

The Roles of Market Concentration and Diversity in Exploring the Nexus between Financial Leverage and Firm Performance

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ABSTRACT

The **purpose** of the study is to determine the relationship between financial leverage and the financial performance of companies in the insurance industry in Jordan, taking into account the influence of market concentration and product diversity. It analyzes data from 20 Jordanian insurance companies over 15 years (2005–2019). The study reveals a positive connection between financial leverage and insurance company profitability, with product diversification enhancing this relationship. Initially, market concentration had a negative impact on return on equity, but product diversification turned it into a positive influence. Additionally, the study highlights the positive mediating role of market concentration in the financial leverage-financial performance relationship. These findings have practical implications for insurers, emphasizing the need for diversified product portfolios and effective financial leverage strategies in a competitive market. This research contributes to understanding capital structure dynamics in emerging markets, specifically in the Jordanian insurance sector, by providing empirical evidence of the mediating and moderating effects of market concentration and product diversity.

Keywords: market concentration; diversity of products; financial leverage; financial performance; insurance industry

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INTRODUCTION

Capital structure decisions are of utmost importance for insurance companies, as they directly affect financial stability, risk management, and long-term sustainability. By balancing debt and equity in their funding sources, these companies can optimize their capital structure, finding the right risk-return equilibrium. Capital is crucial for meeting insurance obligations like claims and damages [1]. The interplay between capital structure, market concentration, product diversity, and performance has gained significant attention. In a competitive environment, capital structure goes beyond value maximization; it becomes a fundamental factor influencing competitiveness.

The Jordanian insurance industry faces challenges due to high market concentration, dominated by a few major players that have caused financial problems and losses for others. Jaloudi's research [2] highlights this high concentration with a (H-H) index of 529, a median market share of 2.8%, and only four companies having a market share exceeding 5%. The seven largest providers account for roughly half of all premiums. Consequently,

net profit margins are notably low, with a median of 1.9%. Increased competition leads to higher target capital ratios and quicker adjustments towards these targets. *Figure 1* illustrates the high market concentration in the Jordanian insurance market.

The insurance sector in Jordan, it faces another significant challenge as insurance companies tend to prioritize car insurance and health insurance. While these two forms of insurance are undoubtedly crucial for individuals and businesses, the concentration on them has resulted in limited diversity in the overall insurance market. Other essential types of insurance, such as property insurance, life insurance, and liability insurance, often receive less attention as shown in *Fig. 2* below. This imbalance not only narrows the range of coverage options available to consumers but also limits the overall growth and development of the insurance industry in Jordan.

Product diversity is a factor that can impact the link between financial leverage and financial performance in Jordanian insurance. A diverse product range allows insurers to meet varied customer needs, enhancing resilience and risk management [3]. However, managing

such diversity poses challenges in resource allocation, operational efficiency, and profitability. This research aims to unravel the complex dynamics of the financial leverage-performance relationship in emerging markets, specifically the Jordanian insurance sector. By exploring how market concentration mediates and product diversity moderates this relationship, the study offers insights for theory development and practical guidance for insurers in similar emerging market contexts.

LITERATURE REVIEW

The Relationship between Financial Leverage and Financial Performance

Insurance companies operate in a unique business environment where risk transfer and financial protection are central. Their profitability is influenced by various factors, including capital structure decisions. The insurance business involves collecting premiums and investing funds to generate returns. Optimal capital structure decisions can impact the cost of capital, interest expenses, and financial risk, leading to enhanced profitability. Leverage choice affects investment capabilities, claim loss absorption, and overall financial health. Therefore, insurance companies must carefully evaluate the trade-off between leverage benefits and risks to ensure long-term sustainability. The theories of capital structure, such as Modigliani and Miller's MM1 and MM2, initially proposed that financing decisions have no impact on company performance in perfect markets. However, they later acknowledged the value-enhancing potential of changing capital structure, particularly through increased debt, due to the tax advantages it offers.

Theories of capital structure offer insights into how companies determine their optimal financing mix. The trade-off theory, proposed by Kraus and Litzenberger [4], highlights the balancing act between the tax advantages of debt and the costs associated with financial leverage, including the risk of bankruptcy. The agency theory, introduced by Jensen and Meckling [5], focuses on minimizing conflicts of interest between managers and shareholders, suggesting that higher leverage can align their interests. In contrast, the pecking order theory, presented by Myers and Majluf [6], suggests a preference for internal financing over external financing due to asymmetric information, indicating a negative relationship between capital

structure and company performance. These theories provide valuable insights into the factors influencing capital structure decisions and their implications for company performance.

