Does ownership matter in corporate cash holdings? Evidence from an emerging market

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Received 19 September 2023
Revised 8 December 2023
Accepted 25 January 2024

Abstract

Purpose – Using imbalanced panel data of nonfinancial Vietnamese listed firms from 2005 to 2021, this paper explores the potential effect of ownership on firms' cash levels.

Design/methodology/approach – Two hypotheses are tested using different methods, including pooled ordinary least squares (POLS) and system-generalized method of moments (GMM), to investigate the ownership–cash holding relationship for various firm scenarios. Both book and market measures of the cash ratio are examined.

Findings – Results show that foreign and state ownership encourages firms to increase their cash reserves. The positive relationship between ownership and cash holding is, especially, pronounced for firms in the financial deficit.

Research limitations/implications – This research suggests that in this emerging market, outside ownership substantially accelerates cash to hedge against the unexpected issues caused by poor investor protection, low political accountability and information asymmetry.

Originality/value – The study contributes to the existing understanding of the relationship between ownership and corporate cash holdings in the context of a typical emerging market. Besides, it expands the existing knowledge to the extent of such relations in the event of a financial shortage.

Keywords Foreign ownership, State ownership, Cash holding, Budget deficit

Paper type Research paper

1. Introduction

Ownership has significantly influenced various firms' decisions as a critical factor in corporate governance. Government ownership, on the one side, is linked to increased agency issues, as the firms with high state shareholdings are generally committed bureaucrats who may seek political aims rather than shareholder interests and often connect with weak governance practices, low profitability and serious ethical hazard issues (Boubakri *et al.*, 2013; Shleifer and Vishny, 1997; Chen *et al.*, 2018). On the other side, the state involvement implies government subsidies, preferential loan access and soft-budget limitations, especially

JEL Classification — D22, G32, H70, O16, O53

Declaration of interest: The authors declare no conflicts of interest.

Journal of Economics and Development
Vol. 26 No. 2, 2024
pp. 123-138
Emerald Publishing Limited
e-ISSN: 2632-5330
p-ISSN: 1859-0020
DOI 10.1108/JED-09-2023-0168

in the event of financial hardship (Borisova and Megginson, 2011; Kornai *et al.*, 2003; Faccio *et al.*, 2006). State ownership in emerging markets like Vietnam is supposed to have the ability to enhance the standard of organizational governance and increase company efficiency, as shown through the worth of cash holdings (Nguyen, 2022). In terms of foreign ownership, the presence of foreign investors has been positively linked to better corporate governance, such as a wiser cash management policy (Loncan, 2020). Huang and Zhu (2015) demonstrated that offshore investors' involvement enhances corporate governance, reduces agency costs and minimizes the danger of administrative confiscation.

In order to increase our understanding of how ownership affects corporate decisions, this current study is conducted using a sample of listed firms in Vietnam – a typical emerging market. According to Pricewaterhouse Coopers (2021), Vietnam has the world's strongest expanding economy, with an average annual GDP growth rate of 5.1% from 2016 to 2050. Despite significant economic growth and government initiatives, Vietnam's business climate does not appear to promote the corporate sector completely (Maruichi and Abe, 2019). Vietnam is ranked 70th out of 190 countries in the World Bank's ease of doing business index in 2020, up from 86th in 2017 (World Bank, 2020). As a result of lax enforcement of property rights, the bureaucrats can quickly get involved in pervasive rent-seeking behavior.

Furthermore, previous research has found regulatory bias between government- and nongovernment-owned corporations (Tsai *et al.*, 2019; Van Vu *et al.*, 2018). As cash and cash equivalents are the most liquid assets, they are perhaps the most prone to political exploitation (Myers and Rajan, 1998). This potential is compounded by differences in Vietnam's economic and legislative systems (Nguyen Thi *et al.*, 2023; Tran, 2023).

The study contributes to the finance research on the same topic in three distinct manners: firstly, it enhances the current comprehension of the correlation between different forms of ownership (namely state ownership and foreign ownership) and the amount of cash that businesses hold. This study diverges from the existing research that exclusively examines the correlation between state and foreign ownership and cash holding levels in Vietnam, like Bui *et al.* (2022), Tran (2023) and Vo (2018). Two recent studies, including Nguyen (2022) and Nguyen Thi *et al.* (2023), consider the joint effect of two ownership types, but over different periods (i.e. Nguyen (2022) observed the period of nine years from 2009 to 2017, and Nguyen Thi *et al.* (2023) used the data from 2007 to 2017). Indeed, our paper investigates the effects of foreign and state ownership on the cash holding levels of Vietnamese firms from 2005 to 2021. Such a long observed time enables us to see changes in ownership–cash holding relations under the influence of macrouncertainties caused by the global financial crisis and the recent COVID-19 pandemic. Second, our investigation of such relationships in firms with budget constraints and surplus is the first in the market context. Therefore, ownership's impact is better understood as firm behaviors differ for two types of financial conditions. The government tightly regulates the financial industry in Vietnam, and the four largest banks are state-owned. The financial market is deficient in key financial instruments and firms must seek appropriate regulations and direction from government authorities to establish their best financing structure (World Bank, 2020). Vast evidence shows that emerging markets, including Vietnam, are characterized by financial constraints and a lack of access to financial assets [1]. Difficulties in external funding may affect many corporate decisions, including cash reserves. When testing ownership–cash holding association for different financial contexts, our result indicates that the link between cash and ownership is more pronounced for businesses in the financial deficit. Finally, the current paper employs static (i.e. POLS) and dynamic (i.e. GMM) estimators to conduct regressions on book and market metrics of cash holdings, further confirming the reliability of the findings.

