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Financial crisis and dividend policy: evidence from an emerging market

Quoc Trung Tran[1]
Foreign Trade University, Ho Chi Minh City, Vietnam
Xuan Minh Nguyen
Foreign Trade University, Ho Chi Minh City, Vietnam
Thi Huong Dao
Thuyloi University, Ha Noi, Vietnam

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Abstract

Prior research shows that firms restrict their dividend policy due to precautionary motives when they face high uncertainty and external financial constraint during a financial crisis. However, the effect of a financial crisis on dividend policy may also be explained by the bird in hand mechanism. This paper investigates how the global financial crisis affects corporate dividend policy in the Vietnamese stock market. This market is chosen because of its weak corporate governance environment strengthens shareholders' bird in hand motive. With a sample of 5,489 observations between 2007 and 2017, we find that both the probability of dividend payment and dividend payout ratio are higher during the crisis period of 2008-2009. The effect of the financial crisis is weaker in firms with high leverage and large size. Moreover, our findings show that the likelihood of dividend omission is lower while the probability of dividend initiation and dividend increase is higher during the financial crisis.

Keywords: Financial crisis, Dividend policy, Vietnam, Emerging markets

1. Introduction

A financial crisis is a shock to corporate financial decisions as it raises economic uncertainty and decreases bank financing (Shin *et al.*, 2018; Roubini, 2007; Flannery *et al.*, 2013). When firms face high economic uncertainty and external financial constraint, their precautionary motive of cash holdings is stronger and thus they have lower incentives to pay dividends. Prior empirical studies show supporting evidence for this mechanism with higher corporate

[1] Corresponding author: tranquoctrung.cs2@ftu.edu.vn

cash holdings (Lian *et al.*, 2011) and a lower probability to pay dividends (Hauser, 2013) during the crisis period. However, we argue that a financial crisis may also affect corporate dividend policy through an opposite mechanism. When shareholders face high economic uncertainty, they are more likely to prefer dividends as a bird in hand to retained earnings. Therefore, they pressure corporate managers to pay more cash dividends. Motivated by this argument, this paper investigates whether the bird in hand mechanism is effective in corporate dividend policy in the Vietnamese stock market during the global financial crisis. We choose the Vietnamese market as a laboratory for our research since this emerging market has a weak corporate governance environment, which facilitates the bird in hand mechanism.

Following prior studies, we apply Logit and Tobit regression models to analyze the likelihood of dividend payment and the magnitude of dividends, respectively. To investigate how the financial crisis affects corporate dividend policy, we use a dummy variable, which is assigned 1 for the crisis period of 2008-2009 and 0 otherwise. After controlling firm characteristics, we find that firms have higher incentives to pay dividends during the crisis period. These findings are robust with alternative measures of dividend payout ratio and different regression techniques. Moreover, the financial crisis increases the probability of dividend initiation and dividend increase while reducing the likelihood of dividend omission. Besides, we extend our research by investigating this effect by levels of financial leverage and firm size. We split the full data into two groups of low (small) and high (large) financial leverage (size). After comparing their regression results, we find that the positive relationship between the financial crisis and corporate dividend policy is weaker for firms with high leverage and large size.

This study has three contributions to the literature on dividend payout as follows. First, the bird in hand theory is more effective than the precautionary motive of cash holdings in a weak corporate governance environment. Second, unlike prior studies (Lian *et al.*, 2011; Hauser, 2013), this paper shows empirical evidence of a positive relationship between a financial crisis and corporate dividend policy. Third, emerging markets may be promising laboratories for studies in corporate financial decisions due to their special characteristics. Many studies find supporting evidence for the bird in hand theory across young markets such as Pakistan (Farrukh *et al.*, 2017), Thailand (Tangrukwaraskul and Kulchanarat, 2019), Malaysia (Qamar, 2019), India (Kumaraswamy *et al.*, 2019) and Rwanda (Ngoboka and Singirankabo, 2021) in normal economic conditions. Therefore, our findings may provide implications for managers and investors in other markets.

