

How Does Foreign Ownership Affect Firm Performance? The Mediating Role of Corporate Risk-Taking in Vietnamese Firms

Thi Hong Van Hoang and Thi Thu Tran*

ABSTRACT

Manuscript type: Research paper

Research aims: This study examines the impact of foreign ownership on firm performance through the mediating role of corporate risk-taking.

Design/Methodology/Approach: Based on data collected from 489 listed firms in Vietnam from 2017 to 2023, this study uses the maximum likelihood estimation in Structural Equation Modeling (ML-SEM) to examine the research relationship. Additionally, the study employs fuzzy-set Qualitative Comparative Analysis (fsQCA) to further strengthen the initial test results.

Research findings: The findings indicate that foreign ownership has a positive impact on firm performance through the mediating role of corporate risk-taking. Moreover, the results from the fsQCA method confirm that the combination of foreign ownership and corporate risk-taking is a necessary and sufficient condition for enhancing firm performance.

Theoretical contribution/Originality: Research using agency theory to explain the relationship between foreign ownership and firm performance through the role of corporate risk-taking.

Practitioner/Policy implications: This finding provides implications for foreign investors and corporate managers in the context of Vietnam.

Research limitation: This study is limited in sample size because it focuses on companies listed on the Vietnamese stock exchange, therefore the results do not comprehensively cover the entire market.

* Corresponding author: Thi Thu Tran is a Doctor at iSAGE Research Group, Faculty of Accounting, Ton Duc Thang University, Ho Chi Minh City, Vietnam (Email: tranthithu@tdtu.edu.vn).

Thi Hong Van Hoang is a Professor at the Chair of Social & Sustainable Finance, MBS School of Business, Montpellier, France (Email: thv.hoang@mbs-education.com).

Keywords: Foreign Ownership, Corporate Risk-Taking, Firm Performance, ML-SEM, fsQCA
JEL Classification: G30, G32, G38

1. Introduction

Corporate risk-taking is a fundamental strategy that affect to firms' performance and future development (John et al., 2008). Owners often encourage increasing corporate risk-taking to limit risk in their investment portfolios (Faccio et al., 2011; Paligorova, 2010). Conversely, managers want to limit it due to concerns about the limitations of their managerial capabilities (Amihud & Lev, 1981; Holmstrom, 1989). They tend to protect their personal interests and minimise penalties, so they are very cautious and limit their acceptance of corporate risk-taking, creating conflicts of interest between shareholders and managers regarding corporate risk-taking.

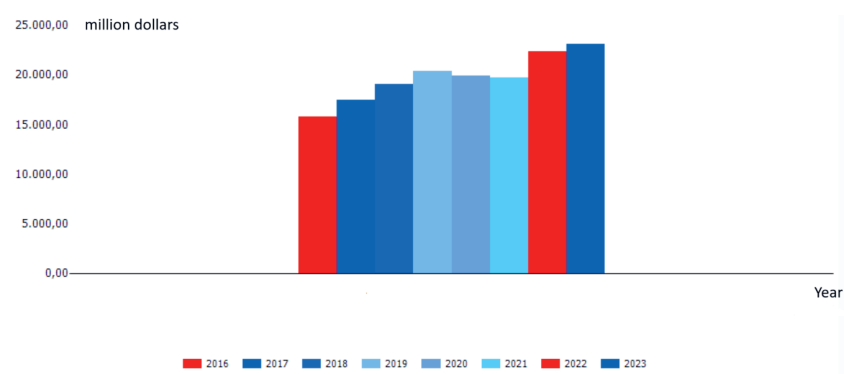
According to agency theory, foreign ownership plays an important managerial role in mitigating conflict. They typically hold large stakes, possess strong information gathering and processing capabilities, and can motivate management to ensure their interests are protected (Shleifer & Vishny, 1997). Furthermore, they have a greater capacity for intervention than domestic shareholders because they are not constrained by relationships, customs, and management culture that limit their ability to monitor effectively (Ferreira & Matos, 2008; Gillan & Starks, 2003). They have strict disciplinary mechanisms for management behaviour that harms owners' interests (Ahmadjian & Robbins, 2005). Recent evidence suggests that businesses increase their risk tolerance through increased foreign ownership and portfolio diversification (Huang et al., 2023). Because foreign owners are often risk-averse, they tend to focus on high-risk sectors such as the environment and technology to seek long-term returns (Faccio et al., 2011; Paligorova, 2010; Huang et al., 2023).

Recent studies show that increased foreign ownership can encourage firms to accept higher levels of corporate risk-taking by incentivising investment in highly uncertain but potentially profitable long-term sectors such as technology, innovation, and strategic projects (Faccio et al., 2011; Huang et al., 2023). Corporate risk-taking, therefore, is not only a result of ownership structure but also serves as a crucial transmission channel through which foreign ownership influences firm performance.

Although previous studies have examined the relationship between foreign ownership and corporate risk-taking, or between

corporate risk-taking and firm performance, very few have systematically analysed the mediating role of corporate risk-taking in the relationship between foreign ownership and firm performance, especially in the context of emerging economies with incomplete institutions such as Vietnam. Stemming from this gap, this study examines the impact of foreign ownership on firm performance through the mediating role of corporate risk-taking in listed companies in Vietnam, an economy that has been strongly attracting foreign investment during the period 2016–2023. Specifically, Figure 1 shows that foreign investment capital increased from approximately US\$15 billion in 2016 to nearly US\$25 billion in 2023. The trend of attracting foreign investment into Vietnam continues to this day, as the Government has been implementing comprehensive solutions to address issues and support investors in participating more extensively in the domestic market. Businesses are also aware of the advantages of mobilizing this capital compared to domestic investors.

Figure 1: Foreign Investments in Vietnam from 2016 to 2023



Source: General Statistics Office of Vietnam

The research findings contribute to the existing literature in the following aspects. First, we provide evidence that foreign ownership positively influences corporate risk-taking. This result emphasises the role of foreign ownership in mitigating agency issues, providing a control mechanism, and regulating risk acceptance among managers, thus complementing the insights of previous studies, including An et al. (2021), Huang et al. (2023), Bena et al. (2017), Boubakri et al. (2013), Fang et al. (2015), and Luong et al. (2017), among many others. Second, the study confirms that corporate risk-taking positively affects firm performance. Finally, the study expands understanding

the mediating role of corporate risk-taking in the relationship foreign ownership and firm performance. This result reinforces the governance implications of managing capital ownership structure and risk acceptance to improve firm performance.

The remainder of the paper is organised as follows. The theoretical framework and research hypotheses are presented in Section 2. Section 3 explains the methodology used. Section 4 presents empirical results and robustness checks. Finally, Section 5 concludes the paper by focusing on the implications of the results.

2. Theory Framework and Research Hypotheses

This section is divided into two subsections. The first subsection focuses on agency theory, while the second subsection develops research hypotheses by combining this theory with previous empirical findings.

2.1 *The Adequacy of Agency Theory*

Agency theory is used to explain the relationship between owners and managers of firms. The owner is a person who brings capital to the firm but does not directly participate in the operation of the firm. They hire managers to do so. In this context of shared control, owners may have doubts about whether managers are acting in the owners' interest or in the managers' interest. Academic research has examined firms with foreign ownership. For example, Shrivastav and Kalsie (2017) and Carney et al. (2019) find that the presence of foreign investors in a firm's capital structure brings various benefits, such as independence, objectivity in inspection, control, and regulation of managers. Indeed, in the case of foreign ownership, there are more requirements in terms of transparency of financial information and accountability to stakeholders. On the other hand, foreign ownership has limited understanding of the local business environment. As a result, foreign ownership requires companies to constantly improve the effectiveness of the corporate governance system to strengthen the supervision of managers. In addition, foreign ownership can offer attractive bonus and welfare policies to managers to improve their efficiency (Dachs & Peters., 2014).

