistent with the previous literature, firm-specific factors, including firm size, asset tangibility, growth, and investment opportunities, are added to the study models. According to ABU-ABBAS ET AL. (2019); AHMED ET AL. (2023b); HOANG ET AL. (2019) larger companies, being diversified and having a lower risk of bankruptcy due to their ability to secure lower borrowing expenses and leverage their established reputation in the stock markets, consequently, they use debt as regular funding to perform better. The second control variable is tangibility, companies with more tangible assets can secure lower borrowing costs by using them as collateral when financing through debt. A study by TRAN ET

AL. (2023) tangibility has a crucial effect on firm outcomes. Numerous studies have investigated firms that make significant investments in tangible assets, typically have lower profitability (AYAZ ET AL., 2021; KALASH, 2021, 2024; LEGESSE & GUO, 2020; SHOAIB & SIDDIQUI, 2022). This occurs as a result of their decreased cash on hand, or liquid assets, which are essential to a thriving company. However, BAZHAIR (2023); STOILJKOVIĆ ET AL. (2024) found a favorable link between tangibility and firm performance.

Table 7. List of the variables with description

Variables	Acronym	Measure	Type	Description
Financial performance	ROA	Return on Assets	Dependent	Net income is divided by the average of total assets
	ROE	Return on Equity	Dependent	Net income is divided by the shareholders' equity
	MTBVE	Market to Book Value	Dependent	Market capitalization divided by the book value of equity
Capital structure	DTAR	Total Debt to Assets Ratio	Independent	Total debt divided by total assets
	DTER	Total Debt to Equity Ratio	Independent	Total debt divided by shareholders' equity
	STDR	Short-Term Debt Ratio	Independent	Total short-term debt divided by total assets
	EMR	Equity Multiplier Ratio	Independent	Total assets divided by the shareholder equity
Agency cost	AUTR	Utilization Ratio	Independent and moderator	Annual sales divided by total assets
Firm-specific variable	FMS	Firm Size	Control	Logarithmic value of total assets
	TANGI	Tangibility of Assets	Control	Fixed assets divided by total assets
	GROWTH	Firm Growth	Control	Sales difference between year *t* and *t-1*, then divided by year *t-1* sales
	ITO	Investment Opportunities	Control	The difference in total assets between year *t* and *t-1*, then divided by the year *t* total assets
	GDP	Gross Domestic Product	Control	Growth rate of annual GDP

Variables used during the robustness check	INF	Inflation	Control	The Consumer Price Index (CPI)
	DIA-AUTR (Alternate measurement of agency cost)	Utilization Ratio based on Deviation from Industry Average	Independent and moderator	Asset utilization ratio minus the industry average of the utilization ratio

Source: Author elaboration

Note:

1. Macroeconomic factors, such as gross domestic product (GDP) and inflation, are added to the study models during the first robustness check.

2. An alternative measurement for agency cost based on the deviation from the industry average is used during the second robustness check.

Firm growth is another control variable that is used in this investigation. According to (AYAZ ET AL., 2021), growth is expected to have a major impact on financial performance. Some studies reported a positive correlation between these two variables (ESSEL, 2023; KALASH, 2024; THI MAI NGUYEN ET AL., 2023), while others evidenced an adverse association (POURSOLEYMAN ET AL., 2023). An investment opportunity is the fourth control variable. Managers may prefer to utilize both internal and external sources of financing to fund investment opportunities. In a study by LEGESSE & GUO (2020), investments usually require firms to implement additional debt. Hence, investment opportunities are expected to have a positive effect on the performance of firms in this study.

Moreover, to strengthen the robustness of the findings and address potential endogeneity concerns, macroeconomic factors at the country level, such as gross domestic product (GDP) and inflation, were added to the study models. Prior studies conducted by KHAN ET AL. (2023); NGUYEN KIM (2023); ZAFAR ET AL. (2019) demonstrated that these variables have a substantial impact on decisions regarding capital structure and may also influence corporate performance. Additionally, incorporating these variables reduces the possibility of biases arising from missing variables that could correlate with the aforementioned relationship. This technique is supported by (EBBES ET AL., 2020), who argue that a common strategy to consider robustness checks and endogeneity problems is adding more variables to the model.

4.4 Research design and econometric model

4.4.1 Research design

The present study employs a sequential explanatory mixed method design to investigate the possible correlation between financial structure and corporate efficiency, and also to examine the modulating influence of agency cost on that relationship. To make sense of the quantitative results, the qualitative data is gathered and examined after the quantitative data has been collected and examined. Thus, the research primarily relies on quantitative data analysis, which serves as the main source of evidence for answering the research questions and testing the study hypotheses. Figure 12 outlines a methodical process applied in this study whereby qualitative analysis is conducted after a quantitative analysis to provide an expanded description of the results.

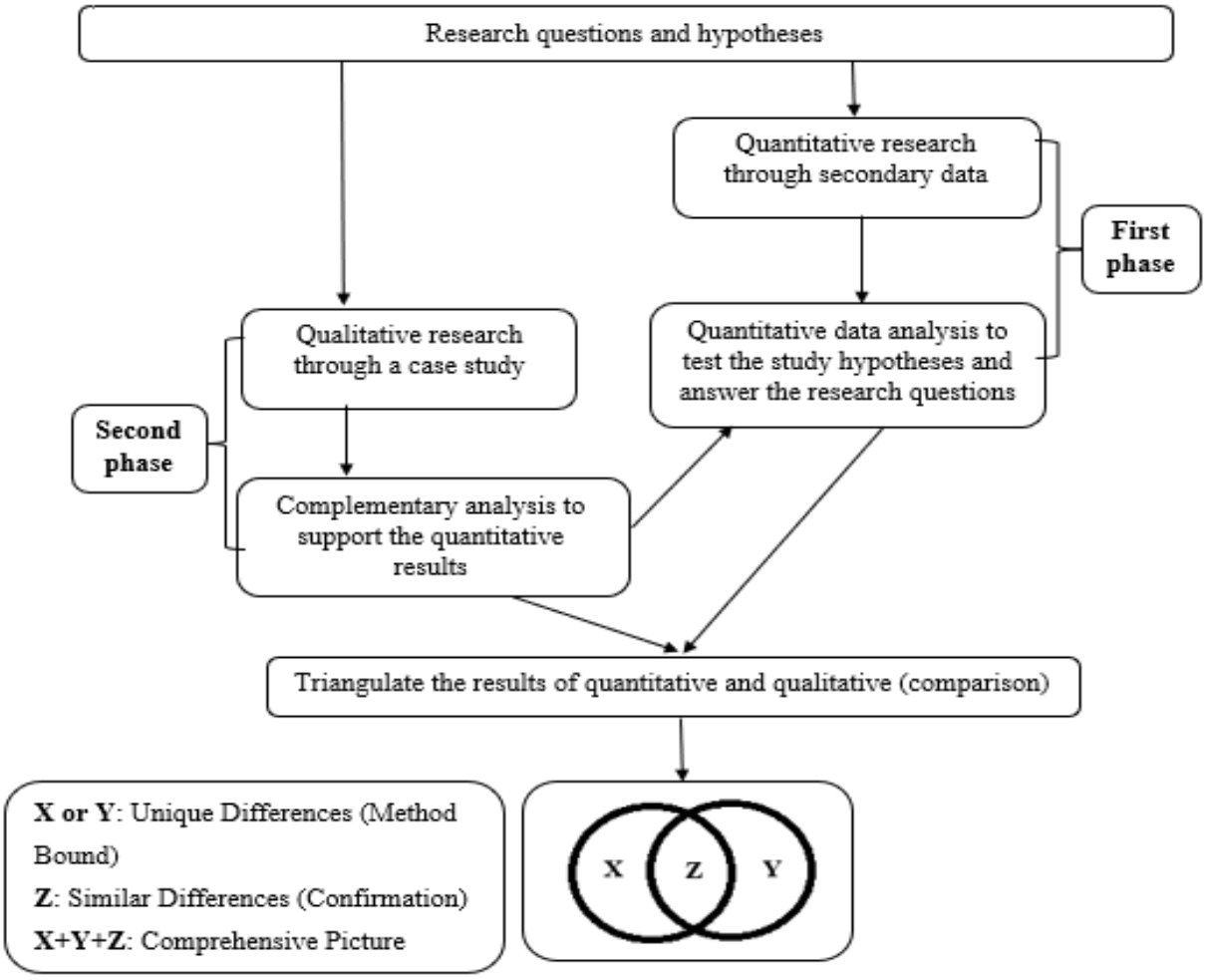

Figure 12. Flowchart for sequential explanatory mixed methods design

Source: Author elaboration

In some domains, including organizational science, according to MOLINA-AZORIN ET AL. (2017) mixed methods have shown a certain level of success. Combining both quantitative and qualitative data is essential and beneficial to develop a deeper comprehension of the topic being studied (MCBRIDE ET AL., 2019; SCHOONENBOOM, 2018). Quantitative analysis facilitates thorough hypothesis testing and answering research questions, whereas qualitative data offers a more profound understanding of the "why" behind quantitative findings. A mixed methods approach that contains data from quantitative and qualitative techniques is useful in accounting and finance research because it can help researchers navigate the complicated dynamics of financial phenomena (DEWASIRI ET AL., 2018a; GRAFTON ET AL., 2011; HOQUE ET AL., 2013).

4.4.2 Model specification and estimation techniques

This research utilizes panel data estimation techniques to analyze the relationship between financial structure and corporate performance, and the influence of agency costs on that association. Compared to conventional or time-series analysis, panel data estimation has numerous benefits because it enables researchers to take the benefit of both the time-series variation within observations and the cross-sectional variation across observations. From the prior literature, A number of common estimation techniques were used including Ordinary Least Square (OLS), Random Effect (RE) model, Fixed Effect (FE) model, Generalized Least Squares (GLS), and Generalized method of moments (GMM) (AHMED ET AL., 2023a; ANOZIE ET AL., 2023; FONCHAMNYO ET AL., 2023; HOUQE ET AL., 2022; ABDULLAH & TURSOY, 2021; KASBAR ET AL., 2023; STOILJKOVIĆ ET AL., 2024; TRAN ET AL., 2023; YAN ET AL., 2023).

In order to examine the association between the study variables and obtain robust results, this research employed the generalized least squares (GLS) method. Moreover, the study also uses the Generalized method of moments (GMM) as dynamic regression in addition to GLS for the robustness tests. The use of GMM guarantees a constant expectation of a relationship between the dependent variable's lag and the residuals. A study conducted by JACCARD ET AL (1990) confirmed that the multiple regression approach is an excellent option to examine multiple relationships.

Furthermore, the method of Generalized Least Squares (GLS) with cross-sectional weight was preferred by the researchers because it is resilient to some typical data problems. In contrast to other methods, GLS can manage issues such as autocorrelation within panels, heteroskedasticity "the unequal variances across groups" and correlations among observations from multiple groups (cross-sectional correlation) (BALTAGI, 2021; WOOLDRIDGE, 2010, 2013). Additionally, the Generalized Least Squares (GLS) method with cross-section weight provides a more reliable result than Ordinary Least Squares (OLS), which suffers from non-normality, heteroskedasticity (unequal variances), and serial correlation (unknown errors). This claim is supported by several studies (AHMED, 2023a; BAI ET AL., 2021; SAIF-ALYOUSFI, 2020; GREENE, 2012; WOOLDRIDGE, 2010). Therefore, the method of GLS with cross-section weight is believed to be more precise as well as effective compared to the traditional model estimations because of the aforementioned advantages and limitations (PEIZHI & RAMZAN, 2020; SAIF-ALYOUSFI ET AL., 2020). The basic econometric model used in this research can be expressed logically as follows:

Model a (without interaction): $Fp_{it} = a_0 + a_1 CapStr_{it} + a_2 AgCo_{it} + a_3 Con_{it} + e_{it}$

Model b (with interaction): $Fp_{it} = a_0 + a_1 CapStr_{it} + a_2 AgCo_{it} + a_3 (CapStr_{it} \times AgCo_{it}) + a_4 Con_{it} + e_{it}$

Where, Fp_{it} represents the dependent variables (firm performance), a_0 signifies the intercept of the model, a_1-a_4 displays a vector notation for the independent variables in the model, $CapStr_{it}$ denotes indicators of capital structure (independent variables), $AgCo_{it}$ represents a measure of agency cost (independent and moderating variable), $CapStr_{it} \times AgCo_{it}$ represents the combined effect of explanatory and moderating variables. Con_{it} denotes control variables, and e_{it} displays unexplained error terms. To verify the study hypotheses, the following econometric models were developed to examine the entire panel data. These models are based on the parameters (variables) exhibited in Table 7.

Model 1: Firm financial performance proxied by return on assets (ROA)

Model 1.1 (without interaction):

$$ROA_{it} = a_0 + a_1 DTAR_{it} + a_2 DTER_{it} + a_3 STDR_{it} + a_4 EMR_{it} + a_5 AUTR_{it} + a_6 FMS_{it} + a_7 TANGI_{it} + a_8 GROWTH_{it} + a_9 ITO_{it} + e_{it}$$

Model 1.2 (with interaction):

$$ROA_{it} = a_0 + a_1 DTAR_{it} + a_2 DTER_{it} + a_3 STDR_{it} + a_4 EMR_{it} + a_5 AUTR_{it} + a_6 (DTAR_{it} \times AUTR_{it}) + a_7 (DTER_{it} \times AUTR_{it}) + a_8 (STDR_{it} \times AUTR_{it}) + a_9 (EMR_{it} \times AUTR_{it}) + a_{10} FMS_{it} + a_{11} TANGI_{it} + a_{12} GROWTH_{it} + a_{13} ITO_{it} + e_{it}$$

Model 1.1 explains the association between capital structure measurements and corporate performance, indicated by return on assets (ROA), and model 1.2 is used to examine how agency cost moderates the above link. Additional control variables were added to the study models to control for firm-specific characteristics and reduce bias in choosing the study parameters.

Model 2: Firm financial performance proxied by return on equity (ROE)

Model 2.1 (without interaction):

$$ROE_{it} = a_0 + a_1 DTAR_{it} + a_2 DTER_{it} + a_3 STDR_{it} + a_4 EMR_{it} + a_5 AUTR_{it} + a_6 FMS_{it} + a_7 TANGI_{it} + a_8 GROWTH_{it} + a_9 ITO_{it} + e_{it}$$

Model 2.2 (with interaction):

$$ROE_{it} = a_0 + a_1 DTAR_{it} + a_2 DTER_{it} + a_3 STDR_{it} + a_4 EMR_{it} + a_5 AUTR_{it} + a_6 (DTAR_{it} \times AUTR_{it}) + a_7 (DTER_{it} \times AUTR_{it}) + a_8 (STDR_{it} \times AUTR_{it}) + a_9 (EMR_{it} \times AUTR_{it}) + a_{10} FMS_{it} + a_{11} TANGI_{it} + a_{12} GROWTH_{it} + a_{13} ITO_{it} + e_{it}$$

Model 2.1 explains the association between capital structure measurements and corporate performance, indicated by return on equity (ROE), and model 2.2 is used to examine how agency cost moderates the above link. Additional control variables were added to the study models to control for firm-specific characteristics and reduce bias in choosing the study parameters.

Model 3: Firm market performance proxied by market to book value (MTBVE)

Model 3.1 (without interaction):

$$MTBVE_{it} = a_0 + a_1 DTAR_{it} + a_2 DTER_{it} + a_3 STDR_{it} + a_4 EMR_{it} + a_5 AUTR_{it} + a_6 FMS_{it} + a_7 TANGI_{it} + a_8 GROWTH_{it} + a_9 ITO_{it} + e_{it}$$

Model 3.2 (with interaction):

$$MTBVE_{it} = a_0 + a_1 DTAR_{it} + a_2 DTER_{it} + a_3 STDR_{it} + a_4 EMR_{it} + a_5 AUTR_{it} + a_6(DTAR_{it} \times AUTR_{it}) + a_7(DTER_{it} \times AUTR_{it}) + a_8(STDR_{it} \times AUTR_{it}) + a_9(EMR_{it} \times AUTR_{it}) + a_{10} FMS_{it} + a_{11} TANGI_{it} + a_{12} GROWTH_{it} + a_{13} ITO_{it} + e_{it}$$

Model 3.1 seeks to examine the direct connection between market-to-book value (MTBVE), a strong indicator of firm performance at the market level, and capital structure metrics. The investigation of how agency costs influence the connection is extended in Model 3.2 by the addition of the interaction term. In both models, several control variables were added to consider firm-specific characteristics, endogeneity concerns, and reduce bias in the selection of variables.

4.4.3 Panel data unit root test

To determine whether a time series parameter in a panel dataset possesses a unit root (non-stationary) or is stationary, stationarity tests for panel data (panel unit-root tests) can be performed in several methods. These tests usually begin with the assumption that the data follows a continuous trend, either expanding or diminishing. They proceed to make an effort to invalidate the hypothesis to determine if the data genuinely falls into a stationary trend over some time or exhibits a stationary pattern, which is an ongoing rising or decreasing tendency. They can also help in determining the characteristics of the variables, allowing them to select the best kind of model for regression with the specific data set. When a variable is initially categorized as non-stationary, it may become stationary at a level or vice versa. When performing a unit root test, each variable is examined independently at its level. If a variable contains a unit root, one typical way to eliminate it is to differentiate the variable until it reaches each of its distinct levels and then make it stationary.

From the literature, some tests were applied frequently, including "Harris–Tzavalis (HAT) test" proposed by (Harris & Tzavalis, 1999), "Fisher Augmented Dickey–Fuller (ADF-Fisher) test" educated by (Dickey & Fuller, 1979), "Levin–Lin–Chu (LLC) test" enhanced by (Levin et al., 2002), and Phillips–Perron (PP) test developed by (Phillips & Perron, 1988). Unit root test implicit evaluation methods frequently suggest that a series may be assessed by replacing it with a formula. The equation is explained as follows:

$$\Delta y\_t = \alpha + \beta t + \gamma\, \Delta y\_(t-1) + \Sigma\, \delta\_i \Delta y\_(t-i) + e\_t$$

Where, Δy_t shows the variation of the time series between the prior value ($y\_(t-1)$) and its present value (y_t); α denotes a constant term; βt displays the trend of the data (t represents time); γ is the coefficient of $\Delta y\_(t-1)$ (the first lagged difference term); $\Sigma\, \delta\_i \Delta y\_(t-i)$ shows the total of the coefficients (δ_i) on the extra lagged difference terms ($\Delta y\_(t-i)$) that are incorporated in the errors to take into consideration for autocorrelation; and e_t shows the error term at t time.