The remainder of the paper is organized as follows. Section 2 analyzes prior studies in the role of a financial crisis in firms' financial decisions and then presents arguments to develop our research hypothesis. Section 3 describes regression models to examine how the financial crisis determines corporate decisions in dividend payment. Section 4 shows how we collect our research data and describes its summary. Section 5 reports the main findings, the robustness checks, and the additional results. Section 6 presents the conclusion.

2. Literature review and hypothesis development

Miller and Modigliani (1961) posit that firms fail to prefer dividends to retained earnings under a perfect capital market. However, there are several market frictions which make firms have different preferences towards dividends and retained earnings. Prior research implies that a financial crisis is a promising context to investigate corporate dividend decisions since it increases external financial constraints and economic uncertainty (Lian *et al.*, 2011; Arslan *et al.*, 2006). Investigating the features of bank equity between normal and crisis periods, Flannery *et al.* (2013) find that bank stability declines during crisis periods. Campello *et al.* (2010) conduct a survey in which respondents are Chief Financial Officers of 1,050 firms around the world to know how their investment plans changed in the crisis year of 2008. Their findings show that financially constrained firms plan to have larger decreases in the budget for research and development activities. Moore (2017) shows that economic uncertainty increases to historically high levels during the global crisis.

Lian *et al.* (2011) posit that cash is more important to firms in a financial crisis. When firms face high economic uncertainty and external financial constraint, they tend to hold more cash due to precautionary motives. Cash helps them survive and seize emerging investment opportunities effectively. With 8,663 firm-years from Chinese listed firms between 1999 and 2009, they conclude that corporate cash levels are higher during the crisis period 2008-2009. Almeida *et al.* (2004) find that firms accumulate more cash from their cash flows when facing high financial constraint in both developing and developed countries. In addition, Horioka and Terada-Hagiwara (2014) examine corporate cash holdings across 11 Asian economies over the 2002-2011 period. Their findings indicate that the cash flow sensitivity of cash is higher during the crisis period. Arslan *et al.* (2006) also document that firms save more cash as a reaction to a financial crisis in Turkey. These prior studies imply that firms tend to prefer retained earnings to dividend payments when they face a financial crisis. Consistently, Hauser (2013) finds that firms are less likely to pay dividends in the period 2008-2009, even after controlling their financial conditions.

Although prior research shows supporting evidence for the negative impact of a financial crisis on corporate dividend policy, we posit that the bird in hand mechanism is also a potential motive. According to Gordon (1959), shareholders tend to prefer cash dividends to retained earnings due to uncertainty of future cash flow. It is confirmed that "A bird in hand is worth more than two in the bush". With a sample of 51 listed firms in Pakistan from 2006 to 2015, Farrukh *et al.* (2017) find that corporate dividend decisions positively affect firm profitability and share price. These findings are supporting evidence for the bird in hand theory. Tangrukwaraskul and Kulchanarat (2019) also document similar results when they investigate the dividend policy of Thai listed firms over the period of 2009-2018. Several studies show that investors prefer dividends in Singapore (Williams and Duro, 2017), Malaysia (Qamar, 2019), India (Kumaraswamy *et al.*, 2019), and Rwanda (Ngoboka and Singirankabo, 2021). The global financial crisis leads to high economic uncertainty. Therefore, shareholders have high incentives to pressure corporate managers to distribute dividends. When the bird in hand

mechanism is more effective than the precautionary motive, firms pay more dividends in the crisis period.

Vietnamese stock market is a promising environment to examine whether the bird in hand mechanism can dominate corporate dividend policy during the global financial crisis. As a young stock market, Vietnam has a weak legal framework to protect investors (Pham and Hoang, 2020); Hai and Nunoi (2008) show that Vietnam has a weak legal framework for corporate governance. Nguyen (2008) also documents that the enforceability of legal regulations on corporate governance in Vietnam is low. Moreover, Minh and Walker (2008) show that the Vietnamese stock market is poor in market transparency, investor protection, and firm management. Its corporate governance score is only 50.9% while other regional countries have much higher scores. Malaysia is the highest at 77.3%, followed by Thailand (72.7%), and Indonesia (60.0%). McGee (2009) posits that weak corporate governance in the Vietnamese stock market is from three reasons: (i) conflict and inconsistent legislations; (ii) weak information disclosure and transparency; and (iii) ineffective penalties for violations. Two legal documents on corporate governance namely Circular No. 121/2012/TT-BTC and Decree No. 71/2017/ND-CP have not been respected by a large proportion of listed firms since they have no effective remedies for violations. In addition, the knowledge and experience of investors are limited so that they can monitor corporate managers effectively. Over 80% of listed firms in Vietnam have violations in information announcements. In a weak corporate governance environment, investors have high incentives to follow the bird in hand theory. Therefore, the bird in hand mechanism is stronger than the cautionary motive in corporate dividend policy when firms face high uncertainty and financial constraints under the impact of the global financial crisis. We hypothesize that firms are more likely to pay, and pay more dividends during the crisis period.

