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Financial performance of securities firms in Vietnam: The significance of business size and diversification

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Abstract: This study investigates the impact of business diversification and firm size on the financial performance of securities companies in Vietnam. Using secondary data from 33 publicly listed securities firms between 2010 and 2024, the research analyzes the effects of different business lines—proprietary trading, brokerage, consulting, and lending—on financial outcomes through quantitative methods. The findings reveal that both firm size and diversification have a significant impact on performance, with positive effects observed for business, consulting, and brokerage activities. In contrast, lending activities are associated with negative results. These outcomes confirm that diversification benefits securities firms in Vietnam, although the effects vary across different activities. The study contributes to the existing literature by providing empirical evidence over 14 years and highlights that strategic diversification can enhance or hinder financial success depending on the operational focus. Practical implications suggest that securities firms and Vietnamese authorities can leverage these insights to optimize diversification strategies and better prepare for Vietnam's emerging stock market landscape, supporting sustained growth and development.

Keywords: *Business diversification, Financial performance, Securities companies, Size, Vietnam.*

1. Introduction

After nearly 25 years of development, the Vietnamese stock market has expanded significantly in terms of scale, structure, and product offerings, emerging as a dynamic and modern platform for both domestic and international entities. The first trading session on July 28, 2000, at the Ho Chi Minh City Stock Exchange (the predecessor of HOSE) recorded two stock codes. By the end of 2019, 1,622 stock codes and fund certificates were listed or registered for trading. The market capitalization reached 4,384 trillion VND, accounting for 72.6% of GDP in 2019. The government bond market recorded an average growth of 27%/year, the highest among Asian emerging economies. The government bond market capitalization in 2019 was 25.1% of GDP, representing a 12-fold increase after a decade of formation and development. The derivatives market officially operated on August 10, 2017, but more than 59 million VN30 index futures contracts have been traded. The quality of investors in the market has improved with the active and extensive participation of foreign and institutional investors. As of October 2021, the number of investors opening accounts on the Vietnamese stock market was 3.8 million, accounting for over 3% of the population. The stock market has genuinely become a pillar of the capital channel for the economy. The total size of the stock market (including the total market capitalization of stocks and outstanding bonds) at the end of 2020 reached 131.95% of GDP, which is quite close to the 146.2% of

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GDP contributed by bank credit, supporting the restructuring of the Vietnamese financial system in a more sustainable direction. Fairness and transparency in the stock market are constantly enhanced through regulations on information disclosure and Vietnam's active participation in global financial initiatives. According to FTSE Russell, the Vietnamese stock market is on the waiting list for upgrading to an emerging market [1]. The strong recovery of the Vietnamese stock market following the Covid-19 pandemic, along with the Vietnamese government's economic restructuring in 2024, has created vital momentum to promote the process of upgrading the Vietnamese stock market.

Contributing to this process is an indispensable role for securities companies. The Vietnam Stock Market Development Strategy for the 2021-2030 period emphasizes the importance of securities companies in successfully implementing the goal of modernizing and upgrading the market. The State Securities Commission (SSC) will promote the restructuring of securities companies to enhance competitiveness, improve financial stability, and strengthen modern corporate governance in line with international practices. With the role of intermediaries in the stock market, the healthy and effective operations of securities companies significantly contribute to advancing the development of Vietnam's stock market to a new level. As of November 15, 2022, there were 81 securities companies licensed by the State Securities Commission to conduct securities investment consulting and brokerage activities. According to a report by Guotai Junan Securities [2] the revenue streams of Vietnamese securities companies come from four business activities: brokerage, lending, consulting, and proprietary trading. In particular, the contribution of traditional business lines is decreasing due to changes in the security sector, especially with the development of technology. Le [3] indicates that the application of technology has a significant impact on the return on assets (ROA) of securities companies in Vietnam. Robo-advisor, one of the key applications of AI and LLM, has revolutionized the financial services provision of securities companies. Immediately after TCBS introduced the first robo-advisor in Vietnam in 2017, securities companies increased their adoption rates. In addition, the zero-fee trend has reflected the increasingly fierce competition among Vietnamese securities companies. Starting in 2019, with the initiation of online platforms such as Robinhood and Schwab, most Vietnamese securities companies have implemented zero-fee strategies to retain individual investors. This shift has significantly altered the business model of securities companies, with margin lending becoming a stable source of income, rather than relying on traditional brokerage fees. On the other hand, the M&A wave and the development of the bond market have created significant opportunities for securities consulting and trading activities. The shift in business model reflects the adaptation of securities firms in Vietnam to the global movement in the financial services sector. It is expected to change the firm performance of these companies.