The empirical literature on the relationship between capital structure and insurance company profitability differs from the theoretical literature. Some studies report positive links between capital structure and profitability [7–9] while others, like Suhartono [10] and Gundu [11] suggest a negative relationship with financial leverage. Overall, there is no consensus on the exact nature and strength of this relationship. The existing theories and studies highlight its complexity, influenced by factors like market dynamics, firm-specific traits, and industry-specific elements. Further investigation is needed to explore these factors and their interactions, gaining a more nuanced understanding of the financial leverage-profitability relationship in insurance companies. Based on this literature review, the research presents the following hypotheses.

H1: There is a positive significant relationship between financial leverage and the financial performance of insurance companies in Jordan.

The Moderating Influence of the Diversity of Products on the Relationship between Financial Leverage and Financial Performance

The diversity of products within insurance companies can play a moderating role in the relationship between financial leverage and financial performance. When insurance companies have a diverse range of products in their portfolio, it can influence the impact of financial leverage on their overall performance [12]. The diversity of products allows insurance companies to tap into different market segments, reduce their dependence on specific product lines, and capture a wider customer base [13]. Agency theory suggests that the relationship between financial leverage and financial performance is influenced by the alignment of interests between shareholders and management [14]. When firms diversify their product offerings, it can affect the risk profile of the company and alter the incentives and behaviour of management. Product diversification can provide a buffer against the financial risk associated with high leverage, thus reducing agency costs and enhancing financial performance. Nahda and Rahmadana [15] state that there is a positive

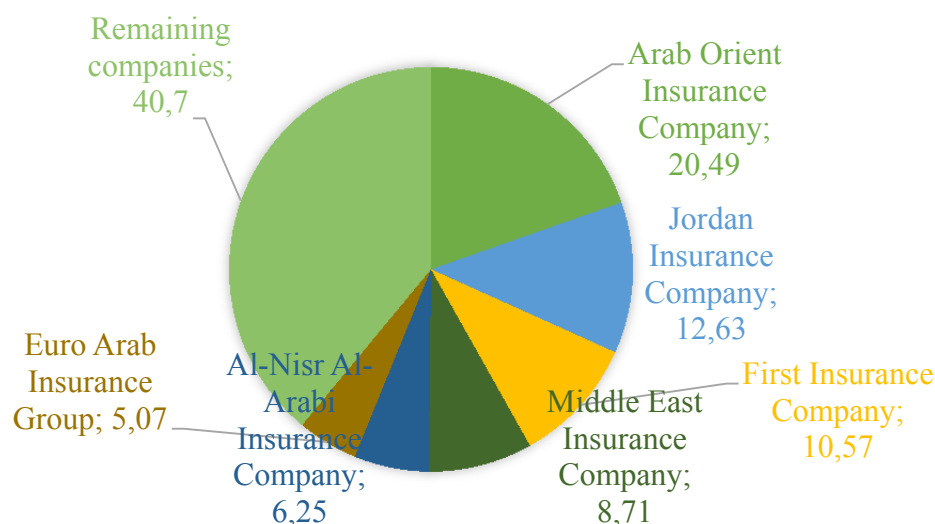


Fig. 1. The High Concentricity in the Jordanian Insurance Market

Source: The author's calculations are based on data from the Jordan Insurance Federation (Jif), the Annual report of the Insurance Companies Association for the year 2019. URL: www.joif.org (accessed on 19.05.2023).

