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THE EFFECTS OF LEVERAGE, FIRM SIZE, CASH FLOW VOLATILITY, AND TAX AVOIDANCE ON CASH HOLDING IN THE 2020-2021 PANDEMIC PERIOD

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ABSTRACT

This research aims at how the role of the leverage, firm size, cash flow volatility, and tax avoidance on cash holding in manufacturing companies listed on the Indonesia Stock Exchange (IDX) in 2020-2021 Manufacturing companies listed on the Stock Exchange Indonesia during 2020-2021 and is also available on the eddyelly website. The sample was selected using by 54 companies were included in the valid data when the sample was chosen using the purposive sampling technique. Multiple regression analysis is used during data processing method, using help from Ms. Excel and the Windows version of Eviews version 12 for Windows 10 and Microsoft Excel 2019. The findings of this investigation suggest that leverage has a significant negative effect on cash holding, firm size, cash flow volatility shows an insignificant negative effect on cash holding and there is empirical evidence related to this study while tax avoidance shows an insignificant positive effect on cash holding and there is no evidence empirical research. The implication of this research is the benefit of the company`s internal parties regarding the variable cash holding with independent variables and as relevant new evidence related to liquidity, substantial dependence and the use of complementary liquidity sources.

Keywords*: Cash Holding, Leverage, Firm Size, Cash Flow Volatility, Tax Avoidance*

1. INTRODUCTION

In the last few years, it has been increasing rapidly and has also been hit by a global pandemic situation, competition between companies in Indonesia is getting tougher and tougher. Manufacturing companies that exist and remain in critical condition continue to compete in maintaining and maintaining and increasing the existence of their companies. One of the identifications of recent events is the company's liquidity which has declined and weakened drastically, thus affecting the company's contribution to gross domestic product (GDP), therefore cash holding is one of the causes, because it is a vital company asset that needs attention and its existence can be meet business needs as a managerial benchmark. Adequate cash holding can help the company's internal management, if cash holding is inadequate this will increase the cost of external capital from the market such as issuing shares and paying dividends. This relates to the trade-off theory, cash and debt share features such as cash holding that can bring benefits and generate costs for shareholders. If based on this theory, the company must have an optimal level of cash ratios, which balances the marginal benefits and marginal costs of cash holdings, but there are differences that imply that there is no optimal level of cash storage to reduce the cost of asymmetric information, and a manager needs to cash to provide strength in controlling the company Several causal factors that can affect cash holdings are leverage, firm size, cash flow volatility, and tax avoidance. The company can maintain its financial flexibility by making large cash reserves and low leverage (Nadia, 2016) , so that the profit from assets is higher than loans (Wahyudi, 2017). Firm size is tied to operational cash flow in (Ali, Ullah & Ullah, 2016), which is based on total assets owned. Cash flow that is too high and fluctuating will have a risk of a lack of liquidity as a result of an unexpected decrease in cash flow (Ferreira and Vilela, 2004) can cause financial distress. Companies that do as

much as possible withhold tax-related transactions and make cash accumulate (Foley et al., 2007), this illustrates the existence of managerial discretion and possible agent problems.

In recent years many manufacturing companies have experienced financial distress, so it is necessary to know that cash holding is one of the most important and liquid assets, because it is quickly converted into cash which is king in meeting financial needs. Because of this, managers tend to save cash holdings after predicting economic conditions (Chen, dkk, 2016). In several existing studies which have been carried out in eight Asian countries (Hong Kong, Indonesia, Malaysia, the Philippines, Singapore, South Korea, Taiwan and Thailand, from these results there was an average increase in 1996 of 6.7% and in 2006 of 12.1%. Based on this phenomenon, how does the role of leverage, firm size, cash flow volatility and tax avoidance have a positive or negative effect and are significant and not significant on cash holdings, so that they can reflect cash holdings for the pandemic period from 2020-2021.

It is hoped that this research can be input for companies related to the variables in this study and for investors to help see the factors of cash holding in financial statements as a factor in making decisions for their investment and looking at other factors.

2. LITERATURE REVIEW

Trade-Off Theory

This theory explains the need to determine and consider the optimal level of cash holding between costs and marginal benefits described by Miller and Orr (1966). Through cash holding, the company provides benefits such as reducing potential financial difficulties. Due to cash reserves, the company can use it when facing unforeseen circumstances and potential losses from external funding in the capital market (Ferreira dan Viela, 2004). There are several motives for cash holding, namely: speculative motives, precautionary/preventive cost motives, transaction motives, agency motives, and tax avoidance motives (Ros et al., 2013).