Regarding the panel variable's non-stationary situation, the null hypotheses for each of these tests are expressed equally. When making judgments and performing robustness checks, researchers run multiple tests at the same time. This research aims to explain the four “unit root” tests that were previously described.

5 EMPIRICAL ANALYSIS AND DISCUSSION

The findings of data analysis are presented and interpreted in the current chapter together with the essential rigorous checks and diagnostics. The chapter also covers the outcomes of the employed empirical analysis approaches. The present chapter is divided into nine primary parts. Descriptive results (summary statistics) are used in the first part to provide a summary of the variables utilized in the regression analysis during the time frame of the sample (study period). The findings of the correlation analysis (Pearson correlation matrix) showing the connection between the variables are shown and interpreted in the second part. The results of the variation inflation factor (VIF) to check the issues of multicollinearity are also presented and interpreted in this part. The outcomes of multiple unit root tests on panels for the study factors included in this investigation are displayed in the third part. The results of the panel data model selection test illustrating the most suitable model are presented in the fourth part, while the results of the cointegration tests are provided in the fifth part. The findings of multiple regression analysis using the Generalized Least Squares (GLS) approach are presented and interpreted in part six, along with screening for suggested evaluations. Section seven presents the results of the robustness check. Section eight shows the results of the qualitative analysis, which corroborates and supports the quantitative findings. Lastly, the discussion part for interpreting and reporting the study findings is presented in section nine. The association between the structure of firms' capital, agency cost, with corporate performance, and the moderating effect of agency cost on the correlation between capital structure and performance are all experimentally examined in this chapter.

5.1 Descriptive analysis

A description of the variables used in this investigation based on 433 firms' data between 2010 and 2022 is provided in this section. To enumerate the distinct characteristics of the data and find trends among the variables, descriptive analysis is applied. These statistics contain measurements of central tendency (mean and median), and measurements of dispersion (standard deviation, range of the variables). The descriptive statistics for the variables in this study (capital financing, corporate performance, agency cost, and control variables) are presented in Table 8. To guarantee the collection of precise data, it is interesting that this study included variables assessed at a ratio or interval level.

While MTBVE symbolizes performance driven by the market, ROA and ROE are measures of corporate performance based on accounting data. The arithmetic means of ROA and ROE are 0.053 and 0.059 with a standard deviation of 0.089 and 0.252, respectively. The minimum and maximum values of ROA are -0.964 and 0.681, while the lowest and highest values of ROE are -3.971 and 2.668, respectively. Concerning MTBVE, the mean value is 2.524 with a deviation of 2.857. The minimum and highest values of MTBVE are 0.020 and 52.304, respectively. This clearly shows that the performance of the firm's market is almost better than the performance predicted by accounting ratios.

Table 8. Descriptive statistics

Variables	Obs.	Mean	Median	Std. Dev.	Min.	Max.
ROA	5629	0.053	0.047	0.089	-0.964	0.681
ROE	5629	0.059	0.067	0.252	-3.971	2.668
MTBVE	5629	2.524	1.761	2.857	0.020	52.304
DTAR	5629	0.243	0.219	0.192	0.000	0.970
DTER	5629	0.844	0.413	1.488	0.000	30.183
STDR	5629	0.114	0.076	0.119	0.000	0.878
EMR	5629	2.698	1.834	3.107	1.003	49.850
AUTR	5629	0.589	0.484	0.540	0.000	5.342
FMS	5629	12.910	12.694	2.481	7.027	21.169
TANGI	5629	0.593	0.631	0.225	0.013	0.995
GROWTH	5629	0.216	0.078	1.296	-1.000	41.597
ITO	5629	0.063	0.044	0.198	-4.071	0.982
GDP	5629	3.626	2.980	4.000	-8.855	19.592
INF	5629	6.257	3.272	11.118	-2.540	72.309

Source: Author elaboration based on EViews output

In addition, the firm's financial leverage is quantified by DTAR, DTER, STDR, and EMR which reflect the firm's capital structure composition. Their arithmetic means are (M = 0.243, SD = 0.192, Min = 0.000, and Max = 0.970) for DTAR, (M = 0.844, SD = 1.488, Min = 0.000, and Max =

30.183) for DTER, (M = 0.114, SD = 0.119, Min = 0.000, and Max = 0.878) for STDR, and (M = 2.698, SD = 3.107, Min = 1.003, and Max = 49.850) for EMR. The above analysis shows that, on average, Middle Eastern non-financial companies displayed less loan utilization behavior between 2010 and 2022. This result is consistent with a possible preference for internal funding or the issuing of stock to support operations as opposed to a significant reliance on debt. AL-HUNNAYAN (2020) found that performance among GCC banks indicates a solid internal financial foundation for further initiatives. This means there will be less reliance on borrowing money from external sources, such as debt. ELGAMMAL ET AL. (2023) also showed that Qatari small and entrepreneurship businesses (SEBs) preferred equity issuance over debt financing.

Further, AUTR measures agency cost and serves as an independent and moderating variable in this study. It has a mean value of 0.589 with a standard deviation of 0.540. The lowest and highest values are 0.000 and 5.342, respectively. The wide range of asset utilization ratios (0 to 5.342) indicates substantial differences in the asset utilization efficiency of companies. Even though on average companies use a moderate utilization ratio (0.589), the majority of companies seem far less efficient due to agency costs related to high equity or debt financing. With regard to control variables, FMS, TANGI, GROWTH, and ITO have arithmetic means of (M = 12.910, SD = 2.481, Min = 7.027, and Max = 21.169), (M = 0.593, SD = 0.225, Min = 0.013, and Max = 0.995), (M = 0.216, SD = 1.296, Min = -1.000, and Max = 41.597), and (M = 0.063, SD = 0.198, Min = -4.071, and Max = 0.982), respectively. Macroeconomic factors, such as GDP, has an arithmetic mean of (M = 3.626, SD = 4.000, Min = -8.855, and Max = 19.592), and INF has an arithmetic mean of (M = 6.257, SD = 11.118, Min = -2.540, and Max = 72.309).

5.2 Correlation analysis

The Pearson test outcomes provide correlation coefficients, which evaluate the degree of the relationship without determining the direction of the association between two parameters. Neither variable is given a dependent or explanatory designation; instead, they undergo treatment equally. After standardizing the coefficients of variation of the variables, the procedure yields a number (rho) between -1 and +1. When the variables rise simultaneously, there is a complete positive association, represented by a value of +1. A value of -1, on the other hand, implies a complete negative association, in which one variable rises as the other falls.

Moreover, correlation coefficients (correlation matrix) analysis can also be used for detecting multicollinearity, which is an issue that can occur in data with panel or time series characteristics. When there is a strong correlation between two independent variables (explanatory variables), this is commonly known as “multicollinearity” in a regression model. It is thus problematic to distinguish each of their distinctive impacts on the dependent or response variable. HAIR (2019) emphasized how crucial it is for predictor variables in a regression model to have a small degree of collinearity.

This suggests that the lowest linear dependability between predictors is what defines excellent predictors. A regression model may accept a reasonable level of correlation among explanatory variables, but strong correlations indicate multicollinearity, which could undermine the accuracy of the model's results. From the perspective of literature, WOOLDRIDGE (2015); SHAO (2019) argued that if the correlation coefficients among the explanatory (independent) variables are higher than a certain value, such as 0.7, then there may be a significant degree of multicollinearity between them.

The coefficients of correlation for each variable in the research are shown in Table 9. This contains the dependent, explanatory, and control variables. Table 9 presents evidence suggesting low correlations (all correlations are less than 70%) between independent variables. In other words, the explanatory variables in this study are not substantially associated. This eliminates fears that multicollinearity will affect how the coefficients of the regression model are interpreted.

The two indicators of firm financial performance, ROA and ROE, have a reasonably high and positive correlation. A market performance measurement that is gauged by its MTBVE has a weak and negative correlation with ROA and ROE. The control matrix analysis also illustrates an adverse correlation between all financial leverage metrics (DTAR, DTER, STDR, and EMR) and financial performance indicators (ROA and ROE), but positive on MTBVE as a proxy of market performance. The correlation coefficients of DTAR with DTER, STDR, and EMR are 0.653, 0.613, and 0.357, respectively.

Moreover, the asset utilization ratio (AUTR), which is used to measure agency cost, has a positive correlation with all performance indicators. However, AUTR is negatively correlated with one hyphenated measure of financial leverage (DTAR), with a coefficient of -0.059.

Table 9. Correlation coefficient

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
(1) ROA	1	0.725***	-0.057***	-0.176***	-0.166***	-0.122***	-0.15***	0.226***	0.165***	-0.171***	0.084***	0.376***	0.163***	0.268***
(2) ROE	0.725***	1	-0.174***	-0.195***	-0.313***	-0.154***	-0.241***	0.166***	0.159***	-0.136***	0.058***	0.265***	0.106***	0.169***
(3) MTBVE	-0.057***	-0.174***	1	0.309***	0.585***	0.166***	0.580***	0.139***	-0.179***	-0.003	-0.029**	-0.052***	-0.081***	-0.099***
(4) DTAR	-0.176***	-0.195***	0.309***	1	0.653***	0.613***	0.358***	-0.06***	0.283***	0.153***	-0.012	0.036***	0.006	0.031**
(5) DTER	-0.166***	-0.313***	0.585***	0.653***	1	0.392***	0.669***	0.003	0.191***	0.074***	-0.009	0.033**	0.026*	0.055***
(6) STDR	-0.122***	-0.154***	0.166***	0.613***	0.392***	1	0.210***	0.176***	0.007	-0.236***	-0.031**	0.016	0.037***	0.101***
(7) EMR	-0.150***	-0.241***	0.58***	0.358***	0.0.7***	0.210***	1	0.025*	0.187***	-0.009	-0.003	0.057***	0.034*	0.096***
(8) AUTR	0.226***	0.166***	0.139***	-0.06***	0.003	0.176***	0.025*	1	-0.044***	-0.472***	-0.014	0.111***	0.116***	0.126***
(9) FMS	0.165***	0.159***	-0.179***	0.283***	0.191***	0.007	0.187***	-0.044***	1	0.155***	0.016	0.196***	0.173***	0.216***
(10) TANGI	-0.171***	-0.136***	-0.003	0.153***	0.074***	-0.236***	-0.009	-0.472***	0.155***	1	0.013	-0.120***	-0.093***	-0.160***
(11) GROWTH	0.084***	0.058***	-0.029**	-0.012	-0.009	-0.031**	-0.003	-0.014	0.016	0.013	1	0.135***	0.076***	0.140***
(12) ITO	0.376***	0.265***	-0.052***	0.036***	0.033**	0.016	0.057***	0.111***	0.196***	-0.120***	0.135***	1	0.227***	0.369***
(13) GDP	0.163***	0.106***	-0.081***	0.006	0.026*	0.037***	0.034**	0.116***	0.173***	-0.093***	0.076***	0.227***	1	0.210***
(14) INF	0.268***	0.169***	-0.099***	0.031**	0.055***	0.101***	0.096***	0.126***	0.216***	-0.160***	0.140***	0.369***	0.210***	1

Note(s): *** p < 1%; ** p < 5%; * p < 10%.

Source: Author elaboration based on EViews output

The correlation between AUTR and other indicators of capital structure (DTER, STDR, and EMR) is positive, at around 0.002, 0.175, and 0.024, respectively. Control variables, such as (FMS, GROWTH, and ITO), are positively related to ROA and ROE, while negatively correlated with MTBVE. The correlations of FMS with TANGI, GROWTH, and ITO are 0.155, 0.016, and 0.196, respectively. The highest correlation between control variables and all proxies of capital structure is 0.283, which is between (FMS and DTAR). Macroeconomic variables, such as GDP and INF are positively linked to ROA and ROE, but negatively on MTBVE. The correlation of GDP with DTAR, DTER, STDR, and EMR is weak and positive, about 0.006, 0.025, 0.036, and 0.034, respectively. INF and DTAR, DTER, STDR, and EMR are positively and weakly correlated with values of 0.031, 0.054, 0.101, and 0.095, respectively.

Overall, the correlation analysis presented in Table 9 reveals moderate magnitudes for all correlation coefficients. This suggests an absence of strong linear relationships between the explanatory (independent) variables. Consequently, the predictor variables in the multiple regression model cannot be predicted from each other with significant accuracy. Based on this outcome, multicollinearity is not expected to be a major problem in our dataset. Therefore, it is safe to combine the explanatory variables in a regression model.

Table 10. Variance Inflation Factors (VIF)

Variables	**Value of VIF**	**Tolerance value**
DTAR	3.015	0.332
DTER	3.071	0.326
STDR	2.072	0.483
EMR	2.047	0.489
AUTR	1.315	0.761
FMS	1.283	0.780
TANGI	1.539	0.650
GROWTH	1.035	0.966
ITO	1.229	0.814
GDP	1.106	0.905
INF	1.262	0.792
Mean	**1.724**	

Source: Author elaboration based on EViews output

Furthermore, to supplement the correlation matrix analysis, I employed the commonly used Variance Inflation Factor (VIF) method to examine any multicollinearity issues. Previous studies by PALLANT (2020); SHRESTHA (2020); VITTINGHOFF ET AL. (2012) demonstrated that substantial multicollinearity among independent variables appears when tolerance levels are smaller than 0.1, and VIF values exceed a value of 10. The maximum VIF found in our investigation is 3.071, while the lowest tolerance value is 0.326, as displayed in Table 10. In combination, these results imply that multicollinearity is not expected to have significant effects on the results of our study.

Finally, the normality of the error terms for each model has been examined using the Jarque-Bera test. Table 11 displays the p-values for every model, which are statistically significant at the 1% level (α = 1%). This suggests that the null hypothesis of the normal distribution is rejected. Regression analysis commonly assumes that the residuals are normal; however, there are situations in which this assumption might be disregarded, especially when the research employs large sample sizes (GREENE, 2019). Various studies indicate that the fixed effects model, which was probably selected based on prior testing, demonstrates a certain level of resilience against deviations from normality, particularly when applied to large datasets (AHMD ET AL., 2023a; ELLIOTT & WOODWARD, 2007; KIM, 2013). Hence, the large sample size (5,629 firm-year observations) used in this study increases the robustness against potential violations of the normality assumptions. Moreover, larger samples often provide more trustworthy conclusions because they are less vulnerable to non-normality effects.

Table 11. Results of the normality and heteroscedasticity test

Test Summary (Chi-Square)	**Model 1 (ROA)**	**Model 2 (ROE)**	**Model 3 (MTBVE)**
Jarque–Bera (Normality Test)	96.77***	142.10***	1006.6***
Breush–Pagan–Godfrey (Heteroskedasticity Test)	214.43***	422.40***	934.46***

Note(s): Confidence level * (α = 0.1), ** (α = 0.05), *** (α = 0.01).

Source: Author elaboration based on EViews output

5.3 Unit root testing in panel econometrics

Considering that our data are panel, the existence of unit roots in the variables that have been employed must be evaluated. Numerous panel unit root tests have been published in the literature, such as Augmented Dickey-Fuller (ADF) Fisher test, Phillips-Perron (PP) test, Levin, Lin and Chu (LLC) test, and Harris–Tzavalis (HAT) (AHMED ET AL., 2023a; ANSER ET AL., 2024; IYOHA ET AL., 2022). The results of these tests are essential in determining the variables' time series characteristics, which in turn assist in selecting the best regression framework. In order to accomplish this goal, multiple unit root tests will be applied to each panel variable separately.

Although determining the best unit root test may be challenging (TURSOY & FAISAL, 2016), this study uses a multi-pronged method to evaluate the data's stationarity qualities. To be more precise, this research applies the tests of ADF-Fisher, PP, LLC, and HAT to thoroughly examine the combined order of the variables that are used (capital structure, agency cost, and corporate performance). This integrative strategy strengthens our variable choice procedure's resilience. The convergence of the findings over a minimum of two-unit root tests is the main factor that determines our selections about the integration sequence. Heterogeneity across cross-sectional units is permitted by both ADF and PP. This implies that they carry out separate unit root tests for every unit in the panel, allowing the autoregressive order (AR(p)) to differ throughout units. However, the LLC and HAT tests consider that all units have a similar unit root procedure, which means all units have the same autoregressive properties and lag structure. In particular, the results of all four tests concur on the null assumption that the procedure is non-stationary, and the model description for every test has the term constant. Lastly, the Schwarz Information Criterion (SIC) is a reference for choosing the lag structure for both ADF-Fisher and PP tests.

The findings of four-unit root tests, which are presented in Table 12, were statistically significant. *P*-values for the t-test and Fisher chi-square test were less than 1% for all variables except FMS, which is significant at 10% in the case of ADF-Fisher only. When one intercept is included in the model specification, these results highly imply that every time series that has been studied is stationary at the level. Therefore, we can strongly refuse the null hypothesis of non-stationarity for each of the variables under investigation, considering the statistically significant findings. Consequently, we can conclude that each variable that is used in this study is stationary at the level. The outcomes of our prediction tests provide optimistic information on the long-term reliability of

our conclusions. All of the parameters are equally stationary (stable) at the level, based on the panel unit root analysis, which is displayed in Table 12.

Table 12. Results of panel unit root tests

Variables	Unit Root in	ADF-Fisher Chi-square	PP Chi-square	LLC Chi-square	HAT Chi-square	Results
ROA	Level	1174.30***	1688.56***	-16.34***	28.09***	Stationary at level
ROE	Level	1221.27***	1647.92***	-25.07***	23.77***	Stationary at level
MTBVE	Level	1116.23***	1582.63***	-31.99***	23.75***	Stationary at level
DTAR	Level	1071.42***	1274.49***	-19.10***	33.49***	Stationary at level
DTER	Level	1106.72***	1325.08***	-37.30***	25.15***	Stationary at level
STDR	Level	1160.91***	1617.45***	-27.53***	29.71***	Stationary at level
EMR	Level	1044.31***	1185.28***	-16.66***	27.94***	Stationary at level
AUTR	Level	1179.29***	1403.52***	-16.80***	31.79***	Stationary at level
FMS	Level	871.602*	1053.91***	-32.26***	47.80***	Stationary at level
TANGI	Level	1035.31***	1362.60***	-31.68***	28.73***	Stationary at level
GROWTH	Level	1613.58***	2129.72***	-74.20***	12.94***	Stationary at level
ITO	Level	1522.63***	2332.04***	-28.44***	17.76***	Stationary at level
GDP	Level	1775.12***	2252.79***	-37.03***	19.56***	Stationary at level
INF	Level	1491.83***	1244.35***	-16.34***	38.57***	Stationary at level

Note(s): *** p < 1%; ** p < 5%; * p < 10%.