Moreover, foreign ownership may be willing to consider a higher level of risk in business investments (Boubakri et al., 2013). In most cases, they are willing to invest in industries with high corporate risk-taking to seek profits (John et al., 2008). This can help improve firm performance and create comparative advantages with firms in the

same industry (Huang et al., 2020; Mateev et al., 2023). In this context, agency theory emphasises that an increase in foreign ownership would help limit conflicts in agency problems. This is because foreign ownership tends to have a governance perspective that is consistent with managers' operational behaviour. In turn, managers expect to receive support from foreign ownership in determining business strategies and investment plans that will improve firm performance. Through the above analysis, we apply agency theory to explain the influence of foreign ownership on firm performance through the mediating effect of corporate risk-taking.

2.2 *Research Hypotheses*

According to the agency theory, the participation of foreign ownership in the capital structure of firms provides numerous financial benefits, such as increasing the amount of capital, improving the ability to control costs, sharing new technologies in production (Estrin et al., 2009; Boubakri et al., 2013). As for the non-financial benefits, we can mention the connection with new markets and the improvement of corporate culture. Meanwhile, the participation of foreign ownership also contributes to increase corporate risk-taking (Dang et al., 2022). Specifically, foreign ownership encourages managers to take risks in order to achieve higher profits (Shleifer & Vishn, 1997; Kim, 2011). In doing so, foreign ownership narrows the gap with managers to achieve firm growth (Abel and Siklos, 2004; Filatotchev et al., 2007). This is the strength of foreign ownership, which helps to limit conflicts between managers and owners (Jensen and Meckling, 1976). Some research also supports this proposition. Specifically, Kim (2011) analyzed 1,337 listed companies in Korea from 2001 to 2007 and showed that foreign ownership encouraged managers to focus on long-term goals, which are riskier, rather than short-term goals. This result was also found in Vo (2016) study, which examined listed companies in Vietnam. Meanwhile, Dang et al. (2022) showed that foreign ownership of more than 29% has a positive effect on corporate risk-taking. Furthermore, Huang et al. (2020) found that foreign ownership in developed economies has a higher requirement for transparency of financial information, internal control systems, and corporate managers.

Vietnam is a developing economy with a stable annual growth rate of 6-8% over the past 10 years. In addition, Vietnam's political situation is very stable, while some tensions in economic relations among major countries have shifted the investment orientation of foreign investment around the world. Even in this complex

geopolitical context, Vietnam remains an attractive country for foreign investors. As a result, the year-on-year increase in foreign ownership has led to remarkable changes in domestic economic development. Sectors such as clean energy, technology, and manufacturing are attractive to foreign investors.

From the above theoretical and empirical arguments, we formulate our first research hypothesis as follows.

Hypothesis 1: Foreign ownership positively affects corporate risk-taking.

Foreign ownership is an important component of a business's capital structure (Haque, 2018). They participate in businesses often as large owners with abundant financial resources. Furthermore, they have good governance and control capabilities to minimise conflicts between owners and managers (Ahmadjian & Robbins, 2005). They are more independent, thus taking a more active stance when exerting pressure on firm managers (Huang et al., 2023).

According to agency theory, this capital flow serves as an external control mechanism over managers, guiding and improving firm performance (Jensen & Meckling, 1976). Previous research evidence supports this view. For example, Douma et al. (2006) found that foreign ownership leads to long-term commitment and improve firm performance. Ferreira and Matos (2008) highlight that foreign ownership increases firm performance through more effective monitoring. Kao et al. (2019) found that for Taiwanese firms, the influence of foreign ownership on firm performance is higher than that of family ownership. In addition, Rashid (2020) showed similar results for firms in Bangladesh.

These findings suggest that foreign ownership serves not only as a source of financial capital but also as an effective governance mechanism that enhances firm performance by improving monitoring, reducing managerial opportunism, and facilitating access to international knowledge and best practices. Given Vietnam's increasing openness to foreign capital inflows and ongoing institutional reforms aimed at strengthening corporate governance, foreign ownership is expected to play an increasingly important role in improving firm performance.

Based on the above theoretical arguments and empirical evidence, we propose the following hypothesis:

Hypothesis 2: Foreign ownership has a positive impact on firm performance.

In addition, corporate risk-taking plays an important role in the development of firms. Indeed, when the level of risk-taking is higher, the competitive advantage is also higher and thus the probability of success is also higher (Eisenhardt, 1989). However, from the perspective of agency theory, there are concerns that managers may choose to take risks based on the interests of external owners or the personal interests of managers (Jensen and Meckling, 1976). Therefore, this agency problem may affect the relationship between corporate risk-taking and firm performance. In this regard, Nartea et al. (2011) found that Southeast Asian countries, including Malaysia, Singapore, Thailand, and Indonesia, are developing markets with higher levels of performance but also higher levels of risk. Chang et al. (2014) found the same result in the case of Taiwan. In addition, Bhuiyan et al. (2020) agreed with previous studies that corporate risk-taking is necessary for business development in today's increasingly competitive environment.

According to our study, Vietnam has been actively developing relations with international organisations to attract foreign investment and improve the competitiveness of domestic enterprises. Foreign investors view the Vietnamese market as potentially risky with high opportunities for business development. In addition, the legal corridor and governance mechanism have been continuously improved by the state to protect businesses and limit the risks faced by businesses. Based on the characteristics of the market and the analysed theoretical basis, we propose the following hypothesis.

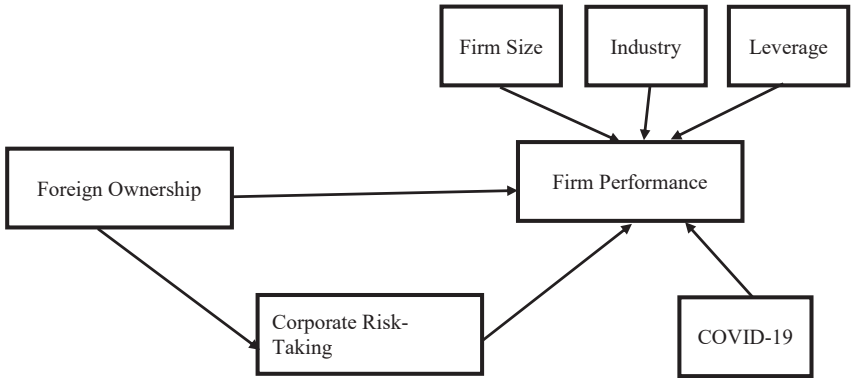
Hypothesis 3: Corporate risk-taking has a positive impact on firm performance.

Moreover, most previous studies have focused on the impact of foreign ownership on corporate risk-taking or firm performance. Few studies have examined the impact of corporate risk-taking on firm performance. Therefore, we seek to fill this research gap by examining the mediating role of corporate risk-taking in the relationship between foreign ownership and firm performance. Indeed, from the perspective of agency theory, increasing foreign ownership is a solution to reconcile the agency problem between owners and managers. Moreover, the risky nature of foreign investment would motivate managers to make bold business decisions to improve firm performance. This is also the basis of helping to reconcile the agency problem between the parties. Through the above analysis, the research team formulated the following hypothesis.