Pecking-Order Theory or Financing-Hierarchy Theory

This theory can regulate the company's internal finances which have several priorities on company funding presented by Myres and Majluf (1984). First priority When retained earnings are insufficient to fund new investments, they use cash holdings and issue new debt or securities (Kariuki et al., 2015). Companies that do not target the optimal level of cash and cash are a buffer between retained earnings and investment needs (Guizani, 2017).

Free Cash Flow Theory

This theory refers to strong corporate governance and plays an important role in overcoming managers' misuse of cash as suggested by Jensen (1986), Managers' discretionary decisions will increase the ability to save excess cash (Le et al., 2018).

Leverage

Leverage is a financial alternative other than cash that can be used to finance its assets and shows the level of dependence in meeting financial interests with sources of external funds. Leverage is a condition and effort when a company buys or adds assets on credit and the results of the debt are higher than the borrowed funds Ali, Ullah dan Ullah, 2016. Opler et al. (1999)

high leverage means lower cash holdings which implies a sign of the proportion of debt in the capital structure and raises the risk of financial problems. According to states that leverage has a significant positive effect on cash holding for possible financial problems. This is in line with the research of Ogundipe et al. (2012). Nadia (2016) which suggests leverage has a significant negative effect on cash holdings and Rahmawati & Indrawati (2013) which states leverage has no effect on cash holdings.

Firm Size

Company size is seen from various aspects (factors), one of which is the number of assets owned, total sales, stock market prices, and so on, both for large and small companies will have an influence on the financial condition and its activities. This is also supported by the formulation of the natural logarithm of total assets, (Le et al., 2018), defined as the scale used and classifying companies (Irwanto et al., 2019). Large companies have easier access to the capital market, while small and medium companies believe that success according to investors is still inadequate (Romadhoni et al., 2019). According to Ahmed, Qi, Ullah and Kimani (2018) stated that firm size has a significant negative effect on cash holding for developing companies (small and medium) that have potential risks in the future because it is difficult to obtain external funds. This is in line with Mercan's research (2019). However, it is not in line with the observational findings of Le et al. (2018) and Angkawidjaja and Rasyid (2019), finding firm size has a significant positive effect on cash holdings, while research by Wijaya and Bangun (2019) Firm size does not have a significant effect on cash holdings. Cash flow volatility and cash holdings.

Cash Flow Volatility

Cash Flow Volatility is a fluctuating cash flow that results in unstable conditions (Rahmawati and Indrawati, 2013) for a certain period of time (Angkawidjaja & Rasyid, 2019) and the highest indicates uncertainty in future income (Ozkan and Ozkan, 2004), so that companies may face and experience constraints from liquidity. Free cash flow developed by Jensen (1986), strong corporate governance plays a role in the misuse of cash by managers because of the causation of managers' decisions that are decided and taken freely regarding cash ownership. According to Le et al. (2018), states that the volatility of cash flows has a positive and significant impact on cash holdings in a certain period and period where these conditions are unstable or indicate uncertainty over future income and the possibility shortage of liquid assets of the company. However, this is not in line with the results of Pasaribu and Nuringsih (2019), cash flow volatility has an insignificant negative effect on cash holdings and Jinkar (2013) does not significantly affect cash holdings.

Tax Avoidance

Tax Avoidance is the result of a determination that arises as a result of the tax avoidance itself. The determinants and causes of tax avoidance due to cash ownership (Chen et al., 2010), as well as managerial decisions affect economies of scale caused by compensation for company performance (Dyreng et al., 2010), and findings on empirical evidence of tax avoidance have a positive effect so that the risk of falling stock prices (Kim, Li, & Zhang, 2011). According to Hogan and Noga (2012) tax avoidance has a significant positive effect on cash holdings for small and medium companies (SMEs) tend to retain cash for activities rather than investments and have tax avoidance in equity.

3. RESEARCH MODEL AND HYPOTHESES DEVELOPMENT

The Effect of Leverage on Cash Holding

The trade-off theory developed by Opler et al. (1999) and Miller and Orr (1966), high leverage means lower cash holdings which implies a sign of the proportion of debt in the capital structure and raises the risk of financial problems. According to Ferreira and Vilela (2004) stated that leverage has a significant positive effect on cash holding for the possibility of financial problems. This is in line with the research of Ogundipe, Salawu and Ogundipe (2012). However, this is not in line with Le et al. (2018) and Nadia (2016) who stated that leverage has a significant negative effect on cash holding and Rahmawati & Indrawati (2013) which stated that leverage has no effect on cash holding.