H1: Both the probability of dividend payment and payout ratio are higher during the crisis period.

3. Research models

We employed both Logit and Tobit models to examine how the global financial crisis affects corporate payout policy. From an econometric perspective, the dividend payout ratio was left-censored. Therefore, Tobit regression should be employed instead of ordinary least squares (OLS) to avoid selection bias (Wooldridge, 2010).

$$PAY_{i,t} = \alpha + \beta_1 CR + \beta_2 CA_{i,t} + \beta_3 CF_{i,t} + \beta_4 LV_{i,t} + \beta_5 FS_{i,t} + \beta_6 TQ_{i,t} + \beta_7 FG_{i,t} + \beta_8 NC_{i,t} + \beta_9 RE_{i,t} + \varphi \text{Industry dummies} + \eta \text{Year dummies} + \varepsilon_{i,t} \quad (1)$$

$$DTA_{i,t} = \alpha + \beta_1 CR + \beta_2 CA_{i,t} + \beta_3 CF_{i,t} + \beta_4 LV_{i,t} + \beta_5 FS_{i,t} + \beta_6 TQ_{i,t} + \beta_7 FG_{i,t} + \beta_8 NC_{i,t} + \beta_9 RE_{i,t} + \varphi \text{Industry dummies} + \eta \text{Year dummies} + \varepsilon_{i,t} \quad (2)$$

where PAY is a dividend payment; DTA is dividends to assets ratio; CR is crisis dummy; CA is cash holdings; CF is operating cash flow; LV is financial leverage; FS is firm size; TQ is

Tobin's Q - a proxy of investment opportunities; FG is firm growth; NC is net working capital; RE is retained earnings.

DeAngelo *et al.* (2006) proposed that there is an ambiguous relationship between cash levels and dividend policy. When firms have abundant cash, they distribute more dividends. However, if they have more cash due to the need for future investment, they are less likely to pay dividends. Networking capital is a substitute for cash holdings. Consequently, its effect on dividend policy is also ambiguous. In addition, firms with high cash flows tend to distribute more dividends to mitigate agency costs (Jensen, 1986). According to pecking order theory, internal funds are cheaper than external funds due to information asymmetry (Myers and Majluf, 1984). Therefore, firms with more investment opportunities tend to save cash for their investment rather than pay dividends (Tran and Phan, 2021). Larger firms have a better reputation. Therefore, they face lower costs of external financing. This leads to higher dividend levels. Moreover, life cycle theory argues that mature firms distribute more dividends as they have fewer investment opportunities. DeAngelo and DeAngelo (2006) and Grullon *et al.* (2002) found supporting evidence for this theory. Variable definitions and expected signs are presented in Appendix A.

4. Research data

We used the database of Fiinpro to collect data of all firms listed on both Ho Chi Minh City and Hanoi Stock Exchanges from 2007 to 2017. After removing firms in the financial sector and firm years with missing information, we had a final sample of 5,489 observations. All research variables were winsorized at 3% to remove the effect of outliers[2].

Table 1 describes our research data. The descriptive statistics in Table 1 show that there are 76% dividend payers in our sample. Dividends to assets ratio vary from 0 to 0.134. On average, firms use 43.6% of their earnings to pay dividends and dividend payment is equivalent to about 3.1% of sales and 2.9% of total assets. Panel B indicates that dividend payers constitute from 70% to 80% of firms annually. This can be explained that firms pay dividends to satisfy their investors who prefer cash to retained earnings. Furthermore, Panel C shows the distribution by year. In 2007, the Vietnamese stock market developed rapidly and many firms prepared their listing procedures. Therefore, the number of listed firms increases from 2007 to 2009 despite the effect of the global financial crisis. After 2009, it increases slightly. Moreover, Panel D illustrates that the largest industry is Industrials contributing 44.91% of observations, which is followed by Consumer goods with 16.36% and Basic materials with 14.79%. The smallest industry is Oil and Gase, constituting about 1.02% of our sample.