The rest of our paper is constructed as follows: the second section is review-related studies. Then, the data and regression models are described in Section 3. The fourth section follows to provide results and a discussion. Section 5 concludes the paper.

2. Literature review and hypothesis development

2.1 Theoretical background of firm cash holdings

Cash holdings are vital to a company's balance sheet (Tong, 2011). The necessity of retaining cash is described in the literature by four motivational factors: transaction costs, precautionary demand, tax consequences and agency problems (Bates *et al.*, 2009). First, the firms minimize daily transaction costs by holding more cash and, hence, can avoid the need to sell assets to fulfill obligations. This motive is known as the transaction cost motive. According to the precautionary motivation, Opler *et al.* (1999) argue that businesses keep cash on hand to safeguard themselves against unexpected events. The authors find that companies with lucrative projects often keep more cash available to deal with considerable opportunity costs in case of financial trouble. Third, Bates *et al.* (2009) indicate that businesses that face tax consequences for repatriating overseas revenues often keep more cash. For the agency motive, Jensen (1986) asserts that executives are motivated to keep large amounts of cash for their own goals instead of the purposes of shareholders. They expand the assets within their ownership and acquire discretionary hands over the firm's asset allocation (Ferreira and Vilela, 2004). The agency motivation causes corporate cash holdings to rise beyond what firms need for precautionary and transactional motives. According to Feng *et al.* (2022), the "cash obsession" stems from financial and economic uncertainty that underpins agency and precautionary reasons. Pinkowitz *et al.*, (2006) find that the interest misalignment between management and shareholders reduces the value of cash holdings. The agency motive becomes apparent when the firm has financial difficulties (Almeida *et al.*, 2004; Denis and Sibilkov, 2009).

2.2 Ownership and corporate cash holdings

Agency issues are essential to cash accumulation (Amess *et al.*, 2015). Insiders can accumulate oversized cash balances, anticipating the seizure of minority shareholders and therefore, enhancing their utility by redirecting cash and tunneling corporate capital to ventures producing private advantages or perquisites intake (Kalcheva and Lins, 2007; Nikolov and Whited, 2014; Pinkowitz *et al.*, 2006). Besides, the information asymmetry between insiders and outside investors leads to higher external funding costs (Ozkan and Ozkan, 2004). The reason is that informational inefficiency and agency problems lead to an undervalued stock offering and higher underwriting charges, lowering the funds generated (Altinkilic and Hansen, 2000) and raising the cost of external funding. Consequently, firms must depend on accrued cash to support developments to avoid such expenses (Opler *et al.*, 1999). Businesses with more unsettled earnings, lumpy investment policies and financial constraints, in particular, appear to take more outstanding cash balances as a liquidity buffer to protect investments (Acharya *et al.*, 2007; Almeida *et al.*, 2004). As a result, cash's underlying value is derived from its ability to provide financial mobility (Gamba and Triantis, 2008).

Foreign ownership is often viewed as an effective way to minimize agency problems. International ownership concentration has the potential to alleviate agency issues and decrease external financing costs; therefore, it influences the way firms manage their cash. Compared to local investors, international investors are more autonomous and actively participate in overseeing invested businesses (Ferreira and Matos, 2008), bringing more money accessible to local businesses (Stulz, 2009), which helps to lower the cost of capital (Bekaert and Harvey, 2000; Chari and Henry, 2004; Henry, 2000) and alleviate financing restrictions (Laeven, 2003). Thus, international ownership may reduce the importance of cash holdings. Loncan (2020) supports this view by showing that foreign institutional ownership has a negative effect on cash holdings. However, Vo (2018) demonstrated a positive correlation between foreign ownership and corporate cash reserves of Vietnamese listed

enterprises. According to the author, international investors encourage enterprises in this market to maintain more cash because they are more vulnerable to agency and precautionary issues. Similarly, Nguyen (2022) shows that foreign ownership benefits the cash holding of firms in this country. This author explains that companies with a large foreign shareholding keep cash on hand to deal with the unforeseen needs. Nguyen Thi *et al.* (2023) also discover that foreign investors push Vietnamese companies to keep more cash. Given that the majority of prior studies for the same research context indicate a positive correlation between foreign ownership and cash holding, the first hypothesis that is put forth:

H1. Foreign ownership has a positive relationship with the cash holdings of Vietnamese firms.