Hypothesis 4: Foreign ownership positively affects firm performance through the mediating role of corporate risk-taking.

Based on the above hypotheses, the research model is shown in Figure 2.

Figure 2: Research model



In addition to verifying the main relationships in the model, we also added the control roles of Firm Size, Industry, Leverage, and the COVID-19 pandemic to the research model. Adding control variables is significant for limiting endogeneity in the model and further supporting the explanation of the dependent variable, business performance. According to research by Mateev et al. (2023), company size reflects the potential in capital and assets built from the start of operations to the present; therefore, larger size indicates better business performance. Meanwhile, differences across business sectors also affect business output (Huang et al., 2023). Financial leverage reflects a business's debt structure relative to its total capital. This ratio varies depending on the enterprise's needs and business sector and affects firm performance (Mohsni et al., 2021). The impact of the COVID-19 pandemic has been very far-reaching for businesses. All activities were affected, leading to changes in financial capacity, operational capabilities, and output (Athira et al., 2024).

The next section focuses on the data set and methodology.

3. Data and Methodology

3.1 Data

We collected data on non-financial firms listed on the Hanoi and Ho Chi Minh stock exchanges during the period 2017-2023. The reason for choosing the 2017 milestone to collect data is because: First, the

trend of capital investment shifting of foreign enterprises is pouring into Southeast Asia, including Vietnam, due to concerns about the conflict in the US-China trade relationship. Second, in 2017, the flow of foreign investment capital into Vietnam has increased strongly and is the highest level since 2008. As is usually the case (Ho et al., 2021), firms in the financial sector are not included in the sample because they have specific capital structure and financial characteristics that may affect the empirical results. The initial number of firms in the sample is 712, of which 489 are foreign owned. These latter firms are therefore part of our final sample, where the distribution of firms by sector is as follows: 41 companies in basic materials, 92 companies in consumer discretionary, 114 companies in consumer staples, 21 companies in energy, 17 companies in health care, 45 companies in real estate, 7 companies in technology, 7 companies in telecommunications, 24 companies in utilities, and the remaining companies in industrials. In addition, to reduce the effect of extreme values, we winsorise the data at the 1% and 99% thresholds using the winsor2 command in Stata. Detailed information on the data sample is presented in Table 1.

Table 1: Variables

Variables	Calculation	Related research
<i>Independent variable</i>		
Foreign Ownership (OWN)	Percentage of shares held by foreigners / Total number of shares issued	Douma et al. (2006)
<i>Mediating variable</i>		
Corporate risk-taking (RISK)	The annual standard deviation of monthly stock returns over a year.	Bhuiyan et al. (2020)
<i>Dependent variable</i>		
Firm Performance (FP)	ROA = Net income / Total assets TOBINQ (Tobin's Q) = (Market value of equity + book value of current liabilities) ÷ book value of total assets ROE = Net income / Total equity	Buallay et al. (2017)
<i>Control variables</i>		
Leverage (LEV)	Ratio of total debt to total assets	Bhuiyan et al. (2020)

Variables	Calculation	Related research
Firm size (SIZE)	The natural logarithm of total assets	Bhuiyan et al. (2020)
Industry (FIELD)	There are 10 industries. 1: Basic Materials 2: Consumer Discretionary 3: Consumer Staples 4: Energy 5: Health Care 6: Industrials 7: Real Estate 8: Technology 9: Telecommunications 10: Utilities	Global Industry Classification Standard (GICS)
COVID-19 pandemic (COVID)	If the date is before 2020, the COVID dummy variable equals 0, otherwise it equals 1.	

Table 2 presents key descriptive statistics for the data sample.

Table 2: Descriptive Statistics

Variables	Obs.	Min	Max	Mean	Std. dev.
OWN	3,423	0	94	3.317	10.186
RISK	3,423	1.687	5.039	3.3	0.431
ROE	3,423	-209.64	160.75	10.716	15.553
ROA	3,423	-48.86	81.22	6.588	7.242
TOBINQ	3,423	0.027	8.879	0.834	0.74
LEV	3,423	0	0.813	0.206	0.182
SIZE	3,423	16.434	28.464	20.964	1.852

Notes: OWN: foreign ownership; RISK: corporate risk-taking; ROE, ROA, TOBINQ: firm performance; LEV: leverage; SIZE: firm size.

The number of firms in the sample is 489, corresponding to 3,423 observations from 2017-2023, including different sectors (excluding the financial sector). The statistics for the variable OWN show that the highest foreign ownership is 94%, while the lowest is 0%. Firms with 0% foreign ownership for the minimum value may have no foreign capital investment in some years during the study period (2017-2023). However, the average value of foreign ownership is quite low, about 3.3%. This rate is quite like that of countries in the Asian region, such as China, Taiwan, Malaysia, etc. (Huang et al., 2020;

Loncan, 2020). The average value of the variable RISK is 3.3 with a range from 1.687 to 5.039. This result shows that the stock price volatility of Vietnamese listed firms is high compared to developed countries such as Australia (Bhuiyan et al., 2020). Firm performance is measured by three indicators, including TOBINQ with an average value of 0.834 (lowest value 0.027, highest value 8.879); ROA with an average value of 6.588% (lowest value -48.86%, highest value 81.22%); and ROE with an average value of 10.716% (lowest value -209.64%, highest value 160.75%). As for the control variables such as LEV and SIZE, the average values are 0.206 and 20.964, respectively.

Table 3: Correlation coefficient matrix

	TOBINQ	ROE	ROA	OWN	RISK	LEV	SIZE	FIELD	COVID	VIF
TOBINQ	1.000									
ROE	0.339***	1.000								
	0.000									
ROA	0.532***	0.769*	1.000							
	0.000	0.000								
OWN	0.058***	0.011	0.011	1.000						1.04
	0.000	0.533	0.511							
RISK	0.473***	0.263***	0.272***	0.073***	1.000					1.06
	0.000	0.000	0.000	0.000						
LEV	-0.116***	-0.124***	-0.158***	-0.017	-0.062***	1.000				1.11
	0.000	0.000	0.000	0.311	0.000					
SIZE	-0.023	0.090***	-0.058***	0.175***	0.204***	0.282***	1.000			1.18
	0.179	0.000	0.000	0.000	0.000	0.000				
FIELD	-0.015	-0.017	-0.022	-0.037**	-0.034**	-0.096***	-0.002	1.000		1.01
	0.388	0.311	0.189	0.030	0.049	0.000	0.918			
COVID	-0.0512	0.096	0.0591	-0.0283	-0.2663	0.0342	-0.0570	-0.000	1.000	1.11
	0.0027***	0.000***	0.0005***	0.0974*	0.0000***	0.0456**	0.0009***	1.000		

Notes: ***, **, * correspond to 1%, 5%, 10% level of significance. OWN: foreign ownership; RISK: corporate risk-taking; ROE, ROA, TOBINQ: firm performance; LEV: leverage; SIZE: firm size; COVID: covid; FIELD: industry.

Table 3 shows the correlation matrix among the variables considered, with the VIF coefficient to test for the problem of multicollinearity. The firm performance (FP) variables, measured by ROA, ROE and TOBINQ, are correlated with each other (p -value < 5%). Therefore, they are not part of the same regression model to be

estimated. In addition, there is a positive correlation between OWN and RISK, RISK and FP (measured by ROA, ROE and TOBINQ). Furthermore, OWN is positively correlated with TOBINQ, but not with ROA or ROE. Importantly, there is no multicollinearity in the model as the VIF value is less than 2. The control variables LEV, COVID, and SIZE have a strong correlation with FP.