[2] Our research findings remain stable with 5% and 10% of winsorization.

Table 1. Data description

Panel A. Descriptive statistics					
Variable	**N**	**Mean**	**SD**	**Min**	**Max**
PAY	5,489	0.760	0.427	0.000	1.000
DTA	5,489	0.029	0.034	0.000	0.134
DTE	5,489	0.436	0.472	0.000	2.040
DTS	5,489	0.031	0.045	0.000	0.201
INT	1,139	0.386	0.487	0.000	1.000
OMT	3,706	0.116	0.309	0.000	1.000
DIN	5,489	0.001	0.028	-0.072	0.071
CR	5,489	0.147	0.354	0.000	1.000
CA	5,489	0.140	0.139	0.003	0.527
CF	5,489	0.125	0.152	-0.174	0.524
LV	5,489	0.495	0.221	0.080	0.862
FS	5,489	26.824	1.386	24.180	29.970
TQ	5,489	0.991	0.458	0.268	2.471
FG	5,489	0.174	0.303	-0.212	1.206
NC	5,489	0.106	0.188	-0.241	0.533
RE	5,489	0.065	0.072	-0.092	0.261
Panel B. Paying firms by year					
Year	**Percent**	**Year**	**Percent**	**Year**	**Percent**
2007	73.02	2011	80.38	2015	72.90
2008	80.56	2012	77.24	2016	69.82
2009	81.42	2013	75.27	2017	73.05
2010	81.60	2014	73.49		
Panel C. Annual number of firms					
Year	**N**	**Year**	**N**	**Year**	**N**
2007	215	2011	520	2015	594
2008	355	2012	536	2016	603
2009	452	2013	554	2017	590
2010	489	2014	581		
Panel D. Industry Distribution					
Industry	**N**	**Percent**	**Industry**	**N**	**Percent**
Technology and Telecommunications	195	3.55	Health Care	209	3.81
Industrials	2,465	44.91	Consumer Goods	898	16.36
Oil & Gas	56	1.02	Basic Materials	812	14.79
Consumer Services	525	9.56	Utilities	329	5.99

Notes: PAY is a dividend payment. DTA, DTS, and DTE are payout ratios with deflators of

assets, sales, and earnings, respectively. INT, OMT, and DIN are dividend initiation, omission, and increase, respectively. CR is crisis dummy. CA is cash holdings. CF is operating cash flow. LV is financial leverage. FS is firm size. TQ is Tobin's Q. FG is firm growth. NC is net working capital. RE is retained earnings.

Source: The authors' calculation

Table 2 compares dividend payments in the crisis period and without the crisis period. We use both T-test and Wilcoxon rank-sum test to compare the mean and median respectively. We find that both the mean and median of the likelihood to pay dividends, dividend payout ratio, dividend initiation, and dividend increase in the crisis period are significantly lower than in the without crisis period. Besides, dividend omission in the crisis period has mean and median higher than in the without crisis period. These findings imply that firms tend to distribute more dividends in the crisis period.

Table 2. Dividend payments in the crisis period and without the crisis period

Variables	Mean			Median		
	Without crisis period	Crisis period	T-test	Without crisis period	Crisis period	Wilcoxon rank-sum test
PAY	0.751	0.810	-3.642***	1.000	1.000	-3.638***
DTA	0.029	0.031	-2.207***	0.018	0.022	-3.118***
INT	0.339	0.653	-9.587***	1.000	1.000	-9.290***
OMT	0.116	0.115	3.642***	0.000	0.000	3.638***
DIN	0.000	0.002	-1.743*	0.000	0.000	-2.876***

Notes: PAY is a dividend payment. DTA, DTS, and DTE are payout ratios with deflators of assets, sales, and earnings, respectively. INT, OMT, and DIN are dividend initiation, omission, and increase, respectively. *, **, and *** are 10%, 5%, and 1% of significance, respectively.