In terms of the impact of state ownership on corporate cash holdings, the evidence is also mixed. Megginson *et al.* (2014) find that the level of cash holdings decreases as state ownership increases. These authors explain that firms with high state ownership do not need to hold a high level of cash since credit from state-owned banks will be readily available for them. However, Chen *et al.* (2018) find that state ownership is positively related to corporate cash holdings, consistent with the argument that state ownership is associated with more severe agency problems. Amess *et al.* (2015) explain that government shareholdings can substitute for poor investor protection and inadequate corporate governance. In this scenario, businesses will keep cash on hand to ensure liquidity. According to Nguyen Thi *et al.* (2023), state-owned businesses in Vietnam store less cash than non-state-owned businesses because the government provides them with substantial financial support through the four largest state-owned banks, negating their need to maintain a high level of cash. Bui *et al.* (2022) consistently discover that state-owned businesses do not need to hold more cash. However, Nguyen (2022) argues that state-controlled businesses typically keep more cash on hand to cover their daily payment obligations. Observing 548 Vietnamese companies between 2009 and 2016, Tran (2023) finds a significant positive correlation between state ownership and cash holding. He clarifies that outside investors who lack access to information can become more concerned with transactional and precautionary motives than with the agency costs associated with cash holdings. Based on the arguments above, the second hypothesis is proposed:

H2. State ownership has a positive relationship with the cash holdings of Vietnamese firms.

3. Research methodology

3.1 Data collection

Stoxplus provides our raw data. We concentrate on publicly traded firms to ensure data reliability since unlisted enterprises' financial data are usually unaudited (Nguyen and Ramachandran, 2006). Moreover, because financial organizations differ from other sectors in terms of asset structure, funding sources and operational laws, we discard all firm-year observations of firms in this industry. Then, we winsorize all variables at the 1% level to cope with the problem of outliers.

The final sample consists of 685 nonfinancial enterprises listed on Vietnam's two largest stock markets, including the Ho Chi Minh and Hanoi stock exchanges, from 2005 to 2021.

3.2 Research model

To examine the impact of ownership on corporate investment, we employ the equation below:

$$\mathrm{CASH}_{i,t} = \alpha + \beta_1 \mathrm{OWN}_{i,t} + \beta_2 \mathrm{CONTROLS}_{i,t} + \mu \quad (1)$$

where CASH is the dependent variable, which is measured in two ways: cash and cash equivalent over the total assets (CASH1) and cash and cash equivalent over the market value of firms (CASH2). OWN stands for ownership, which can be FO (foreign ownership) or SO (state ownership). Control variables, including firm size (SIZE), growth opportunity (GROWTH), profitability (PROFIT) and leverage (TDA), are selected following prior studies on the same topic, including Ferreira and Vilela (2004), Opler *et al.* (1999), Kling *et al.* (2014), Diaw (2021) and Nguyen Thi *et al.* (2023). Definitions and measurements of all variables are provided in Appendix 1. We follow Faulkender and Wang (2006), Dittmar and Mahrt-Smith (2007) and Ahmed *et al.* (2018), to use the method of pooled ordinary least squares (POLS) with the industry and year-fixed effects to solve Equation (1).

Furthermore, some research, including Ferreira and Matos (2008) and Karim and Ilyas (2021), have shown that shareholders, especially from foreign countries, prefer to invest their money in companies that already have high-level cash, suggesting the issue of causality. Besides, Ozkan and Ozkan (2004) and Chen (2008) suggest that the prior period's cash is a major determinant of cash levels in the current year. Therefore, a dynamic model should be run additionally to eliminate the endogeneity problem.

$$\mathrm{CASH}_{i,t} = \alpha + \beta_1 \mathrm{CASH}_{i,t-1} + \beta_2 \mathrm{OWN}_{i,t} + \beta_3 \mathrm{CONTROLS}_{i,t} + \mu \quad (2)$$

To solve Equation (2), we employ a two-step system-generalized method of moments (GMM), as suggested by previous well-known studies conducted on the same research topic, including Ozkan and Ozkan (2004), Loncan (2020), Chen (2008).

3.3 Variable summary and correlation matrix

The descriptive statistics of regression variables in our models are shown in Table 1. The average cash holding of nonfinancial firms is 9.58% of total assets. Firms in the sample are pretty extensive, with an average size of 27.28. Debt accounts for about 21.98% of total assets.

In terms of ownership, the number of shares in the hands of the government during 2005–2021 is significant, accounting for 24.05% of the firm outstanding shares, on average. That means that the number of foreign ownership is 9.04%.

We display a graph below to show how the means of cash holding and ownership fluctuate over time. Figure 1 shows a declining trend in foreign and state investments in the

Variable	N	Mean	S.D.	Min	Max
CASH1	6,826	0.0958	0.1046	0.0010	0.5221
CASH2	6,826	0.0937	0.1068	0.0009	0.6105
SO	6,826	0.2405	0.2561	0.0000	0.9000
FO	6,826	0.0904	0.1301	0.0000	0.4900
SIZE	6,826	27.2766	1.5607	23.6791	31.5847
GROWTH	6,826	0.7608	0.5450	−0.0046	3.2518
PROFIT	6,826	0.1066	0.0882	−0.0934	0.4152
TDA	6,826	0.2198	0.1849	0.0000	0.6909

Note(s): This table presents the descriptive statistics for the variables employed in the analysis. See Appendix 1 for complete definitions of all variables
Source(s): Authors' own calculation