However, quantitative studies on the impact of business models on the performance of securities companies in Vietnam are still quite limited. Several studies on securities companies, such as those by Tran [4]; Tran [5] and Tien [6] offer valuable insights into the factors influencing the profitability, financial risks, and capital structure of securities companies in Vietnam. Le [3] assessed the impact of FinTech applications on the operations of securities companies in Vietnam. The study examined the application of technology in five service areas of securities companies and demonstrated the significance of innovation in these activities on return on assets (ROA). Although the operating areas were not separated, the results of this study confirmed the role of business diversification in the financial performance of Vietnamese securities companies.

Theoretical background and empirical evidence from non-financial sectors have confirmed the significance of business diversification to firm performance. However, the sign of impact is still questionable. Therefore, validating the theories in different settings is critical to understanding how the business model benefits a company. In this paper, we attempted to answer this question by studying the influence of business diversification on the financial performance of listed securities companies in Vietnam. Our research enriches the extant literature on securities companies in Vietnam with three main points. First, we test the hypothetical impact of business diversification on financial performance in the financial sector. Second, we examine the width and depth of business diversification. Third, our

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sample is more extensive than other studies because it covers the entire time range, from the recovery and fast-growing period of the Vietnamese stock market (2010-2024).

We divide the paper into five parts. Part 1 introduces the paper. Part 2 contains the literature review and hypothesis development. Next is the Data and Methodology section. In Part 4, we discuss the empirical results and reach a Conclusion in Part 5.

2. Literature Review and Hypothesis Development

2.1. Overview of Business Diversification and its Impact on Firm Performance

The term "Diversification" was first introduced by Ansoff [7] in his famous matrix. Ansoff defined diversification as a strategy that enables a firm to grow by creating new products for existing or new markets. Compared to the others, diversification is the riskiest strategy, as it requires new skills, techniques, and facilities. Moreover, a firm can implement a related or unrelated diversification strategy. Ansoff defines diversification from a corporate growth perspective, expressing geographical markets and products as two critical aspects of the diversification strategy. The resource-based theory Barney [8] reinforces this perspective by emphasizing that successful diversification stems from the effective utilization of resources. Product and market diversification can enhance companies' competitive advantages, resulting in overperformance compared to their peer firms. Alternatively, diversification is the way that a firm achieves competitive advantages. Porter [9] suggests that a firm can implement diversification to leverage its sustainable competitive advantages over competitors. Porter's definition of diversification aligns with the resource-based perspective, which expresses diversification as optimizing firms' resources to achieve sustainable competitive advantages and improved firm performance. Revenue growth, expansion, cost reduction, and market synergies can help a firm achieve overperformance and sustainable competitive advantages.

In contrast, Jensen and Meckling [10] argue that business diversification can result from managers' empire-building behavior, which aims to maximize management utility at the expense of shareholders. Business diversification is not always based on the company's actual needs. Instead, it is motivated by managers who control the free cash flow. Agency costs deteriorate the firm's value, thereby decreasing shareholders' wealth. Hence, business diversification is risky to a firm. Sohl, et al. [11] reported the existence of a turning point when examining the impact of business diversification on firm performance. Business model diversification is approached from the demand side, allowing a firm to offer different business activities across its business model. The supply synergy is created when particular back-end activities overlap between business models. This study validated the hypothesis of an inverted U-shaped relationship between business diversification and firm performance.

