

CEO OVERPOWER AND STOCK PRICE CRASH RISK: EVIDENCE FROM FAMILY BUSINESSES IN VIETNAM

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ABSTRACT

This study examines how powerful CEOs affect stock price crash risk in Vietnamese family businesses. It focuses on family businesses in Vietnam because the country is actively transforming from a centralized economy into a market economy, which emphasizes the role of private businesses. This study employs Random Effect Models (REM) and dynamic system Generalized Method of Moments (GMM) to analyze a balanced panel of 116 listed family businesses in Vietnam from 2005 to 2020. The findings indicate that family businesses with CEO duality have about a 60% higher crash risk than firms without CEO duality; however, higher CEO ownership reduces the stock price crash risk in family businesses. The findings are robust after the enactment of the Law on Enterprises in Vietnam. The results support agency theory, managerial power theory, organizational theory, and prior literature. It also contributes practical corporate governance implications for managing stock price crash risk in family businesses.

Keywords: family businesses; CEO overpower; stock price crash risk; GMM; Vietnam

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INTRODUCTION

Stock price crash risk has become a contemporary topic of research because inappropriate investment decisions cause sharp fluctuations in stock prices. Kim et al. (2016), Kim

et al. (2019), and Al Mamun et al. (2020) suggest that agency costs and information asymmetry ignite stock price crash risk. Therefore, endogenous factors affecting the stock price crash risk need further discussion.

Shahab et al. (2020) and Kim et al. (2011) indicate mixed impacts of CEO overpower and stock price crash risk because they estimate CEOs' power by different proxies, such as CEO age, CEO ownership, and CEO duality. Sakilu and Kibret (2015) argue that businesses that focus on risk management contribute to better corporate governance because their leaders are closely linked with shareholders in the whole company. Tran et al. (2014) argue that CEO duality can help to manage the company better and improve the leadership role of the board of directors in regard to company performance and potentially reduce risk. While crash risk is quite popular in emerging and developed markets, the causality between the CEO's power and the stock price crash risk is underexplored, especially in family businesses of transitional economies. Therefore, this study aims to close this literature gap by estimating the impacts of CEO overpower and ownership structure on the stock price crash risk in Vietnam, a transitional economy in Asia.

We conduct this study in Vietnam for the following reasons. Firstly, Dang and Nguyen (2021) show that the crash risk in Vietnam is dramatically higher than in developed countries such as France, Australia, and New Zealand. In addition, Luo (2015) shows that in China, the average value of CEO power and CEO ownership are smaller than in Vietnam, implying that CEOs in Vietnamese family business have powerful authority, which affects crash risk. Finally, family businesses are the backbone of the Vietnamese economy because they contribute 25% to the national GDP, and 33% of family businesses think they will have growth opportunities in 2022, higher than in other Asian countries (PWC, 2021). All of these factors make testing how powerful CEOs affect the crash risk of family businesses in Vietnam worthwhile.

The present study employs a dynamic system Generalized Method of Moments (GMM) to analyze a balanced sample of 116 listed family businesses in Vietnam from 2005 to 2020. The findings show that CEO duality, a proxy of CEO overpowers, increases crash risk. Specifically, family businesses with CEO duality have 60% higher stock price crash risk than firms without CEO duality. The CEO duality allows CEOs to have a higher authority, and the CEOs are discharged slowly by the board of directors; therefore, CEO duality motivates CEOs to make riskier business decisions (Mínguez-Vera & Martín-Ugedo, 2010;

Lewellyn & Muller-Kahle, 2012). The findings of this study, however, indicate that higher CEO ownership also reduces crash risk. Kim and Lu (2011) suggest that higher ownership induces CEOs to become more risk-averse because their wealth is tied up with firm performance. As such, higher ownership encourages CEOs to participate in less risky activities that reduce risk to shareholders. These findings are consistent with agency theory and organizational theory, as shown by Kim and Lu (2011).

A robustness test to confirm the persistence of our main findings is also performed in this study. In the first test, we divided the entire sample into before and after 2015 because the Law on Enterprises officially took effect in 2015. These new regulations specified the role of the board of supervisors on the management team wherein internal supervisory boards perform professional monitoring functions, especially on management activities. The test results of this study show that CEO ownership increased crash risk before enacting the regulation, but CEO ownership actually reduces the stock price crash risk after 2015, consistent with the main findings. The results also suggest that CEO duality does not have robust impacts on stock price crash risk before and after enacting the Law on Enterprises in Vietnam.