Table 1.
Descriptive statistics of regression variables

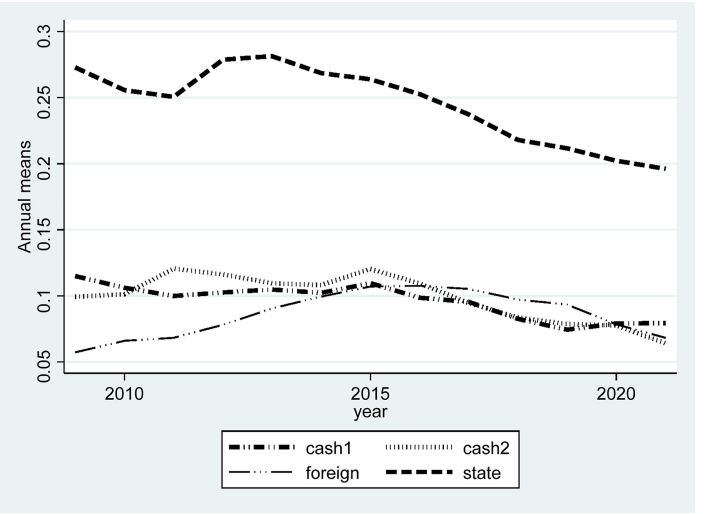

Figure 1.
Graph of the mean values of cash and ownership by year

Source(s): Figure created by authors

equity markets. Regarding cash, during the observed period, the amount of cash takes a gradually decreasing share in the total book value and the market value of the firms.

Table 2 shows the pairwise correlation coefficient matrix between the variables. With coefficients of 0.1357 and 0.1325, state and foreign ownerships are positively associated with CASH1. Similar signs have been found for correlation coefficients between ownership and CASH2. Size and leverage adversely correlate with Vietnamese firms' cash levels.

4. Results and discussion

4.1 Relationship between ownership and cash holding

We present the cash-holding reaction toward two types of ownership in Table 3. The outcomes in columns (1–3) are drawn from running Equation (1) for CASH1 and columns (4–6) are for CASH2, correspondingly. As shown, both state and foreign shareholding coefficients are significant and positive in all columns, suggesting that the more shares on

	CASH1	CASH2	SO	FO	SIZE	GROWTH	PROFIT	TDA
CASH1	1							
CASH2	0.8837	1						
SO	0.1357	0.1323	1					
FO	0.1325	0.0738	−0.1445	1				
SIZE	−0.1660	−0.2210	−0.0506	0.2720	1			
GROWTH	0.0160	−0.2647	−0.0319	0.1909	0.1375	1		
PROFIT	0.2627	0.0948	0.2038	0.1582	−0.0748	0.418	1	
TDA	−0.3469	−0.3275	−0.0494	−0.0852	0.3712	−0.0007	−0.1495	1

Note(s): This table presents the correlations among variables employed in the analysis. See Appendix 1 for complete definitions of all variables
Source(s): Authors' own calculation

Table 2.
Correlation matrix

	CASH1			CASH2		
	(1)	(2)	(3)	(4)	(5)	(6)
FO	0.0715***		0.0806***	0.0816***		0.0917***
	[0.0199]		[0.0200]	[0.0199]		[0.0201]
SO		0.0191*	0.0260**		0.0208**	0.0286***
		[0.0106]	[0.0106]		[0.0105]	[0.0105]
SIZE	−0.0006	0.0016	−0.0011	−0.0027	−0.0001	−0.0032*
	[0.0021]	[0.0019]	[0.0020]	[0.0019]	[0.0017]	[0.0019]
GROWTH	−0.0210***	−0.0184***	−0.0199***	−0.0692***	−0.0662***	−0.0680***
	[0.0060]	[0.0058]	[0.0059]	[0.0047]	[0.0045]	[0.0046]
PROFIT	0.2441***	0.2419***	0.2276***	0.1668***	0.1649***	0.1486***
	[0.0325]	[0.0330]	[0.0330]	[0.0280]	[0.0284]	[0.0282]
TDA	−0.1763***	−0.1853***	−0.1732***	−0.1668***	−0.1772***	−0.1634***
	[0.0160]	[0.0160]	[0.0157]	[0.0151]	[0.0151]	[0.0147]
Constant	0.1656***	0.1036**	0.1701***	0.2575***	0.1868***	0.2624***
	[0.0541]	[0.0512]	[0.0536]	[0.0514]	[0.0468]	[0.0510]
N	6,826	6,826	6,826	6,826	6,826	6,826
R^2	0.2176	0.2131	0.2209	0.2589	0.2531	0.2628

Note(s): The table presents the POLS results for Equation (1). Standard errors are in parentheses. The superscripts *, ** and *** indicate significance at the 5, 1 and 0.1% levels, respectively
Source(s): Authors' own calculation

Table 3.
Relationship between ownership and cash holding

the hands of state and foreign investors, the larger the firm's cash. The outcomes support our H1 and H2 hypotheses. The finding of a positive link between foreign ownership and cash supports the studies of Vo (2018), Nguyen (2022) and Nguyen Thi *et al.* (2023), who also focuses on the Vietnamese market. Foreign investors are motivated by precautionary and agency motives when investing in this emerging equity market, which induces businesses to hold more cash. Besides, the finding of the positive relationship between state shareholding and cash level is consistent with the results of Nguyen (2022) and Tran (2023), who also found that the larger the number of shares held by the state, the higher the corporate cash holdings. The transaction motive can be used to explain the relationship between the two. Another possible reason leading to the positive association between both state and foreign shareholding with cash is the low level of shareholder protection in Vietnam. Dittmar *et al.* (2003) find that shareholder rights protection and agency misalignment are essential factors affecting corporate cash holdings. They argue that when shareholders' rights are weakly protected, the role of elements that drive the demand for cash, for example, investment possibilities and information asymmetry, becomes less significant. At that time, shareholder interests become essential in determining firms' cash levels.