Source: Author elaboration based on EViews output

Our results are more broadly applicable because of the evidence that the stationary behavior property is valid for each unit in the panel. Assuming that stationarity in every variable has been confirmed, this addition establishes compelling evidence to apply the fixed effect model with GLS cross-section weight as suggested by (AHMED ET AL., 2023a; FONCHAMNYO ET AL., 2023). This research method presents itself as a well-suited tool for investigating the influence of capital

financing on the corporate performance of non-financial firms listed on Middle Eastern stock markets. Furthermore, it facilitates the exploration of potential interactions between agency costs and the aforementioned relationship.

5.4 Results of panel data model selection tests

After confirming the stationarity of the variables using unit root tests, we can move forward to the estimation of the panel data model. These models take advantage of the wealth of panel data by utilizing both the cross-sectional (firm-level) and time-series (temporal) parameters. When compared to using either time series or cross-sectional models, this integrated method can produce more efficient estimates. Three main methods are available for analyzing panel data, pooled Ordinary Least Squares (OLS), fixed effects (FE), and random effects (RE). Each technique confronts the existence of unexpected impacts unique to each cross-sectional unit in the data (such as a company). The assumption behind pooled OLS is the notion that all cross-sectional measurements have the same coefficients, while fixed effects models permit unit-to-unit variation in the coefficients, and they prevent time-dependent, undetected effects from correlating with the independent (explanatory) variables. Although time-dependent undetected effects can be linked with the independent variables, the random effect (RE) model assumes that the impacts are random and have a zero mean.

Moreover, the pooled OLS, FE, and RE model will be selected for this investigation using the Chow test, Hausman test, and Lagrange multiplier (LM) test. The reliability of the pooled OLS model assumption that the regression coefficients are the same for all cross-sectional units, is evaluated by employing the Chow test. It compares the alternative hypothesis (H_1) that the coefficients differ with the null hypothesis (H_0), which holds that the coefficients are equal for all units. We refute the null hypothesis as invalid and determine that the pooled OLS model is inappropriate if the Chow test statistic results in a *p*-value lower than a selected significance level ($p < 5\%$). This implies that the coefficients are probably different for each unit, which might support the FE model.

The FE and RE models can be selected with the application of the Hausman test. More specifically, it examines the null hypothesis (H_0) which states that the unobserved impacts are random and unrelated to the independent variables, demonstrating that the RE model is suitable and appropriate. Assuming a connection between the unobserved impacts and the explanatory

variables, the other assumption (H_1) claims that the RE model is inappropriate. The FE model is a reasonable option if the Hausman test statistic results in a *p*-value lower than the selected significance level ($p < 5\%$). In this case, the null hypothesis can be rejected. A high *p*-value, however, may indicate bias in the FE model and support the RE model; therefore, the Breusch Pagan (Lagrange multiplier (LM)) test should be implemented between the pooled OLS and RE models. The LM test serves as a further verification of the Hausman test, but from the standpoint of the pooled OLS model. It assesses the pooled OLS model's appropriateness (H_0) against the alternative hypothesis (H_1), which holds that it is inappropriate. In other words, the LM test evaluates the model's presence or absence of random effects. We reject the null hypothesis as invalid and determine that the pooled OLS model is inappropriate if the LM test statistic results in a *p*-value lower than a selected significance level ($p < 5\%$). This illustrates that random impacts are present in the models.

Table 13. Data panel model estimation

Panel Data Model Selection Test	**Model 1 (ROA)**	**Model 2 (ROE)**	**Model 3 (MTBVE)**	**Results**
Chow Test (Pooled OLS vs. Fixed Effect (FE))	2615.36***	2030.99***	5257.67***	FEM
Hausman Test (Fixed Effect (FE) vs. Random Effect (RE))	188.69***	96.52***	135.96***	FEM
Lagrange Multiplier Test (Pooled OLS vs. Random Effect (RE))	44.56***	35.51***	85.62***	REM

Note(s): Confidence level * ($\alpha = 0.1$), ** ($\alpha = 0.05$), *** ($\alpha = 0.01$).

Source: Author elaboration based on EViews output

To select the most appropriate and optimal model among pooled OLS, fixed effects (FE), and random effects (RE) models, this research employs all three diagnostic tests (Chow test, Hausman test, and Lagrange multiplier (LM) test), and the results of these tests are presented in Table 13. With a statistically significant *p*-value of less than 5%, the pooled OLS model suitability null hypothesis was rejected by the Chow test. This result implies that when compared to the pooled OLS model, the fixed effects (FE) model gives a more appropriate fit to the data.

This idea was then validated by the Hausman test, which produced a *p*-value of less than 5%. The FE model has been further backed as a more reliable option than the RE model, as this finding contradicts the null hypothesis that there are no random consequences. However, the selected FE model has a few shortcomings. In the FE model residuals, Table 11 shows the existence of heteroscedasticity and possible serial correlation (dependency of residuals over time). Hence, the determined coefficients' reliability may be challenged by these problems. To address the above limitations and consider endogeneity issues, this study applied the fixed effect model with GLS cross-sectional weight. Studies by BAI ET AL. (2021); SAIF-ALYOUSFI (2020); SAIF-ALYOUSFI ET AL. (2020) confirmed that the GLS technique is an improved version of the OLS method that exhibits superior results in estimating models with serial correlation or/and heteroscedasticity problems. AHMED ET AL. (2024) also argued that GLS aims to correct the serial correlation, and heteroscedasticity problems, which lead to enhanced statistical conclusions and more reliable estimations. In addition, the study also uses the Generalized method of moments (GMM) as a dynamic regression in addition to GLS for the robustness test. The use of GMM guarantees a constant expectation of a relationship between the dependent variable's lag and the residuals. Given the aforementioned factors, I can conclude that this research technique is an appropriate method of examining the influence of capital structure on the corporate performance of non-financial firms listed on Middle Eastern stock markets. It additionally facilitates investigating potential interactions between agency costs and the above relationship.

5.5 Cointegration test results

The Kao cointegration test, which is an improved version of the (ENGLE & GRANGER, 1987) method, applies the augmented Dickey-Fuller (ADF) t-statistic to decide if a long-term equilibrium connection (cointegration) exists between the panel characteristics. The main goal of the cointegration test is to determine if all variables have a shared dynamic pattern. Cointegration indicates that parameters are essentially related and short-term variations from their long-term equilibrium connection are normal. Comprehending the dynamic interactions among economic factors and generating predictions for the future requires this knowledge. The lack of a cointegration link among the parameters is the null hypothesis of the Kao tests. We could cancel the null hypothesis assuming there is no cointegration if the ADF t-statistic is less than the critical value (0.05). Table 14 demonstrates evidence that the value of *t* statistics for all models (ROA,

ROE, and MTBVE) is significantly lower than the value that is critical (5%), resulting in the failure to accept the null hypothesis. In short, the results indicate that all of the variables have a long-term relationship.

Table 14. Cointegration Test

Kao test	ROA		ROE		MTBVE	
	t-Stat.	**Prob.**	**t-Stat.**	**Prob.**	**t-Stat.**	**Prob.**
ADF	-9.475	0.000***	-4.649	0.000***	-13.090	0.000***
Residual variance	0.0049		0.0543		1.2815	
HAC variance	0.0029		0.0218		0.8783	

*Note: significance levels are *** (1%), ** (5%), * (10%).*

Source: Author elaboration based on EViews output

5.6 GLS main regression analysis

5.6.1 Unveiling the link between capital financing and firm performance

The outcomes of fixed-effects regression with GLS weights for cross-sectional dependence and robust standard errors are presented in Tables 15 and 16. The findings of the GLS regression estimator validate that before interaction, DTAR has a significant and opposite effect on firm performance (ROA and ROE) with a coefficient of (β = -0.098; sig. < 1%) and (β = -0.101; sig. < 1%) respectively, as illustrated in Table 15. However, DTAR affects MTBVE positively and significantly with a coefficient of (β = 0.606; sig. < 1%) as exhibited in Table 16 (model 3). Precisely, this finding shows that a 1% increase in total DTAR reduces ROA and ROE by 0.098 and 0.101 percent respectively, while increasing MTBVE by 0.606 percent among non-financial firms that are listed on Middle Eastern stock markets. This implies that while more leverage (DTAR) reduces a company's profitability, it may be seen by the market as indicating a stronger potential for growth, which would raise the company's market price.

In addition, ROA and MTBVE are positively and significantly impacted by DTER with coefficients of (β = 0.002; sig. < 1%) and (β = 0.727; sig. < 1%) respectively, while negatively and significantly impacted by ROE with a coefficient of (β = -0.029; sig. < 1%) among non-financial firms that are listed on Middle-Eastern stock exchanges. If other factors remain constant, this

means that a 1% increase in total DTER enhances ROA and MTBVE by 0.002 and 0.727 percent, respectively; however, it decreases ROE by 0.029 percent, as illustrated in Table 15 (model 2). These results emphasize the complex relationship between leverage and a company's financial health, showing how it may increase asset efficiency and market value while also possibly lowering equity returns.

Table 15. Regression results (ROA and ROE) as dependent variables without interaction

Variables	Model 1 (ROA) (Without Interaction)			Model 2 (ROE) (Without Interaction)		
	Coef. GLS with FEM	**Std. Error**	**p-value**	**Coef. GLS with FEM**	**Std. Error**	**p-value**
C	-0.137***	0.015	0.000	-0.561 ***	0.032	0.000
DTAR	-0.098***	0.007	0.000	-0.101 ***	0.016	0.000
DTER	0.002***	0.0008	0.003	-0.029 ***	0.004	0.000
STDR	-0.024***	0.008	0.002	-0.094 ***	0.017	0.000
EMR	-0.003 ***	0.0004	0.000	-0.011 ***	0.002	0.000
AUTR	0.067 ***	0.003	0.000	0.154 ***	0.006	0.000
FMS	0.016 ***	0.001	0.000	0.052 ***	0.002	0.000
TANGI	-0.057 ***	0.006	0.000	-0.103 ***	0.011	0.000
GROWTH	0.003 ***	0.0005	0.000	0.002 ***	0.0009	0.007
ITO	0.088 ***	0.004	0.000	0.201 ***	0.007	0.000
R-Square	0.701			0.711		
Adjusted R-Square	0.676			0.686		
F-statistic	27.62			28.97		
Prob.	0.000			0.000		
Obs.	5629			5629		

*Note: significance levels are *** (1%), ** (5%), * (10%).*

Source: Author elaboration based on EViews output

Short-term debt ratio (STDR) is another metric of capital structure and tables 15 and 16 demonstrate that STDR has a negative and significant effect on corporate performance (ROA, ROE, and MTBVE) with beta coefficients of (β = -0.024; sig. < 1%), (β = -0.094; sig. < 1%) and

(β = -0.152; sig. < 5%) respectively. Assuming all other factors are held constant, this suggests that every 1% increase in STDR declines in ROA, ROE, and MTBVE by 0.024, 0.094, and 0.152 percent respectively, demonstrating the negative impact of short-term debt on the profitability of the entire sector. These findings imply that depending excessively on short-term funding might lead to more risk and unstable financial circumstances, which would have a detrimental impact on market value and profitability.

Table 16. Regression results (MTBVE) as a dependent variable without interaction

Variables	**Model 3 (MTBVE) (Without Interaction)**		
	Coef. GLS with FEM	**Std. Error**	**p-value**
C	6.527 ***	0.156	0.000
DTAR	0.606 ***	0.061	0.000
DTER	0.727 ***	0.020	0.000
STDR	-0.152 **	0.074	0.039
EMR	0.284 ***	0.013	0.000
AUTR	0.601 ***	0.032	0.000
FMS	-0.465 ***	0.012	0.000
TANGI	0.197 ***	0.048	0.000
GROWTH	0.009 ***	0.003	0.004
ITO	0.335 ***	0.030	0.000
R-Square	0.942		
Adjusted R-Square	0.932		
F-statistic	192.32		
Prob.	0.000		
Obs.	5629		

*Note: significance levels are *** (1%), ** (5%), * (10%).*

Source: Author elaboration based on EViews output

Moreover, EMR has a significant and adverse effect on firm performance (ROA and ROE) with coefficients of (β = -0.003; sig. < 1%) and (β = -0.011; sig. < 1%) respectively. On the other hand,

as illustrated in Table 16, with a beta value of (β = 0.284; sig. < 1%), MTBVE is significantly influenced by EMR. This result argues that a unit rise in total EMR brings about a decrease of ROA by 0.003 units, and ROE by 0.011 units. This could be the result of an excessive amount of borrowing that leads to high agency issues. Conversely, a unit increase in EMR causes MTBVE to increase by 0.284 units, likely because debt can be seen by shareholders as a sign of lower risk, and this leads to high market performance. This highlights the trade-off that companies could reduce EMR when they plan to boost profitability, while those seeking to attract investors' attention might increase EMR.

5.6.2 The Influence of agency cost (managerial divergence) on firm performance

Agency cost is used as an explanatory (independent) and moderating variable in this research, and it is measured through the assets utilization ratio (AUTR). As shown in Tables 15 and 16, AUTR has a significant role in drawing performance of the companies with a coefficient of (β = 0.067; sig. < 1%) for ROA, (β = 0.154; sig. < 1%) for ROE, and (β = 0.601; sig. < 1%) for MTBVE. If other factors remain unchanged, a 1% increase in AUTR brings about an increase in firm performance indicators by 0.067 in the case of ROA, 0.154 in the case of ROE, and 0.601 in the case of MTBVE. This strong association between asset utilization and corporate performance indicates that greater profitability (ROA and ROE) and market perception (MTBVE) may be achieved through the effective utilization of assets. This is because when managers efficiently use resources, they provide higher returns along with lower expenses, which eventually benefits shareholders and minimizes the conflict of interest between managers and owners, and this probably represents lower agency costs.

5.6.3 The effect of firm-specific factors (control variables) on firm performance

This investigation incorporates an extensive number of control variables in the equations of regression to reduce and mitigate the possibility of selection bias as well as consider firm-level heterogeneity. These control factors are designed to reflect differences in company-specific parameters including firm size, asset tangibility, growth, and investment opportunity. In addition, I used these variables as a control in our econometric models because the study expected unexplained variation pertaining to the company's operational scope. The scope of operation

includes a range of firm-specific features that might impact management choices and, eventually, the achievement of the company. Our goal is to determine the actual impact of the explanatory variables on firm performance by adjusting for these factors. The findings of Tables 15 and 16 illustrate that FMS has a positive and statistically significant impact on firm performance, as measured by ROA and ROE. The coefficients are $\beta = 0.016$ ($p < 0.01$) for ROA and $\beta = 0.052$ ($p < 0.01$) for ROE. However, FMS has a negative impact on market value (MTBVE), with a coefficient of $\beta = -0.465$ ($p < 0.01$). Conversely, TANGI has a negative impact on firm performance ($\beta = -0.057$, $p < 0.01$ for ROA; $\beta = -0.103$, $p < 0.01$ for ROE) but a positive impact on market value ($\beta = 0.197$, $p < 0.01$). Finally, GROWTH and ITO have weak positive effects on all performance indicators, as shown in Tables 15 and 16.

Finally, the F-statistics for all models indicate the statistical significance of the explanatory factors at a conventional level. Additionally, the adjusted R-square, which measures the proportion of variance in firm and market performance (ROA, ROE, and MTBVE) explained by the independent variables, is 0.676, 0.686, and 0.937, respectively. These values suggest that the capital structure, agency cost, and control variables collectively explain 67.6% of the variation in ROA, 68.6% of the variation in ROE, and a substantial 93.7% of the variation in MTBVE for non-financial firms listed on Middle Eastern stock markets.

5.6.4 Investigating the contingent influence of agency costs as a moderator on the capital structure-performance relation

Tables 17 and 18 show the results of the moderating effect of agency cost (managerial divergence). Surprisingly, after adding the interaction term, the direct effects of agency cost and capital financing on business performance did not change. This shows that even after the moderating factor is taken into consideration, the fundamental connection between capital structure and performance often remains consistent throughout the sample. This result offers a starting point for further investigation into the interaction influence. In simpler terms, before analyzing how this connection could be influenced by the moderating variable, such as agency cost in this study, the overall impact of capital structure on performance is still present. Additionally, after including agency cost as a moderating component, the results indicate an increase in the adjusted R-square. This implies that agency costs may significantly influence the link between capital financing and business outcomes. Additionally, after regressing the exogenous variables, the

graphical residual, fitted, and actual values are displayed in "Appendices A2: Panel GLS model diagrams". A significant trend line is seen in all figures, both with and without interacting terms. Thus, homoscedasticity is increased by reducing the residuals due to the strong relationship between the actual and fitted lines. This shows that the model's predictions and the actual values have a significant connection.

Table 17. Regression results (ROA and ROE) as dependent variables with interaction

Variables	Model 1 (ROA) (With Interaction)			Model 2 (ROE) (With Interaction)		
	Coef. GLS with FEM	**Std. Error**	**p-value**	**Coef. GLS with FEM**	**Std. Error**	**p-value**
C	-0.148***	0.015	0.000	-0.595 ***	0.032	0.000
DTAR	-0.118 ***	0.008	0.000	-0.220 ***	0.021	0.000
DTER	0.006 ***	0.001	0.000	-0.014 ***	0.005	0.002
STDR	-0.006	0.010	0.541	-0.081 ***	0.023	0.000
EMR	-0.003 ***	0.0006	0.000	-0.005 ***	0.002	0.003
AUTR	0.073 ***	0.004	0.000	0.179 ***	0.009	0.000
AUTR*DTAR	0.048 ***	0.012	0.000	0.277 ***	0.033	0.000
AUTR* DTER	-0.008 ***	0.002	0.000	-0.021 ***	0.008	0.006
AUTR* STDR	-0.027 **	0.014	0.048	-0.086 ***	0.034	0.011
AUTR*EMR	-0.001 *	0.0007	0.060	-0.015 ***	0.004	0.000
FMS	0.017 ***	0.001	0.000	0.053 ***	0.002	0.000
TANGI	-0.056 ***	0.006	0.000	-0.098 ***	0.011	0.000
GROWTH	0.003 ***	0.0005	0.000	0.002 **	0.0007	0.015
ITO	0.089 ***	0.004	0.000	0.207 ***	0.008	0.000
R-Square	0.703			0.748		
Adjusted R-Square	0.678			0.726		
F-statistic	27.65			34.61		
Prob.	0.000			0.000		
Obs.	5629			5629		

*Note: significance levels are *** (1%), ** (5%), * (10%).*

Source: Author elaboration based on EViews output

As demonstrated in Tables 17 and 18, the interaction term between (AUTR*DTAR) influences all performance proxies (ROA, ROE, and MTBVE) positively and significantly with a coefficient of 0.048, 0.277, and 0.606 percent, respectively. This indicates that the negative effect between financial choice and firm performance is lessened or even turned positive when the managers use their assets efficiently due to low agency costs related to the average level of debt.