The next subsection presents the methodological framework.

3.2 Methodology

Subsection 3.2.1 introduces the ML-SEM method, while subsection 3.2.2 focuses on the fsQCA method.

3.2.1 The ML-SEM Method

As a reminder, in this research we use secondary data to examine the impact of foreign ownership on firm performance through the mediating role of corporate risk-taking. According to Van der Voet et al. (2016), the linear structural model offers advantages in modelling this type of data (see below). In this context, researchers can use partial least squares (Hair et al., 2017b) or ML-SEM (Allison et al., 2017) to estimate the model. The choice between the two methods depends on the research objective and application conditions, as each method has its own advantages and disadvantages.

In this study, we consider the SEM model and choose the ML-SEM method for several reasons. First, the maximum likelihood method allows for missing data. Second, our panel data set includes information on 489 listed companies over a seven-year period from 2017 to 2023. Therefore, the number of observations is large (3,423 observations). In this case, conventional OLS estimation methods may lead to misleading results because the data may suffer from heteroscedasticity, autocorrelation, and endogeneity problems. Therefore, we decided to use the ML-SEM method instead of GMM method. It helps to solve numerous problems such as endogeneity and autoregressive changes in the data over time (time-varying variables) (Allison et al., 2017). Furthermore, it estimates numerous factors simultaneously, including direct and indirect relationships (Allison et al., 2017). Third, ML-SEM does not limit the time span and number of observations (Williams et al., 2018). Finally, the ML-SEM method provides statistical indices such as the χ^2 index, RMSEA index, CFI (comparative fit index) index, TLI index, and SRMR index to assess the suitability of the estimated models, thus increasing the reliability of the results obtained (Siddika & Haron, 2019).¹

Furthermore, the ML-SEM method through the Medsem technique proposed by Mehmetoglu (2018) has been applied in previous studies (Siddika & Haron, 2019; Bernardi et al., 2021). It is worth noting that Stata software is used to estimate the SEM model.

3.2.2 *The fsQCA Method*

According to Ragin (2008), fsQCA has been widely used in social science research. The advantage of this method is that it allows independent factors to be combined within numerous groups of factors to determine the necessary and sufficient conditions for influencing the dependent variable (Fiss, 2007; Greckhamer et al., 2018; Ragin, 2006; Sukhov et al., 2021). These combinations are random and create a causal relationship between the variables. This advantage helps to discover new relationships and new theories in academic research. However, the fsQCA method imposes strict requirements for consistency thresholds that can accept the results of complex data processing and analysis. In addition, when discussing the results, researchers need to be very knowledgeable about the context to demonstrate their practical value (Sukhov et al., 2023). The fsQCA method also helps researchers to randomly test combinations of variables, thereby strengthening the research results obtained with the ML-SEM method. The implementation of the fsQCA method consists of two steps. The first one is the calibration step, which consists in using different thresholds of percentiles (5%, 50%, 95%) of the considered variables to transform them into fuzzy sets with $n^1 = \text{percentile}(x, 95\%)$, $n^2 = \text{percentile}(x, 50\%)$ and $n^3 = \text{percentile}(x, 5\%)$. The second step consists of necessity analysis with a consistency score above 0.75 (Ragin, 2006). In our research, the consistency score indicates whether foreign ownership and corporate risk-taking are necessary to achieve a higher level of firm financial performance.

The next section presents the main results and their robustness check.

4. Empirical Results

Subsection 4.1 presents the results obtained with the ML-SEM method, while subsection 4.2 focuses on the results obtained with the fsQCA method. Subsection 4.3 examines the robustness of the results by dividing the full sample into different subsamples according to different levels of foreign ownership in the corporate capital structure using the ML-SEM method.

4.1 Results with the ML-SEM Method

Tables 4, 5, and 6 present the results obtained using the ML-SEM method to test the research hypotheses established in Section 2.

Table 4: The Results of SEM Model (Dependent Variable: TOBINQ)

Hyphothesis	Correlations	β	Goodness of fit indicators
H_1	OWN $\rightarrow$ RISK	0.308***	χ^2 (3) (Prob > χ^2) = 0.285 RMSEA = 0.017 CFI = 0.954 TLI = 0.930 SRMR= 0.013
H_2	OWN $\rightarrow$ TOBINQ	0.575***	
H_3	RISK $\rightarrow$ TOBINQ	0.878***	
H_4	OWN $\rightarrow$ RISK $\rightarrow$ TOBINQ	0.270***	
Controls	LEV $\rightarrow$ TOBINQ	-0.218***	
	SIZE $\rightarrow$ TOBINQ	-0.106***	
	FIELD $\rightarrow$ TOBINQ	-0.000	
	COVID $\rightarrow$ TOBINQ	0.122***	

Notes: *** represents 1% significance level. OWN: foreign ownership; RISK: corporate risk-taking; ROE, ROA, TOBINQ: firm performance; LEV: leverage; SIZE: firm size; COVID: COVID-19 pandemic; FIELD: industry.

Table 5: The Results of SEM Model (Dependent Variable: ROA)

Hyphothesis	Correlations	β	Goodness of fit indicators
H1	OWN $\rightarrow$ RISK	0.308***	χ^2 (3) (Prob > χ^2) = 0.583 RMSEA = 0.023 CFI = 0.923 TLI = 0.915 SRMR = 0.015
H2	OWN $\rightarrow$ ROA	0.018	
H3	RISK $\rightarrow$ ROA	0.05***	
H4	OWN $\rightarrow$ RISK $\rightarrow$ ROA	0.016***	
Controls	LEV $\rightarrow$ ROA	-0.048***	
	SIZE $\rightarrow$ ROA	-0.007***	
	FIELD $\rightarrow$ ROA	-0.000	
	COVID $\rightarrow$ ROA	0.021***	

Notes: *** represents 1% significance level. OWN: foreign ownership; RISK: corporate risk-taking; ROE, ROA, TOBINQ: firm performance; LEV: leverage; SIZE: firm size; COVID: COVID-19 pandemic; FIELD: industry.

Table 6: The Results of SEM Model (Dependent Variable: ROE)

Hypothesis	Correlations	β	Goodness of fit indicators
H_1	OWN $\rightarrow$ RISK	0.308***	χ^2 (3) (Prob > χ^2) = 0.589 RMSEA = 0.02 CFI = 0.935 TLI = 0.912 SRMR = 0.005
H_2	OWN $\rightarrow$ ROE	-0.035	
H_3	RISK $\rightarrow$ ROE	0.103***	
H_4	OWN $\rightarrow$ RISK $\rightarrow$ ROE	0.026***	
Controls	LEV $\rightarrow$ ROE	-0.115***	
	SIZE $\rightarrow$ ROE	0.016***	
	COVID $\rightarrow$ ROE	0.056***	
	FIELD $\rightarrow$ ROE	-0.001	

Notes: *** represents 1% significance level. OWN: foreign ownership; RISK: corporate risk-taking; ROE, ROA, TOBINQ: firm performance; LEV: leverage; SIZE: firm size; COVID: COVID-19 pandemic; FIELD: industry.

Regarding hypothesis H_1 , Tables 4, 5, and 6 show that OWN has a positive effect on RISK with a coefficient of $\beta = 0.308$ (p -value = 0.000). This result is consistent with previous studies on other countries (Kim, 2011; Huang et al., 2020; Dang et al., 2021) and on Vietnam (Vo, 2016). Therefore, this result is supported by agency theory when it emphasises that foreign ownership participation would increase corporate risk-taking because foreign ownership seeks investment opportunities with risky and competitive strategies. In addition, foreign ownership has appropriate welfare and bonus policies to encourage managers to perform their business activities effectively. Therefore, this approach helps to limit conflicts due to agency problems.