Rumelt [12] expressed the importance of related business diversification to firm performance. He defined business diversification as new activities related to the core business activities. Since related business diversification improves resource-sharing efficiency, a company can achieve better performance than its peers. In contrast, excessive diversification can harm a firm's performance. The role of critical resources in business diversification is affirmed in the resource-based theory. Diversification enables a firm to utilize its resources more efficiently, thanks to economies of scale and scope, resulting in improved business performance. Montgomery [13] identified three motives for business diversification: market power, agency, and resource-based view. He argued that business diversification is not always the route to business success, and empirical findings supported the agency theory, contradicting the market power hypothesis. That raises the question of the relevance of business diversification. Business diversification can lead to agency costs for a firm and ultimately erode its profitability. Therefore, excessive diversification may undermine corporate performance and value. Le [14] referred to this effect as the "diversification discount."

In summary, there is no one-size-fits-all definition for business diversification. From a broader perspective, business diversification can be understood as a company's strategic choice to expand its coverage and enhance its market impact by deploying its specific assets and resources for both related and unrelated business activities. Business diversification can be done primarily by product or location

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extension. However, the relevance of business diversification to business performance is questionable. The empirical findings from previous studies are mixed, requiring further studies to validate the theoretical foundation.

2.2. Hypothesis Development for the Impact of Diversification on the Performance of Securities Firms in Vietnam

The financial performance of securities companies is closely linked to the diversity and stability of their revenue streams, including trading commissions, advisory fees, asset management, and proprietary trading. Trading commissions, which are dependent on client trading volumes, tend to rise during periods of market volatility or bullish trends but decline in bear markets, directly impacting profitability. Alali, et al. [15] emphasize the need for firms to adapt to fluctuating trading volumes and changing investor behavior, particularly during the digital transformation era. Proprietary trading, where firms invest their capital, can generate high returns in favorable markets, but it also introduces significant risks during downturns. Diversification into areas such as wealth management, FinTech, or foreign markets helps securities firms mitigate risks and stabilize profitability, as firms that rely solely on trading or proprietary trading are more vulnerable to market fluctuations. Bhimani [16] argues that diversified firms are better equipped to navigate volatility and sustain consistent profitability. Supporting evidence for the positive impact of business diversification on profitability includes [17] who analyzed a sample of 2,372 banks from 29 Asian Pacific countries, and Kenyoru, et al. [18] who studied commercial banks in Kenya. However, adverse effects were also found in some studies. Jouida, et al. [19] demonstrated that activity and geographic diversification negatively impacted the financial performance of 412 financial institutions in France. Ali, et al. [20] found the inverted U-shape relationship between corporate diversification and firm performance. The authors stated that excessive diversification increases agency costs and leads to internal inefficiencies. The authors used a sample of 141 non-financial companies listed on the Pakistani stock market between 2003 and 2013.

In the Vietnamese context, existing empirical evidence indicates that the impact of business diversification on firm performance is multifaceted. Santarelli and Tran [21] identified a curvilinear relationship, whereby diversification initially enhances profitability but subsequently leads to a deterioration in performance. Conversely, studies such as Nguyen-Thi-Huong, et al. [22] demonstrate that diversification has a positive influence on firm performance, particularly through improvements in return on assets, aligning with the resource-based view and trade-off theories that highlight the benefits of strategic diversification. In contrast, evidence from the banking sector suggests that income diversification may be associated with lower profitability [23]. Furthermore, research indicates that diversification does not significantly affect return on equity. The role of government support appears limited, as it does not exert a notable influence on firm performance [22]. Collectively, these findings highlight the importance of strategic and meaningful diversification, tailored to resource capabilities and contextual market conditions, in optimizing financial outcomes for Vietnamese enterprises.

H_1: Business diversification has a significant influence on the profitability of listed securities companies in Vietnam.

Jahera, et al. [24] argued that the relationship between diversification and firm performance depends on the firm size. Larger firms tend to have more shareholder value and profitability, a superior financing position, and more efficient cost control than small firms. Firm size can be correlated with performance through economies of scale and scope [20]. Therefore, the study includes firm size as a variable for business diversification. The significance of firm size to profitability is emphasized theoretically from the Resource-Based View [8]. Specifically, companies with more resources and capabilities have a stronger ability to create and sustain competitive advantages, leading to long-term profitability and sustainable development. Moreover, bigger firms have a higher likelihood of engaging in strategic conduct at the industry level according to the SCP model. Hence, these firms enjoy higher profitability than the smaller ones.

