

## The Impact of Firm Size, Leverage, and Peer Effect on Cash Holding



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**ABSTRACT:** This research aims to empirically test the influence of firm size, leverage, and peer effect on cash holding. The population of this research is 110 companies in property real estate and building construction sector that listed on the Indonesia Stock Exchange (BEI) in 2018-2022 period. The number of sample on this research is 61 which the criteria of sample is companies in property real estate and building construction sector that listed on the Indonesia Stock Exchange (BEI) in 2018-2022 period consecutively. Data testing uses SPSS25 software. The analysis technique used in this research is multiple linear regression. The results of this research indicate firm size influence cash holding. Meanwhile, leverage and peer effect have no effect on cash holding.

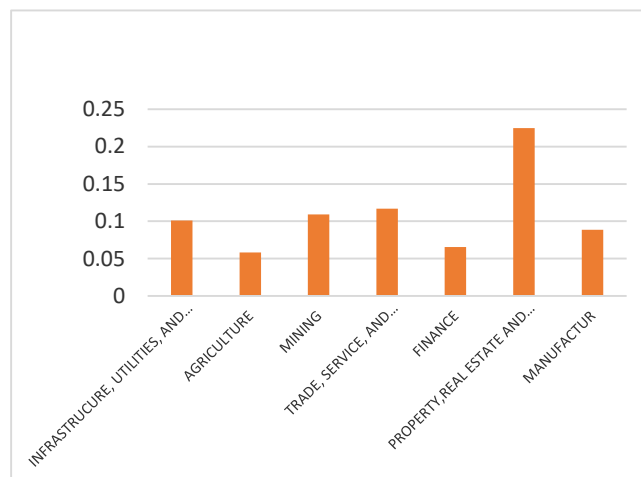
**KEYWORDS:** Cash Holding, Firm Size, Leverage, Peer Effect

### I. INTRODUCTION

Holding large amounts of cash can provide certain benefits, but it also has the potential to create disadvantages. On one hand, this policy is advantageous because the company maintains sufficient cash reserves to cover operational needs, meet its obligations, and mitigate unexpected risks. On the other, excessive cash retention may be seen as a disadvantage, as the company misses opportunities to invest its funds in more productive activities, thereby incurring the opportunity cost of forgone investments.

Previous studies examining the impact of independent variables—namely firm size, leverage, and peer effect—on the dependent variable, cash holding, have revealed a research gap due to inconsistent findings regarding the impact of these independent variables. This inconsistency highlights the need for further research to clarify and provide more definitive evidence on how firm size, leverage, and peer effect affect cash holding.

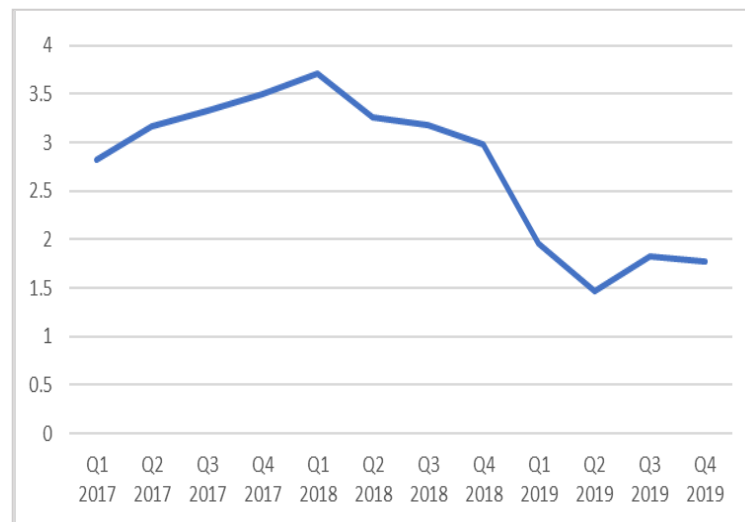
The selection of the property, real estate, and construction sectors as the focus of this research is based on the phenomenon of elevated cash holdings in these sectors, which significantly exceed those of other sectors on the Indonesia Stock Exchange. This phenomenon is illustrated in the following Figure 1:



**Figure 1: Cash Holdings by Sector: 2017-2022**  
Source: Processed data from [www.idx.com](http://www.idx.com), 2023

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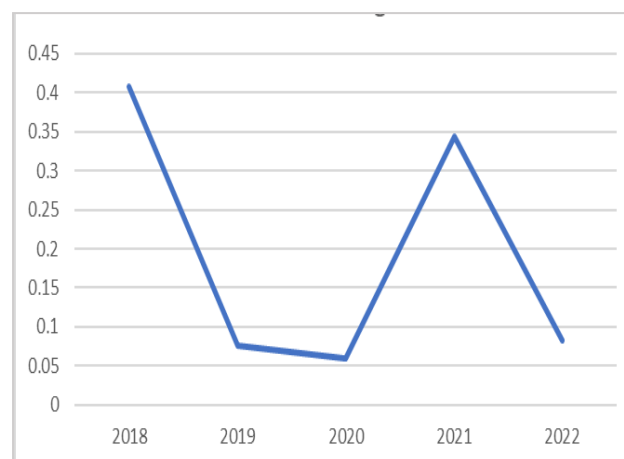
The selection of the research period from 2018 to 2022 is based on significant phenomena related to the increase in the benchmark interest rate by Bank Indonesia, which rose from 4.25% in 2017 to 6.00% by the end of 2018. This increase in interest rates had a negative impact on the property, real estate, and construction sectors, as evidenced by high mortgage rates (KPR), a decline in consumer demand, limited offerings from property developers, and a decrease in the Residential Property Price Index (IHPR) reported by Bank Indonesia. This phenomenon is illustrated in the following Figure 2:



**Figure 2: BI IHPR Growth**

Source: Processed data from [www.bi.com](http://www.bi.com), 2023

In addition to the phenomenon of rising benchmark interest rates set by Bank Indonesia, the period from 2018 to 2022 is also characterized by fluctuations in cash holdings among companies in the property, real estate, and construction sectors. This phenomenon is illustrated in the following Figure 3:



**Figure 3: Cash Holdings Fluctuations: 2018-2022**

Source: Processed data from [www.idx.com](http://www.idx.com), 2023

### A. Theoretical Framework

#### 1) Pecking order theory:

This theory posits that a company will resort to debt as an alternative source of funding when internal resources, such as cash, are insufficient for its operational activities.

Firms with high leverage levels tend to face a greater risk of bankruptcy, as they are obligated not only to pay interest on their debt but also to distribute dividends to shareholders at specified intervals (Kaplan, 1993). To maintain financial flexibility, companies can keep leverage at low levels while holding large cash reserves. This reflects a negative relationship between leverage and cash holdings (Graham & Harvey, 2001).

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Large companies tend to have greater cash stability and lower bankruptcy risk due to their diversification (Rajan & Zingales, 1995). Opler and Stultz (1999) argue that large firms are generally more successful and, therefore, should hold larger cash reserves compared to their smaller counterparts.

### 2) *Trade-off theory:*

The trade-off theory first emerged to help firms make optimal decisions when choosing their capital structure. According to the theory proposed by Miller and Modigliani (1958), companies determine the proportion of debt and equity financing by balancing the costs and benefits of each funding source.

Cash holdings are crucial for companies and involve various costs and benefits. According to Miller and Orr (1966), there are economies of scale in cash management that lead large firms to hold less cash compared to smaller firms. The latter tend to rely on internal financing and opt for short-term funding alternatives (Berger & Udell, 1998). Research by Bates et al. (2006) indicates that small firms, in comparison to large firms, are more likely to rely on self-financing, have lower liquidity, rarely issue stock, and maintain lower leverage.

When a company increases its leverage, managers tend to limit cash usage beyond the optimal level due to the heightened risk of bankruptcy (Grossman & Hart, 1982). To mitigate the risk of financial distress and bankruptcy, firms establish a higher cash reserve (Ferreira & Vilela, 2004).

### 3) *Agency Theory:*

This theory posits that agents (management) and principals (shareholders) sometimes have differing views on how a company should be managed. The agency relationship is defined as one in which one or more principals engage agents to perform services on their behalf, involving the delegation of decision-making authority to the agents (Jensen & Meckling, 1976).