In addition, Tables 4, 5 and 6 also show that hypothesis H_2 is supported such that foreign ownership has a positive impact on firm performance measured by TOBINQ, with a coefficient β of 0.575 (p -value = 0.000) (Table 4). However, the beta coefficients are not significant with firm performance measured by ROA and ROE (Tables 5 and 6). This finding is consistent with previous studies (Kao et al., 2019; Nguyen et al., 2024). Moreover, this result is also consistent with the Vietnamese context. In fact, the fluctuations due to the US-China trade war and the COVID-19 pandemic have made Vietnam more attractive to foreign investors due to its political and economic stability. Therefore, the use of ROA and ROE indicators

related to the book value of firms is not ideal in this case because foreign investors use different accounting standards to estimate the book value of firms. In addition, the agency theory (Jensen & Meckling, 1976) emphasised that the diversity of capital ownership structure, especially with foreign ownership, helps to limit agency problems because foreign ownership has independence, objectivity and effective management ability.

Regarding hypothesis H_3 , Tables 4, 5 and 6 confirm that RISK has a positive impact on FP (firm performance) measured by TOBINO, ROA and ROE with coefficients $\beta = 0.878$, $\beta = 0.005$, $\beta = 0.103$, respectively. This result implies that when firms take more risks, they have more opportunities to improve their performance. In fact, corporate risk-taking to invest in new fields and businesses, such as environmentally friendly products, clean energy, etc., helps to create competitive advantages. This result is consistent with previous studies such as Chang et al. (2014) and Bhuiyan et al. (2020). To the best of our knowledge, this result has not been found in previous studies for the case of Vietnam. However, it is very consistent with the characteristics of Vietnam. Specifically, Vingroup Corporation, a large foreign-owned enterprise in Vietnam, has invested heavily in R&D for green cars, electric motorcycles, and organic agricultural products. As a result, the financial performance of Vingroup Corporation has increased significantly in recent years.

Therefore, the results in Tables 4, 5, and 6 empirically support hypotheses H_1 , H_2 , and H_3 for listed firms in Vietnam over the period 2017-2023. It is shown that there is a positive impact of foreign ownership on corporate risk-taking, and in turn, corporate risk-taking has a positive impact on firm performance. In addition, hypothesis H_4 states that foreign ownership has a positive influence on firm financial performance through the mediating role of corporate risk-taking. Based on the results of Tables 4, 5 and 6, this hypothesis is empirically supported (with a significance level of p -value of 0.000). Therefore, our empirical results show that foreign ownership has contributed to the improvement of firm performance of listed firms in Vietnam. Furthermore, this finding is supported by agency theory, which suggests that foreign ownership limits agency problems because foreign investors are more likely to demand transparent reporting from managers. In the context of global turbulence due to the COVID-19 pandemic and geopolitical conflicts, corporate risk-taking requires close government monitoring to have a positive impact on firm performance. This is evidenced by our empirical results and further confirms the results of Grassa et al. (2025) for India.

Regarding the results provided by the control variables (LEV, SIZE, COVID, and FIELD), according to Lindemanis et al. (2022), the increase in LEV (financial leverage) of firms causes repayment pressure and leads to lower firm performance. This finding is in line with our empirical results. On the other hand, the results show that firm size (SIZE) is negatively related to ROA and TOBINQ, while it is positively related to ROE. Meanwhile, sector differences have no significant relationship with firm performance, which confirms the findings of previous studies such as Huang and Yang (2016) and Mateev et al. (2023).

4.2 Results According to fsQCA Method

After analysing the results obtained with the ML-SEM method, we further test the effect of a random combination of the variables OWN, RISK, SIZE, LEV, COVID, and FIELD on firm financial performance using the fsQCA method (see Section 3 for more details). Tables 7, 8, and 9 present the results. Specifically, Table 7 shows the result related to the effect of the combination of the variables OWN, RISK, SIZE, LEV, COVID, and FIELD on TOBINQ. Using the fsQCA 4.1 software and a consistency threshold of 0.85 (Ragin, 2008), we find that the combination of OWN and RISK is a necessary and sufficient condition to improve TOBINQ with a consistency of 0.86951 and a solution coverage of 0.255576. The consistency is the correlation coefficient r , while the coverage is R^2 (Woodside, 2013). Specifically, r indicates the linear relationship between two variables, with r close to 1 or -1 indicating a strong relationship between the variables. Regarding R^2 , the coefficient represents the proportion of variance in the dependent variable that is explained by the linear regression model, with the value ranging from 0 to 1 and higher values indicate that the model better explains the dependent variable.

Table 7: fsQCA results on TOBINQ

Model: TOBINQ = f(OWN, RISK, SIZE, LEV, COVID, FIELD)
Frequency cutoff: 34
Consistency cutoff: 0.850064

Assumptions:	Raw coverage	Unique coverage	Consistency
OWN*RISK*LEV*~SIZE*FIELD	0.230867	0.109011	0.86951

Solution coverage: 0.255576
Solution consistency: 0.820196

Note: OWN: Foreign ownership; RISK: Corporate risk-taking; ROE, ROA, TOBINQ: Firm performance, LEV: Leverage, SIZE: Firm size, COVID: Covid, FIELD: Industries

Table 8: fsQCA Results on ROE

Model: $ROE = f(OWN, RISK, SIZE, LEV, COVID, FIELD)$

Frequency cutoff: 242

Consistency cutoff: 0.940867

Assumptions:	Raw coverage	Unique coverage	Consistency
OWN	0.2421	0.149466	0.860632
RISK*COVID	0.343225	0.250591	0.919598

Solution coverage: 0.2421

Solution consistency: 0.860632

Note: OWN: Foreign ownership; RISK: Corporate risk-taking; ROE, ROA, TOBINQ: Firm performance, LEV: Leverage, SIZE: Firm size, COVID: Covid, FIELD: Industries

Table 9: fsQCA Results on ROA

Model: $ROA = f(OWN, RISK, SIZE, LEV, COVID, FIELD)$

Frequency cutoff: 242

Consistency cutoff: 0.858353

Assumptions:	Raw coverage	Unique coverage	Consistency
LEV*~SIZE*OWN* FIELD	0.18751	0.00912234	0.923148
~SIZE*OWN*FIELD*COVID	0.108496	0.0516441	0.864436
RISK*LEV*~SIZE*FIELD*COVID	0.227121	0.152174	0.950317

Solution coverage: 0.221125

Solution consistency: 0.940867

Note: OWN: Foreign ownership; RISK: Corporate risk-taking; ROE, ROA, TOBINQ: Firm performance, LEV: Leverage, SIZE: Firm size, COVID: Covid, FIELD: Industries

The results in Table 8 show the effect of the combination of OWN, RISK, SIZE, LEV, COVID, and FIELD on ROE, using the cutoff (or consistency cutoff) of 0.9. The results do not show that the combination of OWN and RISK has a significant impact on ROE. Finally, Table 9 shows the effect of the combination of OWN, RISK, SIZE, LEV, COVID, and FIELD on ROA with a consistency cutoff of 0.858353. It shows that there is no significant effect of the combination of OWN and RISK on ROA.