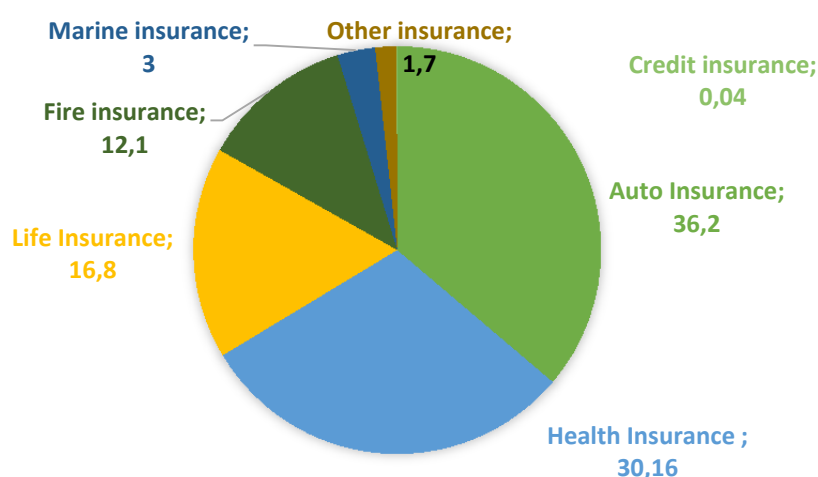


Fig. 2. The Shares of Insurance Branches out of the Total Premiums

Source: The author's calculations are based on data from the Jordan Insurance Federation (Jif), the Annual report of the Insurance Companies Association for the year 2019. URL: www.joif.org (accessed on 19.05.2023).

relationship between diversification and leverage, indicating that a diversity of products can mitigate the risk associated with high levels of financial leverage by providing revenue streams from multiple sources. This diversification of revenue streams can help firms withstand economic downturns and reduce the impact of financial distress. Septina [16] concluded that product diversification can enhance a firm's ability to exploit market opportunities and capture a broader customer base. This increased market reach can positively impact financial performance, especially when accompanied

by effective marketing and distribution strategies. However, larger investments may not necessarily lead to higher net profits for the insurance companies. According to Kanini et al. [17], increased leverage could have a negative impact on the performance of insurance companies if uncontrolled expansion into certain insurance products increases underwriting losses due to the high risks assumed.

H2: Product diversity moderates the relationship between Financial Leverage and the financial performance of Jordanian insurance companies.

The Moderating Influence of the Diversity of Products on the Relationship between Market Concentration and Financial Performance

The relationship between market concentration, as indicated by the Concentration Ratio (CR) of the largest insurance firms in the market, and firm profitability, as measured by the Market Share (MS) of the insurer, is influenced by various mediating factors. One of the key determinants of this relationship is the role played by product variety. The concept of product variety is rooted in economies of scope theory, which posits that businesses can achieve synergistic advantages and cost efficiencies by expanding their range of product offerings within the same industry. Through product diversification, companies can generate a wider array of goods while leveraging their existing resources and competencies [14].

In the insurance industry, the positive association between product diversification and financial performance, particularly within the context of the interaction between market concentration (CR) and market share (MS), can be attributed to several key factors. Diversified product portfolios enable insurers to spread risk, generate revenue from various sources, enhance customer retention and loyalty, establish competitive advantages, adapt to dynamic market conditions, capitalize on cross-selling opportunities, and balance their portfolio in concentrated markets. Ultimately, this contributes to improved financial performance by mitigating concentration-related risks, increasing revenue streams, and bolstering their market presence in situations where limited competition and market dynamics can significantly impact profitability [3, 18].

Empirical research consistently supports the notion that insurance companies offering diversified product portfolios tend to exhibit enhanced financial performance by reducing risk exposure and expanding revenue streams. Numerous studies have established a positive correlation between product diversification and financial performance. For example, Septina [16] found a positive relationship between the concentration ratio (CR) of the largest insurance firms in the market and the market share (MS) of the insurer. Similarly, Aivazian et al. [19] observed a positive association between product diversification and profitability, suggesting that a broader range of insurance products can lead to increased revenues and improved financial performance. Moreover, product diversity plays

a crucial role in mitigating financial risks for insurance companies. Altuntas et al. [20] noted that diversified product portfolios assist insurance firms in reducing exposure to specific risks associated with particular insurance lines. This diversification effect contributes to more stable earnings and improved profitability for insurance companies. While limited attention has been given to exploring the mediating role of product diversification specifically on the relationship between the concentration ratio (CR) of the largest insurance firms in the market and the market share (MS) of the insurer, insights from studies conducted in other sectors, such as the research conducted by Cheng and Kesner [21] in the manufacturing industry, indicate that product diversification can mediate the relationship between market concentration and profitability, leading to higher performance for companies pursuing a concentrated market strategy.