Problems arise when agents act to fulfill their personal interests rather than the best interests of the principals. The conflict between principals and agents relates to the level of cash holdings within the company. One reason managers retain excess cash is to avoid risk (Fama & French, 1998). This excess cash can provide managers with opportunities to make poor investments that would not be financed by the capital markets. Agency theory predicts that self-interested managers tend to maintain higher levels of cash at present to gain personal benefits, rather than saving it for future investments (Jensen & Meckling, 1976). Additionally, Myers (1984) suggests that companies are more likely to finance their investment activities first with internal funds, followed by debt, and finally equity.

## B. *Literatur Review And Hypothesis*

Research by Jebran et al. (2019), Diaw (2021), and Batuman et al. (2022) indicates that firm size has a positive impact on cash holdings. Conversely, Magerakis et al. (2020) found that firm size negatively affects cash holdings. In contrast to these findings, Arora (2019) reported that firm size does not have a significant effect on cash holdings.

Regarding leverage, studies by Jebran et al. (2019), Almustafa & Kalash (2022), He (2019), and Bughsan et al. (2022) demonstrate a negative relationship with cash holdings, while Davidson & Rasyid (2020) found a positive effect of leverage on cash holdings.

Additionally, research by Xingshuo (2020) shows that the peer effect has a significant and positive impact on cash holdings. Machokoto et al. (2021) also argue that the peer effect significantly influences cash holdings, as companies tend to mimic the cash policies of their competitors to maintain competitiveness. However, the findings of Nguyen & Li (2022) contradict those of Jinkrawee et al. (2021), Chen et al. (2019), Xingshuo (2020), and Machokoto et al. (2021), indicating that the cash holdings of rival firms negatively affect a company's own cash holdings.

### 1) *The Impact of Firm Size on Cash Holding :*

Based on theory and previous research reviews, the majority of studies indicate that firm size impacts cash holding, both positively and negatively. This impact arises because larger companies tend to generate profits more easily, resulting in greater cash reserves (positive influence). Conversely, larger firms have a lower risk of bankruptcy, which may lead them to maintain relatively less cash for funding their operational activities (negative influence). Cash holding policies are affected by firm size, which relates to the company's ability to generate profits and its strategy for managing cash. Thus, the hypothesis that can be proposed is:

H1: Firm size has an impact on cash holding.

### 2) *The Impact of Leverage on Cash Holding :*

According to theory and previous research reviews, the majority of studies show that leverage affects cash holding, both positively and negatively. This influence occurs because leverage can be used to mitigate bankruptcy risk

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(positive influence) and serves as a substitute for cash in financing company activities (negative influence). Leverage has a direct effect on cash holding, as the risk of a company's inability to repay debt may prompt it to retain more cash. Consequently, leverage acts as a funding source that can directly replace cash. Therefore, the hypothesis that can be proposed is:

H2: Leverage has an impact on cash holding.

### 3) *The Impact of Peer Effect on Cash Holding :*

Based on prior research reviews, many studies indicate that the peer effect influences cash holding, both positively and negatively. This reflects that the cash holdings of competing firms within the same industry affect a company's cash holdings to maintain competitiveness. In the context of the property, real estate, and construction industries, where competition is intense, the cash holding policies of competing firms significantly impact the cash holding policies of other firms. Based on this discussion, the hypothesis that can be proposed is:

H3: Peer effect has an impact on cash holding.

## II. RESEARCH METHOD

This study is an empirical research that involves hypothesis testing, aimed at examining the impact of independent variables—namely firm size, leverage, and peer effect—on the dependent variable, cash holding. The subjects of this research are companies in the property, real estate, and construction sectors listed on the Indonesia Stock Exchange during the period from 2018 to 2022. The data used in this study were analyzed using a quantitative approach through the Statistical Package for the Social Sciences (SPSS). The analysis involved descriptive statistics, multiple linear regression, classical assumption testing, and normality testing.

