

THE UNIVERSITY OF DA NANG
UNIVERSITY OF ECONOMICS

NGUYEN HO PHUONG THAO

**RESEARCH ON THE INFLUENCE OF
FEMALE LEADERS AND FAMILY OWNERSHIP ON
THE RISK-TAKING OF VIETNAMESE LISTED FIRMS**

SUMMARY OF DOCTORAL THESIS

Da Nang – 2024

**The thesis is completed at
University of Economics - The University of DaNang**

Supervisors: Assoc. Prof. Vo Thi Thuy Anh

Reviewer 1: Prof. Dr. Nguyen Van Tien

Reviewer 2: Assoc. Prof. Nguyen Thi My Linh

Reviewer 3: Assoc. Prof. Phan Dien Vy

The thesis shall be defended in front of the thesis defense committee meeting at University of Economics – The University of Da Nang on November 29, 2024

The thesis can be found at:

- National Library of Vietnam
- The University of Da Nang - The Center for Learning Information Resources and Communication.
- Library of University of Economics - The University of Da Nang

INTRODUCTION

1. Motivations

Risk is an issue that companies face every day and has a significant impact on company performance (Gustafsson & Uysal, 2018; John et al., 2008); the level of risk-taking is a crucial factor in determining a company's success because it affects the corporate's performance, investment, growth, sustainability, and long-term development (Hiebl, 2012). A growing body of literature has recently focused on CEO traits that influence firm risk-taking.

The evidence on the impact of CEO characteristics, specifically CEO gender, on risk-taking is also quite evident in Vietnam. However, studies rarely examine gender and CEO power on firm risk-taking.

Although the Government has made great efforts to create gender equality, deeply ingrained stereotypes about women and their role in society still lead to a gap in achieving senior leadership positions in companies between women and men. Additionally, firms in Vietnam have relatively weak external governance mechanisms, which is reflected in the many severe violations of large companies and corporations. It is time for companies to reconsider the role of the CEO to find new solutions for internal governance mechanisms, aiming for stable growth. Consequently, research on the influence of female CEOs and CEO power on risk-taking in the current context is appropriate.

Many scholars have attempted to provide empirical evidence that women influence the performance of family firms. Nevertheless, more research is still needed to explore the role of women when they are present in senior leadership positions in family firm risk-taking.

Corporate governance mechanisms increasingly emphasize the role of

managers and ownership structures, especially in many countries that are increasingly interested in gender equality in business, so studying the influence of female CEOs and firm risk-taking under the influence of ownership structure and CEO duality structure provides essential contributions.

2. Research objectives

Firstly, analyze the impact of female CEOs and the ratio of female members on the Board of Directors on the risk-taking of non-financial companies listed on the Vietnamese stock market.

Secondly, the author analyzes the moderating impact of CEO ownership and CEO's family ownership rate on the relationship between female CEOs and the risk-taking of non-financial companies listed on the Vietnamese stock market.

Thirdly, analyze the impact of female CEOs on the risk-taking of non-financial companies listed on the Vietnamese stock market when CEO duality.

Fourthly, suggest policies for management agencies, implications for corporate governance, and indicators for investors.

3. Research question

- How do female CEOs and the ratio of female members on the Board of Directors affect the firm risk-taking of non-financial listed firms on the Vietnamese stock market?

- How do the CEO's ownership ratio and the CEO's family ownership rate impact the relationship between female CEOs and the risk-taking of non-financial listed firms on the Vietnamese stock market?

- What will female CEOs' impact on the risk-taking of non-financial listed firms on the Vietnamese stock market in case of CEO duality?

- What should macro and micro-level policymakers pay attention to when making policies for companies with female leaders? What should

investors in the Vietnamese stock market keep in mind when investing in companies with female leaders?

4. Research objects and scopes

4.1. Research object

The research object of the thesis is the influence of female leaders on the risk-taking of listed non-financial companies in Vietnam and the moderating role of CEO ownership and CEO family ownership on the relationship between female CEOs and firm risk-taking. Besides, the thesis also considers the influence of female leaders on the risk-taking of listed non-financial companies in Vietnam in the context of CEO duality.

4.2. Research scope

The thesis studies the impact of female CEOs and the ratio of female members on the board of directors on the level of risk-taking of companies listed on the Vietnam Stock Exchange from 2010 to 2020. Due to data limitations, the study only used the CEO's family ownership ratio.

5. Methods

The main methods are OLS regression and System GMM to handle endogeneity. Data is collected from FiinPro and annual reports, including information about the CEO, board of directors, and ownership percentage. In addition, the study also uses descriptive statistical methods to clarify the research problem further.

6. Contributions

From theoretical perspective

- First, the study provides evidence of the impact of female CEOs and the proportion of female members on the board of directors on corporate risk-taking. It examines the influence of power from stock ownership and CEO duality. The study hopes to promote more research on the power of female CEOs in companies.

- Secondly, the study enriches the existing literature by examining the moderating impact of the CEO's family ownership ratio on the relationship between the CEO and risk-taking, filling in the current research gap.