However, while product diversification can positively impact profitability, it also introduces operational complexities that can affect financial performance. Effectively managing a diverse product portfolio requires additional resources, such as expertise in underwriting, claims management capabilities, and distribution channels. These resource requirements can lead to higher operational costs, potentially offsetting the profitability advantages of diversification. Additionally, the success of product diversification relies on insurers' ability to efficiently handle and integrate various product lines, ensuring consistent quality, pricing, and customer service across the portfolio [22]. Failure to address these operational challenges may hinder profitability. In light of the literature review, the research posits the following hypotheses.

H3a: Product diversity moderates the relationship between market share (MS) and the financial performance of Jordanian insurance companies.

H3b: Product diversity moderates the relationship between concentration ratio (CR) and the financial performance of Jordanian insurance companies.

The Mediating Influence of Market Concentration on the Relationship Between Financial Leverage and Financial Performance

Recently, researchers have increasingly explored how market structure impacts a firm's financial decisions in operational activities. Harris and Raviv [23] highlighted

market concentration as a critical determinant of a firm's capital structure. Cash availability, as a highly liquid asset, empowers a company to gain a competitive edge by expanding its sales network and investing more in research and development [24]. The theory of strategic commitment suggests that higher leverage strengthens a company's competitive ability, with a higher debt ratio indicating a shift toward more competitive behavior in the market [23]. Thus, in industries characterized by low concentration, minimal technical barriers, and typically low debt levels among competitors, an increase in a company's leverage ratio is likely to boost production and enhance performance in the product market.

Higher financial leverage reflects a strategic commitment by a company to compete more aggressively in its market. This increased leverage provides the firm with more financial resources, enabling investments in sales networks, research and development, and growth opportunities. In low market concentration industries, where competition is less intense and firms typically have lower debt levels, an uptick in a company's leverage ratio can stimulate increased production and enhanced performance in the product market. This is because the added financial resources obtained through leverage can confer a competitive advantage in markets where competitors may not be heavily leveraged. The relationship between market concentration and profitability has long intrigued researchers, dating back to the early work of Mason [25], who assumed a positive link between market structure and company performance. This positive relationship between market concentration and performance is typically explained by either the efficiency hypothesis or the market power hypothesis, as proposed by Bain [26].

The market power hypothesis posits that markets with higher concentration yield higher profits compared to less concentrated ones. This hypothesis is particularly relevant for firms in highly concentrated markets, where a few dominant players can control prices and market dynamics. When highly leveraged firms operate in such markets, their financial strength can amplify their market power, potentially leading to higher profits by setting higher prices and limiting competition [27]. Conversely, in less concentrated markets with intense competition, the efficiency theory becomes more pertinent. Firms with larger market shares, often driven by factors like higher leverage, can achieve greater efficiency. They can

capitalize on economies of scale, invest in advanced technologies, and offer competitive prices, ultimately improving financial performance [28].

The Structure-Conduct-Performance (SCP) framework, mentioned in the final paragraph, underscores the interplay between market structure (concentration), firm conduct (leverage and competitive behavior), and performance. Market structure influences firm conduct, and firm conduct, in turn, affects performance [29]. For instance, in highly concentrated markets, the influence of financial leverage on firm conduct is amplified due to the heightened market power of dominant firms. In contrast, in less concentrated markets, the positive impact of leverage on firm conduct might manifest through enhanced efficiency and competitive behavior [30]. In light of the literature review, the research posits the following hypotheses.

H4a: market share (MS) Mediates the relationship between financial leverage and financial performance of Jordanian insurance companies.

H4b: concentration ratio (CR) Mediates the relationship between financial leverage and financial performance of Jordanian insurance companies.

RESEARCH DESIGN AND METHODOLOGY

The research sample consists of publicly traded insurance companies listed on the Amman Stock Exchange (ASE). Four insurance companies were excluded due to mergers or market exits, resulting in a sample of 20 Jordanian insurance companies operating between 2005 and 2019. This time frame was chosen to ensure a stable sample for analysis. This study employed regression analysis to examine the impact of capital structure on company performance. Regression analysis allows the exploration of relationships between a dependent variable and multiple independent variables, facilitating the modeling and examination of various factors simultaneously affecting the dependent variable [31]. It is used to gain insights into and analyze the relationships between independent variables and the dependent variable, as well as to ascertain causal relationships under controlled conditions. Multiple regressions are employed.