Table 18. Regression results (MTBVE) as a dependent variable with interaction

Variables	**Model 3 (MTBVE) (With Interaction)**		
	Coef. GLS with FEM	**Std. Error**	**p-value**
C	6.531 ***	0.158	0.000
DTAR	0.268 ***	0.090	0.003
DTER	0.932 ***	0.030	0.000
STDR	0.214 **	0.103	0.037
EMR	0.202 ***	0.016	0.000
AUTR	0.509 ***	0.050	0.000
AUTR*DTAR	0.606 ***	0.174	0.001
AUTR* DTER	-0.309 ***	0.037	0.000
AUTR* STDR	-0.629 ***	0.186	0.001
AUTR*EMR	0.118 ***	0.020	0.000
FMS	-0.461 ***	0.012	0.000
TANGI	0.225 ***	0.047	0.000
GROWTH	0.010 ***	0.003	0.002
ITO	0.350 ***	0.030	0.000
R-Square	0.938		
Adjusted R-Square	0.932		
F-statistic	176.65		
Prob.	0.000		
Obs.	5629		

*Note: significance levels are *** (1%), ** (5%), * (10%).*

Source: Author elaboration based on EViews output

Further, the interaction terms between (AUTR* DTER) and firm performance (ROA, ROE, and MTBVE) are negative and significant with a beta coefficient of -0.008, -0.021, and -0.309 percent,

respectively. These findings suggest that the initial beneficial effect of the DTER on ROA and MTBVE decreases when managers use assets effectively to provide greater returns with the available resources. This can be explained by increased agency expenses related to equity. Essentially, when a company has an excessive amount of debt funding, managers may prioritize short-term profit maximization over long-term efforts that could eventually improve ROE. This underscores the importance of balancing both equity and debt funding (achieving an optimum level of debt) to minimize agency conflicts and related costs, thereby maximizing firm performance.

In addition, the moderating effect between (AUTR* STDR) and performance metrics (ROA, ROE, and MTBVE) is negative and significant with a beta coefficient of -0.027, -0.086, and -0.629 percent, respectively. These results indicate that the detrimental effects of short-term debt on performance are minimized by firms with strong utilization of assets. This implies that agency costs could play a significant role. Firms that make effective use of their resources may lessen the motivation for managers to take measures that put their own interests ahead of those of owners. The reason why companies with excellent resource utilization (low agency cost) have a lower impact by a significant amount of short-term debt may be attributed to the alignment of objectives between owners (principals) and managers (agents).

Last but not least, the interaction term between (AUTR*EMR) and firm performance (ROA and ROE) is negative and significant with a coefficient of -0.001 and -0.015, respectively, while positive and significant on MTBVE with a beta coefficient of 0.118. The negative relationship offers the possibility of a mitigating factor. The detrimental effect on profitability is mitigated when firms adopt an optimum level of leverage and simultaneously exhibit great asset utilization (efficiency). It also suggests that making effective use of resources (assets) might decrease the agency costs imposed by utilizing the appropriate level of debt.

From the above results, Figure 13 is developed in the context of non-financial firms that operate in Middle Eastern markets. The link between the performance of a company and its level of financial leverage (debt) is seen in the figure as a U-shaped correlation. In other words, the graph illustrates how a firm's optimum debt level follows a quadratic curve, where performance first climbs with debt until reaching the optimum level and then ultimately drops due to a high level of debt, but when reaching the optimum level (balanced capital structure), the firm value is improved, that is agency cost significantly moderates the connection between financial choice and firm achievements. This implies that extremes of debt levels, either very low or very high, are linked to

lower outcomes. This is probably because these extremes (low or high) include substantial agency costs or agency problems (conflicts of interest between managers and owners).

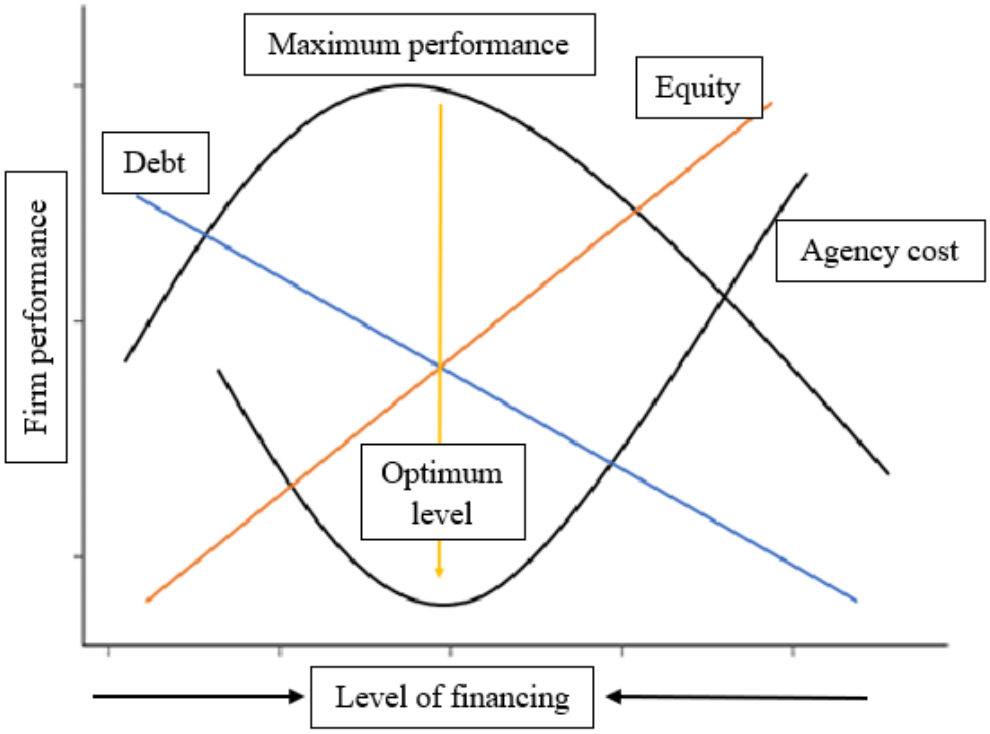

Figure 13. Capital financing, corporate performance, and agency cost
Source: Author elaboration

Table 19 also demonstrates an outcome that compares different capital structure options' influence on agency problems and firm efficiency. These results validate and prove the application of agency theory, implying that a balanced financial structure (mix of debt and equity) can serve as a form of discipline. This method also motivates management to put shareholders' interests ahead of its own interests.

Table 19. Evaluation of firm efficiency, agency costs, and capital formation

Level of capital structure	Firm performance	Agency costs
Low reliance on debt or equity financing	Low	High
High reliance on debt or equity financing	Low	High
Balanced capital structure (Mixture of debt and equity)	High	Low

Source: Author elaboration

5.7 Robustness check

5.7.1 The Integration of macroeconomic factors: GLS and GMM methods

This research conducted an intensive robustness check to strengthen the findings and increase the validity of our initial results. This is performed by adding country-level macroeconomic factors to the study models. Moreover, an alternate measurement of agency cost based on the deviation industry average is applied in the second phase of the robustness test.

Table 20. Panel regression results (ROA, ROE, and MTBVE) without interaction

Variables	Model 1 (ROA)		Model 2 (ROE)		Model 3 (MTBVE)	
	Coef. GLS	Coef. GMM	Coef. GLS	Coef. GMM	Coef. GLS	Coef. GMM
C	-0.047*** (0.018)	-0.007 (0.023)	-0.403*** (0.038)	-0.263*** (0.048)	7.590*** (0.203)	5.201*** (0.268)
DTAR	-0.083*** (0.007)	-0.059*** (0.007)	-0.058*** (0.016)	-0.040** (0.021)	0.802*** (0.072)	0.248** (0.109)
DTER	0.003*** (0.0008)	0.003** (0.001)	-0.030*** (0.004)	-0.027*** (0.006)	0.714*** (0.021)	0.686*** (0.049)
STDR	-0.034*** (0.008)	-0.024*** (0.009)	-0.121*** (0.017)	-0.095*** (0.020)	-0.251*** (0.084)	-0.162* (0.091)
EMR	-0.003*** (0.0005)	-0.002*** (0.0007)	-0.010*** (0.002)	-0.006*** (0.002)	0.286*** (0.013)	0.222*** (0.030)
AUTR	0.058*** (0.003)	0.050*** (0.005)	0.138*** (0.006)	0.121*** (0.011)	0.482*** (0.034)	0.410*** (0.054)
FMS	0.009*** (0.001)	0.003** (0.002)	0.038*** (0.003)	0.023*** (0.004)	-0.552*** (0.016)	-0.381*** (0.022)
TANGI	-0.059*** (0.006)	-0.040*** (0.008)	-0.099*** (0.011)	-0.062*** (0.014)	0.253*** (0.056)	0.176** (0.070)
GROWTH	0.002*** (0.0005)	0.003*** (0.001)	0.001* (0.0008)	0.003*** (0.001)	0.009*** (0.003)	0.009*** (0.002)
ITO	0.079*** (0.004)	0.078*** (0.005)	0.178*** (0.008)	0.198*** (0.011)	0.271*** (0.034)	0.231*** (0.048)
GDP	0.002*** (0.0001)	0.002*** (0.0001)	0.002*** (0.0002)	0.002*** (0.0002)	0.003* (0.001)	0.001 (0.001)
INF	0.001*** (0.0001)	0.001*** (0.0001)	0.001*** (0.0001)	0.001*** (0.0002)	0.008*** (0.0007)	0.005*** (0.0006)
ROA_lag1		0.342*** (0.015)				
ROE_lag1				0.297*** (0.016)		
MTBVE _lag1						0.226*** (0.016)
R-Square	0.722	0.587	0.712	0.775	0.934	0.942
Ad. R-Square	0.698	0.548	0.687	0.755	0.928	0.936
F-statistic	30.47		28.93		166.25	
Prob.	0.000		0.000		0.000	
Obs.	5629	5196	5629	5196	5629	5196

*Note: significance levels are *** (1%), ** (5%), * (10%).*

Source: Author elaboration based on EViews output

Both Generalized Least Squares (GLS) and Generalized Method of Moments (GMM) estimators were used for examining the robustness check. The use of GMM guarantees a constant assumption of the relationship betweefn the dependent variable's lag and the residuals. This strategic integration aims to minimize the possible influence of extraneous macroeconomic factors on corporate performance. This is especially crucial since the financing structure and business performance may be endogenous; for instance, greater debt may be available to firms that perform well. Robustness tests can also lessen the impact of any restrictions (limitations) in the original model formulation and unobserved firm-specific variation. This technique has also been applied in previous studies by (AHMED ET AL., 2024; TIAN ET AL., 2024; RAMDANI & WITTELOOSTUIJN, 2010).

Tables 20 and 21 demonstrate the results of the first robustness check for the direct connection between capital structure and performance before the interaction term and after the interaction effect of agency cost. Interestingly, the majority of findings from both GLS and GMM regression analyses are similar to the findings that were obtained initially. This consistency supports our preliminary findings before and after the moderating influence of agency cost on the capital structure-performance link. The comparable results obtained from both estimating approaches provide more support to the research by indicating that our findings are not dependent on the specific econometric approach used or any endogeneity problems.

Table 21. Panel regression results (ROA, ROE, and MTBVE) with interaction

Variables	Model 1 (ROA)		Model 2 (ROE)		Model 3 (MTBVE)	
	Coef. GLS	Coef. GMM	Coef. GLS	Coef. GMM	Coef. GLS	Coef. GMM
C	-0.058*** (0.027)	-0.022 (0.023)	-0.426*** (0.038)	-0.289*** (0.049)	7.587*** (0.204)	5.321*** (0.266)
DTAR	-0.101*** (0.013)	-0.088*** (0.010)	-0.165*** (0.021)	-0.158*** (0.030)	0.427*** (0.103)	0.104 (0.142)
DTER	0.006*** (0.002)	0.005*** (0.002)	-0.016*** (0.005)	-0.017** (0.009)	0.922*** (0.030)	0.864*** (0.047)
STDR	-0.016* (0.013)	-0.003 (0.011)	-0.104*** (0.023)	-0.065** (0.026)	0.236** (0.115)	0.075 (0.141)
EMR	-0.003*** (0.001)	-0.002** (0.001)	-0.005*** (0.002)	-0.003** (0.001)	0.196*** (0.016)	0.152*** (0.026)
AUTR	0.064*** (0.007)	0.055*** (0.006)	0.159*** (0.009)	0.138*** (0.014)	0.359*** (0.052)	0.306*** (0.089)
AUTR*DTAR	0.044*** (0.021)	0.070*** (0.016)	0.262*** (0.034)	0.310*** (0.060)	0.706*** (0.179)	0.219 (0.244)
AUTR* DTER	-0.007*** (0.003)	-0.005 (0.003)	-0.019** (0.008)	-0.012 (0.015)	-0.320*** (0.036)	-0.285*** (0.076)
AUTR* STDR	-0.026** (0.024)	-0.048*** (0.018)	-0.100*** (0.034)	-0.160*** (0.048)	-0.914*** (0.194)	-0.360 (0.255)
AUTR*EMR	-0.001 (0.002)	-0.002 (0.002)	-0.015*** (0.004)	-0.012*** (0.004)	0.140*** (0.019)	0.117*** (0.040)
FMS	0.010*** (0.002)	0.005*** (0.002)	0.039*** (0.003)	0.025*** (0.004)	-0.546*** (0.016)	-0.385*** (0.022)
TANGI	-0.057*** (0.010)	-0.040*** (0.008)	-0.094*** (0.011)	-0.061*** (0.015)	0.278*** (0.055)	0.179** (0.072)
GROWTH	0.002*** (0.001)	0.003*** (0.001)	0.001 (0.0008)	0.002** (0.001)	0.010*** (0.003)	0.010*** (0.002)
ITO	0.079*** (0.005)	0.078*** (0.005)	0.184*** (0.008)	0.204*** (0.012)	0.272*** (0.033)	0.224*** (0.049)
GDP	0.001*** (0.0001)	0.001*** (0.0001)	0.002*** (0.0002)	0.002*** (0.0002)	0.002** (0.001)	0.001 (0.001)
INF	0.001*** (0.0001)	0.001*** (0.0001)	0.001*** (0.0001)	0.001*** (0.0002)	0.008*** (0.0007)	0.006*** (0.0007)
ROA_lag1		0.337*** (0.015)				
ROE_lag1				0.291*** (0.017)		
MTBVE _lag1						0.220*** (0.016)
R-Square	0.726	0.778	0.738	0.794	0.931	0.944
Ad. R-Square	0.702	0.757	0.715	0.774	0.925	0.938
F-statistic	30.74		32.65		157.57	
Prob.	0.000		0.000		0.000	
Obs.	5629	5196	5629	5196	5629	5196

*Note: significance levels are *** (1%), ** (5%), * (10%).*

Source: Author elaboration based on EViews output

5.7.2 Alternative measurement for agency cost based on industry average deviation

The current research conducted a second extensive robustness check by using an alternate measurement of agency cost in order to improve the validity of the preliminary results. The alternative measure is based on the deviation industry average for the asset utilization ratio. To achieve this aim, the new variable was found using the following formula:

$Industry\ Average\ Ratio_{jt} = \frac{1}{N_{jt}} \sum_{i \in j} Asset\ Utilization\ Ratio$ and

$Deviation_{it} = Asset\ Utilization\ ratio_{it} - Industry\ Average\ Ratio_{jt}$.

This robustness test may reduce the effects of limitations and selection bias in the variables utilized in the initial model formulation. It also compares agency costs to industry norms to account for unnoticed firm-specific variances. Table 22 shows the results of the second robustness check to examine the connection between capital structure and corporate performance before and after the moderating effect using an alternative indicator of agency cost based on the deviation industry average. Surprisingly, the outcomes are consistent with the original findings. The initial findings, both before and after the moderating effect, are supported by this consistency. Similar results from multiple proxies of agency cost lend additional credibility to the study by showing that the conclusions are not dependent on the particular metric.