Therefore, through the results with the fsQCA method, we find that the combination of foreign ownership with corporate risk-taking is a necessary and sufficient condition for increasing firm performance as measured by TOBINQ. However, this is not the case for ROA and ROE. This result again shows the difference between TOBINQ and ROA/ROE as the former considers the market value of

firms while the latter considers only the book value. In other words, firms in Vietnam should increase the proportion of foreign ownership in their capital structure to improve management capabilities, strategies, and business development plans to seek opportunities to expand their market share and firm performance. This result further confirms the result obtained with the ML-SEM method.

The next subsection presents a robustness check analysis of the main result above by dividing the full sample into different subsamples according to different levels of foreign ownership.

4.3 Robustness Check Analyses

To divide the total sample into different subsamples, we consider the level of foreign ownership according to the provisions of the Law on Enterprises 2020 of Vietnam. The thresholds of foreign ownership specified in this law are as follows: less than 5% (OWN1 subsample), from 5% to 50% (OWN2 subsample), and more than 50% (OWN3 subsample). In this regard, it is worth noting that some previous studies also consider different thresholds of foreign ownership to test its impact on firm performance, such as Hess et al. (2010). Table 10 presents the results with the ML-SEM method applied to the three subsamples of firms with the three foreign ownership thresholds mentioned above.

Table 10: ML-SEM Results with Subsamples According to the Level of Foreign Ownership

	ROA			ROE			TOBINQ		
	OWN1	OWN2	OWN3	OWN1	OWN2	OWN3	OWN1	OWN2	OWN3
OWN	-0.027** [-2.16]	0.0006 [0.20]	0.027** [2.33]	-0.0218 [-0.82]	-0.010 [-1.34]	0.026 [0.97]	-0.302** [-2.35]	0.108*** [2.96]	0.328** [2.51]
SIZE	-0.001 [-0.62]	-0.0009 [-0.57]	-0.001 [-0.61]	0.028*** [8.26]	0.029*** [8.35]	0.028*** [8.26]	0.006 [0.36]	-0.006 [-0.35]	0.0059 [0.36]
LEV	-0.064*** [-9.07]	-0.064*** [-9.15]	-0.064*** [-9.07]	-0.146*** [-9.74]	-0.147*** [-9.83]	-0.146*** [-9.74]	-0.476*** [-6.58]	-0.475*** [-6.57]	-0.476*** [-6.59]
COVID	0.009*** [3.89]	0.009*** [3.78]	0.009*** [3.91]	0.035*** [6.60]	0.035*** [6.63]	0.035*** [6.61]	-0.067*** [-2.64]	-0.074*** [-2.89]	-0.067*** [-2.62]
FIELD	-0.001** [-2.14]	-0.001** [-2.25]	-0.001** [-2.13]	-0.002* [-1.95]	-0.002** [-1.96]	-0.002* [-1.95]	-0.007 [-1.41]	-0.008 [-1.62]	-0.007 [-1.40]

Note: ***, ** and * represent statistical significance at the 1%, 5% and 10% levels, respectively. t statistics in brackets. OWN1 refers to a subsample of firms for which foreign ownership is under 5%. OWN2 refers to a subsample of firms with foreign ownership between 5% and 50%. OWN3 refers to a subsample of firms with foreign ownership higher than 50%. RISK: Corporate risk-taking; ROE, ROA, TOBINQ: Firm performance, LEV: Leverage, SIZE: Firm size, COVID: COVID-19 pandemic, FIELD: Industries.

To test the effect of different foreign ownership thresholds on firm performance, we consider three subsamples of firms within the three foreign ownership thresholds mentioned above. For firms in subsample OWN1 (foreign ownership below 5%), the effect of OWN is negative for ROA and TOBINQ, but insignificant for ROE. This result may be because when the percentage of foreign ownership is very low (under 5%), the rights and obligations of foreign owners are low. Since a low percentage of foreign ownership is usually held by individual investors, the latter invest mostly for the purpose of short-term profit. Therefore, their ability to connect with local firms is less effective. As a result, their influence on firm decisions is limited and can have a negative impact on firm performance.

Regarding subsample OWN2, firms with foreign ownership between 5% and 50%, it is important to note that according to Vietnamese regulations, foreign individuals or organisations owning capital at this threshold have the right to control operations, make recommendations regarding business strategies, and convene extraordinary general meetings. In this context, Table 10 shows that for firms in the OWN2 subsample, foreign ownership has a positive relationship only with TOBINQ, not with ROA/ROE. This result is therefore consistent with that for the full sample. Regarding subsample OWN3, firms with foreign ownership higher than 50%, it is important to note that individuals or organisations owning capital at this threshold have decisions on business operating strategies as well as changes in corporate governance and control. In this case, Table 10 shows that foreign ownership has a positive impact on ROA and TOBINQ.

Overall, the robustness check analysis on subsamples shows that firms with very low foreign ownership (less than 5%) do not benefit from these investors to improve their performance. However, for firms with foreign ownership between 5% and 50%, there is a positive effect on TOBINQ. Interestingly, when foreign ownership exceeds 50%, there is a positive effect on ROA in addition to TOBINQ. This result confirms the benefits of having foreign ownership in the capital structure of listed Vietnamese firms.

5. Conclusion

This study examines the impact of foreign ownership on firm performance through the mediating role of corporate risk-taking, based on data from 489 non-financial firms listed on two major stock exchanges in Vietnam (HSX and HOSE) during 2017-2023. The empirical results show that foreign ownership positively affects

firm performance measured by TOBINQ, with a mediating role of corporate risk-taking. Moreover, the fsQCA analysis method shows that the combination of foreign ownership and corporate risk-taking is a necessary and sufficient condition for improving firm performance measured by TOBINQ. In fact, a firm with a diversified capital structure, especially with the participation of foreign investors, tends to take higher risks. Therefore, the combination of foreign ownership and corporate risk-taking can be a driver of increasing firm performance. However, it is important to note that these findings cannot be fully applied to accounting-based measures of performance such as ROA and ROE. Furthermore, these findings cannot be applied when foreign ownership is less than 5%.

Implications for academics: This study is the first to examine the mediating role of corporate risk-taking in the influence of foreign ownership on firm performance. The results add to the knowledge base related to this topic, emphasising the mediating role in economic relationships and contributing to a more thorough explanation of the research problem. Moreover, we conducted two complementary econometric methods, ML-SEM and fsQCA, to verify the research results, enhancing the research's value (Kang & Shao, 2023; Olya & Al-Ansi, 2018; Rasoolimanesh et al., 2021).

Implications for practical applications: The research results demonstrate that foreign ownership increases corporate risk-taking, thereby improving firm performance. This provides a basis for policies and businesses to focus on this source of capital to boost economic development. Furthermore, the parties need to compare and contrast the benefits and limitations of mobilising this capital to develop appropriate policies for each period. However, research shows that when the foreign ownership ratio is less than 5%, the impact on corporate governance and management is negligible. Therefore, the parties need to consider an appropriate ratio to increase the role and influence of this component, thereby providing risk control solutions while still enhancing firm performance.

Our research also has certain limitations, which open up avenues for future research. First, the dataset comprises a sample of 489 non-financial firms listed in Vietnam over the 7 years from 2017 to 2023. This dataset does not allow for a comprehensive assessment of all firms in Vietnam, especially unlisted firms. Second, there may be other measures of firms' risk-taking, such as research and development intensity, value-at-risk, idiosyncratic risk, etc. Future studies may choose to consider these measures.

Acknowledgments

The first author would like to thank the sponsor of the Social & Sustainable Finance Chair of the MBS School of Business, BNP Paribas (France), for its continuous support. Any errors or omissions remain the responsibility of the authors. We have no conflicts of interest to declare.