- Thirdly, the thesis contributes to understanding the impact of female CEOs in the institutional and socio-cultural context of Vietnam, where the rate of female leaders is low, and gender stereotypes are still strong, helping to expand understanding about female influence CEOs in a developing country.

From practical perspective

Firstly, few studies in the Vietnamese market have provided evidence of the influence of female CEOs on firm risk-taking concerning the CEO's ownership ratio and CEO duality. The thesis contributes to the existing literature by presenting comprehensive empirical evidence from a developing economy on the influence of female CEOs on risk-taking as influenced by CEO ownership and CEO duality. Using panel data with a long research period on all listed firms on the Vietnamese stock market is also a new contribution to the thesis.

Secondly, the thesis is the basis for developing practical research on ownership structure affecting vital company decisions, especially family ownership. In addition, to the best of the author's knowledge, no previous study has investigated the moderating role of CEO's family ownership on the relationship between female CEOs and listed firm risk-taking. The thesis could be the first study using this data set in Vietnam.

Thirdly, the thesis results can contribute to a framework for policymakers to promulgate appropriate regulations on the management of listed companies; improving legal regulations related to female leaders, especially the ownership structure of these companies, is aimed at minimizing risks and improving operating efficiency for the company

while protecting minority shareholders. In addition, the empirical evidence from the results of the thesis can also provide suggestions for corporate governance issues and issues to consider when appointing CEOs along with their roles and responsibilities. Finally, this thesis can be a necessary source of information and a signal for investors when formulating and implementing investment portfolios.

7. Thesis structure

The thesis is structured into chapters, including:

Chapter 1: Theoretical and empirical basis on the influence of female leaders and family ownership on firm risk-taking

Chapter 2: Research Design

Chapter 3: Research results on the influence of female leaders and family ownership on the risk-taking of listed firms in Vietnam

Chapter 4: Discussion of research results and recommendations

CHAPTER 1

THEORETICAL AND EMPIRICAL BASIS ON THE INFLUENCE OF FEMALE LEADERS AND FAMILY OWNERSHIP ON FIRM RISK-TAKING

1.1. General issues of female leaders family ownership and firm risk-taking

- Female leaders: In recent years, more and more women have held executive positions in companies. Studies show that when acting as CEOs, chair of the Board of Directors, or members of the company's management board, women influence the firm's performance or risk-taking.

- Family ownership: Some countries have data on family ownership, but mainly for private companies or small and medium-sized enterprises. For public companies, the common point in the studies is that they are all

based on the list of shareholders to consider ownership in the company, the relationship between shareholders, and that most related people must know to hold a significant ownership ratio.

- Risk-taking has a significant impact on profits and business performance. In corporate governance research, the standard deviation of profit margin and debt ratio are commonly used risk measures.

1.2. Theory of the nexus between female leaders, family ownership, and firm risk-taking

1.2.1. Theories about the nexus between female leaders, CEO ownership, and CEO duality and firm risk-taking

The literature review on female corporate leadership needs a specific theoretical framework to explain the relationship between female leadership and corporate risk-taking. Hence, some essential theories commonly applied include Agency theory, upper echelons theory, resource dependence theory, social role theory, and contingency theory of leadership.

1.2.2. Theories about the nexus between family ownership and firm risk-taking

Agency theory analyzes conflicts between shareholders and management and between majority and minority shareholders, especially in developed countries. Socioemotional wealth (SEW) theory posits that family firms prioritize protecting non-economic and emotional value, often leading to management and financial decisions not focused on economic gain.

1.3. Empirical studies on the impact of female leaders, family ownership, and firm risk-taking

1.3.1. Empirical studies on the impact of female leaders on firm risk-taking

The relationship between leader gender and corporate risk-taking has attracted much attention from global research. Research has shown that the presence of women on boards is often associated with reduced risk-taking and corporate performance. Studies in Vietnam also show the influence of leadership gender on risk management, but the results are inconsistent, and there are differences between studies.

1.3.2. Empirical studies on the impact of CEO ownership, CEO family ownership, and CEO duality on firm risk-taking

The impact of CEO power on corporate strategy has attracted much public debate in academic settings. Many recent studies have shown a complex interaction between CEO characteristics, power, and risk-taking behavior. Regarding family ownership, in Vietnam, research on this topic is limited, with some studies showing that family ownership affects operating performance. However, more data and research are needed to clarify this matter.