Table 22. Panel regression results using an alternative measurement for agency cost

Variables	Model 1 (ROA)		Model 2 (ROE)		Model 3 (MTBVE)	
	Before interaction	**After interaction**	**Before interaction**	**After interaction**	**Before interaction**	**After interaction**
C	0.033**	0.027	-0.217***	-0.222***	8.185***	8.154***
	(0.017)	(0.017)	(0.037)	(0.037)	(0.194)	(0.194)
DTAR	-0.085***	-0.077***	-0.066***	-0.037**	0.786***	0.859***
	(0.007)	(0.007)	(0.016)	(0.016)	(0.072)	(0.080)
DTER	0.002***	0.001	-0.030***	-0.032***	0.719***	0.708***
	(0.001)	(0.001)	(0.004)	(0.004)	(0.021)	(0.022)
STDR	-0.037***	-0.032***	-0.121***	-0.142***	-0.249***	-0.307***
	(0.008)	(0.008)	(0.018)	(0.019)	(0.084)	(0.088)
EMR	-0.003***	-0.003***	-0.010***	-0.010***	0.285***	0.286***
	(0.0005)	(0.0005)	(0.002)	(0.002)	(0.013)	(0.013)
DIA-AUTR	0.047***	0.051***	0.111***	0.112***	0.444***	0.370***
	(0.003)	(0.004)	(0.006)	(0.010)	(0.033)	(0.055)
DIA-AUTR *DTAR		0.027**		0.242***		0.497***
		(0.012)		(0.037)		(0.188)
DIA-AUTR * DTER		-0.005***		-0.026***		-0.194***
		(0.002)		(0.008)		(0.036)
DIA-AUTR * STDR		-0.017		-0.065*		-1.117***
		(0.015)		(0.040)		(0.215)
DIA-AUTR *EMR		-0.001		-0.008*		0.106***
		(0.001)		(0.005)		(0.021)
FMS	0.006***	0.006***	0.030***	0.030***	-0.576***	-0.575***
	(0.001)	(0.001)	(0.003)	(0.003)	(0.015)	(0.015)
TANGI	-0.063***	-0.061***	-0.112***	-0.109***	0.241***	0.268***
	(0.006)	(0.006)	(0.011)	(0.011)	(0.056)	(0.056)
GROWTH	0.002***	0.002***	0.002**	0.002**	0.010***	0.010***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.003)	(0.003)
ITO	0.078***	0.078***	0.178***	0.183***	0.268***	0.262***
	(0.004)	(0.004)	(0.008)	(0.008)	(0.034)	(0.033)
GDP	0.001***	0.001***	0.003***	0.003***	0.005***	0.005***
	(0.0001)	(0.0001)	(0.0002)	(0.0002)	(0.001)	(0.001)
INF	0.001***	0.001***	0.002***	0.002***	0.009***	0.009***
	(0.0001)	(0.0001)	(0.0002)	(0.0002)	(0.001)	(0.0007)
R-Square	0.714	0.715	0.705	0.723	0.935	0.933
Ad. R-Square	0.689	0.691	0.679	0.699	0.930	0.927
F-statistic	29.202	29.114	27.932	30.283	169.411	161.493
Prob.	0.000	0.000	0.000	0.000	0.000	0.000
Obs.	5629	5629	5629	5629	5629	5629

*Note: significance levels are *** (1%), ** (5%), * (10%).*

Source: Author elaboration based on EViews output

5.8 Additional analysis based on the qualitative evidence

The aim of this part is to provide the qualitative results that this study used in parallel to support and complement the quantitative results that were discussed in the previous section. It also develops our consciousness of the association between financial structure, firm performance, and the moderated role of agency cost. Strong conclusions were perceived during analyzing quantitative data through a regression model. The qualitative analysis can also be useful to comprehend the decision-making process made by managers and investors. Both Figures 14 and 15 exhibit the outcomes of this method.

Figure 14 shows the wave of agency costs when the companies change financial policy, and Figure 15 displays the wave of agency costs for the firms that do not change their decision towards financial structure. The findings examine the complex linkage underlying capital structure indicated by (CS), financial performance indicated by (FP), and agency costs indicated by (AC). From the figures, the blue line denotes CS, and when the score reaches 0.6, it means that companies used internal funding. Values between 0.7-0.9 suggest a mixture of both internal and external funding, while values at or above 1 indicate the use of all three funding sources (retained earnings, debt, and equity issuances). The orange line represents financial performance (FP); upward movement and a higher index indicate better corporate performance. On the other hand, a declining trend and a lower index point to a deterioration in business performance. Lastly, the agency cost (AC) is shown by the gray line. The potential existence of conflicts between the agent (manager) and principal (owner) is reflected in the agency cost index. Although a low index indicates a better-aligned connection (lower agency costs), a high index indicates raised agency costs (high agency costs).

Figure 14 demonstrates the wave of agency costs when the firms changed their decisions toward capital structure. Among Jordanian non-financial firms presented in cases 1 and 2, when the capital structure reaches indexes of 0.7-0.9 (a combination of internal and external funding (debt and equity)), the trend of the financial performance line is rather stable, showing sustainable financial performance with minor fluctuations.

The agency cost line is still comparatively low and consistent, pointing to few disagreements between managers and owners, aligned interests, efficient control, and effective management strategies. However, when the capital structure indexes decline to 0.7 or lower than 0.6,

demonstrating a decline in reliance on outside financing sources, such as debt. The financial performance exhibits a downward trend, which might indicate worsening financial performance brought on by a lack of external financing. Interestingly, Agency cost climbs with time, suggesting that agency expenses are increasing and that manager-owner conflicts may be intensified.

Case 2 is related to Saudi Arabian non-financial firms, and when they have an optimum level of debt (indexes of 0.7-0.9), firm performance is stable and increases with few fluctuations. Agency costs, therefore, continue to be low and consistent, indicating better monitoring and alignment of interests between management and ownership. On the other hand, when firms decide to rely on internal sources only or use three financing methods (internal, external, and stock issuances) as a response to changing market conditions, the performance of firms decreases due to conflicts of interest between managers and owners (high agency cost) and ineffective governance practices. Similar results were also observed in the case of Kuwaiti non-financial firms (case 6), Turkey non-financial firms (case 8), Qatari non-financial firms (case 10), and Bahraini non-financial firms (case 12).

Furthermore, Figure 15 displays the wave of agency cost with stable capital structure decisions. As shown, the orange line representing financial performance (FP) varies between scenarios (all cases), indicating different levels of business performance over time. The consistent progress or deterioration in firm performance is correlated with the stability in CS (optimum level of debt). However, in certain circumstances there is no direct correlation, for example, in case 9 (Qatar), firm performance exhibits significant increases and decreases, suggesting that other factors beyond capital structure affect corporate performance.

With regard to agency costs (AC), which is indicated by the gray line, the trend most of the time is low or constant, with minor variations. This shows that an optimum level of debt may help to reduce agency costs and boost performance as an ongoing financing source. In other words, it is likely to improve alignment between managers and owners and lessen the chance of conflicts of interest. Nevertheless, there are notable situations when agency costs are either constant or fluctuate, suggesting the possibility of additional operation or governance problems that impact the total cost of managing the principal-agent relationship and bring lower company value and performance.

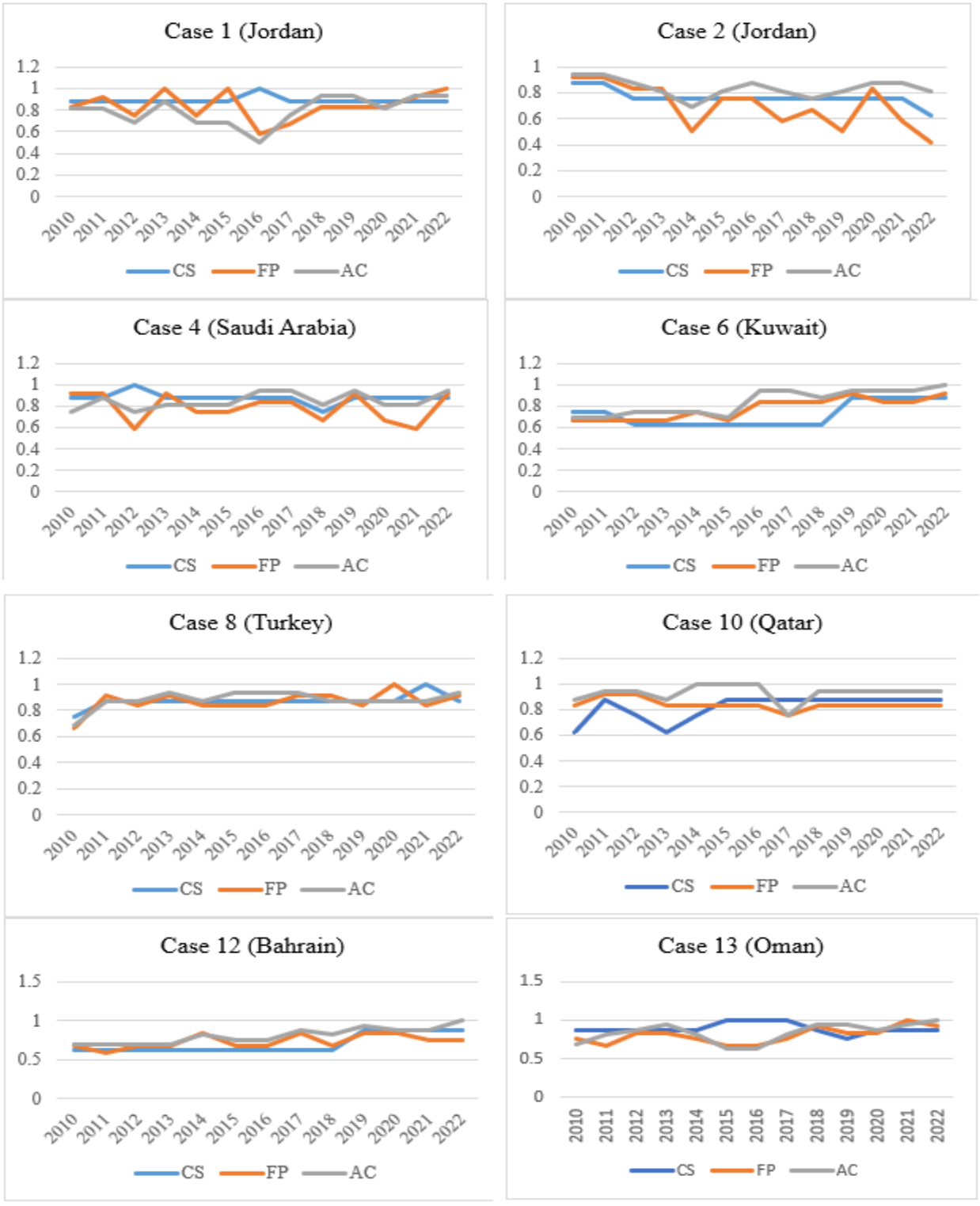

Figure 14. The wave of agency costs when the firms changed their capital structure decisions

Source: Author elaboration based on qualitative analysis

From the above findings, we can conclude that the qualitative supplementary analysis clarifies the complex link between a company's capital structure, and agency costs with financial performance and supports the underlying quantitative results that were discussed in previous sections. The results show a U-shaped pattern, where minimal agency conflicts and high performance and efficiency are encouraged by moderate debt levels (mixture of capital structure).

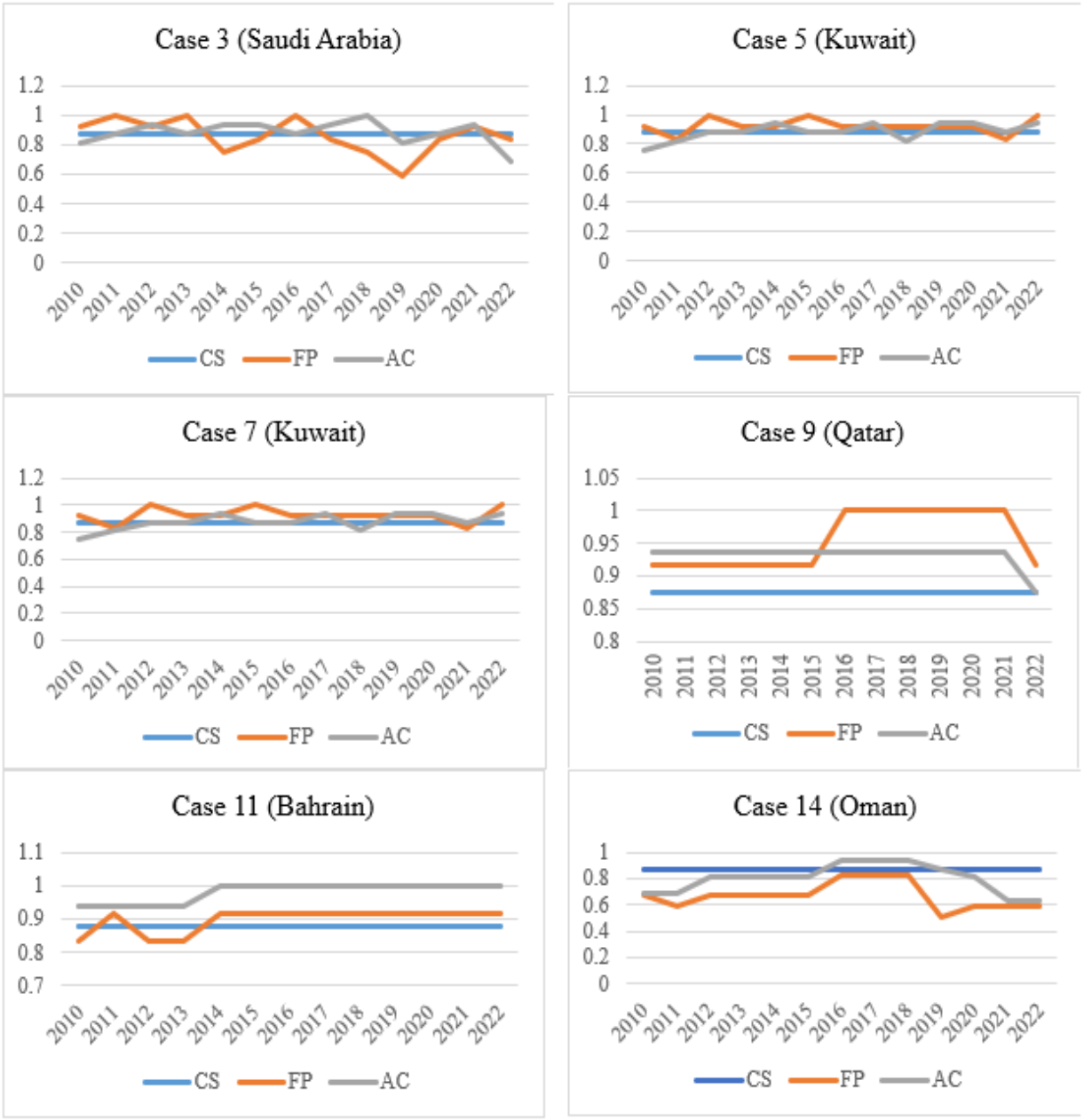

Figure 15. The wave of agency costs when the firms have not changed their capital structure decision

Source: Author elaboration based on qualitative analysis

According to the findings, debt serves as a motivating factor at this ideal point (optimum level), bringing managers' and owners' interests into line. Management is driven to use resources wisely and efficiently, and put shareholder value first, by the need to pay back debt. As demonstrated by the low frequency of conflicts between managers and owners, this corresponds to stable or improving financial performance combined with continuously reduced agency expenses. A lack of financing from outside limits expansion and may impair performance in businesses that depend entirely on internal finance. There are negative effects when this ideal debt limit is not met (having debt above the optimum level). There is a growth in agency expenses when firms rely on a high level of debt or equity. Hence, climbing beyond the optimum debt levels leads to adverse consequences. This is because relieved of the burden of repaying debt, managers can set their own goals, which might cause ownership conflicts and eventually hurt the bottom line of the company. Managers are relieved from the responsibility of prioritizing cash flow for debt repayment when there is a significant debt burden. Due to their independence, they might pursue personal objectives that diverge from the interests of shareholders, bringing the opportunity for ownership disagreements. Therefore, the bottom line (profitability) of the company may ultimately suffer from these conflicts. This idea is in line with arguments that excessive amounts of debt bring high agency expenses and related issues, and consequently, firm performance will be diminished.

5.9 Discussion

This investigation aims to examine the impact of financial structure on corporate performance and address the significant role of agency cost on the above correlation from the perspective of agency theory. The study used data of non-financial companies the registered on the Middle Eastern capital markets due to sustained regional economic growth and having a different socioeconomic landscape. The study utilized both quantitative and qualitative approaches to give a better understanding of the relationship. The results reveal new and interesting perspectives on the strategies of financial policy adopted by these companies.

Precisely, the results demonstrate an adverse and meaningful association between DTAR and ROA, claiming that profitability will be reduced when the amount of borrowing goes up. This clearly means that high reliance on debt financing results in obligations to pay more interest, which will reduce profitability. However, DTER shows a positive and meaningful correlation with ROA. This implies that there may be a marginal improvement in ROA with an average rise in debt

financing compared to equity. Employing optimum debt levels in comparison to equity might increase the efficiency of assets, possibly as a result of debt's tax advantages. In addition, ROA is significantly and negatively impacted by short-term debt (STDR). This is mainly due to the fact that short-term debt often has interest rates that are greater than those of long-term debt, further taxing a company's capacity to make cash from its resources and weakening its operational viability and financial capabilities. The equity multiplier ratio (EMR) has a negative and significant influence on ROA. This suggests that ROA decreases as the amount of debt increases. This drop may be explained by increased agency costs and possible conflicts between managers (agents) and owners (principals). Companies with a reasonable amount of equity funding may have a lower risk associated with finances; however, greater utilization of assets and high profitability are not always assured with equity financing or internal financing.

The above findings clarify and support the hypothesis (H1.1) that a company's debt level (financial leverage) has a significant effect on its return on assets (ROA) and are in line with some aspects of trade-off and pecking order theory. Trade-off theory points out that an ideal debt level can optimize profitability before debt becomes excessively dangerous while the pecking order theory points out that firms should rely on debt financing if the internal source of financing is not sufficient. These findings also align with the research conducted by (BRENDEA ET AL., 2022; ESSEL, 2023; MUHAMMED ET AL., 2024; THI MAI NGUYEN ET AL., 2023).

Moreover, there is a significant and adverse correlation between DTAR and ROE. This supports the idea that, although debt potentially increases overall profitability (ROA), high financing through debt might reduce shareholders' returns. A decreased ROE results from the interest expenses caused by debt, which lowers the net income available to investors in stocks. In a similar vein, DTER has a significant and detrimental effect on ROE; however, it may have a lesser effect than DTAR. This implies that while an excessively leveraged capital structure may still be harmful to shareholder returns, moderate usage of debt funding may not considerably decrease ROE. In other words, leveraging debt in conjunction with equity may initially increase profits; however, an over-dependence on debt can result in declining returns for equity investors because of the increased risk and expenses associated with high debt levels. ROE is also negatively and significantly impacted by short-term debt. The higher interest rates of short-term borrowing have the potential to eat into firms' profits and diminish shareholders' returns. The connection between EMR and ROE is also significant and negative, suggesting that firms with higher equity multiplier

ratios may have agency difficulties (agency problems), in which managers promote personal gain ahead of optimizing shareholder returns. This brings lower profitability and high agency costs therefore lower ROE.