The Effect of Firm Size on Cash Holding

Pecking order theory developed by Myers and Majluf (1984), is required to take into account several internal financial priority arrangements owned by the company. According to Ahmed, et al. (2018) stated that firm size has a significant negative effect on cash holding for developing companies (small and medium) that have potential risks in the future because it is difficult to obtain external funds. This is in line with Mercan's research (2019). However, it is not in line with the results of research by Le et al. (2018) and Angkawidjaja and Rasyid (2019), finding firm size has a significant positive effect on cash holding, while research by Wijaya and Bangun (2019) firm size has no significant effect on cash holding.

The Effect of Cash Flow Volatility on Cash Holding

Free cash flow developed by Jensen (1986), strong corporate governance plays a role in the misuse of cash by managers because of the causation of managers' decisions that are decided and taken freely regarding cash ownership. According to Le et al. (2018), cash flow volatility has a significant positive effect on cash holdings for a certain period and period of time where these conditions are unstable or indicate uncertainty over future income and the possibility of a shortage of the company's liquid assets. This is in line with the research of Angkawidjaja and Rasyid (2019). However, it is not in line with the results of Pasaribu and Nuringsih (2019) cash flow volatility has an insignificant negative effect on cash holding and Jinkar (2013) cash flow volatility does not have a significant effect on cash holding

The Effect of Tax Avoidance on Cash Holding

Free cash flow volatility developed by Jensen (1986), discretionary decisions from managers will cause causation from the managerial decisions themselves. According to Hogan and Noga (2012) tax avoidance has a significant positive effect on cash holdings for small and medium companies (SMEs) tend to retain cash for activities rather than investments and have tax avoidance in equity. This is supported by the research of Frank and Goyal (2014). However, it is not in line with the research results of Yudi et al. (2017) tax avoidance has a significant negative effect on cash holding and Kusumawati et al. (2020) which states tax avoidance has no effect on cash holding.

Hypotheses

The research model of this study as presented in Figure 1:

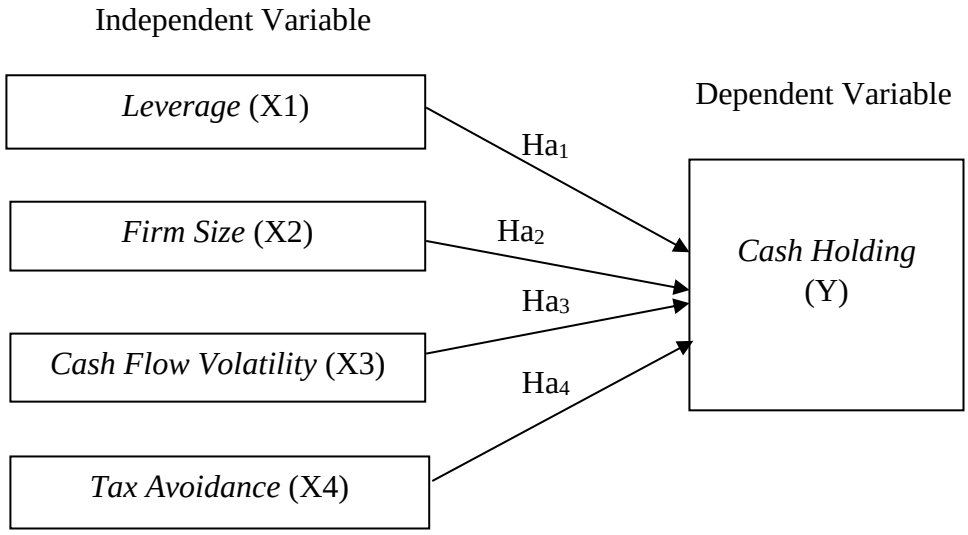

Figure 1. The Research Model

The hypotheses in this research were formulated as follows:

H1: Leverage has a significant negative effect on cash holdings.
H2: Firm size has a significant positive effect on cash holdings.
H3: Cash flow volatility has a significant positive effect on cash holding.
H4: Tax Avoidance has a positive and significant effect on cash holding.