1.4. Research gaps

Thus far, although there have been many studies both domestically and internationally focusing on examining the direct influence of female leaders on risk-taking (Faccio et al., 2016; Song and Chung, 2023; Tran et al., 2020), however, the conclusions drawn on this topic are not entirely consistent with each other. One reason that may explain the inconsistency in these research results is that the socio-cultural characteristics of each country and each region are different. Typically, gender inequality has been measured and ranked by international organizations for each country and region (UNDP, 2022). In particular, Vietnamese social culture has quite heavy gender stereotypes. Traditionally, men are the family's economic breadwinners. They are the more vigorous sex, so they are suitable for big jobs and decision-making jobs, while women play a secondary role in the family and society (Do

Hoang, 2006). The external governance mechanism of listed companies in Vietnam is generally relatively weak, reflected in the shallow assessment score of corporate governance quality in the ASEAN region (Asian Development Bank, 2021) and is in the group of poor low governance quality index in 150 assessed countries (SAHA Rating, 2021). In such a context, to be able to protect the rights of minority shareholders, companies need the presence of an effective CEO. Therefore, the thesis examines the relationship between female leadership and risk-taking in the Vietnamese context. From there, it contributes to the research overview by providing empirical evidence from an Eastern developing country with a relatively weak external corporate governance mechanism and a typical gender bias culture within society. In addition, the research is based on a manually collected data set of all companies listed on the HOSE and HNX exchanges over a long period, which is also different from previous studies in Vietnam.

Existing studies mainly examine the direct effect of CEO ownership. However, Finkelstein (1992) pointed out that CEO ownership is also a form of power. Therefore, it is necessary to consider the combination of the power created by female CEOs from this ownership and the relationship between female CEOs and corporate risk-taking. This is a research gap in internal governance mechanisms, especially related to the internal ownership of companies.

Family ownership is still not unified in academic research, so there are many different concepts about this ownership structure (Gómez-Mejía et al., 2007; Handler, 1989; La Porta et al., 1999). In Vietnam, family ownership is still a relatively new concept; the number of studies on this topic is relatively thin, and there is no consistency in measurement. Recently, many large corporations and companies, such as Van Thinh Phat Group Joint Stock Company and Quoc Cuong Gia Lai

Joint Stock Company, have committed severe violations, affecting minority investors and the stability and development potential of the Stock market. In particular, these companies all have female CEOs and family members who own most of the company's shares. Through this, companies in Vietnam also have a family ownership structure, which is closely related to the management apparatus and can affect the company's results. Therefore, it is necessary to consider these factors in the corporate governance structure comprehensively. Researchers have not conducted this regulatory relationship on a sample of Vietnamese-listed companies. This will be the next research gap that the thesis will exploit.

In addition, the CEO duality structure can also create centralized power for CEOs, which many studies have mentioned, but how does having a female CEO and duality affect risk-taking? In Vietnam, there have been no studies mentioning it. There needs to be a study in Vietnam that approaches this aspect of governance mechanisms when examining the relationship between female leaders and companies' risk-taking. It is also a gap that the thesis wants to confirm.

CHAPTER 2. RESEARCH DESIGN

2.1. Hypotheses about the impact of female leaders, family ownership on firm risk-taking

Proposed hypotheses:

H1: Companies with female CEOs accept lower risks than companies with male CEOs.

H2: The higher the proportion of female members on a company's Board of Directors, the lower the risk-taking of firm.

H3: The CEO ownership ratio will reduce the negative impact of female CEOs on corporate risk-taking.

H4: The CEO's family ownership ratio will reduce the negative effect of female CEOs on firm risk-taking

H5a: The impact of female CEOs on a firm risk-taking will be weaker in firms with CEO duality

H5b: The impact of female CEOs on a firm risk-taking will be more substantial in firms with CEO duality

2.2. Measurement of research variables

2.2.1. Dependent variables

This study measures a firm's risk-taking using earning volatility and debt ratio.

2.2.2. Main independent variables

- Female CEO: The dummy variable takes the value one if the company has a female CEO and zero otherwise. (fceo)
- The ratio of female members on the Board of Directors: Measured by the ratio of female members. (gender)
- CEO ownership ratio: Measured by the ratio of shares held by the CEO to the total number of outstanding shares. (ceo_own)
- CEO's family ownership ratio: Measured by the percentage of the CEO's and family members' direct shares to the company's total equity. (ceo_famown)
- CEO duality: The dummy variable takes the value one if the CEO is also in the position of Chairman of the Board of Directors and takes the value 0 otherwise. (duality)

2.2.3. Other independent variables

- Variable representing corporate governance mechanism: Size of the Board of Directors (bsize), the proportion of independent members (indep).
- Variable representing CEO traits: CEO's experience (ceoexe), CEO's age (ceoage), qualifications of the CEO (ceolevel).

- Firm-specific variables: The ratio of fixed assets to total assets (tang), firm age (firmage), firm size (firmsize), firm performance (ROA), sale growth rate (growth).

2. 3. Research models

2.3.1. Model analyzing the impact of female leaders on firm risk-taking and the moderating role of CEO ownership ratio

Model (1)

$$\text{earning volatility}_{i,t} = \beta_0 + \beta_1 \text{fceo}_{i,t} + \beta_2 \text{ceo_own}_{i,t} + \beta_3 \text{fceo}_{i,t} * \text{ceo_own}_{i,t} + \beta_4 \text{gender}_{i,t} ; (1)$$

Model (2)

$$\text{debt ratio}_{i,t} = \alpha_0 + \alpha_1 \text{fceo}_{i,t} + \alpha_2 \text{ceo_own}_{i,t} + \alpha_3 \text{fceo}_{i,t} * \text{ceo_own}_{i,t} + \alpha_4 \text{gender}_{i,t} + \alpha_5 \text{duality}_{i,t} + \sum \alpha_j \text{other independent variables}_{i,t}^j + \delta_i + \gamma_t + u_{i,t} ; (2)$$