Together, these findings highlight the detrimental impacts of excessive leverage and short-term debt on shareholders' return and propose the necessity of a balanced capital structure strategy to maximize the value of owners. Therefore, the hypothesis (H1.2) that a company's debt level (financial leverage) has a significant effect on its return on equity (ROE), is accepted and supported by both trade-off and agency theory. According to the trade-off theory, firms should strike a balance between the tax shield of debt and the cost of bankruptcy. This means that substantial levels of debt raise the risk of financial distress as well as interest costs, which weakens ROE even when overall profitability improves. On the other hand, a moderate level of debt may provide better performance and fewer risks. Agency theory also points out that an optimum level of debt (mixture of debt and equity) has a disciplinary impact, while large debt or equity financing could result in agency issues when managerial decisions decrease earnings and ROE because managers promote personal gain ahead of optimizing shareholder returns. These results are also consistent with the investigation carried out by (KALASH, 2021; MATHUR ET AL., 2021; TRAN ET AL., 2023: ATTIA ET AL., 2023).

Regarding market performance, measured by (MTBVE), the effect of both DTAR and DTER on MTBVE is significant and positive. This suggests that firms with a reasonable amount of debt financing may be valued more highly by the market and have higher future earnings, as the market perceives them to have greater growth prospects. This may be because debt is considered a productive utilization of capital and has tax-shielding advantages. In contrast, higher dependence on debt financing could turn these advantages into financial risks. Short-term debt (STDR) has a negative and significant relation with MTBVE, claiming that companies with a large amount of short-term borrowing might be considered risky in the marketplace due to potential refinancing challenges, liquidity issues, and higher cost of debt. Hence, a lower market value in relation to book value could be displayed. EMR is significantly and positively affected by MTBVE, suggesting that firms that applied a mixed capital financing have low risk in the stock market. Hence, market value can be observed as higher compared to the book value.

Collectively, these results illustrate the significant role of the optimum level of capital financing in improving market performance, and also the detrimental effect of short-term financing on

market value. Hence, the hypothesis (H1.3) that a company's debt level (financial leverage) has a significant effect on its market-to-book value (MTBVE) is accepted and supported by both agency and trade-off theory. According to agency theory, when agents have fixed commitments, such as repaying debt and related interests are obligated to perform efficiently and generate more cash to prevent bankruptcy. As a result, they are in line with the objectives of owners who want to observe profits and a high market value. The trade-off theory also proposes that companies should weigh the positive and negative aspects of both equity and debt financing in order to determine the best possible structure for capital. The tax shield and management control (discipline) are the main benefits of borrowing. However, the costs of financial challenges, such as the potential risks of bankruptcy and agency costs, may offset these advantages. Additionally, these findings align with the research conducted by (ABDULLAH & TURSOY, 2021; AHMED ET AL., 2023a; AYAZ ET AL., 2021; SDIQ & ABDULLAH, 2022).

Once the direct effects of capital structure on company performance have been examined, it is essential to further investigate by taking agency costs into consideration as this research aims to examine. Although decisions about a company's capital structure affect its profitability and financial stability, managers' use of these types of funding has an enormous effect on performance. This is the situation where the possible conflicts of interest between agents (managers) and principals (owners) are highlighted by agency theory. In the next paragraphs, the direct association between agency cost and firm performance will be discussed.

The positive and significant link between AUTR and ROA displays that when companies employ their assets more efficiently produce better returns on their capital investments. Two primary steps underlie this. Firstly, higher productivity and sales are the result of effective utilization of assets, and this happens without corresponding increases in costs. Ultimately, this increases ROA through improved cost control and larger profit margins. Secondly, companies may enhance profitability by decreasing unused assets, which reduces related expenses such as depreciation and storage. These arguments confirm the hypothesis (H2.1) that agency costs significantly impact return on assets (ROA) and are consistent with some aspects of agency theory. According to this theory, there is a misalignment between the manager (agent) and owner (principal) interests as uncontrolled managers follow their personal goals rather than the shareholders' goals. However, when assets are used effectively, both parties can gain immediately from increased operational effectiveness, lower expenses, and larger profit margins. This means that operational methods that

improve asset efficiency and overall profitability are the outcome of lower agency costs, which are demonstrated by higher utilization of assets and a managerial alignment of interests with owners. These results are consistent with the study conducted by (KALASH, 2024; NGUYEN ET AL., 2023; ROY & CHAKRABORTY, 2023).

Moreover, a strong and significant correlation between AUTR and ROE is also revealed by the investigation and this result implies a greater effect on the value of shareholders because ROE accounts for both financial leverage and profitability. Like ROA, effective utilization of resources increases profitability, but in this instance, the firm's use of financial leverage enhances the benefit in a better way. Companies that have a greater AUTR can convert better returns on resources into a larger improvement in ROE by carefully employing financing through debt. Due to this impact, firms may increase their dividend payments to shareholders without requiring raising equity investments correspondingly. Therefore, a favorable effect on ROE lends credibility to the agency theory that increased AUTR is correlated with reduced agency expenses. Appropriate asset use by managers enhances profitability and demonstrates a dedication to maximizing shareholder value, which is a fundamental principle in reducing agency issues. Hence, the hypothesis (H2.2) that agency costs significantly impact return on equity (ROE) is accepted. The above findings are also similar to the work of (KHUONG ET AL., 2022; NGUYEN ET AL., 2023).

Other interesting findings in this investigation are the positive influence of AUTR on MTBVE. This highlights that high market performance can be achieved by the firms as a result of the effective utilization of assets. Investors assess these firms through possessing a strong management team, along with having lower conflicts of interest. A firm's ability to create a considerable amount of cash flow from its present resources is a reflection of productive asset use. This capability might boost trust among investors and indicate potential for future development. Thus, any improved market valuation compared to the book value could be evidenced. The idea that reduced agency costs, which result from effective asset utilization, contribute to a more positive market impression, is supported by the robust market reaction. The above finding clarifies and supports the hypothesis (H2.3) that agency costs significantly affect market-to-book value (MTBVE), and is in line with agency theory, which asserts that enhanced corporate performance and improved market reputation are caused by a reduction in agency costs. The above findings are also consistent with the studies of (AHMED ET AL., 2023a; HOUQE ET AL., 2022; RASHID KHAN ET AL., 2020; YAN ET AL., 2023).

Furthermore, the findings offer strong evidence in favor of the hypothesis that better performance for non-financial companies in Middle Eastern countries' stock markets is a result of managerial decisions that should be made efficiently. Our results show a significant and favorable relationship between the asset utilization ratio (AUTR) and shareholder value (ROE), efficiency in operations (ROA), and market capitalization (MTBVE). This in-depth examination highlights the different methods that management effectiveness contributes to overall business performance in the Middle Eastern stock markets. A possible way to consider the concept of AUTR is as a stand-in for management efficacy in terms of allocating and using resources. Managers who make excellent use of their resources can increase profits, successfully control spending, and possibly even indicate future development prospects. Thus, this general increase in corporate performance is consistent with the idea that effective decision-making by managers makes a company profitable. The above arguments confirm and accept the third hypothesis (H3) that the efficiency of managerial decisions leads to improved performance for non-financial firms, and are supported by agency theory claims that managers should prioritize optimizing earnings above minimizing waste, which enhances the value of investors, operational efficiency, and value of the market. This is due to the fact that managers' effective decision-making fights for the benefit of shareholders and reduces agency expenses. These findings are also in line with the results of (IMENI ET AL., 2021; NGUYEN ET AL., 2023; SIMAMORA, 2021; TAYEH ET AL., 2023).

After examining the distinct impacts of agency costs and financial structure on firm performance, this study investigates the moderating role of agency costs in the link between capital financing and corporate performance. According to agency theory, the level of agency conflicts (agency problems) that arise between managers and shareholders can be impacted by a company's financing strategy. Based on the results that I found, the discussion of how agency costs measured by asset utilization affect the correlation between capital structure decisions and corporate performance will be explained below.

The interaction term of (AUTR*DTAR) significantly and favorably affects ROA. A possible explanation for this is that companies with typical levels of debt appear to have a lower fall in profitability (ROA) when they implement effective and efficient asset management techniques due to low agency costs related to debt. Hence, by operationalizing resources efficiently through managers, the adverse effect of raising debt financing on ROA is eliminated due to lower related agency costs.

Compared to DTAR, the interaction term of (AUTR*DTER) has a strong and negative influence on ROA, demonstrating that when the resource utilization is ineffective, the positive influence of debt financing on ROA reduces. High reliance on debt financing or equity funding, with inefficient resource utilization, could be a factor in minimizing performance and poor operation. This emphasizes how crucial for non-financial firms in Middle Eastern markets to adopt a mixed capital structure (debt and equity) with effective asset management in order to optimize return on assets because of stronger agency conflicts and their costs associated with higher equity and debt funding. In addition, the interaction term between (AUTR*STDR) and ROA is significant and negative, indicating that high utilization of resources for non-financial firms mitigates the adverse impact of STDR on ROA. The pressure to achieve results swiftly brought on by short-term financing may cause managers to prioritize decisions that might harm their company's long-term achievement. Although a larger percentage of short-term borrowings may be present, effective asset management may lessen these constraints and redirect management resources into methods that increase overall performance among non-financial firms listed on the Middle Eastern Stock Exchange.

The negative and significant interaction between (AUTR*EMR) and ROA suggests a factor that lessens the determinant effect of debt financing on ROA. According to these findings, a substantial debt ratio is typically linked to higher financial risk, it can also result in agency issues due to managers' overspending or the establishment of their empires. Nevertheless, effective utilization of resources combined with low agency costs appears to mitigate these adverse consequences, highlighting the significance of balanced debt and equity in enhancing firm performance (ROA) by bringing managers' and shareholders' objectives into alignment. The above findings reject the hypothesis (H4.1) that agency costs do not exert a moderating influence on the capital structure and return on assets (ROA) relationship and are similar to the arguments of (BAWUAH, 2024; HOANG ET AL., 2019; LEGESSE & GUO, 2020; KONTUŠ, 2021).

The connection between the interaction term of (AUTR*DTAR) and ROE is also significant and beneficial and indicates how effective asset management may increase the benefits of borrowing on equity returns. One possible reason for this is that when agency costs are low (balanced interests between owners and managers), management demonstrates a greater tendency toward effective asset usage. Consequently, this lowers the negative impact of leverage on return on equity (ROE).

However, the correlation between (AUTR*DTER) and ROE is negative and significant. This suggests that executives who use assets efficiently can reduce the adverse effect of DTER on ROE. Additionally, ROE is negatively and significantly impacted by the interaction of (AUTR*STDR), asserting that the detrimental impact of short-term debt on ROE can be lessened by efficient asset consumption that is connected to lower agency costs. Similarly, the relationship between (AUTR*EMR) and ROE is negative and significant, claiming that efficient asset management and appropriate debt policy are necessary for determining ROE. The aforementioned results cannot confirm hypothesis (H4.2) that agency costs do not exert a moderating influence on the capital structure and return on equity (ROE) relationship and are consistent with the work of (ANKAMAH-YEBOAH ET AL., 2021; AYAZ ET AL., 2021; BAWUAH, 2024; HOANG ET AL., 2019).

Similar to ROE, the interaction between (asset utilization and capital structure) with market performance portrays a nuanced picture. The positive association between (AUTR*DTAR) and MTBVE demonstrates that the favorable impact of debt on market value is greatly increased by the effective utilization of assets (low agency cost). However, according to the findings, when agency costs increase, the positive effect of financial leverage on market performance weakens or may even be turned into negative.

The significant connection between (AUTR*DTER) and MTBVE illustrates that efficient asset utilization by managers reduces the favorable effect of DTER on MTBVE, possibly as a result of higher agency costs related to high dependence on debt and equity financing. Additionally, the negative and significant interaction effect between (AUTR*STDR) and MTBVE highlights that the adverse effect between short-term borrowing and firm market performance will be diminished when agency costs are low (when managers employ the firm's resources efficiently and effectively). Last but not least, the beneficial association with EMR suggests that the effective use of assets might strengthen the favorable market sentiment linked to a significant percentage of debt. In other words, the crucial role of mixing (debt and equity) and effective utilization of resources will lower agency costs, thereby enhancing market performance. The results mentioned above fail to validate the hypothesis (H4.3) that Agency costs do not exert a moderating influence on the capital structure and market-to-book value (MTBVE) relationship and are similar to the investigation of (AYAZ ET AL., 2021; BAWUAH, 2024; AHMED ET AL., 2023a; DORUK & ERGÜN, 2023; SIMAMORA, 2021).

Furthermore, the findings of this research provide compelling and strong evidence for hypothesis (H5), according to which the claims made by agency theory are still current, accurate, and useful for non-financial companies that are listed on Middle Eastern stock markets. The noteworthy results obtained by examining different firm performance metrics, such as Return on Equity (ROE), Return on Assets (ROA), and Market-to-Book Value (MTBVE), indicate that agency costs are a key moderator in the link between capital structure and corporate performance. A significant finding that was released in this study is the debt financing at the optimum level that could push managers to focus on the shareholders' value and improve firm performance. For instance, a clear relationship is shown between capital structure metrics and asset management, which implies that efficient asset management might reduce the negative effects of debt on the performance of firms.

This suggests that managers who make effective use of their resources mitigate the negative effects of debt and enhance the profitability of their companies. This result is consistent with the assumptions made by agency theory, which holds that debt at an optimum level can serve as a management-disciplining tool by lowering agency costs and increasing company value. Additionally, according to agency theory, debt financing is one strategy for minimizing conflict of interest (agency problems) and associated costs. This is because when debt levels rise, managers are under pressure to spend money on profitable investments and generate a greater amount of free cash flow. They are also obligated to pay more attention to the achievement of the company and to consistently fulfill their obligations. Consequently, the company's performance can be strengthened and enhanced. These findings are in line with the results of (BAWUAH, 2024; DORUK & ERGÜN, 2023; SDIQ & ABDULLAH, 2022; AHMED ET AL., 2023a; STOILJKOVIĆ ET AL., 2024). Table 23 provides a synopsis of hypothesis testing.

Two robustness tests were carried out to verify the validity, uniformity, and accuracy of the findings obtained from the initial analysis. As part of these supplementary tests, first, macroeconomic factors such as GDP and inflation rate were added to the study models as control variables to adjust for the macroeconomic effects. Also, the Generalized Method of Moments (GMM) estimator was used with the Generalized Least Squares (GLS) approach to address possible problems with panel data analysis. Secondly, an alternative agency cost measure based on industry average deviation was used. The results of these robustness checks confirm the preliminary findings, showing that under different circumstances, there is an ongoing connection

between financial structure and firm performance as well as a moderating influence of agency costs on that link. The comparable results obtained from estimating approaches provide more support to the research by indicating that our findings are not dependent on the specific econometric approach used or any endogeneity problems.

Finally, a qualitative assessment was also carried out as an additional and complementary analysis to the quantitative study to give a deeper comprehension of the outcomes. The quantitative results were supplemented with insightful information from the qualitative investigation, in which I used a qualitative case study technique. The statistical associations that were identified were better understood and contextualized due to this analysis. This qualitative analysis shows a U-shaped link between financial structure, corporate performance, and agency expenses, which supports the findings from the quantitative discussion. Overall, the findings display that business performance is significantly influenced by financial structure, and this relationship is significantly moderated by agency costs.

The present research focuses on the Middle Eastern capital market; therefore, the results may not be applied in other regions. Nevertheless, the knowledge obtained presents the framework for comprehending the moderating influence of agency costs. Therefore, additional research can broaden these conclusions by using data from other countries or regions that offer comparability and solve the problems of generalizability.

Table 23. The outcome of hypothesis testing

Objectives	Postulated Hypotheses		Decision
Objectives 1 and 2	**H1.** There exists a statistically significant relationship between a non-financial firm's capital structure and its financial performance on Middle Eastern stock exchanges.		
	H1.1	A company's debt level (financial leverage) has a significant effect on its return on assets (ROA)	Accepted
	H1.2	A company's debt level (financial leverage) has a significant effect on its return on equity (ROE)	Accepted
	H1.3	A company's debt level (financial leverage) has a significant effect on its market-to-book value (MTBVE)	Accepted
Objective 3	**H2.** There is a statistically significant connection between the intensity of agency costs and the performance of non-financial companies listed on stock exchanges in Middle Eastern countries.		
	H2.1	Agency costs significantly impact return on assets (ROA)	Accepted
	H2.2	Agency costs significantly impact return on equity (ROE)	Accepted
	H2.3	Agency costs significantly impact market-to-book value (MTBVE)	Accepted
Objective 4	**H3**	The efficiency of managerial decisions leads to improved performance for non-financial firms listed in Middle Eastern countries' stock markets	Accepted
Objective 5	**H4.** The impact of financial structure on the financial performance of non-financial firms listed on Middle Eastern stock exchanges is not contingent upon the level of agency costs.		
	H4.1	Agency costs do not exert a moderating influence on the capital structure and return on assets (ROA) relationship	Rejected
	H4.2	Agency costs do not exert a moderating influence on the capital structure and return on equity (ROE) relationship	Rejected
	H4.3	Agency costs do not exert a moderating influence on the capital structure and market-to-book value (MTBVE) relationship	Rejected
Objective 6	**H5**	The propositions stated by agency theory are still applicable and valid for non-financial firms listed on Middle Eastern countries' stock markets	Accepted

Source: Author elaboration

6 CONCLUSION, POLICY IMPLICATION, AND LIMITATION

This chapter attempts to provide an overview of the findings from the prior chapter. The policy implications are also discussed in light of the above results. Finally, a brief description of the study limitations is presented at the end of this chapter.

6.1 Conclusion

In a highly competitive environment, firms suffer a variety of challenges and difficulties in obtaining their objective of profitability and high performance. Therefore, the decisions that are made by managers regarding asset management and capital structure must be carefully analyzed before they are implemented. In order to follow the principle of sustainability and develop the financial outcomes, companies need to assess their performance and explore the possible advantages of utilizing resources. According to agency theory, the conflict of interest that results from the separation of duties between managers and principals minimizes firm performance and profitability. Nevertheless, the theory claims that debt at the balanced level can be applied as a form of discipline and minimize agency problems, and enhance profitability. The main objective of this study is to expand the current literature by empirically examining hypotheses related to the association between financial structure, agency costs, and company performance. Moreover, it examines how agency costs as a moderator affect the nexus between capital structure and firm outcomes among non-financial firms recorded on Middle Eastern capital markets. Finally, it will examine the validity and usefulness of the application of agency theory.

