INFLUENCE OF CASH HOLDINGS AND CAPITAL STRUCTURE ON FINANCIAL PERFORMANCE IN INSURANCE LISTED COMPANIES

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Abstract
This study aims to assess the impact of cash holdings and capital structure on the financial performance of listed insurance companies on the Vietnamese stock exchange. Financial performance is measured by the return on assets (ROA). Cash holdings are measured by cash and cash equivalents divided by total assets. Capital structure is measured by the debt-to-equity ratio. The study utilizes financial report data from 13 listed insurance companies from 2018 to 2022, comprising 65 observations, employing OLS regression method and addressing multicollinearity using FGLS model. The results indicate a positive linear effect between the cash holdings ratio and the return on assets, while the capital structure does not influence financial performance. Based on the research findings, the authors also provide recommendations to optimize financial performance and propose solutions for selecting the optimal capital structure and cash holdings of listed insurance companies.

1. Introduction

Cash holdings in insurance companies involve the retention of a portion of assets in the form of cash or cash equivalents. In the insurance industry, maintaining cash reserves is crucial to ensure the availability of sufficient funds to meet customer compensation claims when necessary. This includes paying out unexpected compensation claims resulting from unforeseen events such as accidents or disasters. Cash holdings can also be used to ensure liquidity and financial stability for the company in the short term. However, maintaining a large amount of cash can also lead to resource wastage and inefficiency if not managed carefully.

Research by Almeida et al (2004) has found a positive correlation between fluctuations in cash holdings and cash flow, indicating that companies increase (decrease) their cash holdings when they experience an increase (decrease) in cash flow. Additionally, the authors also found evidence that companies with restricted access to external financing hold more cash when cash flow is tight, while companies without financial constraints do not.

Riddick & Whited (2009) examined the impact of cash flow on the sensitivity of a company's cash holdings, and their findings contradict those of Almeida & colleagues (2004), as they found

a negative correlation between cash holdings and changes in cash flow. Specifically, when a company's cash flow increases, the amount of cash held decreases, and vice versa. Cash holdings enable companies to finance investments and other debts to avoid high costs associated with raising capital from external sources.Acharya & colleagues (2009), Almeida & colleagues (2004), Bates & colleagues (2009), and Riddick & Whited (2009) all agree that companies with increasing cash flows tend to shift cash holdings into investments, as positive cash flow shocks often reflect higher yields in real assets. Therefore, companies may reduce cash holdings to support high-yielding projects.These studies provide evidence that cash holdings impact firm value; however, specific metrics can have either positive or negative effects depending on individual independent and dependent variables. Many studies also indicate that the accumulation of cash by a company is one of the significant factors influencing these financial decisions. The more cash a company holds, the more likely it is to use cash inefficiently, leading to potential distortions in investment decisions: underinvestment and overinvestment. Consequently, companies tend to restrict investments and implement dividend policies with high payout ratios or use debt as a mechanism to control excessive cash flow.

The relationship between capital structure theory and firm performance has been a topic of considerable interest among scholars in the field of corporate finance over many decades. A company's capital structure reflects the extent to which it uses debt and equity capital to finance its assets. The degree of leverage, whether high or low, influences the behavior of managers and their financial decisions, thus impacting firm performance (Harris & Raviv, 1991; Graham & Harvey, 2000). Therefore, examining the relationship between capital structure and firm performance is crucial because establishing and maintaining an appropriate capital structure can enhance operational efficiency, maximize shareholder value, and is always a primary goal of corporate managers.The capital structure reflects the extent to which debt and equity capital are used to finance the formation of insurance companies' assets. The choice between using more or less debt will influence the behavior of managers as well as their financial decisions.

Research on the impact of capital structure on firm performance originated from data usage in developed countries. Roden & Lewellen (1995) examined the capital structure of 48 U.S. companies during the period 1981-1990 and identified a positive relationship between capital structure and firm performance. Hadlock & James (2002) suggested that companies with higher profitability would use more debt. In recent years, this relationship has also been explored in developing countries. Majumdar & Chhibber (1999) examined the relationship between capital structure and firm performance in India and found an inverse relationship between the level of debt usage and firm profitability. Salim (2012) also found an inverse relationship between the level of debt usage and the operational efficiency of companies listed on the Malaysian Stock Exchange.