The impacts of size and capital level have been studied by numerous authors worldwide. According to Gao and Alarussi [25] size, working capital, and intangible assets have a significant positive impact

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on return on assets (ROA) and earnings per share (EPS). Small-cap companies, due to their inability to adapt to technological innovations, experienced significant declines in both efficiency and productivity Cohen and Klepper [26]; De Massis, et al. [27] and Kijkasiwat and Phuensane [28]. Gupta, et al. [29] propose that a merger strategy can enhance financial capacity, leading to greater efficiency and increased value creation. Alternatively, economies of scale are the underlying motive of corporate mergers. My and Abbott [30] examine the impact of scale, regulation, and ownership structure on the productivity and efficiency of 53 Vietnamese securities companies from 2009 to 2017, finding a positive effect of business size on firm performance. Similarly, Hung, et al. [31] consider firm size to be the most critical factor affecting the performance of private firms. Chang and Elyasiani [32] note that in countries with developed financial markets, there is a tendency for industries such as commercial banks, insurance companies, and securities firms to merge in order to become more competitive and efficient. Lee, et al. [33] indicate that large securities firms, in particular, have achieved economies of scale and derived significant benefits from such economies within the brokerage sector in Korea. However, Hua, et al. [34] found a negative impact of company size on profitability. In Vietnam, Tran [5] noted that increasing capacity will improve profitability. Tran [4] identified capital size as the key driving force of financial risk management, leading to better financial performance for securities firms.

Based on the theoretical background and empirical supporting evidence, the study hypothesizes that firm size will have a positive impact on the profitability of securities companies in Vietnam. The significance of firm size to the operations and profitability of Vietnamese securities companies is reflected in both legal regulations and reality. For example, the minimum capital requirement for a securities business is 50 billion VND. If a security company wants to conduct a range of business activities, it must have adequate lump sum capital. Currently, SSI and TCBS are two major security firms in the Vietnamese market, with a charter capital of approximately 20 trillion VND. However, the gap in capital among security firms in Vietnam is large. Larger firms can absorb market risks, invest in technology, and expand their business lines, contributing to long-term profitability and resilience in a volatile market [35-37]. Big firms also provide margin trading to customers more effectively than smaller ones, since the security law limits the margin trading rate. Therefore, it is relevant to propose that more prominent security companies will have higher profitability.

H_2: Firm size has a positive impact on the profitability of listed security companies in Vietnam.

Table 1.
Hypothesis development of the empirical study.

Hypothesis	Basis
H1: Business diversification has a *significant influence* on the profitability of listed securities companies in Vietnam (+/-)	Khanna and Palepu [38]; Mishra and Akbar [39]; Molyneux and Yip [40]; Lee, et al. [17]; Ali, et al. [20]; Santarelli and Tran [21]; Kenyoru, et al. [18]; Jouida, et al. [19]; AlKhouri and Arouri [41]; Pangboonyanon and Kalasin [42]; Bhimani [16]; Nguyen, et al. [23]; Nguyen-Thi-Huong, et al. [22] and Alali, et al. [15].
H2: Firm size has a *positive impact* on the profitability of listed security companies in Vietnam (+)	Lee, et al. [33]; Doğan [43]; Molyneux and Yip [40]; Tran [4]; Lee, et al. [17]; Børing [36]; My and Abbott [30]; Gao and Alarussi [25]; Tran [5]; Yadav, et al. [37] and Nguyen, et al. [23].

3. Data and Empirical Models

3.1. Data

The study utilizes secondary data extracted from the consolidated financial statements of listed security companies on the Hanoi Stock Exchange (HOSE), Hanoi Stock Exchange (HNX), and UpCom exchanges in Vietnam. The authors collected data from 33 listed security companies from 2010 to 2024. The sample has 495 observations. Data are constructed in panels. Each company is recognized for a range of 15 years. The authors built a raw database before processing data in Stata 18 MP.

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3.2. Empirical Models

The impacts of business diversification on firm performance are examined through the following equations.

$$Profitability_{i,t} = \beta_0 + \beta_1 * Business\ Diversification_{i,t} + \beta_2 * Firm\ Size_{i,t} + \beta_3 * InCap_{i,t} + \beta_4 * Cashratio_{i,t} + \beta_5 * StockGDP_{i,t} + \beta_6 * Interest_{i,t} + \varepsilon_{i,t}$$

The authors use four indicators to proxy the profitability of securities companies: (i) Gross Profit, (ii) Gross Profit Margin, (iii) Return on Assets (ROA), and (iv) Return on Equity (ROE).