2. 3 .2. Model analyzing the moderating role of the CEO's family ownership ratio on the relationship between female CEOs and firm risk-taking

Model (3)

$$\text{earning volatility}_{i,t} = \beta_0 + \beta_1 \text{fceo}_{i,t} + \beta_2 \text{ceo_famown}_{i,t} + \beta_3 \text{fceo}_{i,t} * \text{ceo_famown}_{i,t} + \beta_4 \text{gender}_{i,t} + \beta_5 \text{duality}_{i,t} + \sum \beta_j \text{other independent variables}_{i,t}^j + \delta_i + \gamma_t + \varepsilon_{i,t} ; (3)$$

Model (4)

$$\text{debt ratio}_{i,t} = \alpha_0 + \alpha_1 \text{fceo}_{i,t} + \alpha_2 \text{ceo_famown}_{i,t} + \alpha_3 \text{fceo}_{i,t} * \text{ceo_famown}_{i,t} + \alpha_4 \text{gender}_{i,t} + \alpha_5 \text{duality}_{i,t} + \sum \alpha_j \text{other independent variables}_{i,t}^j + \delta_i + \gamma_t + u_{i,t} ; (4)$$

2.4. Research data

Research data is collected from FiinPro system, annual reports, and financial information portals. Only listed companies with continuous financial data for at least five years and not belonging to the financial

industry were included in the study. The research sample includes 532 non-financial companies on HOSE and HNX from 2010 to 2020. In addition, data on inflation rates and economic growth are taken from the General Statistics Office of Vietnam.

3.5. Research methods and data processing

The thesis applies quantitative methods including OLS regression to study the influence of female leaders on corporate risk-taking. The study uses a model with interaction variables to examine the role of the CEO's ownership ratio and the CEO's family. The two-step system GMM method is used to check endogeneity. The PSM method and OLS regression are also used to analyze the transition from male CEO to female CEO.

CHAPTER 3. RESEARCH RESULTS ON THE INFLUENCE OF FEMALE LEADERS AND FAMILY OWNERSHIP ON THE RISK-TAKING OF LISTED FIRMS IN VIETNAM

3.1. The situation of female leaders, family ownership and the risk-taking of listed companies in Vietnam

3.1.1. Female leaders in companies in Vietnam

The proportion of female CEOs in listed companies in Vietnam has increased from 2013 to 2020, clearly differentiated by industry, with the healthcare industry having the highest proportion.

3.1.2. CEO family ownership in listed companies in Vietnam

The consumer goods and technology industries have the highest average CEO family ownership of the industries (9.4% and 7.7%, respectively). The highest percentage of CEO family ownership belongs to companies in the consumer goods industry at 83.2%. The companies with CEO family ownership have a higher average debt ratio than those without CEO family ownership.

3.1.3. Risk-taking of companies in Vietnam

The average earning volatility of the oil and gas industry is the highest, specifically 5.2%. Regarding risk-taking measured by debt ratio, the industrial sector and the oil and gas industry have the highest debt ratio.

3.2. Descriptive statistics of data

3.2.1. Descriptive statistics of listed companies

The average value of earning volatility is about 3.878%, the smallest value is 0.124%, and the largest is 20.175%. The average debt ratio in the sample is relatively high at 48.5%. The average proportion of female CEOs in the study sample was 6.8%. The average percentage of female directors on the Board of Directors in the companies in the sample is about 13.9%.

3.2.2. Descriptive statistics of data for two groups of companies with male CEOs and female CEOs

CEO ownership is, on average, higher in companies with female CEOs than in companies with male CEOs (6.6% versus 3.8%). The CEO's family ownership rate in companies with female CEOs is also higher than in companies with male CEOs (9.9% and 4.4%, respectively). The group of companies with female CEOs has a lower debt ratio (about 4.4%) than those with male CEOs; this conclusion is statistically significant.

3.3. Correlation coefficient matrix

The correlation coefficients between independent variables are low, ranging from a minimum of 0.000 to a maximum of 0.623. Thus, the possibility of multicollinearity between variables in the studied models is excluded.

3.4. The impact of female leaders on firm risk-taking of listed companies in Vietnam and the moderating role of CEO ownership and CEO family ownership

3.4.1. The impact of female leadership on risk-taking and the moderating role of CEO ownership ratio

Table 3.12. Female leaders impact the earning volatility of firms and the moderating role of CEO ownership

Symbol ***, ** and * indicate significance at the 1%, 5%, and 10% levels, respectively. Standard error values are in parentheses. Firm-specific variables are shortened when presented in tables in the thesis summary.