This study is unique because the closest study to our research is Harper et al. (2020). That study examined how CEO power affects the crash risk of the listed firms in the U.S. stock market. The present study complements their findings by analyzing listed family businesses. In addition, we further test whether CEO powers have robust impacts on crash risks before and after enacting the Law on Enterprises in Vietnam.

LITERATURE REVIEW

Theories

Organizational theory suggests that CEOs misuse their power making final decisions when they have too much power over decision-making. Organizational theory asserts that the CEO's power to make decisions in real situations can generate profits and flexibly change according to market fluctuations. Zarei et al. (2018) also argue that powerful CEOs are very confident with their decisions, so they tend to ignore other opinions. Therefore, making wrong decisions is easy, leading to risks for the company.

Agency theory suggests that CEO duality simultaneously reduces the firm's risks. The reason given to explain this is that many investors are concerned with their own risk and profitability. CEO duality means that the same person has the power of a CEO and also holds the position of chairman of the board of directors (Tran et al., 2014; Lewellyn and Muller-Kahle, 2012; Mínguez-Vera and Martín-Ugedo, 2010). In addition, managers are more risk-averse than shareholders, which leads to conflicts arising when acting on behalf of shareholders. Mínguez-Vera and Martín-Ugedo (2010) argue that the CEO's duality provides higher authority against the board of directors. On one hand, therefore, CEOs become more risk-averse because their job security and wealth are tied in with firm performance; on the other hand, as Zarei et al. (2018) mention, increasing the power of a CEO imposes higher risks on the company by exploiting information asymmetry for personal gain at the expense of shareholders, reducing firm value.

Regarding ownership, agency theory suggests that firms with non-family businesses outperform family businesses because independent voting rights minimize agency costs. As such, agency theory concludes that management ownership reduces conflict of interest between the company owner and the manager. Management ownership, however, will not improve the relationship between the members' families and shareholders because family companies can utilize company resources for personal gain.

According to managerial power theory, Shahab et al. (2020) mentioned that a CEO's compensation could better explain company agency problems. Shahab et al. (2020) argue that a higher CEO compensation gap makes CEOs more prone to exploiting resources. In terms of ownership, investors tend to be more protective of their interests, contribute to the company's management, and reduce the CEO's salary, lowering the crash risk. Therefore, Shahab et al. (2020) supports this agency theory by saying that different ownership rights lessen the negative impact CEOs can have on stock prices. Choe et al. (2014) suggest that if CEOs have more power to exploit rent, they will try to bring more benefits to the company.

CEO overpower and stock price crash risk

Lewellyn and Muller-Kahle (2012) argue that CEO duality allows the CEO to control the board of directors and influence the nominating committee, meaning that CEO duality empowers the CEO's authority. Several empirical studies report that CEO duality increases stock price volatility. Mínguez-Vera and Martín-Ugedo (2010) suggest that CEO duality allows CEOs to make strategic decisions quickly without constraints from the board of directors. Moreover, duality also undermines the supervising and monitoring functions of the board of directors, implying weaker corporate governance and higher risk. Bliss et al. (2011), however, report an inverse relationship between CEO overpower and stock price crash risk, wherein CEO duality motivates CEOs to become risk-averse because their share may become worthless if the stock price reduces dramatically. As there are mixed findings between CEO duality and stock price crash risk, the following hypothesis is proposed:

Hypothesis 1: CEO duality positively affects stock price crash risk.

CEO ownership positively influences crash risk, as explained by Haider and Fang (2018), who find that CEO ownership also empowers CEO power. The more powerful the CEO, the more limited the company's guardianship for the CEO, so the board of directors' management will have more difficulty if they choose to remove the CEO position. Likewise, CEOs have more motivation to take more risks when they have too much confidence that they will not lose their position. CEO ownership negatively affects crash risk because higher ownership makes CEOs more risk-averse, and they actively participate in activities to reduce risk to shareholders (Kim and Lu, 2011). As prior studies report the mixed relationship between CEO ownership and stock price crash risk, the following hypothesis is proposed:

Hypothesis 2: CEO ownership positively affects stock price crash risk.