To measure Business Diversification, the study follows Wrigley [44] and uses the sales proportion as a proxy variable for business diversification. Overall, the revenue stream of securities firms comes from four main business activities: stock trading, consulting, brokerage, and lending. We calculate the sales percentage of each domain in comparison to total net sales.

Regarding the firm size, we use ln (total assets) as a proxy variable. The vector of control variables includes the Cash Flow Ratio and Internal Capabilities. We also include macroeconomic variables reflecting the significance of the stock market in the economy and the interest rate.

The following table provides a detailed description of variables in the study:

Table 2.
Explanation of variables in the empirical models.

Name	Meaning	Determination
Dependent Variables		
GrossProfit	This variable measures the profit margin generated by operating activities.	GrossProfit = Gross Profit from operating activities
GrossMargin	This variable reflects the gross profit a securities company earns for every $1 of internal capital.	Gross Margin = Gross profit/(Contributed Equity + Charter Reserved Funds + Financial Reserve)
ROA	This variable measures the profitability of total assets	ROA = Net Income/Average Total Assets
ROE	This variable measures the profitability of equity	ROE = Net Income/Contributed Equity
Size	This variable reflects the size of a securities company	Size = ln(Total Assets)
Business Diversification	This variable measures the degree of diversification of a securities company. The study classifies the business activities of a security company into four sectors: Business, Brokerage, Consulting, and Lending.	Business_P = Sales from proprietary trading/Net Sales Brokage_P = Sales from brokage service/Net Sales Consult_P = Sales from consulting and advisory services/Net Sales Lend_P = Sales from lending services/Net Sales
Cashratio	This variable reflects the cash flow of a securities company	cashratio_3 = Cashflow from Operating activities (CFO)/Net Sales
InCap	This variable measures the internal capital source of a security company	InCap = (Charter Reserved Funds + Financial Reserve)/Contributed Equity
StockGDP	This variable reflects the development of the stock market	StockGDP = Value of the stock market/ GDP
Interest	This variable measures the Interbank interest rate.	Interest = Average Interbank Interest Rate

4. Results and Discussion

4.1. Overview of Business Diversification and Financial Performance of Vietnamese Securities Companies

The following three tables provide an overview of the financial performance of listed securities companies in Vietnam from 2010 to 2024. The study classified the total sample into three sub-samples corresponding to three periods of the Vietnamese stock markets.

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Table 3.
Profitability of listed security companies over the period 2010-2024.

Indicators	2010 - 2015		2016 - 2020		2021 - 2024	
	Mean	Std.	Mean	Std.	Mean	Std.
GrossProfit (billion VND)	73.2	168	251	437	646	1,020
ROA	0.0145121	0.0899803	0.0428364	0.0881475	0.0241106	0.1644093
ROE	0.0285554	0.1685884	0.0996144	0.1370263	0.0937947	0.1865364

The average gross profit across the three periods shows notable growth, with the average gross profit increasing from VND 73.2 billion in 2010-2015 to VND 251 billion in 2016-2020 and further increasing to VND 646 billion in 2021-2024. This upward trend indicates the significant improvement in the profitability of listed securities companies in Vietnam over time. However, the high standard deviations for each period, especially in the 2021-2024 period (1,020 billion VND), reflecting significant disparities in the performance of these companies, with some firms achieving very high profits (up to 5.24 trillion), while others experienced considerable losses (as low as -543 billion in 2021-2024). The substantial variation in gross profit suggests that a few leading firms dominate the performance of the security sector in Vietnam.

The average ROA shows gradual improvement over the three periods, increasing from 1.45% in 2010-2015 to 4.28% in 2016-2020 before slightly declining to 2.41% in 2021-2024. ROA has been improved gradually over the three periods, implying that securities firms have become more efficient in utilizing their assets to generate returns. However, the standard deviations remain high across all periods, with the 2021-2024 period seeing the highest volatility (16.44%). The wide range of ROA values (from -146.21% to 62.16% in 2021-2024) highlights that while some companies are highly efficient in utilizing their assets, others struggle to achieve returns.