VARIABLE	earning volatility			
	(1)	(2)	(3)	(4)
fceo	0.377 (0.272)	0.313 (0.273)	-0.201 (0.263)	-0.495* (0.275)
ceo_own	3.214*** (0.817)	2.521*** (0.889)	1.947** (0.973)	1.733* (1.032)
fceo*ceo_own			8.558*** (2.486)	8.946*** (2.515)
gender	-0.924** (0.431)	-0.733* (0.431)	-0.941** (0.430)	-0.747* (0.432)
ceolevel		0.138 (0.132)		0.135 (0.126)
ceoexe		-0.188*** (0.073)		-0.181** (0.079)
ceoage		-0.081 (0.412)		-0.020 (0.450)
duality		0.585*** (0.152)		0.609*** (0.163)
bsize		0.102* (0.060)		0.120* (0.062)
indep		0.176 (0.271)		0.156 (0.276)
Constant	16.484*** (1.239)	16.283*** (1.976)	16.493*** (1.404)	16.071*** (2.210)
Number of observations	3,355	3,348	3,355	3,348

VARIABLE	earning volatility			
	(1)	(2)	(3)	(4)
R ² adjustment	9.8 %	10.4 %	10.2 %	10.8 %

Source: Author calculated from data

The coefficient of the variable *fceo* has a statistically significant negative sign in column (4) at the 10% significance level, indicating that female CEOs reduce the earning volatility of companies; hypothesis H1 is supported. The gender variable has a negative and statistically significant regression coefficient in all columns, showing that hypothesis H2 is supported. The interaction variable *fceo*ceo_own* in columns (3) and (4) has a positive estimated coefficient, meaning that when the CEO's ownership ratio increases, it has a moderating effect that reduces the negative relationship between female CEO and corporate risk-taking, hypothesis H3 is supported.

Table 3.13. Female leaders impact the debt ratio of firms and the moderating role of CEO ownership

Symbol ***, ** and * indicate significance at the 1%, 5%, and 10% levels, respectively. Standard error values are in parentheses. Firm-specific variables are shortened when presented in tables in the thesis summary.

VARIABLE	debt ratio			
	(1)	(2)	(3)	(4)
<i>fceo</i>	-0.015 (0.010)	-0.014 (0.010)	-0.022** (0.011)	-0.021* (0.011)
<i>ceo_own</i>	0.151*** (0.031)	0.150*** (0.033)	0.135*** (0.034)	0.143*** (0.036)
<i>fceo*ceo_own</i>			0.118* (0.069)	0.114* (0.068)
<i>gender</i>	-0.122*** (0.018)	-0.125*** (0.018)	-0.123*** (0.018)	-0.125*** (0.018)
<i>ceolevel</i>		-0.011* (0.006)		-0.011* (0.006)
<i>ceoexe</i>		0.007** (0.003)		0.007** (0.003)

ceoage		-0.038** (0.017)		-0.037** (0.018)
duality		-0.010 (0.007)		-0.010 (0.007)
bsize		-0.020*** (0.002)		-0.019*** (0.002)
indep		-0.021* (0.012)		-0.022* (0.012)
Constant	-0.806*** (0.048)	-0.661*** (0.082)	-0.804*** (0.048)	-0.600*** (0.084)
Number of observations	4,969	4,955	4,969	4,955
R ² adjustment	33.4%	34.4%	33.4%	34.5%

Source: Author calculated from data

The regression coefficient of the variable fceo always has a negative sign from columns (1)-(4). The gender variable has a negative and statistically significant regression coefficient. Columns (3) and (4) also reveal that the moderating role of CEO ownership is significantly positive because the estimated coefficient of the interaction variable is positive, continuing to support hypothesis H3.

Table 3.14. Female leaders impact earning volatility and the moderating role of CEO family ownership

Symbol ***, ** and * indicate significance at the 1%, 5%, and 10% levels, respectively. Standard error values are in parentheses. Firm-specific variables are shortened when presented in tables in the thesis summary.

Variable	earning volatility			
	(1)	(2)	(3)	(4)
fceo	0.401 (0.273)	0.339 (0.272)	-0.043 (0.283)	-0.492* (0.284)
ceo_famown	1.261* (0.663)	1.783*** (0.678)	0.107 (0.694)	0.817 (0.683)
fceo*ceo_famown			6.492*** (1.791)	7.616*** (1.858)
gender	-0.842* (0.431)	-0.149 (0.427)	-0.792* (0.431)	-0.107 (0.422)
ceolevel		0.178 (0.134)		0.217 (0.132)

Variable	earning volatility			
	(1)	(2)	(3)	(4)
ceoexe		-0.194** (0.080)		-0.218*** (0.080)
ceoage		0.112 (0.446)		-0.039 (0.462)
duality		0.742*** (0.157)		0.800*** (0.155)
bsize		0.102* (0.062)		0.077 (0.061)
indep		0.130 (0.277)		0.075 (0.281)
Constant	16.866*** (1.236)	10.649*** (2.077)	16.906*** (1.402)	12.668*** (2.218)
Number of observations	3,355	3,348	3,355	3,348
R ² adjustment	9.4%	9.6%	9.8%	9.9%

Source: Author calculated from data

The moderating impact of CEO family ownership on the relationship between female CEOs and company earning volatility is proven to be significantly positive, with the coefficient of the interaction variable of *fceo*ceo_famown* being 6.492 in column (3) and 7.616 in column (4) and both statistically significant at the 1% level. Hypothesis H4 is supported.