This research is classified as correlational research, which aims to investigate the effects or relationships between the independent variables (firm size, leverage, and peer effect) and the dependent variable (cash holding). The population of this study includes all property, real estate, and construction companies listed on the Indonesia Stock Exchange from 2018 to 2022. The sample consists of 305 companies within this category. The sampling procedure can be seen in Table 1 below:

**Table 1. Sample Selection Procedure**

Total Companies in the Property, Real Estate, and Construction Sectors Listed on the IDX from 2018 to 2022	110
Total Companies in the Property, Real Estate, and Construction Sectors Listed on the IDX from 2018 to 2022 (Non-Sequential)	49
Total Companies in the Property, Real Estate, and Construction Sectors Listed on the IDX from 2018 to 2022 (Sequential)	61
Number of Period	5
Total Sample	305

(Source: Data processed from [www.idx.com](http://www.idx.com), 2023)

The variables observed in this study consist of the dependent variable, cash holding, and the independent variables, which are firm size, leverage, and peer effect. The operational definitions of each variable are presented in Table 2 below:

**Table 2. Operational Definition of Variables**

Variables	Definition	Measurement
<i>Cash Holding</i>	The amount of liquid assets that a company keeps on hand and available for investment in physical assets or distribution to investors (Gill & Shah, 2011).	Cash and cash equivalents to total assets (Jebran et al., 2019)
<i>Firm Size</i>	A scale used to classify the size of a company in various ways, such as total assets, log size, market value of shares, and others. Essentially, firm size is divided into three categories: large firms, medium-sized firms, and small firms. The determination of a firm's size is based on its total assets (Machfoedz, 1994).	Natural logarithm of total assets (Diaw, 2021)
<i>Leverage</i>	The use of fixed costs in an effort to enhance profitability (Horne & Wachowicz, 2001).	Debt to total assets (Rasyid & Davidson, 2020)

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<i>Peer Effect</i>	The influence of competitors on a company's policies, specifically regarding the cash holdings of rival firms (Jinkrawee et al., 2021).	Peer firm's average cash to total assets (Chen et al., 2019)
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The data for this study were collected from the annual reports of property, real estate, and construction companies listed on the Indonesia Stock Exchange for the period 2018-2022. Each variable to be empirically tested, including cash holding, firm size, leverage, and peer effect, was derived from financial components in the annual reports, in accordance with the specific measurement criteria for each observed data point.

### A. Descriptive Statistical Test

The results of the descriptive statistical test in this study can be shown in the following table 3:

**Table 3. Result of the Descriptive Statistical Test**

	N	Minimum	Maximum	Mean	Std. Deviation
CH_Y	305	.0023	.3956	.07729	.0741057
SIZE_X1	305	24.8485	32.4545	29.22046	1.5493242
LEV_X2	305	.0191	1.1131	.41416	.2247683
PEER_X3	305	.0564	.0802	.07135	.0068914
Valid N (listwise)	305				

(Source: Data processed from SPSS, 2023)

The cash holding value, proxied by cash to total assets, for property, real estate, and building construction companies listed on the Indonesia Stock Exchange from 2018 to 2022, has a minimum value of 0.0023, which is PT. Fortune Mate Indonesia Tbk. (FMII) in 2020, while the maximum value is found in PT. City Retail Devel Tbk. (NIRO) in 2018 at 0.3956. The average value is 0.007729 and the standard deviation is 0.0741057. From the statement above, it can be concluded that the standard deviation value is smaller than the average value. This shows that the distribution of cash holding variable data is homogeneous.

The firm size value, proxied by the natural logarithm of total assets for property, real estate, and construction companies listed on the Indonesia Stock Exchange during the period 2018 – 2022, has a minimum value of 24.8485, which is PT. Metro Realty Tbk. (MTSM) in 2022, while the maximum value is found in PT. Waskita Karya Tbk. (WSKT) in 2018 at 32.4545. The average value is 29.22046 and the standard deviation is 1.5493242.

The leverage value, proxied by the debt to assets ratio (DAR), for property, real estate, and construction companies listed on the Indonesia Stock Exchange from 2018 to 2022, has a minimum value of 0.0191, which is PT. Sitara Propertindo Tbk. (TARA) in 2022, while the maximum value is found in PT. Binakarya Jaya Abadi Tbk. (BIKA) in 2022 at 1.1131. The average value is 0.41416 and the standard deviation is 0.2247683.

The peer effect value, proxied by the average peer firm's cash holding in property, real estate, and building construction companies listed on the Indonesia Stock Exchange during the period 2018 – 2022, has a minimum value of 0.0564, which is PT. Nusa Raya Cipta Tbk. (NRCA) in 2020, while the maximum value is found in PT. Sitara Propertindo Tbk. (TARA) in 2022 at 0.0802. The average value is 0.07135 and the standard deviation is 0.0068914.