The average return on equity (ROE) increased significantly from 2.86% in 2010-2015 to 9.96% in 2016-2020, indicating a higher return for shareholders of listed securities firms in Vietnam. The period from 2021 to 2024 saw the highest return on equity (ROE), with an average value of 9.38%. Similar to the situation of gross profit and ROA, there was a high variation in ROE of listed securities companies.

In summary, the financial performance of Vietnam's listed securities companies from 2010 to 2024 demonstrates notable growth in profitability. However, high standard deviations reveal profitability disparities between leading and underperfȍmed firms. The dominance of a few leading firms suggests a competitive and fragmented market. While the overall sector has progressed, the wide performance gaps underscore the challenges faced by smaller or less efficient companies.

Table 4.
Descriptive statistics of explanatory variables.

Variable	Obs	Mean	Std. dev.	Min.	Max.
Size	495	20.83562	1.518222	17.09002	25.02065
Business Diversification					
Business_P	495	0.2397589	0.2882298	-0.2265366	0.9832024
Brokage_P	495	0.2322983	0.1708979	0.0034511	1
Consult_P	495	0.0890229	0.1960606	-0.0018345	2.827585
Lend_P	495	0.1426343	0.1786113	0	0.6745942
Control variables					
Cashratio	495	-0.6274476	3.799652	-32.60206	46.95681
InCap	494	0.0272945	0.0381665	0	0.2
StockGDP	495	35.66116	19.23755	0	76.075
Interest	495	9.421213	2.834459	6.96	16.9538

4.2. Descriptive Statistics of Proxy Variables

Table 4 reports the description of explanatory variables in the empirical models. The average size of the securities companies is 20.84, with a standard deviation of 1.52. This indicates a relatively consistent company size across the sample. The range value from 17.09 to 25.02 represents the variation in the

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sample. The average portion of revenue from securities business is 24%, with a standard value of 29%. The range from -23% to 98% indicates that some firms make huge losses when conducting securities business. The mean value of brokerage percentages is 23%, with a standard deviation of 17%, showing moderate variability in brokerage performance. The mean value of consulting percentage is only 9% with a standard deviation of 20%, highlighting the minority of consulting revenue in the business model of securities firms in Vietnam. The minimum value of -0.2% and the maximum value of 283% show that while most companies have low consulting performance, some companies perform exceptionally well in this activity. Lending activity accounts for an average of 14% of total revenue. Some firms do not provide lending, but others have 67% of their revenues coming from lending activities.

The average ratio of operating cash flow to net revenues is -0.63. The standard deviation is 3.80, indicating that some companies have strong cash flow positions and are highly liquid, while most securities companies struggle to manage their cash effectively.

The average InCap is 3%, with a standard deviation of 4%. This suggests that most companies rely heavily on external financing sources. The maximum internal financing source is 20% of total equity, indicating that the retention rate of the securities firms is lower than the payout rate.

Regarding macroeconomic variables, the StockGDP has an average of 35.66%, with a standard deviation of 19.24%. The Vietnamese stock market is on an upward trend, with a growing contribution to the country's GDP. On average, the stock market's value accounts for approximately 36% of Vietnam's total GDP, underscoring its significance in the country's financial system.

Table 5.
Model selection.

Criteria	Model 1 GrossProfit	Model 2 GrossMargin	Model 3 ROA	Model 4 ROE
F test for FEM	F (32,452) = 7 p-value <1%	F (32, 452) = 3.97 p-value <1%	F (32, 452) = 1.00 p-value >5%	F (32, 452) = 2.71 p-value <5%
Hausman test (FEM vs. REM)	Chi2(9) = 26.73 p-value <5%	Chi2(9) = 30.53 p-value <5%	Chi2(8) = 14.3 p-value >5%	Chi2(9) = 15.76 p-value > 5%
Breusch and Pagan Lagrangian multiplier test for random effects				p-value <5%
Breusch–Pagan/Cook–Weisberg test for heteroskedasticity			p-value <5%	p-value <5%
Modified Wald test for groupwise heteroskedasticity	chi2 (33) = 8416.18 p-value<1%	chi2(33) = 881.03 p-value <1%	chi2(1) = 63.27 p-value <1%	
Wooldridge test for autocorrelation in panel data	F (1, 32) = 4.241 p-value <5%	F (1, 32) = 0.174 p-value > 5%	F (1, 32) = 1.686 p-value > 5%	F (1,32) = 8.987 p-value <5%
Best fit model	GLS	GLS	POLS robust	GLS