In Vietnam, the relationship between capital structure and operational efficiency has also been studied by several researchers. Nguyen Tan Vinh (2011) investigated this relationship among companies listed on the Hanoi Stock Exchange and found a positive correlation. Le & Phung (2013) utilized data from listed companies on the Vietnamese stock market from 2007 to 2011 to

study the relationship between capital structure and firm performance, revealing that debt usage has a positive correlation with firm operational efficiency.However, according to the author's research, there has been no study on the relationship between cash holdings and capital structure to the operational efficiency of listed insurance companies on the Vietnam stock exchange. The insurance market has recently experienced stable development. The level of penetration and insurance density reflects the development level of the insurance sector in a country. Along with that, enterprise market capitalization is one of the factors used to evaluate businesses. In terms of current market capitalization in the insurance sector, Bao Viet Group (BVH) remains the largest market-capitalized insurance business, followed by PVI and VNR.

From practical demands and theoretical contributions aimed at finding appropriate cash management methods and a suitable capital structure to enhance the operational efficiency of insurance companies, the author has chosen the topic "A study of Cash Holdings and Capital Structure on Financial Performance in Listed Insurance companies in Vietnamese stock market"

2. Literature Review

2.1. The hypothesis of cash holdings

The first hypothesis originates from the "Trade-off Theory," developed by Keynes (1936), which argues that firms maximize their value by considering the marginal costs and benefits of holding cash. According to the Trade-off Theory, the scale of the firm is negatively related to cash holdings because larger firms can easily access low-cost financing (Ferri and Jones, 1979).

The Trade-off Theory predicts a negative correlation between profitability and cash holdings. Profitable firms are expected to have sufficient cash flows to avoid inefficient investment issues (Caglayan-Ozkan and Ozkan, 2002). Some studies, such as Bates et al. (2009), have found a negative correlation between profitability and cash holdings. However, Mai Thanh Giang's study (2016) showed a positive correlation between cash holdings and profitability. Bates and colleagues (2009) argued that capital costs could increase debt capacity and thus reduce the need for cash. Lee and Song (2008) found a negative correlation between capital costs and cash holdings in companies after the Asian financial crisis. However, Opler et al. (1999) found that cash holdings increased relative to capital costs.

2.2. The hypothesis of Miller and Modigliani

Capital structure is a topic of great interest to researchers. The inception of the capital structure theory began with the Modigliani and Miller propositions published by these two authors in 1958. Subsequently, the theory of capital structure has been further developed by researchers.The Modigliani and Miller propositions kick-started the theory of capital structure. Miller & Modigliani (1958) argued that in a perfect market, capital structure does not affect the value of the firm. Therefore, there is no optimal capital structure for a specific firm. However, the assumptions of a perfect market such as no transaction costs, no taxes, symmetric information, and interest rates on borrowing equal to risk-free interest rates are not suitable for the actual operating environment of firms. Therefore, researchers have introduced assumptions that the value of the firm and the operational efficiency of the firm are affected by the capital structure.

2.3. The hypothesis of Capital Structure (DER) and Financialperformance

Watson and Head (2007) stated that capital structure reflects the value of debt a company uses compared to its equity. Indices reflecting capital structure include debt-to-equity ratio, long-term debt-to-equity ratio, long-term debt-to-total capital ratio, and short-term and long-term debt-to-equity ratio. In this study, we use the debt-to-equity ratio as the capital structure index. This index shows the ratio between two fundamental sources of capital that a company uses to finance its operations: debt and equity. The capital structure of a business, as defined by Baker and Martin (2011), is the blend of debt and equity that the business uses to finance its production assets, operations, and future development. This is a factor directly affecting the overall cost of capital and contributes to the overall risk level of the business. Empirical studies support the view that capital structure negatively impacts business performance, such as Singh and Faircloth (2005) and Dawar (2014), who argue that high debt ratios will reduce future investments, thus negatively affecting business performance and future development prospects.