Source: The authors' calculation

5. Research results

5.1 Corporate dividend policy under the global financial crisis

Table 3 shows both Logit and Tobit regression results to investigate how the global financial crisis determines corporate dividend decisions. Contrary to Lian *et al.* (2011) and Hauser (2013), we find that the crisis dummy is positively related to both the decision to pay and the payout ratio. Our findings are in line with the precautionary motive that makes firms save more cash and reduce dividends when they face higher economic uncertainty and external financial constraint during the crisis period. However, we can explain them by the bird in hand theory. When shareholders recognize high economic uncertainty and less availability of investment opportunities that are created by the global financial crisis, they have high incentives to pressure corporate managers to pay dividends - the bird in hand to protect their wealth. As a result, firms pay more cash dividends in the crisis period.

Table 3. Corporate dividend policy and the global financial crisis

Variables	Dependent variable is PAY	Dependent variable is DTA	Dependent variable is DSA	Dependent variable is DTE
Intercept	-4.545***	0.053***	-0.088***	0.176
	(-3.75)	(2.97)	(-2.94)	(0.69)
CR	0.613***	0.009***	0.012***	0.086***
	(5.54)	(6.37)	(6.61)	(3.62)
CA	2.807***	0.040***	0.038***	0.471***
	(5.60)	(6.17)	(3.48)	(5.45)
CF	-0.267	0.008	-0.004	-0.543***
	(-0.80)	(1.53)	(-0.48)	(-6.65)
LV	1.624***	-0.019***	-0.058***	0.366***
	(4.70)	(-3.61)	(-6.41)	(4.28)
FS	0.140***	-0.002**	0.005***	-0.002
	(3.08)	(-2.45)	(4.59)	(-0.22)
TQ	0.520***	0.014***	0.016***	0.053**
	(3.94)	(6.97)	(5.60)	(2.53)
FG	-1.020***	-0.026***	-0.023***	-0.353***
	(-8.34)	(-13.73)	(-7.97)	(-11.65)
NC	-0.346	-0.005	-0.020***	0.146*
	(-1.03)	(-0.89)	(-2.56)	(1.87)
RE	11.765***	0.192***	0.191***	1.462***
	(10.00)	(12.09)	(8.52)	(6.51)
Left-censored		1,318	1,318	1,318
No. of observations	5,489	5,489	5,489	5,480

Notes: PAY is a dividend payment. DTA, DTS, and DTE are payout ratios with deflators of assets, sales, and earnings, respectively. CR is crisis dummy. CA is cash holdings. CF is cash flow. LV is financial leverage. FS is firm size. TQ is Tobin's Q. FG is firm growth. NC is net working capital. RE is retained earnings. *, **, and *** are 10%, 5%, and 1% of significance, respectively.

Source: The authors' calculation

In addition, in line with Tran *et al.* (2017) and Brockman and Unlu (2009), we find that corporate cash holdings positively affect dividend policy. Firms with high levels of cash pay more dividends to mitigate agency problems between managers and shareholders (Jensen and Meckling, 1976). Besides, we find that high-growth firms are less likely to disgorge cash. Firms prefer internal to external funds for their investment since costs of external financing are higher than those of internal financing. Retained earnings are positively associated with

corporate dividend policy since mature firms have fewer investment opportunities (DeAngelo and DeAngelo, 2006; Grullon *et al.*, 2002).

5.2 Robustness checks

In Table 4, we present estimation results from random effects Logit, fixed effects Logit, random effects Tobit and OLS for payers as robustness checks. We also find that the global financial increases both the likelihood to pay and the payout ratio. These estimation results are consistent with those reported in Table 3.