4.3. Empirical Results

Table 5 shows the model selection procedure. We conduct the empirical tests for panel data to select the best-fit model. For Model 1, with "GrossProfit" as the dependent variable, and Model 2, with "GrossMargin" as the dependent variable, FEM is more favorable than REM and POLS. However, these models face the problem of heteroskedasticity; the GLS regression is the best relevant selection. For the model 3 with "ROA" as the dependent variable, POOL OLS is the best-fit model. We run the regression with vce (robust) to address the problem of heteroskedasticity. The last model, with "ROE" as the dependent variable, uses the GLS model.

The following table reports the results of the empirical models in the study. We can see the significant impact of Size on the financial performance of Vietnamese securities firms. The most substantial effect was observed for Gross Profit. Each standardized point increase in size will contribute to a 0.703 standardized point increase in Gross profit. In terms of profitability ratios, Size shows a more substantial impact on ROE than ROA at p-value <1%. The result of the Size affirms H2. Alternatively, larger firms tend to exhibit better financial performance.

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Table 6.
Results of the empirical models in the study.

	(1)	(2)	(3)	(4)
	GrossProfit GLS	**GrossMargin GLS**	**ROA POLS (Robust)**	**ROE (GLS)**
Size	0.703***	0.416***	0.177***	0.309***
	(0.000)	(0.000)	(0.002)	(0.000)
Business_P	0.067	-0.037	-0.086	-0.072
	(0.174)	(0.498)	(0.124)	(0.206)
Brokage_P	0.158***	0.046	-0.031	0.053
	(0.000)	(0.298)	(0.612)	(0.255)
Consult_P	0.046	0.082**	0.054	0.061
	(0.176)	(0.033)	(0.180)	(0.127)
Lend_P	-0.133***	-0.138***	-0.203***	-0.207***
	(0.001)	(0.003)	(0.001)	(0.000)
cashratio	-0.002	0.062*	-0.033	-0.014
	(0.958)	(0.089)	(0.452)	(0.712)
InCap	-0.020	0.244***	0.070**	0.266***
	(0.589)	(0.000)	(0.020)	(0.000)
StockGDP	0.137***	0.177***	0.176***	0.193***
	(0.009)	(0.003)	(0.008)	(0.002)
Interest	0.011	-0.083*	-0.169***	-0.195***
	(0.804)	(0.087)	(0.001)	(0.000)
N	494	494	494	494
F			9.758	
df_m			9	
df_r			484	
bic	21151.8	-326.5	-730.0	-495.9

Standardized beta coefficients; *p*-values in parentheses
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Examining business diversification, we can observe the significant impact of Brokage_P, Consult_P, and Lend_P on the financial performance of Vietnamese securities companies. Business Activity does not make a significant impact on the financial performance of these companies. The percentage of sales from brokerage activity contributes significantly to the gross profit. However, no effect was found in the case of gross margin, ROA, and ROE. Consulting activity improves gross profit margin at p-value <1%. The statistical significance of these relationships highlights the importance of effective brokerage services, including trading and advisory, in generating revenue and driving profitability. Firms excelling in these activities benefit from additional revenue streams, directly impacting their gross profit levels. Companies with a larger portion of consulting activity will have a higher gross profit margin. For lending activities, companies that provide more lending services to customers tend to have lower financial performance, notably lower return on assets (ROA) and return on equity (ROE). Firms with higher lending activities may be less efficient in utilizing their resources.

The negative impact of the lending activity raises concerns about the current situation of margin lending in securities companies. In the context of intense competition in the stock market, as revenue streams from brokerage and proprietary trading businesses shrink, margin lending has become a central pillar for the profitability of Vietnamese securities companies. According to Thu [45] the margin loans of 25 leading securities firms in 2024 reached approximately 210 trillion VND, 5 times higher than the value in 2018, which was 40 trillion VND. The significant expansion of margin lending requires securities companies to raise sufficient financing sources. The securities companies appear to use debt financing primarily to ensure sufficient capital for lending services. The following table displays the Pearson correlations between lending percentage and debt structure of securities firms in Vietnam.