3. Research Methods

Over the past 30 years of formation and development, the insurance market in Vietnam has made remarkable progress. However, compared to some countries in the region, the scale of the Vietnamese market is still limited. Nevertheless, the increasing demand for insurance from organizations and individuals presents a good opportunity for further development of the insurance market in the future. The insurance market in Vietnam was established in 1993 and has since seen significant development with the establishment of many life and non-life insurance companies, insurance brokers, and a richer variety of insurance products, especially life insurance and health insurance. Insurance premium revenue has also experienced significant growth.

In 2023, amidst the global economic challenges and specific difficulties faced by the domestic economy, the insurance market also encountered certain obstacles. However, with the concerted efforts to implement a series of government policies aimed at supporting, overcoming difficulties, restoring production, and developing the economy in general, as well as continuing to improve mechanisms and policies related to insurance, the Vietnamese insurance market still achieved noteworthy results and is expected to continue growing in the future. In fact, insurance has demonstrated its role in stabilizing the macroeconomy and social welfare, and the Vietnamese insurance market is evaluated to have ample room for further development.

Currently, there are a total of 13 insurance companies listed on the Vietnam stock exchange. In recent years, the Vietnamese economy has witnessed significant growth, especially with the government's strategic development plan for the insurance industry until 2030, which provides direction for insurance companies in building their business strategies, thus fostering the strong development of the Vietnamese insurance sector.

The study utilizes a dataset on cash holdings collected from the annual financial reports of 13 insurance companies listed on the Ho Chi Minh City Stock Exchange (HSX) and the Hanoi Stock Exchange (HNX) from 2018 to 2022. The data was retrieved from financial reports available on the financial securities data pages https://finance.vietstock.vn/ and www.cafef.vn.

Research Hypothesis

Hypothesis H1: Cash holding rate (CASH) has a positive influence on ROA in
Insurance listed companies on Vietnamese stock exchange.

Hypothesis H2: Capital structure (DER) has a positive influence on ROAin
Insurance listed companies on Vietnamese stock exchange.

Data Processing Method

Data were classified, cleaned, and further analyzed using the Stata software, includingencoding data, cleaning data, descriptive statistical analysis of the research sample,correlation analysis, and regression analysis.

4. Research Results

Regression Results

Table 1 showes the information about three different variables: ROA (Return on Assets), DER (Debt-to-Equity Ratio), and CASH (Cash Holdings). The data are collected from 65 observations and include descriptive statistics such as minimum, maximum, mean, percentile 50 (p50), standard deviation (sd), kurtosis, and skewness.This table presents descriptive statistics for three key financial variables: ROA, DER, and Cash Holdings. These statistics offer insights into the central tendency, variability, and shape of the distributions for each variable, aiding in the understanding of their respective financial performances and characteristics.

Table 1. General Descriptive Statistics and Detailed Descriptive Statistics

variable	obs	min	max	mean	p50	sd
ROA	65	-0.0414783	0.1141584	0.0326232	0.0297978	0.0286605
DER	65	0.0549905	6.695383	2.385646	2.309556	1.451822
CASH	65	0.0013115	0.4991375	0.0691769	0.0217156	0.101608

variable	kurtosis	skewness
ROA	3.929638	0.729 5629
DER	4.104962	0.9723661
CASH	8.390855	2.353092

Table 2 shows the correlation coefficients between the variables ROA (Return on Assets), DER (Debt-to-Equity Ratio), and CASH (Cash Holdings):

Table 2 Correlation analysis Results of Independent Variable

variable	ROA	DER	CASH
ROA	**1.0000**		
DER	**0.4264**	**1.0000**	
CASH	**-0.4817**	**-0.3843**	**1.0000**

Enterprises holding more cash are less sensitive to monetary policy compared to those holding less cash. A study conducted by Yang et al. (2017) further supports this conclusion. Holding more cash helps alleviate pressure on the performance of managers and encourages excessive investment in projects that benefit themselves (Phan, 2022).