RESULTS AND DISCUSSIONS

To assess the validity of the model assumptions, various statistical tests were conducted. These diagnostic tests

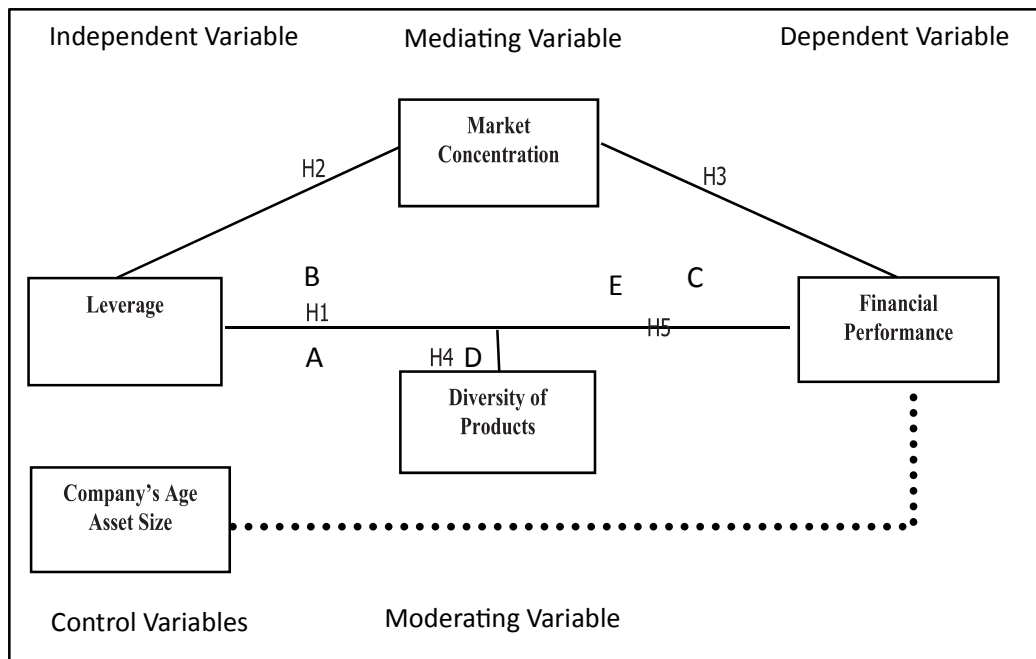


Fig. 3. Conceptual Framework

Source: Compiled by the authors.

encompassed a range of assessments, including tests for multicollinearity, heteroskedasticity, serial correlation, and model specification (Table 1).

Multiple regression analysis is a critical statistical tool with specific assumptions. Two key assumptions are the absence of multicollinearity and heteroscedasticity among independent variables. The variance inflation factor (VIF) helps assess multicollinearity, ideally indicating none [32]. However, the return on assets (ROE) model showed heteroscedasticity. To address this, options like model adjustment, variable transformation, or robust standard error calculations can be used. The robust standard error method corrects heteroscedasticity while preserving coefficient estimates.

In panel data analysis, addressing serial correlation is crucial for reliable regression models. Positive serial correlation can lead to underestimated standard errors and incorrect hypothesis rejections. Fortunately, in this case, test results indicate no significant serial correlation issues. Another concern is model specification errors, which stem from omitting relevant variables or including irrelevant ones, potentially distorting coefficient estimates. To ensure proper model specification, a model specification link test was conducted. Meeting these assumptions and addressing issues like multicollinearity, heteroscedasticity, serial correlation, and model specification errors is vital for

maintaining the statistical validity and reliability of regression models (Table 2).

Regression Model 1 demonstrated that a one-unit increase in leverage corresponds to a 33.16% increase in the return on equity for insurance companies. This positive correlation indicates that higher leverage levels enable insurance firms to generate greater returns on equity. The positive association discovered in this study aligns with findings from previous research [7–9]. Consequently, hypothesis H1 is supported, indicating a significant positive relationship between financial leverage and the financial performance of insurance companies in Jordan.

The regression outcome is consistent with agency cost theory, which posits that borrowing reduces the agency cost between owners and managers, with creditors acting as supervisors in capital utilization. Therefore, substantial debt levels exert considerable pressure on managers to prioritize profitable investments, generating sufficient cash flow for interest payments and averting potential bankruptcy [33]. Moreover, increased debt leads to tax shielding, resulting in higher returns on equity for Jordanian insurance companies.