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Table 7.
The financing structure of Vietnamese securities companies.

	SDrate	LDrate	Debt	Lend_P
SDrate	1.0000			
LDrate	-0.0226	1.0000		
Debt	0.9774***	0.1895***	1.0000	
Lend_P	0.2953***	-0.1304***	0.2624***	1.0000

Note: *** p-value <1%.

We can see from the table above that sales from lending services have a significant relationship with the debt ratio, short-term debt ratio, and long-term debt ratio. Vietnamese securities firms heavily depend on short-term debt. That means margin loans pose a high risk to the financial performance of the Vietnamese securities companies. The State Security Commission regulates margin loans strictly by setting limits for the lending rate (less than 200% of equity), lending volume for one investor (less than 3% of equity), and lending period (up to 3 months). The government also requires securities companies to disclose and report their activities periodically. However, the capital of most leading securities companies is pumped by banks within the same business ecosystem. This channel enables securities companies to operate as a form of shadow banking in the financial market. Le, et al. [46] found that shadow banking deteriorates the firm performance, while Nguyen, et al. [47] found that shadow banking weakens the positive relationship between bank competition and bank stability. Therefore, securities companies that offer more lending services may have lower financial performance.

The positive impact of firm size on financial performance highlights the importance of capital size in the operations of securities companies. Big-sized companies outperform the smaller ones. However, the sources of capital are critical to determining sustainable performance. After the COVID-19 pandemic, the Vietnamese stock market entered a highly volatile phase. The explosion of digital technology has made the stock business more competitive than ever before. Individual investors, with the assistance of virtual assistants offered by FinTech solutions, can manage their investments more independently. This situation leads to the shrinkage of traditional businesses, such as brokerage and advisory services. Vietnamese securities firms are shifting their business to riskier areas, such as margin loans and lending services. However, the empirical results indicate that excessive lending leads to a decline in the financial performance of securities companies. Financial Institutions Rating [48] identified that lending services pose high credit and legal risks to the business performance of Vietnamese securities firms. The empirical result is consistent with previous studies and affirms that the impact of business diversification depends on the type of diversification. Related diversification, such as consulting services, contributes positively to financial performance, whereas risky and unrelated diversification negatively impacts the profitability of Vietnamese securities companies.

5. Conclusion

The analysis of business diversification in Vietnamese securities companies reveals that brokerage and consulting activities significantly enhance financial performance, particularly in gross profit margins. However, lending activities harm financial metrics such as return on assets (ROA) and return on equity (ROE). The growth of margin lending, which has surged dramatically since 2018, raises concerns about financial stability due to its high reliance on short-term debt and the associated risks of shadow banking. Regulatory measures are in place to control margin loans; however, the reliance on bank financing complicates the situation. Larger firms tend to perform better; however, the quality of capital sources is crucial for achieving sustainable success. As the market becomes increasingly competitive post-COVID-19, securities firms are shifting towards riskier lending services, which empirical evidence suggests may harm overall financial performance. The study highlights that related diversification, such as consulting, enhances profitability, while risky diversification, like excessive lending, detracts from it. In conclusion, the findings underscore the importance for Vietnamese

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securities companies to carefully assess their diversification strategies, striking a balance between growth opportunities and associated risks to ensure financial stability.

This study emphasizes the importance of strategic decision-making in diversification to improve financial performance while mitigating the risks associated with excessive lending practices. This approach will enable firms to optimize their operations and focus on more sustainable growth avenues while managing the inherent risks of their diversification strategies. Effective management of diversification strategies is crucial for Vietnamese securities companies to navigate the evolving market landscape and maintain long-term financial stability. To achieve sustainable growth, Vietnamese securities companies must prioritize diversification strategies that enhance profitability while carefully managing the risks associated with lending activities.

Transparency:

The authors confirm that the manuscript is an honest, accurate, and transparent account of the study; that no vital features of the study have been omitted; and that any discrepancies from the study as planned have been explained. This study followed all ethical practices during writing.

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