Table 3 shows the coefficients for ROA, DER, and CASH:
The p-value of ROA is 0.001, indicating that ROA significantly influences the financial activities of the enterprise at the 5% significance level ($p < 0.05$). The regression coefficient of ROA is 0.007962. This means that when ROA increases by 1 unit, the financial activities of the enterprise will increase by 0.007962 units in a positive direction. The 95% confidence interval for the regression coefficient of ROA is from 0.0034724 to 0.0124515. This indicates that we are 95% confident that the true regression coefficient lies within this range.

Table 3 OLS Regression Results

Source	SS	df	MS
Model	0.016613492	2	0.008306746
Residual	0.035957484	62	0.000579959
Total	0.052570976	64	0.000821421

Number of obs = **65**
$F_{(2, 62)}$ = **14.32**
Prob > F = **0.0000**
R-squared = **0.3160**
Adj R-squared = **0.2940**
Root MSE = **0.02408**

ROA	Coef. t	Std. Err.	t	P>|t|	[95% Conf.	Interval]
DER	0.007962	0.0022459	3.55	0.001	0.0034724	0.0124515
CASH	-0.0750776	0.0320907	-2.34	0.023	-0.139226	-0.0109293
_cons	0.0188225	0.0071903	2.62	0.011	0.0044493	0.0331956

The table shows that ROA has a significant and positive impact on the financial activities of the enterprise. This could be interpreted as the efficiency of the enterprise in using assets to generate profits affecting how they manage and use finances.(Bryman & Cramer, 2001; Kohler &

Kreuter, 2005; Torres-Reyna,2007; Ditzen, 2018)

Table 4 Results of Heteroscedasticity (estat hettest)

ROA
Breusch-Pagan / Cook-Weisberg test for heteroskedasticity
Ho: Constant variance
Variables: fitted values of ROA
chi2(1) = 5.88
Prob > chi2 = 0. 0153

Table 4 shows that the p-value is 0.0153, which is less than the conventional significance level of 0.05, indicating that we reject the null hypothesis and accept the hypothesis that the variance is not homogeneous. This suggests that there is heteroscedasticity in the variance of the dependent variable (ROA) based on its predicted values. ROA exhibits heteroscedasticity, which can be addressed using the FGLS model.

Table 5 shows the coefficients estimated using a generalized least squares approach, indicating heteroskedasticity with cross-sectional correlation and panel-specific AR(1) autocorrelation.

Table   5Cross-sectional   time-series   FGLS   regression

Coefficients: **generalized least squares**
Panels: **heteroskedastic with cross-sectional correlation**
Correlation: **panel-specific AR(1)**

Estimated covariances	=	**91**	Number of obs	=	**65**
Estimated	=	**13**	Number of groups	=	**13**
autocorrelations	=	**3**	Time periods	=	**5**
Estimated coefficients			Wald chi2(2)	=	**50.12**
			Prob > chi2		**0.0000**

ROA	Coef. t	Std. Err.	t	P>|t|	[95% Conf.	Interval]
DER	**0.0081325**	**0.0019835**	**4.10**	**0.000**	**0.0042449**	**0.0024094**
CAS	**-0.0527239**	**0.0264399**	**-1.99**	**0.046**	**-0.1045452**	**-0.0009026**
H	**0.0182974**	**.0081063**	**2.26**	**0.046**	**0.0024094**	**0.0341854**
_con						
s						

Based on the Cross-sectional time-series FGLS regression table, the author observes the following:ROA significantly impacts the financial activities of the enterprise, with a p-value of 0.000.The regression coefficient of ROA is 0.0081325, indicating a positive relationship between ROA and the financial activities of the enterprise. It can be concluded that ROA significantly influences the financial activities of the enterprise, and this relationship is positive.