Endnote

- ¹ The χ^2 index is used to assess the fit of the model to the actual data. Its value is recommended to be higher than 0.05 (Pituch and Stevens, 2015). The SRMR index considers the difference between the actual collected data and the predicted model. Its value should be less than 0.05 (Schumacker and Lomax, 2016). The CFI index compares the model fit of the collected data with other models. The TLI is good if it is in the range of 0.9 to 1 (Schumacker and Lomax, 2016). The RMSEA index is like the SRMR index. Its value should be in the range of 0.05 to 0.08 (Pituch and Stevens, 2015).

References

- Abel, I., & Siklos, P. L. 2004. Secrets to the successful Hungarian bank privatization: The benefits of foreign ownership through strategic partnerships. *Economic Systems*, 28: 111-123. DOI: 10.1016/j.ecosys.2004.05.002
- Ahmadjian, C. L., & Robbins, G. E. 2005. A clash of capitalism: Foreign shareholders and corporate restructurings in 1990s Japan. *American Sociological Review*, 70(3): 451-471. DOI: 10.1177/000312240507000305
- Allison, P. D., Williams, R., & Moral-Benito, E. 2017. Maximum likelihood for cross lagged panel models with fixed effects. *Socius: Sociological Research for a Dynamic World*, 3: 1-17. DOI: 10.1177/2378023117710578
- Amihud, Y., & Lev, B. 1981. Risk reduction as a managerial motive for conglomerate mergers. *Bell Journal of Economics*, 12(2): 605-617. DOI: 10.2307/3003575
- An, Z., Chen, C., Li, D., & Yin, C. 2021. Foreign institutional ownership and the speed of leverage adjustment: International evidence. *Journal of Corporate Finance*, 68: 101966. DOI: 10.1016/j.

jcorpfin. 2021.101966

- Athira, A., Ramesh, V. K., & Sinu, M. 2024. COVID-19 pandemic and firm performance: an empirical investigation using a cross-country sample. *IIMB Management Review*, 36(3): 269-281.
- Bena, J., Ferreira, M. A., Matos, P., & Pires, P. 2017. Are foreign investors locusts? The long-term effects of foreign institutional ownership. *Journal of Financial Economics*, 126(1): 122-146. DOI: 10.1016/j.jfineco.2017.07.005
- Bernardi, L., Mattila, M., Papageorgiou, A., & Rapeli, L. 2021. Down but not yet out: Depression, political efficacy, and voting. *Political Psychology*, 44: 217-233. DOI: 10.1111/pops.12837
- Bhuiyan, M. B. U., Cheema, M. A., & Man, Y. 2020. Risk committee, corporate risk-taking and firm value. *Managerial Finance*, 47: 285-309. DOI: 10.1108/MF-07-2019-0322
- Boubakri, N., Cosset, J. C., & Saffar, W. 2013. The role of state and foreign owners in corporate risk-taking: Evidence from privatization. *Journal of Financial Economics*, 108: 641-658. DOI: 10.1016/j.jfineco.2012.12.007
- Buallay, A., Hamdan, A., & Zureigat, Q. 2017. Corporate governance and firm performance: Evidence from Saudi Arabia. *Australasian Accounting, Business and Finance Journal*, 11: 78-98. DOI: 10.14453/aabfj.v11i1.6
- Carney, M., Estrin, S., Liang, Z., & Shapiro, D. 2019. National institutional systems, foreign ownership and firm performance: The case of understudied countries. *Journal of World Business*, 54: 244-257. DOI: 10.1016/j.jwb.2018.03.003
- Chang, C. S., Yu, S. W., & Hung, C. H. 2014. Firm risk and performance: The role of corporate governance. *Review of Managerial Science*, 9: 141-173.
- Dachs, B., & Peters, B. 2014. Innovation, employment growth, and foreign ownership of firms: A European perspective. *Research Policy*, 43: 214-232. DOI: 10.1016/j.respol.2013.08.001
- Dang, R., Le, N. T., Reddy, K., & Vu, M. C. 2022. Foreign ownership and corporate risk-taking: Panel threshold evidence from a transactional economy. *Finance Research Letters*, 45: 102190. DOI: 10.1016/j.frl.2021.102190
- Douma, S., George, R., & Kabir, R. 2006. Foreign and domestic ownership, business groups, and firm performance: Evidence

- from a large emerging market. *Strategic Management Journal*, 27: 637-657. DOI: 10.1002/smj.535
- Eisenhardt, K. M. 1989. Agency theory: An assessment and review. *Academy of Management Review*, 14: 57-74. DOI: 10.5465/amr.1989.4279003
- Estrin, S., Hanousek, J., Kočenda, E., & Svejnar, J. 2009. The effects of privatization and ownership in transition economies. *Journal of Economic Literature*, 47: 699-728. DOI: 10.1257/jel.47.3.699
- Faccio, M. A., Marchica, M. T., & Mura, R. 2011. Large shareholder diversification and corporate risk-taking. *Review of Financial Studies*, 24(11): 3601-3641. DOI: 10.1093/rfs/hhr065
- Fang, V. W., Maffett, M., & Zhang, B. 2015. Foreign institutional ownership and the global convergence of financial reporting practices. *Journal of Accounting Research*, 53(3): 593-631. DOI: 10.1111/1475-679X.12076.
- Ferreira, M. A., & Matos, P. 2008. The colors of investors' money: The role of institutional investors around the world. *Journal of Financial Economics*, 88: 499-533. DOI: 10.1016/j.jfineco.2007.07.003
- Filatotchev, I., Isachenkova, N., & Mickiewicz, T. 2007. Corporate governance, managers' independence, exporting, and performance of firms in transition economies. *Emerging Markets Finance and Trade*, 43: 62-77. DOI: 10.2753/REE1540-496X430504
- Fiss, P. C. 2007. A set-theoretic approach to organizational configurations. *Academy of Management Review*, 32: 1180-1198. DOI: 10.5465/amr.2007.26586092
- Gillan, S. L., & Starks, L. T. 2003. Corporate governance, corporate ownership, and the role of institutional investors: A global perspective. *Journal of Applied Finance*, 13(2), 4-22. DOI: 10.2139/ssrn.439500
- Grassa, R., Alhashmi, M., & Rafeea, R. 2025. Risk and performance disclosure during the Covid-19 pandemic: does ownership structure matter?. *Journal of Financial Reporting and Accounting*, 23(6): 2553-2572.
- Greckhamer, T., Furnari, S., Fiss, P. C., & Aguilera, R. V. 2018. Studying configurations with qualitative comparative analysis: Best practices in strategy and organization research. *Strategic Organization*, 16: 482-495. DOI: 10.1177/14761270187864
- Hair Joseph F, Sarstedt Marko, Ringle Christian M & Gudergan