DATA AND METHODOLOGY

Data

Data were collected for 116 family businesses in Vietnam from 2005 to 2020 that were listed on Ho Chi Minh Stock Exchange and Hanoi Stock Exchange. Because the Vietnamese stock market started in 2000 with only two listed firms, data

were collect from 2005 to ensure a sufficient sample size for regression analysis with fewer biases. Family business-specific data is manually compiled from various reliable databases, including Vietstock and financial statements of all family businesses. Finance companies were excluded because Duong et al. (2022) suggest that financial intermediaries rely heavily on financial leverage. Therefore, the excess leverage ratio in financial firms is typical, while it signals distress risk in non-financial firms. Following Duong et al. (2021), all variables are winsorized at the 5% and 95% levels to mitigate extreme value issues. Also following Duong et al. (2022), observations that do not have enough data to calculate relevant variables were removed. Following Diéguez-Soto et al. (2015) and Eckrich et al. (2012), family businesses were classified as such if the surnames of internal stakeholders involved in the management and governance of the business are matched. For example, if the surname of the chairman matches the surname of managers or blockholders, that business is classified as a family business. Our final sample is a balanced panel with 983 annual observations of 116 family businesses from 2005 to 2020.

Variable definitions

i. Dependent variable (DUVOL and NCSKEW)

Stock price crash risk proxies: Crash risk is estimated from the distribution of returns, a conditional deviation to clearly show the imbalance in risk for investors to make more rational decisions. Following Al Mamun et al. (2020), the crash risk is estimated by the "negative coefficient of skewness" represented by NCSKEW and "down-to-up volatility" represented by DUVOL of market-adjusted individual stock returns. The higher the NCSKEW or DUVOL, the higher the value proves that the stock is more vulnerable to stock price crash risk. However, the DUVOL is less efficient than NCSKEWS and is limited because it needs to consider the third moment of stock return distribution (Li & Chan, 2016). The formula of both DUVOL and NCSKEW is calculated by:

$$DUVOL_{i,t} = \log \left(\frac{(n_u - 1) \sum_{Down} W_{i,t}^2}{(n_d - 1) \sum_{Up} W_{i,t}^2} \right)$$

$$NCSKEW_{i,t} = - \frac{[n(n-1)^2 \sum W_{i,t}^3]}{[(n-1)(n-2)(\sum W_{i,t}^2)^{\frac{3}{2}}]}$$

ii. Independent variable:

CEO overpower: This study follows the

example of Shahab et al. (2020) and Mínguez-Vera and Martín-Ugedo (2010) to measure CEO ownership (CEOOWN) and CEO duality (CEOPRCH), respectively. The proportion of CEO holdings of the firm calculates CEO ownership (CEOOWN). Because higher ownership makes CEOs more risk-averse and has a weak external governance influence, the more CEOs are encouraged to participate in activities to reduce risk to shareholders (Kim and Lu, 2011). The dummy variable calculates CEO duality (CEOPRCH), equaling one when the CEO holds both positions simultaneously, and 0 otherwise. Because duality CEOs use their power only towards aligning the goals and interests of shareholders, it is easier to make decisions that increase risks for the company.

iii. Control variables:

Institutional ownership: Institutional ownership (INST_OWN) is controlled for following Huang et al. (2020). Institutional ownership is measured by the proportion of institutional holdings of the firm. An and Zhang (2013) show that institutional ownership of transient institutions affects crash risk in a positive relationship. Because they tend to value short-term trading to maximize profits, the long-term values of the company are not heavily focused, and could be liquidated if the company starts to do poorly. Weak supervision of institutional ownership will increase crash risk more quickly. Shahab et al. (2020) show a negative impact on crash risk. The higher percentage of institutional ownership imposes higher supervision roles on management activities and discourages them from making risky decisions.

Blockholders: Following Fattoum-Guedri et al. (2018), blockholders are measured by the proportion of shareholders owning more than 5% of the shares in the company. Chauhan et al. (2015) argue that blockholders in family businesses are diversified investors and connected with the management, leading to higher agency costs and information asymmetry. Therefore, higher block ownership causes higher risks for family businesses. A higher number of blockholders reduces the firm's performance and increases risk, which is why blockholders will be more cautious in general management – they are more risk-averse to help decrease risk, thus defining the negative association of blockholder

ownership with a firm's risk (Fattoum-Guedri et al., 2018). Choi et al. (2020) showed the insignificant impact of blockholder and the stock price crash risks.

State ownership: Boubakri et al.'s (2013) technique is used to measure the proportion of government holdings of the firm. State ownership and stock price crash risk have demonstrated a positive relationship in the sense that the compensation of CEOs from the salary of state-owned companies will not be equal to that of non-owned companies. However, it makes them more powerful and more likely to increase crash risk because state ownership increases their relationship with government shareholders and provincial state officers to influence board decisions (Shahab et al., 2020). Boubakri et al. (2013) indicate that a negative association between politics and government interests limit risk-taking and prompt firms to pursue conservative, less risky investments.