### B. Multiple Linear Regression Test

The results of the multiple linear regression analysis conducted using SPSS are presented in the following table:

**Table 4. Results of the Multiple Linear Regression Analysis**

Model		Unstandardized	Standardized		t	Sig.
		Coefficients	Coefficients	Beta		
		B	Std. Error			
1	(Constant)	-1.584	.324		-4.888	.000
	SQRT_SIZE	.337	.054	.367	6.183	.000
	SQRT_LEV	-.043	.039	-.066	-1.110	.268
	SQRT_PEER	.104	.533	.011	.195	.194

(Source: Data processed from SPSS, 2023)

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### III. DISCUSSION

#### A. *The impact of firm size on cash holding*

Based on the results of the hypothesis testing regarding the impact of firm size on cash holding, it was found that the coefficient is positive, with a significance value of 0.000 (less than 0.05). Additionally, the t-statistic for the firm size variable is 6.183, which is greater than the critical t-value of 1.6506. This indicates that firm size has a significant effect on cash holding, leading to the rejection of H0 and acceptance of H1.

Cash holding policies are affected by the size of the firm, reflecting the company's ability to generate profits and its strategy for cash retention. Firm size impacts cash holding because each company varies in size, as measured by the natural logarithm of total assets, resulting in different abilities to avoid bankruptcy risks and to achieve profitability. Consequently, cash holding policies are tailored to the size of the firm.

In the property, real estate, and construction sectors, larger firms tend to have higher cash holding levels. This indicates that cash holding policies in these sectors are influenced by the size of the company. An example from the study sample illustrating a large company with a high level of cash holding is PT. Wijaya Karya Tbk. (WIKA) in 2018.

The findings of this study align with the pecking order theory, which posits that firm size positively influences cash holding. Larger firms typically exhibit greater cash stability (Opler et al., 1999) and lower bankruptcy risk due to broader diversification (Rajan & Zingales, 1995). This finding contrasts with trade-off theory, which suggests that firm size negatively affects cash holding, as smaller firms are more likely to utilize internal funds for financing compared to larger firms (Berger & Udell, 1998). Smaller firms also have lower liquidity, rarely issue shares, and typically exhibit lower leverage (Bates et al., 2006).

The results of this study are consistent with the findings of Jebran et al. (2019), Diaw (2021), and Batuman et al. (2022), all of which demonstrate a positive relationship between firm size and cash holding. However, these findings differ from those of Magerakis et al. (2020), who found a negative relationship, and Arora (2019), who concluded that firm size has no significant effect on cash holding.

#### B. *The impact of leverage on cash holding*

Based on the results of the hypothesis testing regarding the impact of leverage on cash holding, it was found that the coefficient is negative, with a significance value of 0.268 (greater than 0.05). Additionally, the t-statistic for the leverage variable is -1.110, which is smaller than the critical t-value of 1.6506 ( $-1.110 < 1.6506$ ). This indicates that leverage does not have a significant effect on cash holding, leading to the acceptance of H0 and rejection of H2.

Leverage refers to the total amount of debt financed by external parties to the company in order to enhance profitability (Horne & Wachowicz, 2001). In this study, leverage is proxied by the ratio of total debt to total assets. The results indicate that leverage does not have an impact on cash holding policies for companies in the property, real estate, and construction sectors. This differs from the initial hypothesis suggesting that leverage would affect cash holding. This suggests that the size of a company's leverage does not affect the amount of cash held by that company.

In the property, real estate, and construction sectors, the absence of an impact from leverage indicates that companies in this sector have cash holding policies that are independent of their leverage levels. In other words, these companies are capable of meeting their debt obligations without significantly increasing or decreasing their cash holding levels.

Leverage does not affect cash holding in companies within the property, real estate, and construction sectors because these firms are able to manage the risks of default and bankruptcy. Consequently, the cash holding policies of these companies do not need to be adjusted according to existing leverage levels, as they can meet their debt obligations in the future. Generally, it can be stated that companies in the property, real estate, and construction sectors have a good level of solvency.

The results of this study contradict the pecking order theory, which posits that leverage has a negative impact on cash holding, as firms tend to use leverage as a substitute for cash in their financing activities (Kaplan, 1993). Furthermore, this research also differs from trade-off theory, which suggests that leverage positively influences cash holding; as the level of leverage increases, the cash holding level also rises to mitigate bankruptcy risk (Ferreira & Vilela, 2004).