Some other papers, like Kling *et al.* (2014), suggest that we should regress cash holdings on lagged dependent variables to reduce the problem of autocorrelation. Thus, we re-run Equation (1) when all explanatory variables are in lagged terms and report the regression results in Appendix 2. Consistent with Table 3, the coefficients of both state and foreign shareholdings are significant and positive in all columns, suggesting a positive relationship between ownership and the levels of cash.

The study uses a sample of Vietnamese-listed businesses from 2005 to 2021. Some significant events occurred during this period, for example, the global financial crisis (2007–2009) and the Prime Minister decision number 55/2009/QĐ-TTg (i.e. in 2009, The Prime Minister (2009) issued the Decree 55/2009/QĐ-TTg which increases the maximum foreign ownership in listed Vietnamese businesses to 49%). Besides, the COVID-19

pandemic over 2020–2021, has severely impacted investor behaviors and many corporate decisions. Thus, to provide insights into the relationship between ownership and corporate cash holding across these significant events, we re-run Equation (1) for (1) noncrisis period, that is, the sub-sample excluding the global financial crisis (GFC: 2007–2009) and the COVID-19 pandemic (2020–2021); (2) the GFC period and (3) the COVID-19 period. The outcomes are provided in Table 4 below. As shown, the estimated coefficients of FO and SO for the noncrisis period corroborate our earlier findings, confirming the nature of the positive link between ownership and cash holding of Vietnamese listed firms. During the GFC period, the relationship between the two types of ownership and cash disappears. Besides, the coefficients of other firm-level factors are insignificant, except for leverage. This result shows that under the uncertainty caused by the GFC, firm decisions related to cash holdings are mainly based on the levels of debt firms can acquire and the macroconditions, not the power of shareholders. During the pandemic caused by the Corona virus, foreign ownership remains a positive influence on corporate cash reserves.

When studying the impact of ownership and cash holding, some studies, including Vo (2018), Loncan (2020) and Chen *et al.* (2018), warn us of the endogeneity problem. This problem may arise from the desire of investors to invest in firms with a high level of cash. To deal with this, we run additional tests (Equation (2)) using the GMM estimator. As shown in Table 5, both state and foreign shareholding coefficients are significant and positive in all columns, which are qualitatively identical to those in our baseline results. Thus, the study's primary findings remain unchanged. In addition, Equation (2) is re-run with system-GMM when all independent variables are in lagged terms, and the outcomes hold strong (see Appendix 3).

	Noncrisis		GFC		COVID-19	
	CASH1	CASH2	CASH1	CASH2	CASH1	CASH2
	(1)	(2)	(3)	(4)	(5)	(6)
FO	0.0843***	0.0993***	0.0018	0.0483	0.0764***	0.0764***
	[0.0228]	[0.0235]	[0.0698]	[0.0528]	[0.0286]	[0.0220]
SO	0.0291**	0.0325***	0.0127	0.0121	0.0206	0.0236*
	[0.0115]	[0.0116]	[0.0306]	[0.0256]	[0.0139]	[0.0122]
SIZE	−0.0012	−0.0037*	0.003	−0.0019	−0.0018	−0.003
	[0.0023]	[0.0022]	[0.0059]	[0.0048]	[0.0021]	[0.0019]
GROWTH	−0.0236***	−0.0789***	0.0022	−0.0524***	−0.0141**	−0.0436***
	[0.0072]	[0.0056]	[0.0156]	[0.0126]	[0.0063]	[0.0046]
PROFIT	0.2471***	0.1768***	0.0673	−0.0152	0.1785***	0.1024***
	[0.0392]	[0.0333]	[0.0958]	[0.0646]	[0.0422]	[0.0375]
TDA	−0.1801***	−0.1716***	−0.1727***	−0.1291***	−0.1409***	−0.1231***
	[0.0173]	[0.0166]	[0.0407]	[0.0372]	[0.0180]	[0.0162]
Constant	0.1576**	0.2647***	0.0771	0.2324*	0.1407**	0.2008***
	[0.0611]	[0.0594]	[0.1522]	[0.1191]	[0.0581]	[0.0530]
N	5,140	5140	489	489	1,197	1,197
R^2	0.2327	0.2712	0.1597	0.1846	0.1768	0.2394

Table 4.
Relationship between ownership and cash holding – test for different periods

Note(s): The table presents the POLS results of the relationship between ownership and cash holding of Vietnamese listed firms over (1) a noncrisis period, (2) GFC and (3) COVID-19. Standard errors are in parentheses. The superscripts *, ** and *** indicate significance at the 5, 1 and 0.1% levels, respectively
Source(s): Authors' own calculation