Leverage: Alp et al.'s (2022) findings are used to calculate the leverage ratio (LEV) by total liabilities over total assets. Alp et al. (2021) mention the negative relationship between financial leverage and crash risk. Financial leverage helps the company carry more debt, using less money to wear and maintain long-term stability, thus reducing the risk. The higher leverage ratio causes financial constraints and pressure from repayment obligations. Therefore, firms with higher financial constraints are exposed to operational disruptions and have stock price instability, increasing the possibility of crash risk (Kim et al., 2019; Wang et al., 2020).

Firm Size: Firm size, measured by the natural logarithm of total assets, which affects the vulnerability to crash risk is controlled for following Kim et al. (2011) (Kim et al., 2011). Kim and Cho (2021) suggest a positive relationship between size and risk. The larger the company, the more opportunities it has to develop and the higher the risk due to higher agency costs and management entrenchments.

Age: Harper et al. (2020) is used to measure the age of the CEO. When crash risk is more likely to happen, it is usually caused by a young CEO who will be pressured to bring profits to the business to ensure a more secure salary and position (Kim et al., 2011). Younger CEOs are also more likely to engage in business misconduct (Gu, 2022). James (2020) also indicates that younger CEOs may manipulate earnings to

secure their jobs at an early tenure. Business misconducts erode a firm's financial position and reputation, leading to increased stock price crash risks (James, 2020). Chowdhury and Fink (2017) indicate a positive relationship between the CEOs' age and crash risk. Older CEOs take more risks and will be less cautious in decisions because they are not afraid of getting into trouble early in the labor market.

Research Model

To examine the relationship between CEO overpower and crash risk related to stock price, specifically CEO alignment when in power to maximize opportunities for individuals and shareholders, Harper et al. (2020) is followed. Engaging in opportunistic behaviors is the primary cause of crash risk. CEOPOWER is represented by CEO duality (CEOPRCH) and CEO ownership (CEOOWN). Therefore, DUVOL and NCSKEW, which represent the crash risk, are employed. Shahab et al. (2020) mention that from the agency's point of view, the CEO becomes too powerful when participating in the salary and bonus setting process for the company to benefit from the shareholders' assets. Hence, how ownership structure affects stock price crash risk is examined in the model.

$$\text{Crash risk}_{i,t} = \beta_0 + \beta_1 \text{CEOOWN}_{i,t-1} + \beta_2 \text{CEOPRCH}_{i,t-1} + \sum \beta_q \text{control}_{i,t-1} + \alpha_i + \alpha_t + \varepsilon_{i,t} \quad (1)$$

The control variables all have an impact on stock price crash risk, including institutional ownership (Huang et al., 2020), Blockholder (Fattoum-Guedri et al., 2018), state ownership (Boubakri et al., 2013), leverage (Alp et al., 2022), size (Kim et al., 2011), and age (Harper et al., 2020) in which the sequence of de-meaned daily returns to stock *i* during period *t*; and *n* is the number of observations on daily returns during the period, the sign of "i" indicates cross-sections; the notation of "t" is time; "α" stands for intercept; $\varepsilon_{i,t}$ is the residual value. α_i is the firm fixed effect, and α_t is the year fixed effect. These variables are clearly described in Appendix A.

Research Methodology

Initially, the Hausman and Breusch Pagan test was performed to select the most suitable estimation method among the Ordinary Least Squares, Fixed Effect Models, and Random Effects Models. Then, the Wald test to test whether the

selected estimation approach violates the heteroskedasticity issues is implemented. Supposing the Wald test result indicates a heteroskedasticity issue, the dynamic system GMM estimation is employed to overcome the endogenous problems (Tran et al., 2022). A robustness test by separating the entire sample before and after 2015 is also performed, because the Law on Enterprises officially took effect in 2015 with new mandatory corporate regulations.

EMPIRICAL RESULTS AND DISCUSSION

Descriptive Statistics

Table 1 presents the descriptive statistics of all variables. The DUVOL and NCSKEW, representing stock price crash risk, are 0.302 and 0.126, with a standard deviation of 73.5% and 24.3%, respectively. The mean crash risk result is higher than developed countries like France, Australia, and New Zealand. In Vietnam, Vo (2020) shows

that the mean and median of NCSKEW are 0.423 and 0.415, and DUVOL is 0.284 and 0.318, respectively, meaning that the present findings are similar to Vo (2020). The difference is that Vo (2020) focuses on non-financial companies from 2007 to 2015, while here, the data is collected from family businesses. The different data collection methods cause slight variations in the average stock price crash risk. CEO duality had a mean value of 0.362, higher than in China, which is 0.201. The CEO ownership mean is 0.088 is higher than China's 0.005. However, state ownership has a mean of 0.528, much higher than Vietnam at 0.054. Leverage with a mean of 0.5; AGE's 49.705; and SIZE with a mean of 6.567. In addition, the normality test is used to test whether the sample has a normal distribution. The result shows that all variables are normal distributions.