These findings are inconsistent with studies conducted by Jebran et al. (2019), Almustafa & Kalash (2022), He (2019), and Bughsan et al. (2022), which indicate that leverage negatively affects cash holding. Additionally, this study's results do not align with the findings of Davidson & Rasyid (2020), which demonstrate that leverage has a positive effect on cash holding.

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### C. *The impact of peer effect on cash holding*

Based on the results of the hypothesis testing regarding the influence of peer effect on cash holding, it was found that the coefficient is positive with a significance value of 0.194 (greater than 0.05). Additionally, the calculated t-value for the peer effect variable is 0.195, which is smaller than the critical t-value of 1.6506 ( $0.195 < 1.6506$ ). This allows us to conclude that peer effect does not significantly impact cash holding, resulting in the acceptance of H0 and rejection of H3.

In this study, peer effect is defined as the influence of competing firms on a company's cash holding. Peer effect is measured by the average cash holding of peer firms, grouping the data based on the same year. The results indicate that peer effect does not influence cash holding for companies in the property, real estate, and construction sectors. This suggests that the level of cash holding of competing firms within the same industry and time period does not affect a company's cash holding policy.

In the property, real estate, and construction sectors, the absence of a peer effect on cash holding indicates that a company's cash holding policy does not depend on the cash holdings of competing firms. In other words, companies are able to maintain their cash holding strategies according to their own capabilities in generating profits and managing bankruptcy risks, without being influenced by the cash holding policies of their competitors.

The peer effect does not impact cash holding in companies within the property, real estate, and construction sectors because firms in this sector have varying abilities to generate profits. Consequently, companies do not feel compelled to adjust their cash holding policies based on the average cash holdings of peer firms.

These findings differ from those of Jinkrawee et al. (2021), Chen et al. (2019), Kingshuo (2020), and Machokoto et al. (2021), which indicate that peer effect positively influences cash holding. Additionally, this study's results do not align with the findings of Nguyen & Li (2022), which demonstrate that the cash holdings of rival firms negatively affect the cash holdings of a company.

## CONCLUSION, LIMITATIONS, AND RECOMMENDATIONS

### *Conclusion*

Based on the research conducted using the Statistical Package for Social Science (SPSS) to empirically examine the effects of firm size, leverage, and peer effect on cash holding in companies within the property, real estate, and construction sectors from 2018 to 2022, several conclusions can be drawn as follows:

1. **Firm Size** statistically has a positive effect on cash holding in companies within the property, real estate, and construction sectors during the period of 2018–2022. This indicates that as a company's size increases, its level of cash holding tends to be higher, as larger companies tend to have better cash stability and lower bankruptcy risks.
2. **Leverage** statistically does not have an effect on cash holding in companies within the property, real estate, and construction sectors during the same period. This suggests that a company's cash holding policy is independent of the level of leverage, allowing companies to meet their debt obligations without significantly increasing or decreasing their cash holding levels.
3. **Peer Effect** also statistically does not influence cash holding in companies within the property, real estate, and construction sectors during the period of 2018–2022. This indicates that a company's cash holding policy is not affected by the cash holding of competing firms. In other words, companies are able to maintain their cash holding strategies according to their ability to generate profits and manage bankruptcy risks without being influenced by the policies of their competitors.

### *Limitations*

The limitations of this study include a coefficient of determination that only reaches 0.112 or 11.2%, meaning that cash holding can only be explained by firm size, leverage, and peer effect to the extent of 11.2%. Consequently, 88.8% is explained by other variables outside the model. Additionally, there are many companies that did not present their financial statements consecutively during the period from 2018 to 2022, and this led to failing to meet the criteria and a reduction in the sample size..

### *Recommendations for Future Research*

Future researchers are advised to increase the sample size, either by extending the time frame or by adding more companies, in order to obtain more accurate results. Given that this study's findings indicate that the leverage and peer effect do not influence cash holding, subsequent researchers are encouraged to replace these variables with other determinants of cash holding. Furthermore, it is recommended that future researchers provide additional independent variables to increase the coefficient of determination, thereby enhancing the independent variables' ability to better represent the dependent variable in the research model.

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