In this study, product diversification is a moderating variable. While it didn't show significance in Model 1, Model 2 ($p < 0.05$) shows that it strengthens the connection between leverage and insurance firms' financial performance (ROE), confirming hypothesis H2. This

Table 1

Diagnostic Checks

VARIABLES	ROE	
Testing for Multicollinearity	Mean VI	1.78
Testing for Heteroskedasticity	P-value	0.0735
Testing for Serial Correlation	P-value	0.0308
Testing for model specification	hat	0.000
	hatsq	0.251

Source: Compiled by the authors.

Table 2

The Moderating Influence of the Diversity of Products on the Relationship between Financial Leverage and Financial Performance

ROE	MODEL 1	t-Stat	MODEL 2	t-Stat
Leverage	0.3316 ***	0.0139	0.2102***	0.0169
	(0.000)		(0.000)	
PD	0.1910	0.1157	0.1291 *	0.1219
	(0.101)		(0.036)	
PD* Leverage			0.2486 **	0.01408
			(0.002)	
Age	0.0909	-0.0142	0.0855	0.14063
	(0.523)		(0.092)	
Size	0.0480 **	0.1230	-0.1382*	0.1014
	(0.002)		(0.036)	
Constant	0.04584**	0.1952	0.5114***	0.2734
	(0.003)		(0.000)	
Observations	300		300	
R-squared	0.3566		0.4047	

Source: Compiled by the authors.

Note: t-statistics in parentheses. * p < 0.05, ** p < 0.01, *** p < 0.001.

highlights that the relationship's strength depends on product diversification. Highly leveraged firms leverage their customer bases for cross-selling and use product diversification to benefit from economies of scale and scope [27], boosting sales, market power, and competitive positions, leading to increased cash flow and reduced financial difficulties [17]. Efficient product diversification helps insurers reduce risk and meet regulatory capital requirements. Firm size (total assets) significantly

influences insurance company performance, with larger firms typically being financially stronger than smaller competitors [34]. Company age has a minor negative correlation with ROE in the insurance industry, suggesting that older firms don't necessarily outperform newer ones (Table 3).

The regression model above shows a one-unit increase in market share led to a notable 9.79% increase in return on equity. This aligns with market power theory and

Table 3

The Moderating Influence of the Diversity of Products on the Relationship between Market Concentration and Financial Performance

Dependent Variable: ROE	MODEL 1	t-Stat	MODEL 2	t-Stat
MS	0.0974* (0.041)	0.2646	0.0480** (0.002)	
CR	-0.1690* (0.049)	0.0506	-0.3706* (0.010)	0.0122
PD	0.0403*** (0.000)	0.1708	0.0373*** (0.000)	0.2201
PD* MS			0.14882*** (0.000)	0.3654
PD* CR			0.3601*** (0.000)	
Age	-0.3150 (0.120)	0.0062	-0.2321 (0.583)	0.0017
Size	0.0261** (0.002)	0.0605	0.0403** (0.002)	0.0535
Constant	0.0584** (0.003)	0.3424	0.6411*** (0.000)	0.4244
Observations	300		300	
R-squared	0.3566		0.4047	

Source: Compiled by the authors.

Note: t-statistics in parentheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

efficiency theory, as seen in previous studies [27, 14]. Model 2 results also indicate a significant moderating effect of product diversity on the relationship between market concentration and performance. This underscores that the strength of this relationship depends on the level of product diversity, supporting hypothesis H3a. It suggests that companies with substantial market shares, especially market leaders, can leverage their extensive customer bases for cross-selling and product diversification. These strategic approaches help them achieve scope economies and enjoy related benefits.

Companies with larger market shares benefit from cost-effective production, higher profit margins, reduced marketing costs, improved product quality, and competitive pricing. This advantage stems from their accumulated experience, allowing them to spread fixed costs over larger production volumes [35]. These factors are vital for insurance companies aiming to provide trustworthy products and services. As insurers expand their market share, their competitive edge grows stronger, leading to increased investments in advertising and research and development, fostering new product development and revenue growth.