Table 1: Descriptive Statistics

Variables	Obs.	Mean	Median	Std.Dev	Jarque-Bera Prob
NCSKEW	983	-0.302	-0.329	0.735	<0.001
DUVOL	983	-0.126	-0.134	0.243	<0.001
CEOPRCH	983	0.362	0.000	0.481	<0.001
CEOOWN	983	0.088	0.027	0.129	<0.001
LEV	983	0.500	0.520	0.204	<0.001
AGE	983	49.705	50.000	9.354	<0.001
SIZE	983	6.567	5.923	7.034	<0.001
INST_OWN	983	0.247	0.164	0.251	<0.001
BLOCKHOLDER	983	0.405	0.403	0.233	<0.001
STATEOWN	983	0.054	0.000	0.137	<0.001

Table 1 presents the descriptive statistics of all variables. Our sample 116 listed companies in Vietnam from 2005 to 2020. All variable definitions are reported in Appendix A.

Source: Summarized from financial statements of businesses processed by Eview 10.

Pearson Correlations Matrix

The correlation relationships between the variables have mixed negative and positive effects. The correlation coefficient of CEO duality and CEO ownership is about 0.413, showing a strong positive relationship. CEO age and leverage are about 0.002, indicating a fragile positive relationship. The variance inflation factor (VIF) is examined to test whether the

sample has a multicollinearity issue. The result is that the VIF of all variables is less than five, and there is no multicollinearity issue (Tran et al., 2022).

Table 2: The Pearson correlation matrix

	CEOPRCH	CEOOWN	INST_OW	BLOCKHOLDER	STATEOWN	SIZE	LEV	AGE	VIF
CEOPRCH	1								1.31

CEOOWN	0.413*** (<0.001)	1							1.3020

INST_OW	-0.118*** (<0.001)	-0.196*** (<0.001)	1						1.1441

BLOCKHOLDER	0.012 (0.717)	0.175*** (<0.001)	0.104*** (0.001)	1					1.1007

STATEOWN	0.081** (0.011)	-0.037 (0.245)	0.076** (0.017)	-0.093** (0.003)	1				1.0970

SIZE	-0.107*** (<0.001)	-0.016 (0.621)	0.166*** (<0.001)	0.167*** (<0.001)	-0.174*** (<0.001)	1			1.1959

LEV	0.029 (0.360)	0.051 (0.109)	-0.062** (0.052)	0.131*** (<0.001)	0.117*** (<0.001)	0.239 (<0.001)	1		1.1267

AGE	0.260*** (<0.001)	0.142*** (<0.001)	0.137*** (<0.001)	0.062** (0.050)	0.041 (0.195)	0.105** (0.001)	0.002 (0.960)	1	1.1279

Table 2 presents the Pearson correlation matrix of all variables. Our sample includes 116 listed companies in Vietnam from 2005 to 2020. All variable definitions are reported in Appendix A. Note: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Source: Summarized from financial statements of businesses processed by Eview 10.

Table 3: Hausman Test, Breusch-Pagan Tests.

Dependent variables	Hausman Test	Breusch-Pagan Tests
1. DUVOL	Prob. = 0.957	Prob. = <0.001
2. NCSKEW	Prob. = 0.839	Prob. = <0.001

Source: Author's work.

The Hausman test was conducted to choose between FEM and REM, and the result is prob. >0.05 for both dependent variables; hence REM is more suitable than FEM. Secondly, we also employ Breusch-Pagan Tests to choose between REM and OLS, and the result is less than 0.05 for both dependent variables. Therefore, the REM estimation is the most suitable for this study.

Estimation results from the REM method

After employing the Chow and the Hausman test in Table 3, the Random Effect Model (REM) is utilized for DUVOL and NCSKEW. All coefficients

of CEOPRCH and CEOOWN are statistically insignificant. Acrey et al. (2011) showed that their results were insignificant between the CEO overpower bonus and risk, despite showing that firms tend to shift to short-term risk-taking when there is an interaction between a high reward and a high salary of powerful CEOs.

Greene (2005), however, argues that REM may generate biased results if there are autocorrelation and heteroskedasticity issues. The Durbin Watson method is used to measure the autocorrelation test in residuals, which tests whether the current model has an autocorrelation problem. Table 4 reports that there is an autocorrelation issue with the REM estimation. Besides that, Wald test is continued to check whether the findings violate the heteroskedasticity assumption. Table 4 also reports that REM estimations have heteroskedasticity issues, implying biased results. Following Tran et al. (2022), dynamic system GMM is performed, because this estimation could overcome unobserved heterogeneity issues.