Using an integrated method, this research gathers data using both quantitative and qualitative methodologies. The quantitative data supporting the fundamental analysis constitute the primary method of offering proof for answering research questions and evaluating the study assumptions. The quantitative data for this research is based on secondary data and collected from reputable financial databases such as Thomson Reuters Eikon, and also from audited annual reports of 433 non-financial companies listed on Middle Eastern stock markets. The data covers thirteen years, from (2010-2022). To supplement the quantitative results and obtain a better understanding of how financial decisions are reached, a qualitative case study technique has also been employed in conjunction with quantitative analysis.

The negative and statistically significant correlation between DTAR with ROA, and DTER with ROA and ROE suggests a novel insight that high reliance on excessive amounts of debt is harmful to non-financial firms because it has higher financial risk and expenses. The findings also demonstrate a negative effect of short-term debt on ROA, ROE, and MTBVE, as higher short-term debt often has interest rates that are greater than those of long-term debt, and this has the potential to eat into firms' profits and diminish shareholders' returns and market valuation. Moreover, a pronounced, negative correlation between EMR with ROA and ROE indicates that greater dependence on debt funding increases agency costs, thereby lowering performance and shareholder return. The above findings strongly support a balanced capital structure (mixture of debt and equity) or reasonable levels of debt financing as an instrument for enhancing firm performance and maximizing shareholders' return. Additionally, MTBVE is significantly influenced by DTAR, DTER, and EMR. Again, this implies that the market accepts optimum levels of debt, as it opens opportunities for expansion and efficient use of resources.

Moreover, asset utilization presents a positive and significant influence on both firm performance (ROA, ROE) and market performance (MTBVE), which suggests that agency costs hamper firm achievements. This means that when managers utilize resources efficiently and effectively, they can obtain several goals, such as a larger market share, more profits for shareholders, and higher profitability due to a reduction in agency conflicts and their costs (integrating the interests of the manager (agent) and shareholder (principal)), that is a strong managerial decision towards enhancing firm financial performance.

Regarding the moderating effect, the study found that agency cost significantly moderates the relationship between financial structure (DTAR, DTER, SDTR, EMR) and firm and market performance (ROA, ROE, and MTBVE). These findings signify a U-shaped correlation, when performance climbs with debt until reaching the optimum level and then ultimately drops due to a high level of debt and related agency costs (weak asset utilization). However, when the firms use the optimum level (balanced capital structure), the firm value is improved, and agency costs reach the minimum level due to high asset utilization, that is, agency costs significantly moderate the connection between debt financial choice and firm achievements. Collectively, these findings support the usefulness and reliability of agency theory through understanding the association between the financial structure and performance. The theory declares that debt at the balanced level can be applied as a form of discipline and minimize agency problems. This strategy may also

push the manager's power to focus on the firm's objectives, as borrowing drives managers to first prioritize shareholders' benefits. As a result, they are forced to utilize resources effectively, which improves the company's performance as a whole.

To confirm the validity, consistency, and accuracy of the results derived from the preliminary outcomes, two robustness tests were conducted. The results of these tests confirm the preliminary findings, showing that under different circumstances, there is an ongoing connection between corporate performance and financial structure as well as a moderating influence of agency cost on the above relation.

Furthermore, the qualitative analysis also supports and complements the U-shaped link observed from the quantitative analysis between capital financing, corporate performance, and agency expenses. The qualitative analysis shows that reasonable debt levels encourage managers to consider the interests of shareholders by matching their interests with owners, which improves performance and reduces agency costs. On the other hand, substantial debt levels may remove pressure on management, which leads to agency challenges and perhaps harmful conduct that negatively affects profitability.

6.2 Policy implications

Based on the study findings, we provide the following practical implications that highlight the potential significance of the results.

1. This thesis examines the empirical relationship between financial leverage and corporate performance. It also investigates how this link is strengthened or weakened by agency costs. This study contributes new and novel findings from a less developed region to a library of previously published work regarding the relationship between financial structure with business performance, and expands the corpus of knowledge already available in corporate finance and accounting literature. It also fills the gap in the literature by utilizing the long-term perspective and accounting for the moderating influence of agency cost on the aforementioned relation.

2. It is suggested that policymakers and banks in the Middle East regulate the amount of debt acquired by non-financial firms and encourage them to strive for a well-rounded capital structure that encompasses both debt and equity financing. This avoids the problem of relying excessively on debt or equity.

3. Strategies that enhance the utilization of firms' assets should be supported by laws and policies. This can reduce agency costs and enhance the performance of the company as a whole.

4. Policymakers should support the use of reasonable debt levels as an effective instrument for corporate governance. Managers may be more likely to focus on shareholder benefit and efficient use of assets ahead of time, given the requirement to pay off debt.

5. Government agencies have the ability to heavily prioritize transparency and careful disclosure practices about a company's financial structure and risk-reduction strategies. This enables investors to make informed decisions and maintain management accountable.

6. The findings indicate that, in comparison to the 3-4 mean value from prior investigations, the sample firm's level of debt is not extreme, and companies in the non-financial sector can decide to borrow additional money in order to reduce agency problems and boost their financial performance.

7. Investors can take advantage of accounting data, such as levels of debt and information related to a company's financing policies, to assist their financing choices. This data may be used to predict future outcomes and assess the achievements of the companies they are reviewing. Their choice would therefore be less harmful and more realistic.

8. The influence on possible agency costs should be taken into consideration by stakeholders and policymakers when creating organizational governance structures or financial legislation. Minimizing conflicts of interest and encouraging actions that benefit owners must be the primary objectives of policy.

9. The research emphasizes the necessity of financial literacy for corporate entities, particularly in choosing the best financial policy. From this perspective, conferences, business debates, workshops, training, and other educational programs could be helpful to provide knowledge for the firms that need to make financial decisions.

10. The results point to the necessity of a strong regulatory structure for the Middle Eastern financial markets. This approach needs to strike a balance between protecting investors and making it easier for firms to obtain financing.

6.3 Limitation

Similar to previous studies, this research has some limitations, and they are listed below:

1. The present investigation employed data from listed non-financial firms, as these companies allow all parties to make investments and hold a portion of the firm by selling stocks in the marketplace. Therefore, it is recommended for future studies to conduct a study and incorporate data from non-listed firms to see if any comparable findings can be found, as they do not have a stock market and their ownership is held by a limited number of investors.
2. Given that Middle Eastern financial institutions are expected to have distinct and unique financial and regulatory requirements, we encourage future research to examine the links that have been taken into account in our analysis.
3. The results of the current research are focused on the Middle Eastern stock market, which limits how broadly they can be applied to other regions. Nonetheless, the knowledge acquired establishes the foundation for comprehending the moderating effect of agency issues. By adding more countries or regions, future research could broaden this study, enabling comparisons and resolving the generalizability problem.
4. In order to reduce the bias caused by missing variables, future studies could examine the moderating role of certain macroeconomic parameters in the relationship between financial structure and company performance. It is assumed that the economic conditions of a given region have some bearing on the corporate-level variables, including performance and important choices made by the company's manager.
5. Since the field of behavioral finance has developed, studies related to agency problems and associated costs are required to make sure businesses can optimize their profits while maintaining a suitable level of borrowing in their capital framework.

7 NEW AND NOVEL SCIENTIFIC FINDINGS

This thesis investigated the interplay dynamic between capital structure and firm financial performance, and it further examines how agency costs moderate the association between these two factors under the consideration of agency theory. It consists of six objectives and eleven hypotheses that were tested through the use of econometric modeling instruments. The findings of this study include some new and novel scientific findings that may serve as a foundation for future investigations. Moreover, further analysis might be executed to utilize novel and supplementary analytical constructions in the research framework, such as creating a multigroup examination for various countries.

1. From the findings of this research, I can confirm that there is a statistically significant and negative connection between financial structure proxies (debt-to-asset ratio, short-term debt ratio, and equity multiplier) and indicators of firm performance (ROA and ROE) among non-financial firms in the Middle Eastern markets. This highlights that firm performance is lowered by excessive borrowing (short- or long-term financing) beyond an optimum level of debt. In addition, the adverse effect of equity multiplier on corporate performance suggests a significant stage of balanced financial structure. This means that a higher equity multiplier is recorded as a result of high financing through debt. If this debt is not controlled well, adequate firm performance may not be achieved due to different interests observed between managers and owners. These findings emphasize financial success and economic expansion for the long run that could be obtained by effective financial management and reduction on relying high debt burden.

2. From the viewpoint of market performance, I discovered that a balanced level of debt has the potential to develop company performance in the market, improve shareholders' confidence, and stock price growth. Firms that apply a reasonable amount of borrowing have more investment opportunities, and this leads to higher economic activity and higher market perception.

3. The study findings confirm that one of the tools that motivates and disciplines managers is debt funding. This is due to the fact that debt financing puts emphasis on managers to improve the firm's cash flow and participate in attractive project investments. From this perspective, managers are accountable and should continue to meet their commitments and achieve the firm's objectives. Hence, the firm's financial performance can be strengthened and heightened.

4. The findings acknowledge that the financial outcomes of non-financial firms are significantly affected by effective asset use. This claims that when managers utilize assets efficiently, agency cost will be reduced and as a result the performance of non-financial firms is enhanced. Moreover, effective resource utilization can be seen as a good sign of operational performance, and this leads to avoiding intensive conflict that may be observed between owners and managers through supervising the firm's objectives and managers' plans. The above results are also compatible with stakeholder interests, as an effective management plan helps to increase profitability and pay governments taxes and spend funds in building social infrastructure.

5. Based on the results, I can also verify that the relationship between capital structure and agency costs is significantly affected by moderating variables such as agency costs. This implies that the magnitude of agency costs has a significant impact on determining debt funding and its effect on corporate performance. This novel understanding emphasizes the significant role of a moderate level of debt policy in reducing agency costs, increasing efficiency, and thereby improving firm value. It also implies firms should use both internal efficiency and external financing choices to fund their projects. In other words, enhanced business performance across all indicators (ROA, ROE, MTBV) is the result of a balanced capital structure (combination of debt and equity) with efficient handling of assets.

6. From the findings of this research, I discovered the continued usefulness, applicability, and validity of agency theory through understanding the association between the financial structure and performance of the firms among non-financial firms registered on the Middle Eastern stock market, particularly when the different objectives between agents and principals exist. This finding emphasizes accountability and competent governance that helps in supporting reasonable economic policies and inequalities.

8 SUMMARY

As representatives of the company, managers work to optimize the firm's efficiency and value to achieve their own goals and reputation. On the contrary, the company's shareholders want to optimize their net worth and return on investment from the company. Other stakeholder groups, including lenders, customers, suppliers, employees, and communities, want their best interests secured and promoted. Between the various stakeholders in the company, these goals of maximizing and protecting interests would undoubtedly lead to divergence of interests, thereby creating costs. Through theoretical arguments and hypotheses, the theory of agency clarifies the costs caused by the conflict of interest between managers (agents) and shareholders (principals) in the corporate environment. One of the contentious topics in the literature that might lead to the duality of interests between agents and principals, which will affect how well a corporation performs, is the structure of the firm's capital. The current investigation intends to explore the relationship between capital financing and corporate performance as well as the modulating role of agency cost in that relationship under the lens of agency theory.

This study adopts a mixed methods approach, drawing on both quantitative and qualitative data collection techniques. The primary method of providing evidence for obtaining research objectives and testing study hypotheses is quantitative data. The quantitative data comes from a balanced panel, collected from reputable financial databases such as Thomson Reuters Eikon and also from audited annual reports of 433 non-financial firms listed on Middle Eastern stock markets over the period 2010-2022. Additionally, qualitative data based on a case study approach in conjunction with quantitative analysis is used in this study to complement and support the quantitative results. Using a panel econometric approach, namely fixed-effects regression with GLS cross-section weights, the results show that the structure of firm capital indicated by (DTAR, DTER, and EMR) has a significant and negative effect on firm performance (ROA and ROE), but a positive effect on market performance (MTBVE). This claims that high dependence on excessive amounts of debt in forming capital is harmful to the company, as they are expected to be risky and more expensive. STDR is also found to affect all performance metrics inversely. This is due to STDT's habit of carrying higher and more frequent interest payments in comparison to long-term debt. Asset utilization ratio (AUTR) has a positive and significant effect on all performance proxies, suggesting that agency costs hamper firm achievements. This means that when managers utilize

assets efficiently and effectively, they can reach beneficial goals, such as a larger market share, more profits for shareholders, and higher profitability.

Further, our analysis finds that agency costs, as assessed by (AUTR), significantly moderate the link between financial leverage and firm performance. This suggests a U-shaped correlation when performance climbs with debt until reaching the optimum level and then ultimately drops due to a high level of debt and related agency costs (weak asset utilization). However, when reaching the optimum level (balanced capital structure), the firm's performance is improved due to low agency costs related (High utilization of firm assets), that is, agency cost significantly moderates the connection between financing and firm achievements. Robustness tests are also conducted, and the results confirm the preliminary findings, showing that under different circumstances, there is an ongoing connection between financial structure and corporate performance, as well as a moderating influence of agency cost on the above relation.

Qualitative analysis also supports and complements the U-shaped relationship observed from the quantitative analysis between financial structure, business performance, and agency expenses. These findings validate the empirical agency theory, that managers are prevented from executing unconscious and hasty decisions by mounting debt. To fulfill their responsibilities, managers have to pay closer attention to their efficiency. The research offers significant perspectives to managers and investors on their reliance on figures from accounting, including debt levels, financing methods, and evaluating agency costs to optimize the financial results of the company.

9 APPENDICES

A1: References

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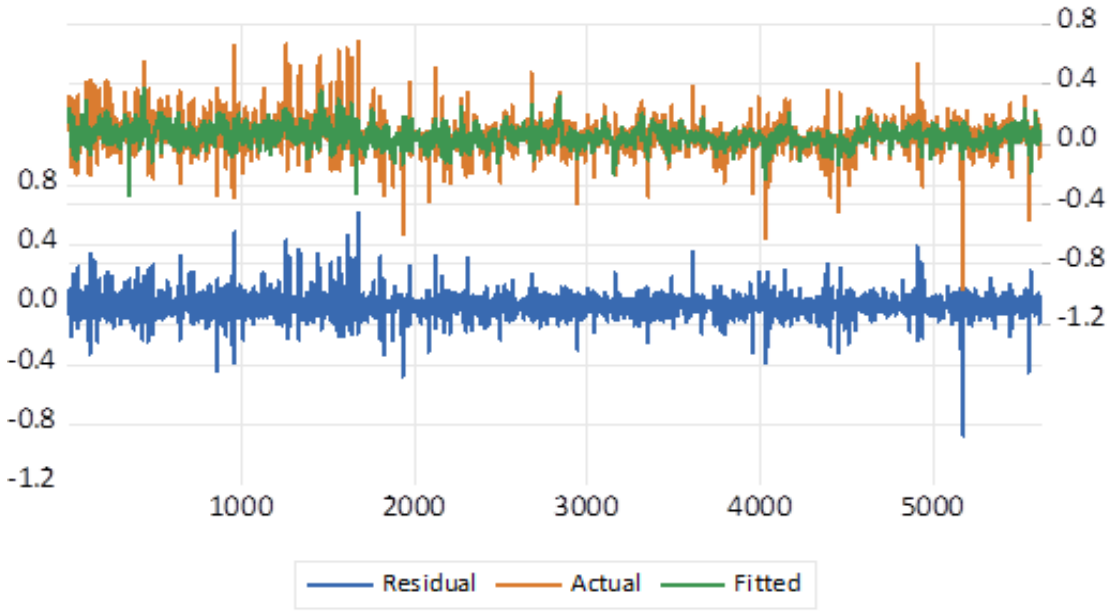
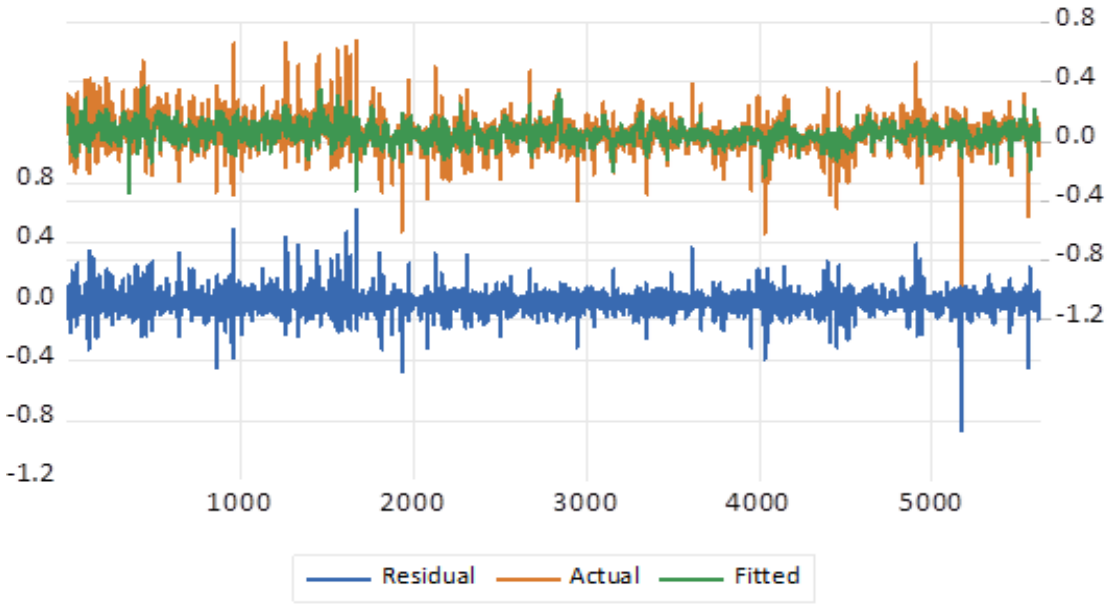
A2: Panel GLS model graphs