Table 4. Robustness checks with alternative regression approaches

Variables	Random effects Logit	Fixed effects Logit	Random effects Tobit	OLS for payers
Intercept	-5.059***		0.065***	0.127***
	(-3.15)		(3.61)	(7.33)
CR	0.544***	0.332**	0.007***	0.004***
	(4.37)	(2.52)	(6.12)	(3.38)
CA	2.415***	0.974*	0.029***	0.014**
	(5.02)	(1.75)	(6.31)	(2.55)
CF	-1.139***	-1.611***	-0.014***	0.012**
	(-3.15)	(-4.20)	(-3.81)	(2.40)
LV	1.601***	1.149**	-0.024***	-0.047***
	(4.17)	(2.24)	(-5.64)	(-10.59)
FS	0.177***	0.088	-0.002**	-0.003***
	(3.04)	(0.86)	(-2.36)	(-5.68)
TQ	0.508***	0.388***	0.010***	0.011***
	(4.30)	(3.07)	(8.75)	(6.03)
FG	-0.587***	-0.116	-0.016***	-0.018***
	(-3.95)	(-0.72)	(-9.64)	(-10.09)
NC	-0.066	0.457	0.002	-0.001
	(-0.18)	(1.10)	(0.39)	(-0.28)
RE	11.393***	9.097***	0.142***	0.111***
	(11.69)	(8.48)	(14.75)	(7.64)
Left-censored			1,318	
No. of observations	5,489	3,433	5,489	4,171

Notes: PAY is a dividend payment. DTA is dividends to assets ratio. CR is crisis dummy. CA is cash holdings. CF is cash flow. LV is financial leverage. FS is firm size. TQ is Tobin's Q. FG is firm growth. NC is net working capital. RE is retained earnings. *, **, and *** are 10%, 5%, and 1% of significance, respectively.

Source: The authors' calculation

5.3 Dividend initiation, omission, and increase under the global financial crisis

According to Brockman and Unlu (2009), dividend initiation, omission, and increase also reflect corporate dividend policy. Therefore, we extend this research by investigating how the global financial crisis affects dividend initiation, omission, and increase. We replace the probability of dividend payment (PAY) in Equation (1) with variables to describe the decisions to initiate, omit, and increase dividends. Then, we run Logit regression for the three new equations with the observations for which these decisions are possible (Shao *et al.*, 2013). Table 5 reports that the probability of dividend initiation and increase is higher while the likelihood of dividend omission is lower during the financial crisis. These findings also imply that the global financial crisis positively influences corporate dividend policy. Economic uncertainty is higher during the global financial crisis. Consequently, shareholders are more likely to pressure corporate managers to initiate dividends, reduce dividend omission, and increase dividend payout.

Table 5. Dividend initiation, omission and increase under the global financial crisis

Variables	Dependent variable is INT	Dependent variable is OMT	Dependent variable is DIN
Intercept	-3.332**	3.447***	-0.001
	(-2.14)	(2.69)	(-0.15)
CR	1.272***	-0.259*	0.003***
	(7.67)	(-1.71)	(3.65)
CA	1.325**	-2.225***	-0.006***
	(2.06)	(-4.31)	(-2.59)
CF	0.049	0.552	0.008**
	(0.11)	(1.15)	(2.51)
LV	1.632***	-0.729**	0.000
	(3.55)	(-1.97)	(0.31)
FS	0.059	-0.159***	0.000
	(1.01)	(-3.28)	(0.99)
TQ	0.243	-0.299*	-0.001
	(1.48)	(-1.84)	(-0.87)
FG	-0.547***	0.714***	-0.012***
	(-3.13)	(3.87)	(-8.36)
NC	-0.188	0.288	0.001
	(-0.44)	(0.72)	(0.81)
RE	10.613***	-7.282***	0.010**
	(8.08)	(-5.97)	(2.12)
No. of observations	1,139	3,706	5,383

Notes: INT, OMT, and DIN are dividend initiation, omission, and increase, respectively. CR is crisis dummy. CA is cash holdings. CF is cash flow. LV is financial leverage. FS is firm size. TQ is Tobin's Q. FG is firm growth. NC is net working capital. RE is retained earnings. *, **, and *** are 10%, 5%, and 1% of significance, respectively.

Source: The authors' calculation

5.4 The role of financial leverage and firm size

The extant literature shows that financial leverage and firm size are important in corporate dividend decisions (Baker, 2009; Pathan *et al.*, 2016). Therefore, in this study, we also examine the effect of the financial crisis on dividend policy by levels of financial leverage and firm size. We divide the full sample into two sub-samples of low (small) and high (large) financial leverage (size). Then we run both Logit and Tobit regressions for each sub-sample. Table 6 illustrates that the relationship between the global financial crisis and payout policy is weaker in high leverage firms. This can be explained that firms with high leverage are more controlled and monitored by creditors who recognize high risk during the crisis period. Therefore, firms are less flexible in their payout policy and the bird in hand mechanism is less effective.