Table 3.15. Female leaders impact the debt ratio and the moderating role of the CEO family ownership

Symbol ***, ** and * indicate significance at the 1%, 5%, and 10% levels, respectively. Standard error values are in parentheses. Firm-specific variables are shortened when presented in tables in the thesis summary.

Variable	debt ratio			
	(1)	(2)	(3)	(4)
fceo	-0.013 (0.010)	-0.014 (0.010)	-0.018* (0.011)	-0.019* (0.011)
ceo_famown	0.016 (0.025)	-0.002 (0.026)	-0.008 (0.027)	-0.040 (0.029)
fceo*ceo_famown			0.106** (0.051)	0.084* (0.050)

Variable	debt ratio			
	(1)	(2)	(3)	(4)
gender	-0.113*** (0.018)	-0.116*** (0.018)	-0.130*** (0.018)	-0.131*** (0.018)
ceolevel		-0.013** (0.006)		-0.017*** (0.006)
ceoexe		0.009*** (0.003)		0.006** (0.003)
ceoage		-0.041** (0.017)		-0.037** (0.018)
duality		-0.001 (0.006)		0.019*** (0.006)
bsize		-0.020*** (0.002)		-0.018*** (0.002)
indep		-0.020* (0.012)		-0.015 (0.012)
Constant	-0.793*** (0.048)	-0.644*** (0.082)	-0.724*** (0.048)	-0.601*** (0.085)
Number of observations	4,969	4,955	4,969	4,955
R ² adjustment	33.1%	34.2%	30.5%	31.6%

Source: Author calculated from data

The CEO's family ownership ratio also moderates, reducing the negative relationship between female CEOs and companies' debt ratio. The regression coefficient of the interaction variable $fceo*ceo_famowwn$ is 0.106 (5% statistical significance) and 0.084 (10% statistical significance), respectively.

3.4.3. The influence of female CEOs on the firm risk-taking in the case of CEO duality

Table 3.16. The impact of female CEOs on company earning volatility in two groups of companies with CEO duality and CEO non-duality

Symbol ***; ** and * indicate significance at the 1%, 5%, and 10% levels, respectively. Standard error values are in parentheses. Firm-specific variables are shortened when presented in tables in the thesis summary.

Variable	earning volatility							
	CEO duality				CEO non-duality			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
fceo	0.856* (0.458)	0.934** (0.456)	-0.180 (0.486)	-0.161 (0.483)	0.347 (0.335)	0.369 (0.337)	-0.094 (0.301)	-0.575* (0.312)
gender	-1.591* (0.857)	-1.604* (0.862)	-1.524* (0.852)	-1.515* (0.856)	-1.128** (0.493)	-0.990** (0.493)	-1.052** (0.491)	-0.911* (0.492)
ceo_own	2.213* (1.232)	2.866** (1.230)	0.600 (1.293)	1.167 (1.279)	2.958 (1.894)	3.287* (1.883)	1.929 (1.935)	2.130 (1.931)
fceo*ceo_own			9.251*** (2.677)	9.961*** (2.767)			15.367* (8.325)	16.521** (8.389)
.....								
ceolevel		0.338 (0.265)		0.350 (0.264)		0.051 (0.135)		0.035 (0.136)
ceoexe		-0.249 (0.166)		-0.240 (0.166)		-0.149* (0.087)		-0.147* (0.087)
ceoage		1.787*		2.040**		-0.592		-0.622

Variable	earning volatility							
	CEO duality				CEO non-duality			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
bsize		(0.970)		(0.969)		(0.506)		(0.506)
		0.088		0.130		0.149**		0.162**
indep		(0.107)		(0.107)		(0.074)		(0.073)
		0.890		0.909		-0.066		-0.051
Constant		(0.571)		(0.578)		(0.314)		(0.313)
	23.514***	16.713***	23.014***	15.282***	12.603***	14.956***	12.576***	15.071***
	(2.967)	(4.723)	(2.951)	(4.681)	(1.578)	(2.603)	(1.579)	(2.601)
Number of observations	1,052	1,052	1,052	1,052	2,303	2,296	2,303	2,296
R ² adjustment	14.2%	14.8%	15%	15.8%	9.8%	10.5%	10%	10.7%

Source: Author calculated from data

Table 3.17. The impact of female CEOs on the company debt ratio in two groups of companies with CEO duality and CEO non-duality

Symbol ***; ** and * indicate significance at the 1%, 5%, and 10% levels, respectively. Standard error values are in parentheses. Firm-specific variables are shortened when presented in tables in the thesis summary.