Table 4: Results from Random-Effect Models

Variables	REM		REM	
	DUVOL		NCSKEW	
Independent variables	Coef.	T-stats	Coef.	T-stats
Constant	-0.0495	-0.53	0.0349	0.13
CEOPRCH	0.0028	0.14	-0.0338	-0.58
CEOOWN	-0.0997	-1.34	-0.1756	-0.81
INST_OWN	-0.0419	-1.17	-0.1356	-1.31
BLOCKHOLDER	0.0217	0.58	0.0178	0.16
STATEOWN	-0.0699	-1.09	-0.1579	-0.85
SIZE	-0.0065	-0.98	-0.0293	-1.53
LEV	-0.0291	-0.66	-0.0345	-0.27
AGE	0.0009	0.92	0.0031	1.11
Firm fixed effect	No		No	
Year fixed effect	No		No	
Observation	983		983	
R-squared	0.006		0.007	
F-statistic	0.793		0.851	
Prob(F-statistic)	0.609		0.558	
Durbin-Watson stat	1.867		1.848	
Wald Test P-value	<0.001		<0.001	

Table 4 presents estimation results from the Random-Effect Models method (REM). Our sample includes 116 listed companies in Vietnam from 2005 to 2020. All variable definitions are reported in Appendix A. Note: * t-stats > 1.645, ** t-stats > 1.96, *** t-stats > 2.56.

Source: Summarized from financial statements of businesses processed by Eview 10.

Estimation results from dynamic system GMM

Table 5: Estimation results from the GMM method

Variables	NCSKEW		DUVOL	
	Coef.	T-stats	Coef.	T-stats
Lag Dependent variable	0.017*	1.67	0.009	0.51
CEOPRCH	0.594***	9.63	0.183***	8.18
CEOOWN	0.122	0.41	-0.103*	-1.66
INST_OWN	-0.446***	-4.32	-0.366***	-11.76
BLOCKHOLDER	0.664***	4.79	0.087	1.51
STATEOWN	-0.093	-0.23	0.388**	2.14
SIZE	-0.058*	-1.83	0.016	1.55
LEV	0.275**	2.04	0.119***	2.57
AGE	-0.002	-0.71	-0.004***	-2.72
Cross-section fixed (first differences)	Yes		Yes	
J-statistic	82.89169		76.446	
Prob(J-statistic)	0.224279		0.400	
Instrument rank	84		84	
N	759		759	

Table 5 presents estimation results from the GMM method. Our sample includes 116 listed companies in Vietnam from 2005 to 2020. All variable definitions are reported in Appendix A. Note: * t-stats > 1.645, ** t-stats > 1.96, *** t-stats > 2.56.

Source: Summarized from financial statements of businesses processed by Eview 10.

Table 5 shows the result of regression by using the GMM method, the findings of which suggest that firms with CEO duality have about a 60% higher crash risk than those without CEO duality, which is also to say that firms with powerful CEOs have about a 60% higher crash risk than firms with less powerful CEOs. Lewellyn and Muller-Kahle (2012) suggest that CEO duality gives CEOs great authority in the nominating committee. Moreover, CEO duality creates difficulties for boards of directors to remove the CEO position, even after a disappointing business performance. Mínguez-Vera and Martín-Ugedo (2010) suggest that CEO duality implies a long-term relationship between the CEO and the company, which creates a more comfortable environment for their decisions. This study's results are consistent with organizational theory because when CEOs have too much power over decision-making, they misjudge their final decision-making power, leading to higher crash risk. The results also support hypothesis 1, which conjectures a positive relationship between CEO duality and stock price crash risk. While these findings align with Lewellyn and Muller-Kahle (2012) and Mínguez-Vera and Martín-Ugedo (2010), they are inconsistent with Bliss et al. (2011).

On the other hand, the present findings suggest that higher CEO ownership reduces crash risk, proxied by DUVOL. This result implies that a one percent increase in CEO ownership leads to a 0.1% decrease in crash risk, which is proxied by DUVOL. Kim and Lu (2011) suggest that higher ownership makes CEOs risk-averse, so they participate in activities to reduce risk to shareholders. The results of this study align with agency theory, suggesting that management ownership minimizes the conflict of interest between the principal and the manager. Therefore, higher CEO ownership discourages them from taking excessive risks to protect their wealth, which is often tied to the company's stock price. Unfortunately, this finding fails to support hypothesis 2.