1. ROA before the moderation



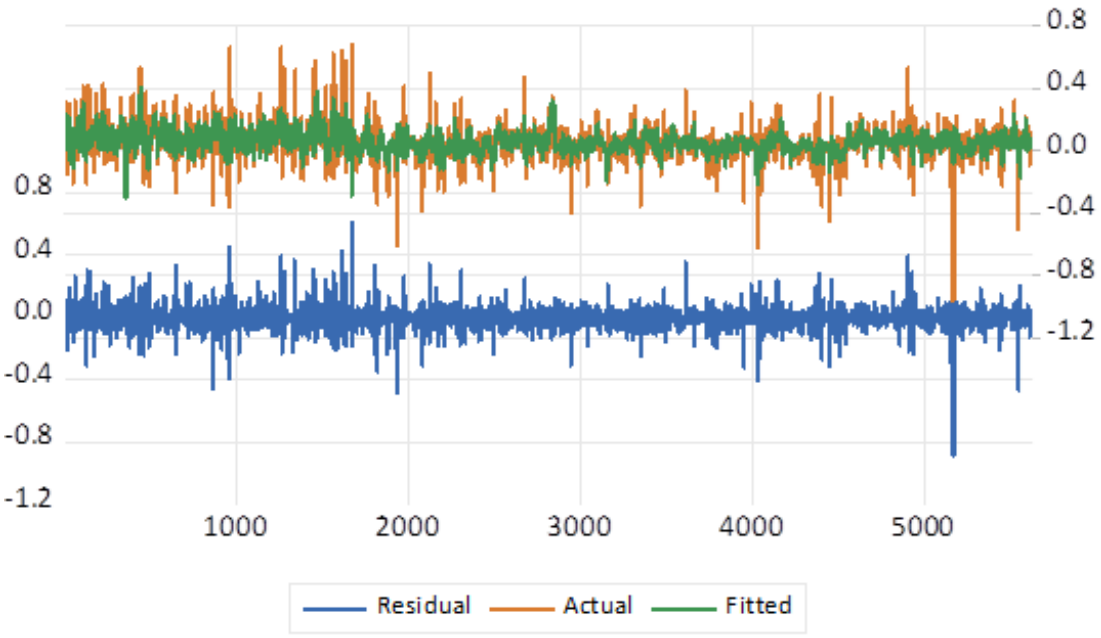
Source: Author elaboration based on EViews output

2. ROA after the moderation



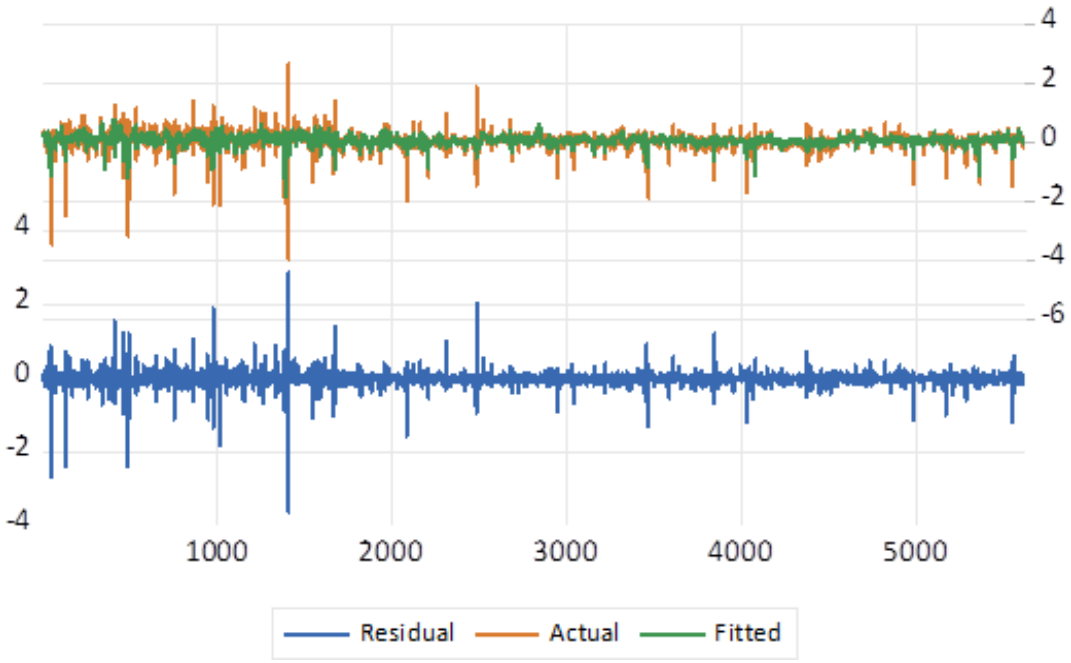
Source: Author elaboration based on EViews output

3. ROA during robustness check



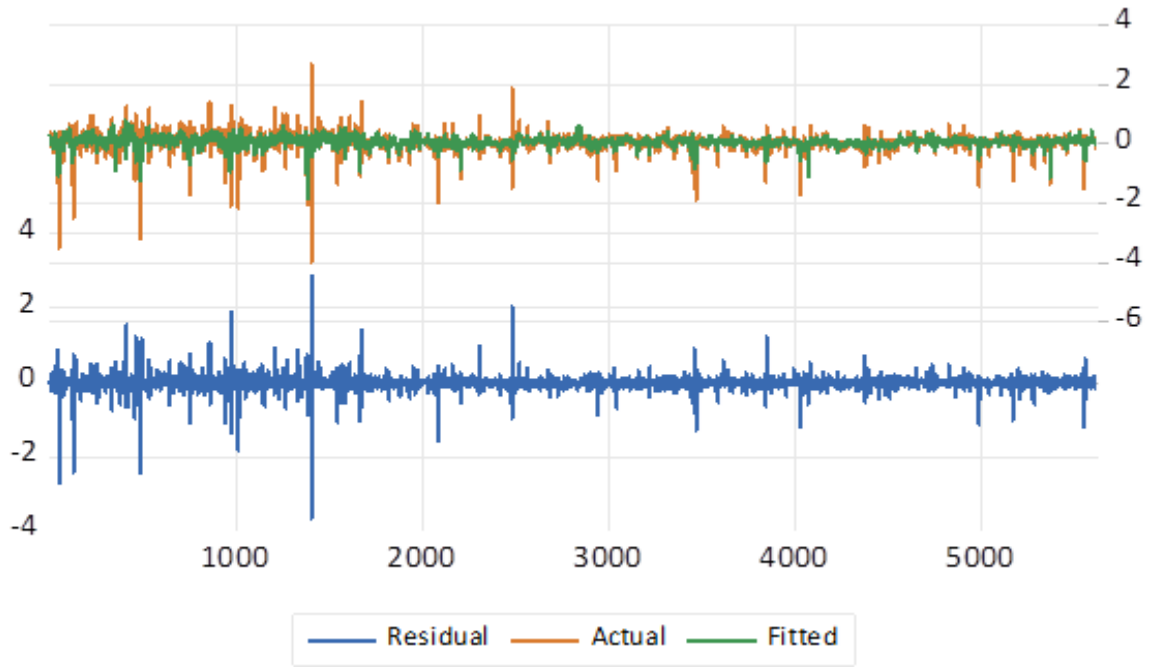
Source: Author elaboration based on EViews output

4. ROE before the moderation



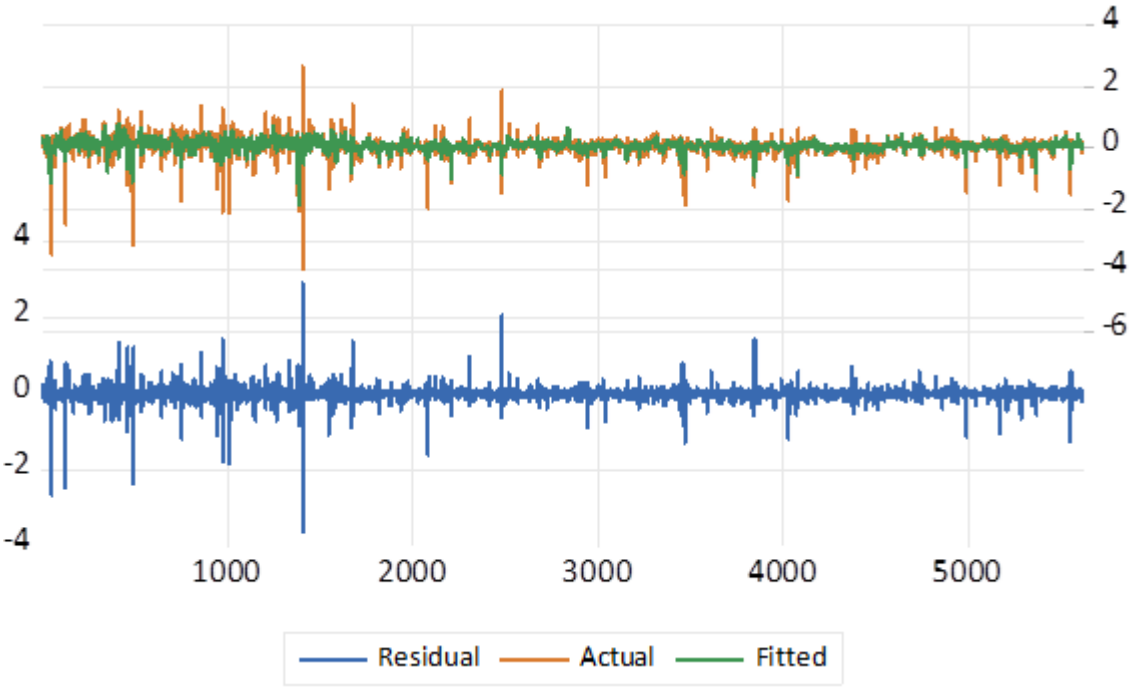
Source: Author elaboration based on EViews output

5. ROE after the moderation



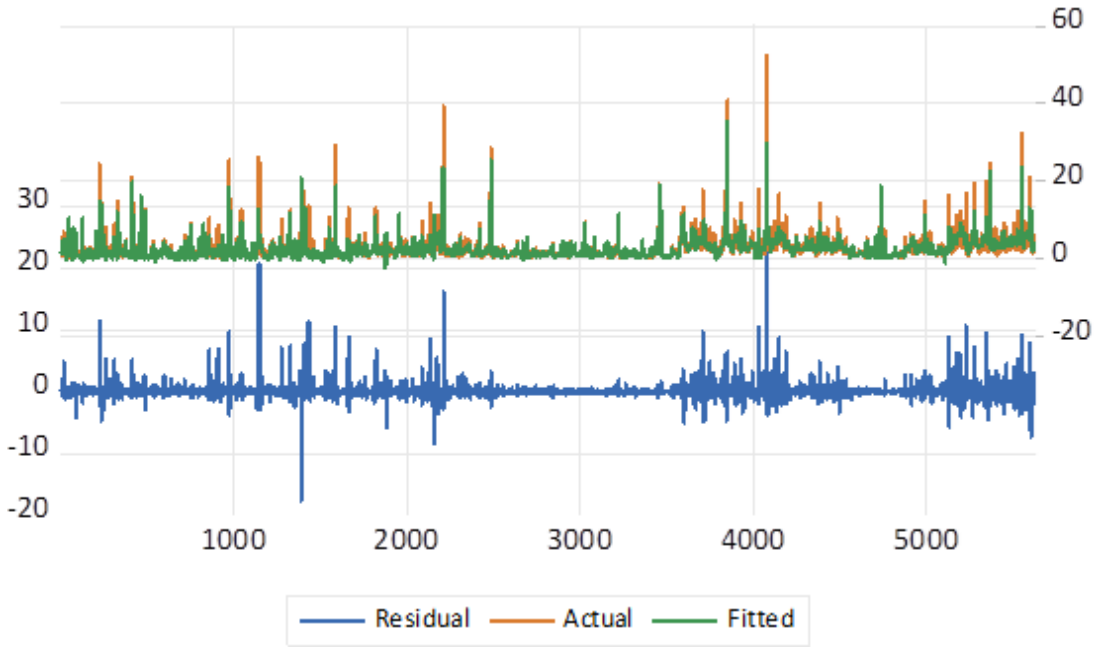
Source: Author elaboration based on EViews output

6. ROE during robustness check



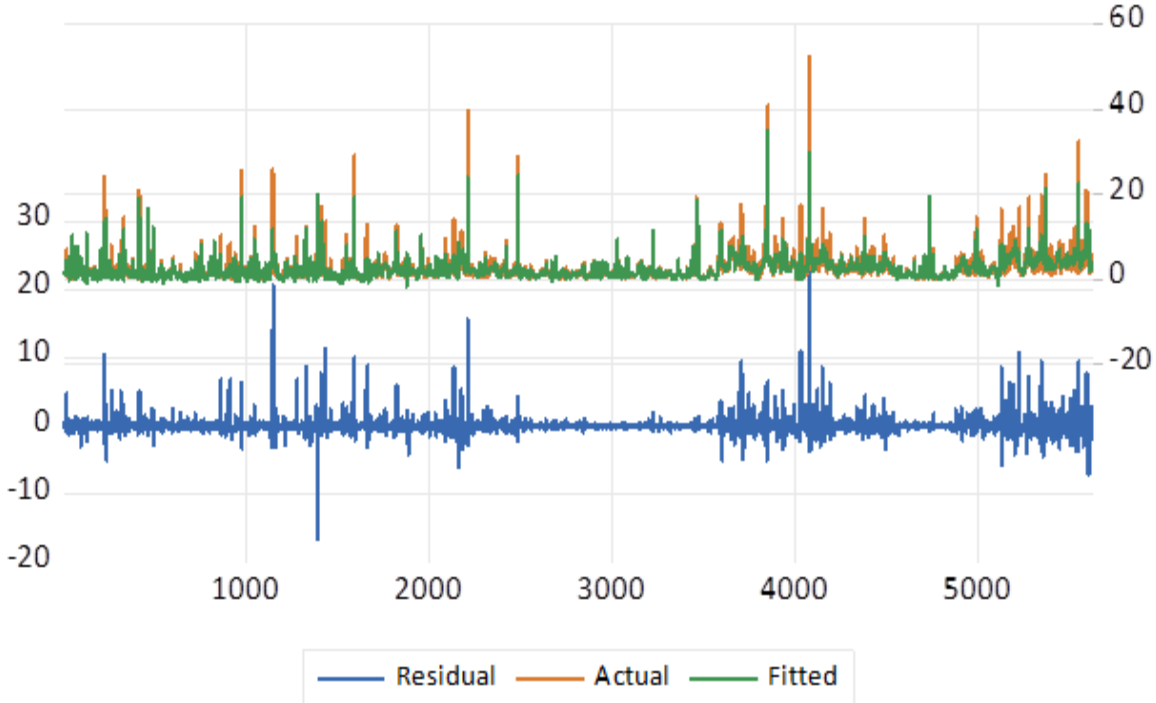
Source: Author elaboration based on EViews output

7. MTBVE before the moderation



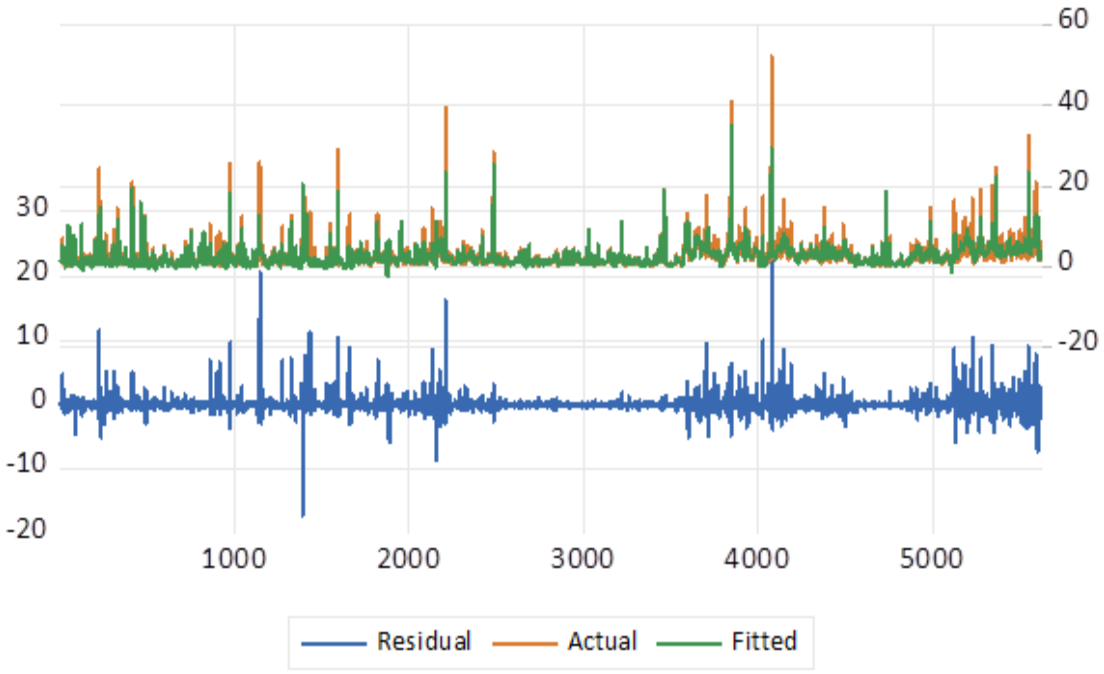
Source: Author elaboration based on EViews output

8. MTBVE after the moderation



Source: Author elaboration based on EViews output

9. MTBVE during robustness check



Source: Author elaboration based on EViews output

A3: Supplementary evidence from case studies

Part A: Firm demographics

Market capitalization:

Age of the firm:

Number of employees:

Geographical location:

Part B: Determinant of Capital Structure

Case number	Year	Sources of financing			
		Internal financing	External financing		Equity issuance
			STD	LTD	
	2010				
	2011				
	2012				
	2013				
	2014				
	2015				
	2016				
	2017				
	2018				
	2019				
	2020				
	2021				
	2022				

Note: giving indexes: (0 = Information not available, 1 = No, 2 = Yes)

Part C: Firm Performance Indicators

	Year	Investor Relations	Risk Management and Resilience	Profitability	Market trend movement	Market Perception	Planned expansion
Case number	2010						
	2011						
	2012						
	2013						
	2014						
	2015						
	2016						
	2017						
	2018						
	2019						
	2020						
	2021						
	2022						

Note: giving indexes: (0 = Information not available, 1 = No, 2 = Yes)

Part D: Governance and Agency Cost

	Year	No CEO Duality	Audit Com mittee	Compensation Committee	Board Independ ence	Evidence of No Conflicts of Interest	Regular board meeting	Disclosure of executive compensation	Corporate governance committee
Case number	2010								
	2011								
	2012								
	2013								
	2014								
	2015								
	2016								
	2017								
	2018								
	2019								
	2020								
	2021								
	2022								

Note: giving indexes: (0 = Information not available, 1 = No, 2 = Yes)