	CASH1			CASH2		
	(1)	(2)	(3)	(4)	(5)	(6)
L.CASH1	0.6936***	0.6959***	0.6948***			
	[0.0335]	[0.0326]	[0.0332]			
L.CASH2				0.5722***	0.5733***	0.5755***
				[0.0414]	[0.0407]	[0.0407]
FO	0.0056*		0.0089*	0.0183**		0.0217**
	[0.0075]		[0.0078]	[0.0090]		[0.0094]
SO		0.0083**	0.0092**		0.0084*	0.0102*
		[0.0038]	[0.0040]		[0.0055]	[0.0057]
SIZE	0.0013***	0.0012***	0.0012***	0.0024***	0.0024***	0.0023***
	[0.0002]	[0.0002]	[0.0002]	[0.0003]	[0.0003]	[0.0003]
GROWTH	−0.0077***	−0.0069***	−0.0071***	−0.0416***	−0.0404***	−0.0408***
	[0.0024]	[0.0023]	[0.0024]	[0.0036]	[0.0034]	[0.0035]
PROFIT	0.1139***	0.1068***	0.1054***	0.1464***	0.1422***	0.1376***
	[0.0165]	[0.0162]	[0.0162]	[0.0162]	[0.0163]	[0.0164]
TDA	−0.0616***	−0.0614***	−0.0609***	−0.0759***	−0.0766***	−0.0745***
	[0.0085]	[0.0084]	[0.0083]	[0.0112]	[0.0111]	[0.0108]
N	6,790	6,790	6,790	6,218	6,218	6,218
AR^2	0.2322	0.2277	0.2309	0.5253	0.5136	0.5229
Hansen	0.1482	0.1582	0.1598	0.1033	0.1075	0.1017

Note(s): Table 5 presents the GMM results for Equation (2). Standard errors are in parentheses. The superscripts *, ** and *** indicate significance at the 5, 1 and 0.1% levels, respectively
Source(s): Authors' own calculation

Table 5. Relationship between ownership and cash holding – GMM method

4.2 Financial deficit and the relationship between ownership and cash holding

Next, to examine whether financial situation (i.e. deficit or surplus) influences the link between ownership and cash holding, Equation (1) is run for two sub-samples: deficit and surplus. We measure budget constraints by cash flow position, followed by Almeida *et al.* (2004) and Pál and Ferrando (2010). A firm will belong to the "deficit" group if its cash flow is negative for the given year; otherwise, it goes to the "surplus" category.

The regression results of Equation (1) for two sub-sample groups are presented in Table 6. Results in columns (1–2) are for CASH1 and columns (5–6) are for CASH2. As shown, the ownership coefficients are higher for firms with deficits. To ensure the role of the financial situation, we also run a separate regression with interaction terms between ownership and deficit dummy (which takes 1 if firms fall into deficit and 0 otherwise) with POLS (columns 3, 7) and GMM (columns 4, 8). The significantly positive coefficients of interaction terms between ownership and the deficit dummy confirm that the budget constraints strengthen the impact of ownership on cash holdings.

To further examine the role of budget limitation, we use the dividend payout to separate deficit from surplus firms. If a firm does not pay dividends to its shareholders for that year, it is labeled as a deficit and vice versa. The results for the second classification metric are provided in Table 7. As can be seen, the ownership coefficients are higher for financially constrained firms. Moreover, when the alternative measure of deficit dummy is introduced to the models, the significantly positive coefficients of its interaction with ownership confirm that the relationship between ownership and cash holding is more pronounced for firms with budget limitations.

5. Conclusion

Many business choices have been strongly influenced by ownership. To contribute empirical evidence on the effects of ownership on corporate cash holdings in an emerging market, we use comprehensive data of 685 nonfinancial listed firms for the period from 2005 to 2021 to

Table 6.
Relationship between ownership and cash holding – deficit vs surplus firms

	CASH1				CASH2			
	POLS			GMM	POLS			GMM
	Deficit (1)	Surplus (2)	All firms (3)	All firms (4)	Deficit (5)	Surplus (6)	All firms (7)	All firms (8)
L.CASH1				0.6927***				
				[0.0332]				
L.CASH2								0.5764***
								[0.0407]
FO	0.1502***	0.0690***	0.0731***	0.0059	0.1988***	0.0778***	0.0810***	0.0178*
	[0.0487]	[0.0200]	[0.0199]	[0.0081]	[0.0597]	[0.0195]	[0.0193]	[0.0093]
SO	0.0776***	0.0204*	0.0222**	0.0076*	0.0905***	0.0222**	0.0237**	0.0072
	[0.0166]	[0.0111]	[0.0111]	[0.0042]	[0.0213]	[0.0108]	[0.0108]	[0.0058]
deficit_dum			−0.0271***	−0.0100***			−0.0379***	−0.0136***
			[0.0054]	[0.0032]			[0.0064]	[0.0043]
FO*deficit_dum			0.0842*	0.0394*			0.1252**	0.0488*
			[0.0464]	[0.0314]			[0.0541]	[0.0304]
SO*deficit_dum			0.0455***	0.0207*			0.0598***	0.0364**
			[0.0163]	[0.0120]			[0.0183]	[0.0156]
SIZE	−0.0074*	−0.0002	−0.0012	0.0012***	−0.0088**	−0.0025	−0.0034*	0.0024***
	[0.0038]	[0.0021]	[0.0020]	[0.0002]	[0.0043]	[0.0019]	[0.0019]	[0.0003]
GROWTH	0.0119	−0.0224***	−0.0194***	−0.0072***	−0.0332***	−0.0699***	−0.0672***	−0.0406***
	[0.0115]	[0.0061]	[0.0058]	[0.0024]	[0.0104]	[0.0047]	[0.0045]	[0.0035]
PROFIT	0.0081	0.2337***	0.2178***	0.1034***	0.0098	0.1475***	0.1345***	0.1347***
	[0.0593]	[0.0344]	[0.0336]	[0.0163]	[0.0717]	[0.0289]	[0.0277]	[0.0170]
TDA	−0.0895***	−0.1817***	−0.1738***	−0.0617***	−0.1082***	−0.1701***	−0.1639***	−0.0751***
	[0.0238]	[0.0168]	[0.0159]	[0.0084]	[0.0268]	[0.0154]	[0.0148]	[0.0109]
Constant	0.2519**	0.1559***	0.1768***		0.3209***	0.2516***	0.2710***	
	[0.1014]	[0.0550]	[0.0533]		[0.1149]	[0.0511]	[0.0504]	
N	548	6,232	6,780	6,780	548	6,232	6,780	6,211
R^2	0.2475	0.2176	0.2236		0.2718	0.2672	0.2672	
AR^2				0.2313				0.5363
Hansen				0.0610				0.1231