Table 6 Results of the Autocorrelation by FGLS of ROA

| ROA |
| --- |
| Wooldridge test for autocorrelation in panel data
H0: no first-order autocorrelation
F(1, 12) = 6.333
Prob > F = 0.0271 |

Enterprises should opt for an appropriate capital structure. Each capital-raising tool of an enterprise incurs certain costs, such as interest payments for debt instruments. Therefore, the capital structure policy should balance the interests of shareholders, the board of directors, management, and creditors. During the selection of managers, it is necessary to plan for a capital structure that aligns with the specific characteristics of each company and its developmental stages.

Reality ROA, CASH, and DER

ROA is synthesized and analyzed in detail according to Graph 1 as follows.

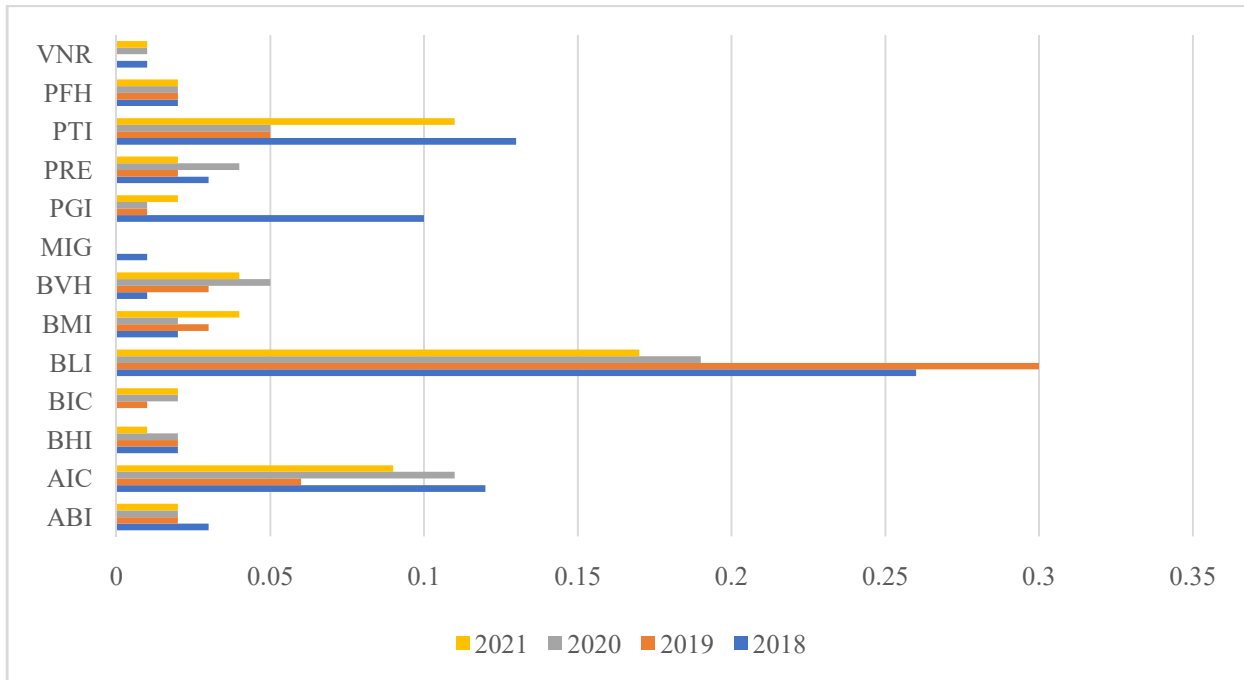***Graph1.ROA of Listed Insurance Listed companies during the Period 2018–2022***
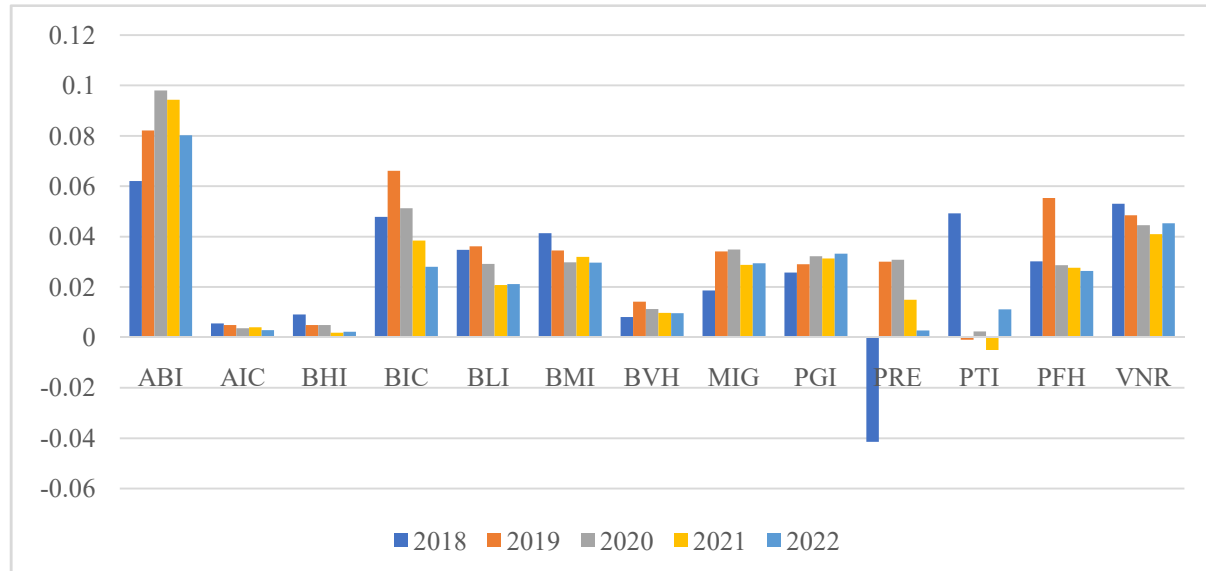
There is significant variation in ROA for each stock over the years. Some stocks like AIC, BHI, and PFH show a trend of increasing ROA over the years, while others like PRE and PTI exhibit large fluctuations and even negative ROA in some years. The stock with the largest volatility