The results of this study also indicate that institutional ownership helps reduce the stock price crash risk. One finding implies that a one percent increase in institutional ownership leads to a 0.44% decrease in crash risk, proxied by NCSKEW. Shahab et al. (2020) show that a higher percentage of institutional ownership

effectively monitors management activities. Therefore, institutional ownership restrains CEOs' power and prevents them from taking excessive risks. As a result, these findings support managerial power theory, which states that investors tend to be more protective of their interests, contribute to the company's management, and reduce the CEO's salary, lowering the crash risk (Shahab et al., 2020).

The findings of this research report that state ownership positively increases the crash risk; specifically, a one percent increase in state ownership leads to a 0.388% decrease in crash risk, proxied by DUVOL. State ownership participation protects against the risk of financial distress because the government has to protect its interests. Moreover, the political connection between government shareholders and provincial state officers also affects the management's decisions to archive social and political objectives rather than maximizing shareholders' wealth, causing a higher stock price crash risk (Shahab et al., 2020). While these findings align with Shahab et al. (2020), they are inconsistent with Boubakri et al. (2013).

The results here also indicate the positive impact of blockholder ownership and crash risk, implying that a one percent increase in block ownership leads to a 0.664% increase in crash risk, which is proxied by NCSKEW. Chauhan et al. (2015) argue that blockholders in family businesses are less diversified investors and connected with the management, leading to higher agency costs and information asymmetry. Therefore, higher block ownership causes higher risks for family businesses. While these findings align with Chauhan et al. (2015) and agency theory, they are inconsistent with Fattoum-Guedri et al. (2018) and Newton and Paeglis (2019).

A positive relationship between leverage and crash risk is also suggested by the results. This result is consistent with Kim et al. (2019) and Wang et al. (2020), wherein higher leverage causes financial constraints and pressure from repayment obligations. Therefore, firms with higher financial constraints are exposed to operational disruptions and have stock price instability.

The results indicate that older CEOs reduce the stock price crash risk, whereas younger CEOs are more likely to engage in business misconduct

(Gu, 2022). James (2020) also indicates that younger CEOs may manipulate earnings to secure their jobs at an early tenure. Business misconduct erodes a firm's financial position and reputation, leading to increased stock price crash risks (James, 2020).

Finally, the findings suggest that larger firms reduce the stock price crash risk. Additional directors and supervisory board members in larger firms effectively monitor management activities. Moreover, larger firms have a more practical risk management framework than smaller firms. Therefore, powerful CEOs have more challenges before taking a risky decision, which subsequently reduces the stock price

crash risk.

Robustness Test

The Law on Enterprises officially took effect in Vietnam in July 2015. This regulation guides ownership structure and the role of supervisory boards in the companies. The internal supervisory boards impose higher internal control on CEOs' powers, which may affect the stock price crash risk. In this section, the dynamic GMM estimations system is employed to test whether our main findings remain robust before and after enacting the Law on Enterprises in Vietnam.

Table 6: The impacts of the Law on Enterprises 2015 on crash risk

Variables	Before enacting the Law on Enterprises 2015				After enacting the Law on Enterprises 2015			
	NCSKEW		DUVOL		NCSKEW		DUVOL	
	Coef.	T-stats	Coef.	T-stats	Coef.	T-stats	Coef.	T-stats
Lag Dependent variable	0.073	0.79	0.165*	1.68	-0.008	-0.21	-0.006	-0.16
CEOPRCH	-1.010	-0.95	-0.118	-0.22	0.041	0.16	0.009	0.10
CEOOWN	3.861	1.23	1.218*	1.74	-2.458***	-2.82	-0.982***	-3.16
INST_OWN	-1.491	-0.85	-0.017	-0.02	1.861***	4.03	0.360*	1.69
BLOCKHOLDER	-0.392	-0.26	0.421	0.98	-0.145	-1.07	0.065	0.53
STATEOWN	5.876	0.83	0.542	0.20	-0.953	-0.93	-0.448	-1.44
SIZE	-0.049	-0.15	-0.114	-1.59	0.546***	4.21	0.079**	2.26
LEV	0.960	0.61	0.382	0.85	-0.180	-0.44	-0.011	-0.11
AGE	-0.071***	-3.57	-0.012***	-2.51	0.031***	4.18	0.005*	1.66
Cross-section fixed (first differences)	Yes		Yes		Yes		Yes	
N	303		303		456		456	
J-statistic	20.074		16.875		60.439		63.013	
Prob(J-statistic)	0.270		0.463		0.353		0.272	

Table 6 presents the impacts of the Law on Enterprises 2015 on crash risk. Our sample includes 983 observations from 116 listed companies in Vietnam from 2005 to 2020. All variable definitions are reported in Appendix A. Note: * t-stats > 1.645, ** t-stats > 1.96, *** t-stats > 2.56.