Note(s): The table presents the results of Equation (1) for two groups: deficit and surplus firms, and results with dummy variables for all firms. Standard errors are in parentheses. The superscripts *, ** and *** indicate significance at the 5, 1 and 0.1% levels, respectively
Source(s): Authors' own calculation

Table 7.
Relationship between ownership and cash holding – dividend payout as an alternative measure of financial deficit

	CASH1				CASH2			
	POLS			GMM	POLS			GMM
	Deficit (1)	Surplus (2)	All firms (3)	All firms (4)	Deficit (5)	Surplus (6)	All firms (7)	All firms (8)
L.CASH1				0.6905***				
				[0.0337]				
L.CASH2								0.5759***
								[0.0408]
FO	0.1502***	0.0372*	0.0467**	−0.0067	0.1765***	0.0399**	0.0473**	0.0046
	[0.0339]	[0.0215]	[0.0216]	[0.0091]	[0.0369]	[0.0193]	[0.0189]	[0.0105]
SO	0.0407***	0.0185	0.0232	0.0073*	0.0451***	0.0174	0.0210	0.0084*
	[0.0104]	[0.0150]	[0.0154]	[0.0059]	[0.0115]	[0.0141]	[0.0143]	[0.0079]
deficit_dum2			−0.0320***	−0.0070**			−0.0370***	−0.0079**
			[0.0065]	[0.0029]			[0.0061]	[0.0038]
FO*deficit_dum2			0.0950***	0.0315*			0.1216***	0.0337*
			[0.0367]	[0.0164]			[0.0374]	[0.0192]
SO* deficit_dum2			0.0144	0.0016*			0.0215	0.0005*
			[0.0167]	[0.0069]			[0.0163]	[0.0091]
SIZE	−0.0082***	−0.0004	−0.0052***	0.0014***	−0.0108***	−0.0031	−0.0079***	0.0025***
	[0.0020]	[0.0029]	[0.0018]	[0.0002]	[0.0022]	[0.0024]	[0.0018]	[0.0003]
GROWTH	0.0029	−0.0325***	−0.0149***	−0.0069***	−0.0463***	−0.0811***	−0.0640***	−0.0403***
	[0.0070]	[0.0078]	[0.0053]	[0.0024]	[0.0051]	[0.0061]	[0.0044]	[0.0034]
PROFIT	0.2059***	0.2581***	0.2211***	0.1010***	0.1383***	0.1797***	0.1463***	0.1295***
	[0.0423]	[0.0507]	[0.0334]	[0.0160]	[0.0346]	[0.0412]	[0.0275]	[0.0164]
TDA	−0.1271***	−0.2011***	−0.1566***	−0.0626***	−0.1249***	−0.1806***	−0.1462***	−0.0754***
	[0.0142]	[0.0225]	[0.0141]	[0.0084]	[0.0138]	[0.0204]	[0.0135]	[0.0109]
Constant	0.2927***	0.1510*	0.2630***		0.4029***	0.2664***	0.3778***	
	[0.0550]	[0.0772]	[0.0509]		[0.0594]	[0.0667]	[0.0495]	
N	3,598	3,228	6,826	6,790	3,598	3,228	6,826	6,218
R^2	0.1818	0.1867	0.2007		0.2121	0.2704	0.2433	
AR^2				0.2428				0.5367
Hansen				0.0579				0.1240

Note(s): The table presents the results of Equation (1) for two groups: deficit and surplus firms, and results with dummy variables for all firms. Standard errors are in parentheses. The superscripts *, ** and *** indicate significance at the 5, 1 and 0.1% levels, respectively
Source(s): Authors' own calculation

investigate whether foreign and state shareholders have any effects on a firm cash position, and if so, what the direction and magnitude of that influence are. The regression results reveal that ownership substantially accelerates enterprise cash holdings, and this relation is more pronounced for firms with financial deficits.

The outcomes reveal that when the state and foreign investors hold more shares, firms tend to keep more cash to hedge against the unexpected issues caused by poor investor protection, low political accountability and information asymmetry. However, according to Faulkender and Wang (2006), massive cash holdings have a damaging effect on the marginal worth of cash and lead to lower profitability. Thus, appropriate corporate governance policies should be developed to reduce information asymmetry issues in this emerging market. In addition, improving investor protection is essential to provide investors with higher confidence.