according to the table is PTI, as it has no negative values within its range of variation, making PTI the stock with the highest ROA volatility at 0.054249.

Cash Holding (CASH)

CASH is synthesized and analyzed in detail according to Graph 2 as follows:

**Graph 2.CASH of Listed Insurance Listed companies during the Period 2018–2022**

Holding cash over the years demonstrates changes in the index for each stock over the years. For instance, BLI's cash holding ratio ranged from 0.17 to 0.3 during the period from 2018 to 2019, then decreased to 0.19 in 2020. This indicates significant fluctuations in BLI's cash holding over the years.

Capital structure (DER)

DER is synthesized and analyzed in detail according to Graph 3 as follows:

Graph 3.DER of Listed Insurance Listed companies during the Period 2018–2022
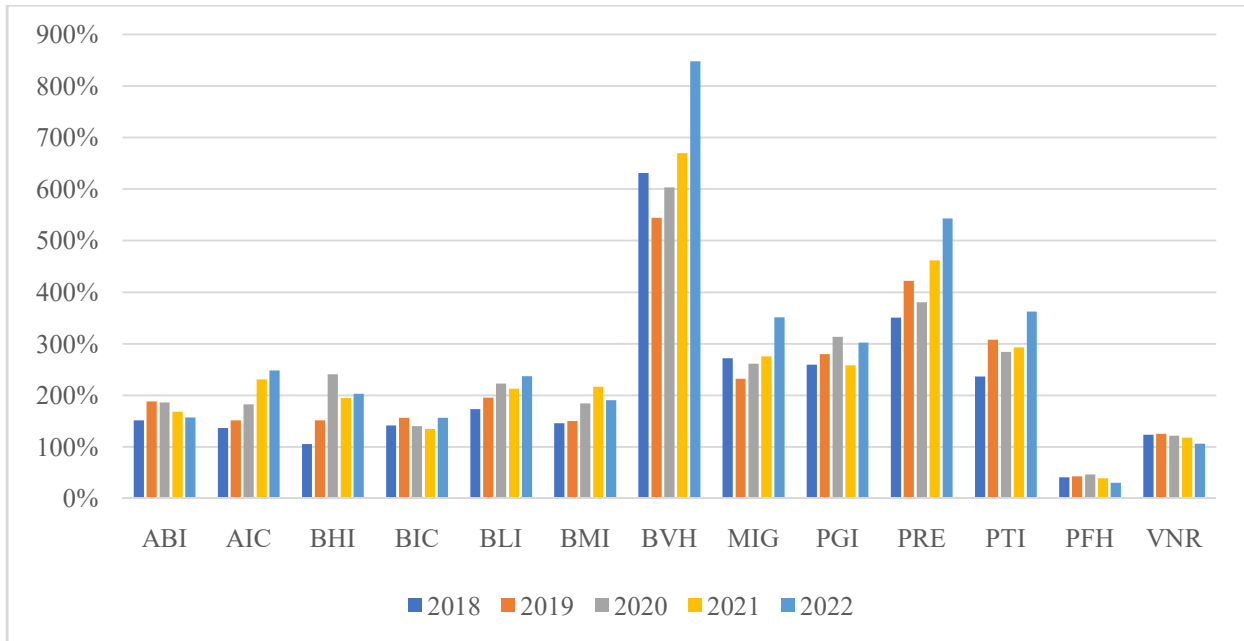
Some stocks like BVH, PRE, and BLI have stable capital structures over the years. This may indicate the stability and growth potential of these companies. On the other hand, some stocks like PFH show significant fluctuations in their capital structure over the years, which could be due to market factors or specific business conditions of the company. For the stock "ABI," we observe the highest rate at 188% in 2019 and the lowest rate at 151% in 2018.

5. Discussion and implications

Vietnam is increasingly integrating into the global economy, opening up many investment opportunities and increasing income, leading to an increased demand for health insurance, especially in the insurance sector. Therefore, the development of insurance companies is necessary. The cash holding level of an insurance company is appropriate when it maintains a reasonable capital structure ratio. Most listed insurance companies maintain an inappropriate cash holding ratio. The research results show that there exists an optimal cash ratio, specifically for insurance companies with the stock code ABI at 7.09%, to maintain the financial performance of the company at a good level. Therefore, companies in the research sample should adjust their cash holdings during economic fluctuations and focus on ongoing projects. Economic conditions are always changing, so insurance companies do not necessarily need to hold cash at an optimal level, but they can flexibly hold cash within a range around the optimal level and maintain a close relationship. Continue to check the rationality of the cash holding ratio. If a company holds too much cash, its financial performance will decrease, and it will not be able to take advantage of other development opportunities in the future.

6. Conclusion

In the current context, managing cash holdings and capital structure plays a crucial role in the business operations of listed insurance companies in the Vietnamese stock market. Liquidity and capital structure are two determining factors for the flexibility and stability of an insurance company, especially in today's volatile business environment. Proper cash management helps

insurance companies maintain liquidity and payment capabilities in emergency situations, while also facilitating investments in new development projects. However, holding too much cash can lead to capital wastage and reduced efficiency in resource utilization. Equally important is the capital structure, with careful consideration between debt and equity. A proper capital structure not only helps insurance companies optimize capital costs but also establishes a strong financial foundation, minimizing risks and increasing profitability. However, it's essential to remember that there's no one-size-fits-all formula for all insurance companies, and cash management and capital structure need to be flexible and tailored to the specific conditions of each company and market. The diversity in approach and management will create flexibility and diversification, thereby enhancing the competitive strength of the insurance industry in the market.

Therefore, cash holdings and capital structure not only affect business efficiency but also determine the sustainability and development of insurance companies in the Vietnamese stock market. To achieve sustainable success, insurance companies need to continuously monitor and adjust their financial management strategies in response to market dynamics and business conditions.

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