Variable	debt ratio							
	CEO duality				CEO non_duality			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
fceo	-0.044**	-0.031*	-0.077***	-0.062***	-0.005	-0.007	-0.004	-0.001
	(0.018)	(0.019)	(0.022)	(0.023)	(0.012)	(0.012)	(0.014)	(0.013)
gender	-0.095***	-0.095***	-0.094***	-0.092***	-0.126***	-0.128***	-0.126***	-0.128***

Variable	debt ratio							
	CEO duality				CEO non_duality			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	(0.033)	(0.032)	(0.033)	(0.032)	(0.021)	(0.021)	(0.021)	(0.021)
ceo_own	0.070	0.025	0.020	0.005	0.341***	0.310***	0.345***	0.328***
	(0.043)	(0.046)	(0.049)	(0.049)	(0.059)	(0.059)	(0.063)	(0.063)
fceo*ceo_own			0.291***	0.294***			-0.043	-0.176
			(0.097)	(0.103)			(0.165)	(0.156)
.....								
ceolevel		-0.010		-0.006		-0.014**		-0.014**
		(0.011)		(0.011)		(0.006)		(0.006)
ceoexe		-0.002		-0.001		0.009**		0.009**
		(0.006)		(0.006)		(0.004)		(0.004)
ceoage		0.075**		0.087**		-0.075***		-0.076***
		(0.035)		(0.036)		(0.020)		(0.020)
bsize		-0.021***		-0.020***		-0.019***		-0.019***
		(0.004)		(0.005)		(0.003)		(0.003)
indep		-0.073***		-0.072***		-0.007		-0.007
		(0.022)		(0.022)		(0.014)		(0.014)
Constant	-1.016***	-1.224***	-1.020***	-1.352***	-0.765***	-0.487***	-0.766***	-0.488***
	(0.091)	(0.163)	(0.090)	(0.166)	(0.057)	(0.094)	(0.057)	(0.094)
Number of observations	1,350	1,350	1,350	1,350	3,619	3,605	3,619	3,605
R ² adjustment	34.4%	36.4%	34.7%	37.3%	33.8%	35.1%	33.9%	35.1%

Source: Author calculated from data

The research results in Table 3.16 present that the estimated coefficients of the variable *fceo* in columns (1) and (2) are positive and highly statistically significant for the sample of companies with CEO duality. In those firms, the impact of female CEOs on firm risk-taking is weaker. This result supports hypothesis H5a of the thesis.

Similarly, Table 3.17 shows that for the sample of companies with CEO duality, the impact of female CEOs on debt ratio is evident, shown in the regression coefficient of the variable *fceo* from column (1) to column (4) are all negative and statistically significant. The findings indicate that the impact of female CEOs on the company's risk-taking is more substantial in the case of CEO duality, and hypothesis H5b of the thesis is supported.

3.4.4. The influence of female CEOs on the company's risk-taking in the case of a transition from male CEO to female CEO

3.5. The robustness of the research model

3.5.1. The sustainability of research results

In this part, the thesis conducts several ways to test the sustainability of the research results, including replacing the variable *ceo_own* with dummy variables *ceo_own5* and *ceo_own10*; controlling macroeconomic variables into the model; Replace the variable Family Ownership with the dummy variable *ceo_famown2*. The obtained results are still the same as the base model, confirming the reliability of the research results.

3.5.2. Endogeneity in research models

The thesis uses a two-step system GMM estimation method for dynamic panel data to check endogeneity. The results yield a considerable p-value of the Hansen test, showing that the H_0 hypothesis that all instrumental variables are exogenous cannot be rejected. This

proves that the instrumental variables are valid. The estimates from the model are reliable.

CHAPTER 4. DISCUSSION OF RESEARCH RESULTS AND RECOMMENDATIONS

4.1. Discuss study results

4.1.1. The impact of female leaders on firm risk-taking and the moderating role of the CEO's ownership ratio and the CEO's family ownership ratio

Research results show that female CEOs are often risk-averse, consistent with some international studies but contradict other studies, possibly due to cultural differences and national contexts such as Vietnam. Women have to perform many roles simultaneously and bear the pressure of family responsibilities, and many even have their careers interrupted, quit their jobs, or choose to work part-time. As a result, women have fewer opportunities for advancement. Women tend to hesitate when approaching management roles, which are significantly more risky than men because of their efforts toward both career and family. That may be an explanation for the impact of female CEOs on corporate risk-taking in the Vietnamese context.

The proportion of female board members has a negative relationship with risk-taking, whereas CEO and family ownership can reduce female CEOs' risk aversion. The results also show that, in the Vietnamese context, female CEOs do not necessarily have reduced risk-taking compared to male CEOs and that CEO gender transition does not affect the company's risk-taking level.

The results of the thesis show that the CEO's ownership ratio negatively regulates the above relationship; in other words, the greater the ownership of female CEOs in the company, the less risk-averse.

Conflicts between managers and owners cause widespread agency problems in companies. Therefore, when the ownership rate of female CEOs increases, the difference between female and male CEOs in risk-taking decisions will blur.

The research results of the thesis show that the more a CEO's family ownership ratio increases, the female CEO will no longer be risk-averse. Agency problems are shown to decrease significantly the more shares the CEO's family holds. However, the larger the ownership of the CEO's family members, the higher the expected benefits, so the more shares held by female CEOs in the family, the more they demonstrate a focus on governance and may be willing to take risks. Further, in the current Vietnamese context, there is no clear concept of family companies and family ownership, which leads to investors contributing capital to companies as merely ordinary shareholders. In this sense, they want to maximize the benefits of owning shares. They do not have the concept of family ownership and preserving the family's social and emotional assets yet; this result in Vietnam, therefore, differs from some studies worldwide. Moreover, it also points out that SEW theory is not the best to explain the influence of family ownership in the Vietnamese stock market.