- Siegfried P. 2017b. *Advanced issues in partial least squares structural equation modeling*. The United States of America: Sage
- Haque, F. 2018. Ownership, regulation and bank risk-taking: evidence from the Middle East and North Africa (MENA) region. *Corporate Governance: The International Journal of Business in Society*, 19(1): 23-43. DOI: 10.1108/CG-07-2017-0135
- Hess, K., Gunasekarage, A., & Hovey, M. 2010. State-dominant and non-state-dominant ownership concentration and firm performance: Evidence from China. *International Journal of Managerial Finance*, 6: 264-289. DOI: 10.1108/17439131011074440
- Ho, T., Phung, D. N., & Nguyen, Y. N. 2021. State ownership and corporate risk-taking: Empirical evidence in Vietnam. *Australian Economic Papers*, 60: 466-481. DOI: 10.1111/1467-8454.12214
- Holmstrom, B. 1989. Agency costs and innovation. *Journal of Economic Behavior and Organization*, 12(3): 305-327. DOI: 10.1016/0167-2681(89)90025-5
- Huang, C. H., & Yang, C. H. 2016. Ownership, trade, and productivity in Vietnam's manufacturing firms. *Asia-Pacific Journal of Accounting & Economics*, 23: 356-371. DOI: 10.1080/16081625.2016.1188449
- Huang, G., An, Z. and Li, D., 2023. Foreign institutional ownership and corporate risk-taking: International evidence. *Corporate Governance: An International Review*, 31(2): 260-284. DOI: 10.1111/corg.12456
- Huang, Z. X., Tang, Q., & Huang, S. 2020. Foreign investors and stock price crash risk: Evidence from China. *Economic Analysis and Policy*, 68: 210-223. DOI: 10.1016/j.eap.2020.09.016
- Jensen, M. C., & Meckling, W. H. 1976. Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics*, 3: 305-360.
- John, K., Litov, L., & Yeung, B. 2008. Corporate governance and risk-taking. *Journal of Finance*, 63: 1679-1728. DOI: 10.1111/j.1540-6261.2008.01372.x
- Kang, W., & Shao, B. 2023. The impact of voice assistants' intelligent attributes on consumer well-being: Findings from PLS-SEM and fsQCA. *Journal of Retailing and Consumer Services*, 70: 103130. DOI: 10.1016/j.jretconser.2022.103130
- Kao, M. F., Hodgkinson, L., & Jaafar, A. 2019. Ownership structure,

- board of directors and firm performance: Evidence from Taiwan. *Corporate Governance: The International Journal of Business in Society*. DOI: 10.1108/CG-04-2018-0144
- Kim, B. 2011. Do foreign investors encourage value-enhancing corporate risk taking? *Emerging Markets Finance and Trade*, 47: 88-110. DOI: 10.2753/REE1540-496X470305
- Lindemanis, M., Loze, A., & Pajuste, A. 2022. The effect of domestic to foreign ownership change on firm performance in Europe. *International Review of Financial Analysis*, 81: 101341. DOI: 10.1016/j.irfa.2019.04.004
- Loncan, T. 2020. Foreign institutional ownership and corporate cash holdings: Evidence from emerging economies. *International Review of Financial Analysis*, 71: 101295. DOI: 10.1016/j.irfa.2018.12.003
- Luong, H., Moshirian, F., Nguyen, L., Tian, X., & Zhang, B. 2017. How do foreign institutional investors enhance firm innovation? *Journal of Financial and Quantitative Analysis*, 52(4): 1449-1490. DOI: 10.1017/S0022109017000497
- Mateev, M., Sahyouni, A., & Tariq, M. U. 2023. Bank regulation, ownership and risk taking behavior in the MENA region: Policy implications for banks in emerging economies. *Review of Managerial Science*, 17: 287-338. DOI: 10.1007/s11846-022-00529-5
- Mehmetoglu, M. 2018. Medsem: A Stata package for statistical mediation analysis. *International Journal of Computational Economics and Econometrics*, 8: 63-78. DOI: 10.1504/IJCEE.2018.088321
- Mohsni, S., Otchere, I. and Shahriar, S. 2021. Board gender diversity, firm performance and risk-taking in developing countries: The moderating effect of culture. *Journal of International Financial Markets, Institutions and Money*, 73: 101360. DOI: 10.1016/j.intfin.2021.101360
- Nartea, G. V., Ward, B. D., & Yao, L. J. 2011. Idiosyncratic volatility and cross-sectional stock returns in Southeast Asian stock markets. *Accounting & Finance*, 51: 1031-1054. DOI: 10.1111/j.1467-629X.2010.00384.x
- Nguyen, P. T. L., Huynh, N. T., & Huynh, T. T. C. 2024. Foreign investment and the firm performance in emerging securities market: Evidence from Vietnam. *Journal of Economics and Development*, 26: 82-102. DOI: 10.1108/JED-12-2022-0244
- Olya, H. G., & Al-Ansi, A. 2018. Risk assessment of halal products

- and services: Implication for tourism industry. *Tourism Management*, 65: 279-291. DOI: 10.1016/j.tourman.2017.10.015
- Paligorova, T. 2010. Corporate risk-taking and ownership structure. Working Paper. Bank of Canada. DOI: 10.2139/ssrn.1364393
- Pituch, K. A., & Stevens, J. P. 2015. *Applied multivariate statistics for the social sciences: Analyses with SAS and IBM's SPSS*. Routledge.
- Ragin, C. C. 2006. Set relations in social research: Evaluating their consistency and coverage. *Political Analysis*, 14: 291-310. DOI: 10.1093/pan/mpj019
- Ragin, C. C. 2008. *Redesigning social inquiry: Fuzzy sets and beyond*. University of Chicago Press.
- Rashid, M. M. 2020. Ownership structure and firm performance: The mediating role of board characteristics. *Corporate Governance*, 20: 719-737. DOI: 10.1108/CG-02-2019-0056
- Rasoolimanesh, S.M., Ringle, C.M., Sarstedt, M. and Olya, H. 2021. The combined use of symmetric and asymmetric approaches: Partial least squares-structural equation modeling and fuzzy-set qualitative comparative analysis. *International Journal of Contemporary Hospitality Management*, 33(5): 1571-1592. DOI: 10.1108/IJCHM-10-2020-1164
- Schumacker, E., & Lomax, G. 2016. *A Beginner's Guide to Structural Equation Modelling*. 4th ed.
- Shleifer, A., & Vishny, R. W. 1997. A survey of corporate governance. *Journal of Finance*, 52: 737-783. DOI: 10.1111/j.1540-6261.1997.tb04820.x
- Shrivastav, S. M., & Kalsie, A. 2017. The relationship between foreign ownership and firm performance in India: An empirical analysis. *Artha Vijnana*, 59: 152-162.
- Siddika, A., & Haron, R. 2019. Capital regulation and ownership structure on bank risk. *Journal of Financial Regulation and Compliance*, 28: 39-56. DOI: 10.1108/JFRC-02-2019-0015
- Sukhov, A., Lättman, K., Olsson, L. E., Friman, M., & Fujii, S. 2021. Assessing travel satisfaction in public transport: A configurational approach. *Transportation Research Part D: Transport and Environment*, 93: 102732. DOI: 10.1016/j.trd.2021.102732
- Van der Voet, J., Kuipers, B. S., & Groeneveld, S. 2016. Implementing change in public organizations: The relationship between leadership and affective commitment to change in a public

- sector context. *Public Management Review*, 18: 842-865. DOI: 10.1080/14719037.2015.1045020
- Vo, X. V. 2016. Foreign investors and corporate risk taking behavior in an emerging market. *Finance Research Letters*, 18: 273-277. DOI: 10.1016/j.frl.2016.04.027
- Williams, R., Allison, P. D., & Moral-Benito, E. 2018. Linear dynamic panel-data estimation using maximum likelihood and structural equation modeling. *The Stata Journal*, 18(2): 293-326. DOI: 10.1177/1536867X1801800201
- Woodside, A.G. 2013. Moving beyond multiple regression analysis to algorithms: Calling for adoption of a paradigm shift from symmetric to asymmetric thinking in data analysis and crafting theory. *Journal of Business Research*, 66(4): 463-472.