The Multiple Regression Model

The multiple regression model equation used is as follows:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \varepsilon$$

Notes:
Y : Cash Holding
α : Constant Value
β_{1-5} : Coefficient Value
X_1 : Leverage
X_2 : Firm Size
X_3 : Cash Flow Volatility
X_4 : Tax Avoidance
ε : Error Term

4. RESEARCH METHODS

Population and Sample

Methodology This research methodology is designed descriptively and is a quantitative research and secondary data acquisition through the Indonesia Stock Exchange (IDX) in the 2016-2021 period. The selection of the sample used is purposive sampling with manufacturing companies in Indonesia and the sample criteria starting from: 1) Being registered consecutively on the IDX from 2016-2021; 2) Issuing Sustainability Reports for 2016-2021; 3) Using the currency rupiah during 2016-2021; and 4) Experienced no loss during 2016-2021. The results for the total number of valid samples are 54 companies for the 2 year research period (2020-2021) and a total of 108 data.

Data Analysis Technique

In this study using descriptive statistical tests, chow test, Hausman test, classical assumption test and t-Test.

Table 1. Summary of Variable Operationalization

Variable	Instruments	Source	Scale
Cash Holding (Y)	$CHR = \frac{\text{Cash and Cash Equivalent}}{\text{Total Assets}}$	Le, Tran, Ta dan Vu (2018)	Ratio
Leverage (X1)	$DAR = \frac{\text{Total Debt}}{\text{Total Assets}}$	Le, Tran, Ta dan Vu (2018)	Ratio
Firm Size (X2)	Size= The Natural Logarithm of Total Assets	Le, Tran, Ta dan Vu (2018)	Ratio
Cash Flow Volatility (X3)	$CFV = \frac{\partial \text{ Cash Flow Over 4 Years}}{\text{Total Assets}}$	Le, Tran, Ta dan Vu (2018)	Ratio
Tax Avoidance (X4)	$\text{Cash ETRit} = \frac{\text{Cash Tax Paid}}{\text{Pretax Income}}$	Yudi T. H., Nur A. K., M. Rheza R. (2017)	Ratio

5. RESULTS

Descriptive Statistics

Table 2. Descriptive Statistics

Sample: 2020 2021

	Observations	Mean	Median	Maximum	Minimum	Std. Dev.
Y_CHR	108	0.146818	0.103075	0.857141	0.006011	0.138253
X1_DAR	108	0.374403	0.366427	0.792736	0.003453	0.174432
X2_SIZE	108	29.21328	28.91009	33.53723	26. 15513	1.573253
X3_CFV	108	0.049800	0.045848	0.172659	0.010544	0.031722
X4_CETR	108	0.314461	0.217274	4.035701	0.001666	0.485512

The descriptive statistical test performed in table 2, with 108 data shows that the cash holding variable (CHR) has a mean (average) of 0.146818. This shows that the company's average cash holding (CHR) is 14.68%, this means that the 54 sample companies still have low cash holdings in meeting the company's financial needs. The median (middle value) obtained from the cash holding variable (CHR) is 0.103075. The maximum value of cash holding (CHR) is 0.857141. The minimum value of cash holding (CHR) is 0.006011. The standard deviation (standard deviation) of cash holdings (CHR) is 0.138253.

The average value (mean) obtained from the leverage variable (DAR) is 0.374403, which means the company uses external funding to finance its assets, so it has a relatively high average debt level of 37.44%. The median of the leverage variable (DAR) is 0.366427. The maximum value of leverage (DAR), which is 0.792736, is held by Pyridam Farma Tbk. in 2021. The minimum value of leverage (DAR), which is 0.003453, is held by Star Petrochem Tbk. in 2020. The standard deviation obtained from the leverage variable is 0.174432.

Based on the 108 data used, it can be concluded that the average value (mean) obtained from the firm size variable (SIZE) is 29.21328. It shows that 54 companies from 2020-2021 have a total average assets of 2921.32%. The median obtained from the variable firm size (SIZE) is 28.91009. The maximum value of firm size (SIZE) is 33.53723 Astra International Tbk. in 2021. The minimum firm size (SIZE) is 26.15513. The value of the standard deviation variable firm size (SIZE) is 1.573253.

The cash flow volatility (CFV) variable has an average value (mean) of 0.049800. This value means that the 54 companies sampled from 2020-2021 have an average fluctuating cash flow of 4.98%. The median value of the cash flow volatility (CFV) variable is 0.045848. The maximum value of the cash flow volatility (CFV) variable is 0. The minimum value of the variable cash flow volatility (CFV) is 0.010544. The standard deviation value of the cash flow volatility (CFV) variable is 0.031722.