4.1.2. The impact of female CEOs on firm risk-taking in case of CEO duality

The results of dividing the research sample according to CEO duality structure have provided empirical evidence on how female CEO duality affects corporate risk-taking behavior. According to agency theory, CEO duality increases the problem of power concentration in the CEO and weakens the board's effectiveness in monitoring and controlling management. The research results of the thesis support the view of agency theory that duality creates favorable conditions for opportunism

in management and that companies with CEO duality structures tend to have risk-taking significantly higher. However, the research results also show that companies with duality female CEOs are less likely to use debt.

4.2. Recommendations for relevant parties

4.2.1. For policymakers and state management agencies

Research presents that female CEOs generally accept less risk than male CEOs, but they behave similarly when they own more shares. The proportion of women on the board reduces corporate risk-taking. The government needs to promote gender equality at work, improve childcare and welfare policies, eliminate gender bias in recruitment and management, and improve transparency in company ownership structures. Applying these policies will create conditions for women to develop leadership positions and improve the investment environment.

4.2.2. For companies

Companies should change to achieve gender balance in leadership and awareness and improve governance structures. Combining human factors and appropriate governance structures helps optimize management and reduce risks. To increase the presence and effectiveness of female leaders, companies need to improve training, provide development opportunities, and address gender bias. Companies should also be transparent about promotion standards and consider power control mechanisms to avoid crises. Bringing women into leadership positions helps balance and improves business results and company image.

4.2.3. For investors

Investors should note that companies with female CEOs often accept lower risks, which changes when the female CEO's ownership ratio increases or the CEO holds other positions. For risk-averse investors,

investing in companies with high CEO family ownership should be avoided, as risk-taking in these companies may be higher despite having a female CEO.

CONCLUSIONS

This study contributes to gender and risk-taking research by showing that female CEOs' risk-taking behavior may vary by context, not necessarily by gender stereotypes. The present study makes several significant theoretical contributions. First, research supporting the upper echelon theory perspective provides clear evidence that female CEOs have a distinct influence in explaining firm outcomes. Previous studies have provided similar evidence, but the difference is that the author's thesis also provides mechanisms through which female CEOs can influence company results. Furthermore, to the best of the author's knowledge, this study is the first to examine the impact of female CEOs on all three aspects of CEO ownership, CEO duality, and CEO family ownership in a Vietnam stock market context. Ultimately, this result supports that female CEOs are significantly risk averse, but if supported through power mechanisms, they can perform management behavior no differently than their male counterparts. The research results also provide fundamental knowledge about female CEOs and risk-taking, which is an entirely new result and an essential document for companies to review their internal governance mechanisms in the context of a country with relatively high gender prejudice, such as Vietnam. The thesis uses a research sample that includes all non-financial companies listed on both stock exchanges over a reasonably long period from 2010 to 2020, which is an excellent contribution to the research results, different from previous studies, and is also more reliable.

Limitations of the thesis and future research directions

- The research only focuses on listed companies in Vietnam. Future studies can be expanded to many Asian countries for more comprehensive conclusions.

- Due to the difficulty in collecting data on direct and indirect ownership, the author's research has yet to fully cover the concept of family ownership. Future research can focus on family ownership based on ultimate ownership by the controlling shareholder when there is enough reliable data.

- Aspects such as the direct impact of CEO ownership, family ownership on risk-taking in the context of other corporate governance mechanisms, or research on the non-linear impact of ownership ratio to identify the ownership threshold at which the CEO and the CEO's family begin to accept risk can be considered in future studies to provide new perspectives and other management implications.

- Future research could examine the influence of other forms of ownership on the relationship between female CEOs and risk-taking.

- The author's thesis is based on secondary data sources; future studies can also examine the influence of female leaders on the risk-taking level of listed companies in Vietnam through primary data sources such as face-to-face interviews or questionnaires.

LIST OF PUBLISHCATIONS

No	Article name	Journal	No./year
1	The impact of female chairs on firm risk: evidence from Vietnam	Proceedings of The 2nd National and International Academic Conference Kalasin University 2023, Thailand (ISBN 978-974-9711-23-1)	December, 2023
2	Do female chairs influence the risk of enterprises? The moderating role of ownership ratio	The International Conference On Economics - ICE 2024 (ISBN 978-604-346-271-5)	March, 2024
3	How do women on board affect firm risk? The case of Vietnam	International Conference Sustainable Economic Development: Opportunities And Challenges (ISBN 978-604-937-356-5)	April, 2024
4	The impact of CEO traits on firm's risk-taking: the case of listed companies in Vietnam	Hue University Journal of Science: Economics and Development (ISSN 2588-1205)	Vol. 133, No. 5B (July, 2024)