The current study only focuses on foreign and state ownership of listed firms; thus, cash-holding decisions of the unlisted enterprises under the influence of other types of shareholdings, like institutional, managerial or family ownership, need to be explored by future studies.

Note

1. See Dooley *et al.* (2007), Khurana *et al.* (2006), Matsuyama (2007), Almeida *et al.* (2014).

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Appendix 1

Variable	Definition	Measurement
CASH1	Cash holding	$CASH = \frac{cash\ and\ cash\ equivalent}{total\ assets}$
CASH2	Cash holding	$CASH = \frac{cash\ and\ cash\ equivalent}{market\ value\ of\ firm}$
SO	State ownership	$SO = \frac{the\ number\ of\ shares\ owned\ by\ the\ government}{total\ outstanding\ shares}$
FO	Foreign ownership	$FO = \frac{the\ number\ of\ shares\ held\ by\ foreign\ investors}{total\ outstanding\ shares}$
SIZE	Firm size	$SIZE = ln(Total\ assets)$
GROWTH	Growth opportunity	$GROWTH = \frac{market\ value\ of\ shares}{book\ value\ of\ shares}$
PROFIT	Profitability	$PROFIT = \frac{Earnings\ before\ interest\ and\ tax}{total\ assets}$
TDA	Book leverage	$TDA = \frac{total\ debts}{total\ assets}$
CF	Cash flow	$CF = \frac{The\ sum\ of\ earnings\ before\ extraordinary\ items\ and\ depreciation}{lagged\ total\ assets}$

Source(s): Table created by authors

Table A1. Variables explanation

Appendix 2

	CASH1			CASH2		
	(1)	(2)	(3)	(4)	(5)	(6)
L.FO	0.0635***		0.0737***	0.0749***		0.0863***
	[0.0209]		[0.0210]	[0.0206]		[0.0207]
L.SO		0.0213*	0.0278**		0.0236**	0.0313***
		[0.0109]	[0.0109]		[0.0110]	[0.0109]
L.SIZE	−0.0018	0.0002	−0.0023	−0.0042**	−0.0018	−0.0048**
	[0.0022]	[0.0020]	[0.0021]	[0.0020]	[0.0018]	[0.0020]
L.GROWTH	−0.0158**	−0.0132**	−0.0147**	−0.0533***	−0.0504***	−0.0522***
	[0.0062]	[0.0060]	[0.0061]	[0.0046]	[0.0044]	[0.0044]
L.PROFIT	0.2191***	0.2152***	0.2017***	0.1259***	0.1221***	0.1063***
	[0.0353]	[0.0358]	[0.0359]	[0.0296]	[0.0302]	[0.0299]
L.TDA	−0.1710***	−0.1793***	−0.1680***	−0.1627***	−0.1725***	−0.1593***
	[0.0163]	[0.0161]	[0.0161]	[0.0157]	[0.0155]	[0.0153]
Constant	0.1880***	0.1307**	0.1945***	0.2908***	0.2234***	0.2981***
	[0.0576]	[0.0536]	[0.0571]	[0.0545]	[0.0492]	[0.0542]
N	6,130	6,130	6,130	6,130	6,130	6,130
R^2	0.2092	0.2065	0.2131	0.2237	0.2198	0.2283

Source(s): Authors' own calculation

Table A2. POLS with lagged explanatory variables

Appendix 3

Table A3.
GMM with lagged explanatory variables

	CASH1			CASH2		
	(1)	(2)	(3)	(4)	(5)	(6)
L.CASH1	0.6592***	0.6637***	0.6621***			
	[0.0373]	[0.0362]	[0.0368]			
L.CASH2				0.6548***	0.6591***	0.6597***
				[0.0435]	[0.0429]	[0.0428]
L.FO	0.0039*		0.0083*	−0.0004		0.0020*
	[0.0081]		[0.0085]	[0.0090]		[0.0087]
L.SO		0.0111***	0.0120***		0.0147***	0.0148***
		[0.0041]	[0.0043]		[0.0050]	[0.0052]
L.SIZE	0.0013***	0.0012***	0.0011***	0.0015***	0.0014***	0.0013***
	[0.0002]	[0.0002]	[0.0002]	[0.0003]	[0.0003]	[0.0003]
L.GROWTH	−0.0051*	−0.0042	−0.0045*	−0.0084**	−0.0073*	−0.0074*
	[0.0028]	[0.0026]	[0.0027]	[0.0040]	[0.0038]	[0.0039]
L.PROFIT	0.1008***	0.0902***	0.0892***	0.0638***	0.0515***	0.0511***
	[0.0181]	[0.0177]	[0.0176]	[0.0179]	[0.0176]	[0.0174]
L.TDA	−0.0566***	−0.0562***	−0.0558***	−0.0556***	−0.0547***	−0.0545***
	[0.0092]	[0.0090]	[0.0089]	[0.0110]	[0.0109]	[0.0107]
N	6,130	6,130	6,130	6,117	6,130	6,130
AR^2	0.6175	0.5930	0.5970	0.5515	0.5697	0.5708
Hansen	0.1110	0.1211	0.1251	0.1027	0.0997	0.0994

Source(s): Authors' own calculation

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