Table 6. The role of financial leverage

Variables	Dependent variable is PAY		Dependent variable is DTA	
	Low leverage	High leverage	Low leverage	High leverage
Intercept	-5.481***	-4.628***	0.039	0.064***
	(-2.86)	(-2.99)	(1.27)	(4.53)
CR	0.767***	0.430***	0.012***	0.005***
	(4.69)	(2.95)	(4.97)	(3.55)
CA	3.562***	1.351**	0.053***	0.017***
	(5.45)	(2.09)	(5.73)	(3.28)
CF	0.491	-1.117**	0.028***	-0.008
	(1.11)	(-2.20)	(3.58)	(-1.56)
LV	2.071***	2.125***	-0.004	-0.031***
	(3.39)	(2.78)	(-0.40)	(-4.75)
FS	0.179**	0.125**	-0.001	-0.002***
	(2.48)	(2.20)	(-1.15)	(-2.92)
TQ	0.534***	0.537*	0.015***	0.009***
	(3.63)	(1.94)	(5.93)	(3.64)
FG	-1.496***	-0.691***	-0.047***	-0.008***
	(-8.25)	(-3.93)	(-13.81)	(-4.85)
NC	-0.515	-0.175	-0.011	0.001
	(-1.13)	(-0.37)	(-1.36)	(0.28)

Table 6. The role of financial leverage (*continued*)

Variables	Dependent variable is PAY		Dependent variable is DTA	
	Low leverage	High leverage	Low leverage	High leverage
RE	8.891***	17.713***	0.191***	0.158***
	(6.67)	(9.38)	(9.18)	(9.82)
Left-censored			671	647
No. of observations	2,742	2,747	2,742	2,747

Notes: PAY is a dividend payment. DTA is dividends to assets ratio. CR is crisis dummy. CA is cash holdings. CF is cash flow. LV is financial leverage. FS is firm size. TQ is Tobin's Q. FG is firm growth. NC is net working capital. RE is retained earnings. *, **, and *** are 10%, 5%, and 1% of significance, respectively.

Source: The authors' calculation

Moreover, Table 7 shows that the effects of the financial crisis on dividend decisions are weaker in large firms. Large firms have a better reputation and better corporate governance. Therefore, shareholders are less likely to pressure corporate managers to pay dividends during the crisis period.

Table 7. The role of firm size

Variables	Dependent variable is PAY		Dependent variable is DTA	
	Small firms	Large firms	Small firms	Large firms
Intercept	-1.885	-2.898	0.031	0.047
	(-0.67)	(-1.19)	(0.64)	(1.50)
CR	0.677***	0.490***	0.013***	0.006***
	(4.44)	(3.04)	(5.06)	(3.50)
CA	3.473***	1.559**	0.042***	0.036***
	(5.33)	(2.03)	(5.00)	(3.77)
CF	-0.397	-0.148	0.009	0.004
	(-0.88)	(-0.29)	(1.07)	(0.59)
LV	1.512***	1.444***	-0.014*	-0.028***
	(3.33)	(2.71)	(-1.79)	(-4.07)
FS	0.036	0.095	-0.001	-0.001
	(0.34)	(1.09)	(-0.67)	(-0.79)
TQ	0.675***	0.321	0.015***	0.013***
	(3.76)	(1.55)	(4.99)	(4.83)
FG	-1.334***	-0.676***	-0.035***	-0.019***
	(-7.39)	(-3.78)	(-10.85)	(-8.07)

Table 7. The role of firm size (*continued*)

Variables	Dependent variable is PAY		Dependent variable is DTA	
	Small firms	**Large firms**	**Small firms**	**Large firms**
NC	-0.385	-0.398	-0.009	0.001
	(-0.92)	(-0.73)	(-1.21)	(0.18)
RE	13.035***	10.564***	0.256***	0.117***
	(9.29)	(5.23)	(12.30)	(5.82)
Left-censored			534	784
No. of observations	2,742	2,747	2,742	2,747

Notes: PAY is a dividend payment. DTA is dividends to assets ratio. CR is crisis dummy. CA is cash holdings. CF is cash flow. LV is financial leverage. FS is firm size. TQ is Tobin's Q. FG is firm growth. NC is net working capital. RE is retained earnings. *, **, and *** are 10%, 5%, and 1% of significance, respectively.