Source: Summarized from financial statements of businesses processed by Eview 10.

Table 6 reports that CEO ownership positively impacted crash risk before enacting the Law on Enterprises in 2015. These findings align with Haider and Fang (2018), who indicate that more significant CEO ownership consolidates the CEO's authority against the board of directors. Thus, the board of directors will find removing or replacing powerful CEOs difficult. Haider and Fang (2018) suggest that powerful CEOs restrain the

monitoring functions of the board of supervisors, meaning that powerful CEOs become riskier when overconfident about their job security. Table 6, however, shows that higher CEO ownership reduces stock price crash risk after enacting the Law on Enterprises. As such, our primary findings are solely robust after enacting the Law on Enterprises, but the results indicate that CEO duality does not robustly influence

stock price crash risk before and after enacting the Law on Enterprises.

CONCLUSION AND RECOMMENDATION

This study examines the impacts of CEO powers and ownership structure on the stock price crash risk in Vietnam, a transitional market in Asia. The present research focuses on family businesses in Vietnam because they contribute 25% to the national GDP. A sample of 116 listed family businesses were manually collected using the parameters of the years 2005 to 2020. Dynamic system GMM regressions were employed to analyze data and discuss the findings because they overcome the endogeneity issues of the REM method.

This research generates striking results. Firstly, family businesses with CEO duality have about a 60% higher crash risk than firms without CEO duality; however, CEO ownership reduces the stock price crash risk of family businesses. These findings are robust before and after enacting the Law on Enterprises in Vietnam, again aligning with agency theory, managerial power theory, organizational theory, and prior literature.

This study also contributes practical corporate governance implications for controlling crash risk, especially in family businesses. These businesses may reduce crash risk by increasing CEO ownership and preventing CEO duality. Family businesses should also encourage the participation of institutional investors to effectively monitor the CEO's powers (Shahab et al., 2020). Finally, the findings suggest that policymakers supervise the cross-ownership between subsidiaries of the family business to ensure transparent operations. This suggests that policymakers should closely monitor family relatives who are the directors of subsidiaries in the family business to prevent stock price manipulations. Lower information asymmetry helps ensure the sustainable growth of family businesses in Vietnam and in emerging market; therefore, this study has marginal policy contributions for managers of family businesses in emerging countries to reduce the stock price crash risk and maximize shareholder wealth.

This study also has the following limitations. Firstly, the data are limited because they only reflect the Vietnamese context. Moreover, the findings may be irrelevant to the emerging and developed markets because family businesses in emerging and developed countries tend to

have second and third-generation successors. Since the typical family businesses in Vietnam have successors for only one generation, the results can only be applied to newer businesses. Consequently, further studies on this topic should conduct cross-country analyses to generalize additional insights.

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Appendix A: Variables definitions:

Variables	Notation	Definition	Reference
Dependent Variables			
DUVOL	DUVOL	The log of the ratio of the standard deviation of firm-specific down weekly returns to the standard deviation of up weekly returns during the fiscal year.	Al Mamun et al. (2017)
NCSKEW	NCSKEW	The negative skewness of firm-specific weekly returns over the fiscal year.	Al Mamun et al. (2017)
Independence variables			
CEO ownership	CEOOWN	The proportion of CEO holdings of the firm <i>i</i> at the end of year <i>t</i>	Shahab et al. (2020)
CEO duality	CEOPRCH	The dummy variable equals one when the CEO holds both positions simultaneously and 0 otherwise.	Mínguez-Vera and Martín-Ugedo (2010)
Control variables			
SIZE	SIZE	The natural logarithm of total assets affects the firm size and potentially involves the degree of vulnerability to stock price crash risk.	Kim et al. (2011).
Leverage	LEV	The ratio of total liabilities over total assets	Alp et al. (2022)
CEO age	AGE	The age of the CEO	Harper et al. (2020)
Institutional ownership	INST_OWN	The proportion of institutional holdings of the firm <i>i</i> at the end of year <i>t</i>	Huang et al. (2020)
Blockholder	BLOCKHOLDER	The proportion of shareholders owning more than 5% of the shares in the company	Fattoum-Guedri et al. (2018)
State ownership	STATEOWN	The proportion of government holdings of the firm <i>i</i> at the end of year <i>t</i>	Boubakri et al. (2013)

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