The regression analysis revealed a significant negative relationship between market concentration ratio (CR) and return on equity. A one-unit increase in the concentration percentage of the largest companies led to a notable decrease in return on equity (-16.90%), consistent with previous studies [36–38]. High market concentration negatively affects other insurance providers, indicating a lack of competition. A small number of dominant companies restrict the potential of others [39]. In Model 2, results show a significant moderating effect of product diversity on the relationship between market concentration and performance. This underscores that the strength of this relationship depends on the level of product diversity, supporting hypothesis H3b. Companies with substantial market shares can leverage their customer base for cross-selling and diversify their products to achieve economies of scope and related benefits (Table 4).

The findings reveal a positive link between financial leverage and performance in Jordanian insurance firms, aligning with trade-off and agency cost theories. Companies balance debt financing advantages and financial distress risks. Regression analysis confirms a robust connection between financial leverage and market

Table 4

The Influence of the Mediating Effect of the Market Concentrates on the Relationship between the Financial Leverage and the Performance of Jordanian Insurance Companies

Variable	MODEL 1	MODEL 2	MODEL 3	MODEL 4	MODEL 5
	(ROE)	(MS)	(CR)	(ROE)	(ROE)
Leverage	0.3316*** (0.000)	00217** (0.003)	-0.0010* (0.010)		0.1291* (0.036)
MS				0.0749* (0.041)	.00480** (0.002)
CR				-0.27790* (0.049)	-5.4817* (0.010)
Age	-.43149 (0.120)	.00047 (0.817)	.00584** (0.003)	-.10692 (0.120)	-0.1210 (0.583)
Size	0.0480** (0.002)	00135* (0.038)	.00369 (0.083)	0.0681** (0.002)	0.0462** (0.002)
Constant	0.0882** (0.003)	0.272** (0.001)	0.5114*** (0.000)	0.0574** (0.003)	0.8114*** (0.000)
R-squared	0.3566	0.3566	0.0426	0.3566	0.4047

Source: Compiled by the authors.

Note: t-statistics in parentheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

concentration, helping boost market share in competitive settings. However, there's a negative correlation between market concentration and capital structure, indicating highly competitive companies prioritize debt reduction. Larger firms diversify risks and adapt to market shifts, while smaller ones face greater vulnerability.

Market concentration indices (MS and CR) significantly impact Jordanian insurance companies' performance, providing competitive advantages, improved performance, increased advertising expenditure, and higher revenue. Oligopolistic firms dominate through price agreements, leading to economic rewards. However, a high concentration ratio harms smaller insurers, signaling a lack of competition and potential for a monopoly.

In MODEL 5, considering mediator variables (MS and CR), the strong relationship between financial leverage (X) and performance (Y) persists, suggesting partial mediation by market concentration. This supports the hypothesis that optimal capital structure goes beyond financing costs, crucial for a company's competitiveness. Market concentration significantly influences capital structure, expanding market share, enhancing competitiveness, and sales channels. A strong capital structure supports a competitive edge, growth, and profitability.

In highly competitive markets, firms face pressure to optimize their capital structure to maintain market position. Efficient resource allocation, balancing debt and equity financing, becomes essential. Careful management of capital structure helps firms gain a competitive edge, but securing favorable financing terms can be challenging due to increased risk. Intense competition affects profitability and cash flows, necessitating prudent debt management to mitigate financial risks. Understanding market concentration is crucial for optimizing capital structure in a competitive business environment.

CONCLUSION

This study explores financial leverage, market concentration, product diversity, and financial performance in Jordan's insurance industry. It highlights the positive impact of financial leverage, especially when combined with product diversification, on insurers' profitability. Market concentration plays a mediating role in the link between financial leverage and financial performance. These findings have significance for industry practitioners and policymakers. Based on these findings, some recommendations emerge. Insurance firms should cautiously assess capital structure

decisions, considering the benefits of using financial leverage for profitability while avoiding excessive risk. Diversifying product offerings can enhance financial performance when coupled with leverage. Firms should also adapt to market competition by conducting market research, tracking industry trends, and developing competitive strategies.

Policymakers should consider the implications of market concentration on insurer performance, promoting

competition to stimulate innovation and efficiency. Regulatory measures supporting market entry and competition can create a level playing field for insurers and benefit consumers. Future research can delve deeper into understanding the mechanisms behind these relationships, conduct comparative studies in other emerging markets, extend longitudinal studies, explore additional variables, and expand research beyond the insurance industry to gain comprehensive insights.

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