Source: The authors' calculation

6. Conclusion

Prior research showed that firms restrict their dividend policy due to precautionary motives when they face high uncertainty and external financial constraint during a financial crisis. However, the effect of a financial crisis on dividend policy may also be explained by the bird in hand mechanism. This paper investigates how the global financial crisis affects corporate dividend policy in the Vietnamese stock market. We choose this emerging market since its weak corporate governance environment strengthens shareholders' bird in hand motive. With a sample of 5,489 observations between 2007 and 2017, we find that both the probability of dividend payment and dividend payout ratio are higher during the crisis period of 2008-2009. Unlike prior studies, this paper shows that the bird in hand mechanism is more effective than a precautionary motive in corporate dividend policy during a financial crisis. The financial crisis increases economic uncertainty that may drive corporate managers to reduce dividend payments to save cash but may motivate shareholders to insist on dividends - a bird in hand. Due to weak corporate governance in Vietnam, the bird in hand motive of shareholders tends to be stronger and firms pay more dividends during the crisis period. Moreover, the likelihood of dividend omission is lower while the probability of dividend initiation and dividend increase is higher during the financial crisis. These findings also support the role of investors in forcing firms to pay dividends when they face higher uncertainty caused by the financial crisis. In addition, we find that the effect of the financial crisis is weaker in firms with high leverage and large size. Firms with high leverage have higher default risk and are more controlled by creditors over the crisis period. Therefore, they are less flexible to increase dividends to satisfy shareholders' pressure. Large firms have more experience and mechanisms to ensure strong corporate governance. Consequently, shareholders are less likely to insist on dividends over the crisis period.

Our paper proves that emerging markets are promising laboratories to examine the effects of corporate governance on corporate financial decisions. It also implies that corporate managers should take shareholders' bird in hand motive into consideration when they finance investment opportunities in a financial crisis. In an institutional environment of weak corporate governance like Vietnam, shareholders tend to prefer dividends to earnings and investors tend to prefer short-term to long-term investment. Moreover, creditors should control and monitor their debtors' dividend policy more effectively to protect their benefits from shareholders' bird in hand motive during the crisis period. Finally, the Vietnamese government should improve legal regulations on corporate governance and their enforcement to protect investors more effectively and thus help firms have more resources to finance their investment opportunities, especially in a financial crisis or an exogenous shock.

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Appendix

Appendix A. Variable definitions

Variables	Name	Definition	Expected signs
PAY	Dividend payment	1 if firms pay dividends and 0 otherwise	N/A
DTA	Dividends to assets ratio	Cash dividends/Total assets	N/A
DTS	Dividends to sales	Cash dividends/Total sales	N/A
DTE	Dividends to earnings	Cash dividends/Net income	N/A
INT	Dividend initiation	1 if firms fail to pay dividends in year t-1 but pay dividends in year t	N/A
OMT	Dividend omission	1 if firms pay dividends in year t-1 but fail to pay dividends in year t	N/A
DIN	Dividend increase	1 if dividends to sales ratio in year t is higher than in year t-1	N/A
CR	Crisis dummy	1 if observations belong to the crisis period 2008-2009 and 0 otherwise	+
CA	Cash holdings	(Cash + Cash equivalents + Short-term investment)/Total assets	+/-
CF	Cash flow	(EBITDA + Depreciation)/Total assets	+
LV	Financial leverage	Total liabilities/Total assets	-
FS	Firm size	Natural logarithm of total assets	+
TQ	Tobin's Q	(Total equity market value + Total liabilities)/Total assets	-
FG	Firm growth	Annual growth rate of total assets	-
NC	Net working capital	(Current assets - current liabilities - Cash - Cash equivalents - Short-term investment)/Total assets	+/-
RE	Retained earnings	Retained earnings/Total assets	+

Source: The authors' suggestion