The tax avoidance variable (CETR) has an average value (mean) of 0.314461, which indicates that 54 companies from 2020-2021 have evaded tax compensation for ownership performance of 31.44%. The median value of the tax avoidance variable (CETR) is 0.217274. The maximum value of tax avoidance (CETR) is 4.035701. The minimum tax avoidance (CETR) value is 0.001666. in 2020. The standard deviation value of tax avoidance (CETR) is 0.485512.

Regression Analysis Results and t-Test

The determinant test (R^2), the Sig test, is performed to determine the correlation between the independent and dependent variables as well as the Simultaneous (F) and sig. Part (t). The Adjusted R-Square value of 0.161222 is equivalent to 16.12%, meaning that there are still 83.88% of the variables outside this study. The probability of the F-test statistic is 0.000179 (< 0.05), meaning that it is feasible to use.

Table 3. Regression Test and t-Test Results

	Variable	**Coefficient**	**Std. Error**	**t-Statistics**	**Prob.**
1.	C (Constant)	0.378214	0.279295	1.354171	0.1786
	X1_DAR	-0.384671	0.081352	-4.728499	0.0000
	X2_SIZE	-0.003172	0.009485	-0.334450	0.7387

X3_CFV	-0.129238	0.454499	-0.284352	0.7767
X4_CETR	0.037311	0.028100	1.327819	0.1872

a. Dependent Variable: CHR.

In the test results above, the regression equation used for this research is as follows:

$$CHR = 0.378214 – 0.384671DAR – 0.003172\ SIZE\ -0.129238\ CFV + 0.037311\ CETR + \varepsilon.$$

Based on the statement of the regression results, the leverage variable has a negative (β = 0.384671) and significant (sig. = 0.000) effect on cash holding, reflecting the greater its role in reducing the level of debt held, meaning that Ha1 is accepted. The results of this study are in line with research conducted by Pasaribu and Nuringsih (2019), Wibowo and Wahyudi (2019), also Nadia (2016), they all argue that leverage (DAR) has an effect significant negative effect on cash holdings (CHR). This study is in contrast to research examined by Ogundipe, Salawu and Ogundipe (2012), they stated that leverage had a significant positive effect on cash holdings, while Chireka and Fakoya (2017) stated that leverage had an insignificant positive effect on cash holdings. cash holding, is also different from Angkawidjaja and Rasyid (2019) which states that leverage has no significant negative effect on cash holding.

The results of the firm size variable have a negative effect (β = 0.003172) and are also irrelevant (sig. = 0.7387) on cash holdings, indicating that the size of the company has no effect, meaning that Ha2 is rejected. This is similar to the research by Wijaya and Bangun (2019) which provides no consistency.

The results of the cash flow volatility variable have a minus (β = 0.129238) and insignificant (sig. = 0.7767) effect on cash holding, thus proving that the company does not need to have cash availability. This research is in line with the research of Uyar and Kuzey (2014), Nadia (2016), Chireka and Fakoya (2017), Pasaribu and Nuringsih (2019), they argue that cash flow volatility has an effect negative is not significant to cash holdings. This research contradicts research that has been conducted by Angkawidjaja and Rasyid (2019), Ahmedet al. (2018), also Ogundipe et al. (2012) which states that cash flow volatility has a significant positive effect on cash holdings.

The results of the tax avoidance variable obtained a significant (β = 0.037311) and also insubstantial (sig. = 0.1872) influence on cash holding, directing that the optimal level of cash does not necessarily have an effect on reducing financial risk, meaning that Ha4 is rejected. The results of this study are not the same as Hardianto et al. (2017) who say that Tax Avoidance Risk has no positive effect on Cash Holding Policy. And Irwanto, Steven, Agustina, and Evi (2019) said tax avoidance had a significant effect on cash holding. Also said tax avoidance risk has no positive effect on cash holding

6. DISCUSSION

Based on the results of this study, the role of ratio analysis as represented by leverage, firm size, cash flow volatility, and tax avoidance is not optimal in influencing cash holdings. When viewed from leverage regarding the level of debt, it results in the company saving a number of costs that it can use and explains that the company manager has a discretionary decision to obtain external funds as a substitute for cash (internal data). In addition, at firm size, the

decisions taken will be controlled by the ultimate, which means this is contrary to the pecking order theory and free cash flow theory which have been described previously. This cash flow volatility also contradicts the trade-off theory, which explains that companies do not have to have large cash availability to anticipate and minimize problems due to high fluctuations in cash flow. Finally, tax avoidance, provides a point of view that there are differences in the trade-off theory when the optimal level of cash storage must receive benefits and reduce financial risk and the definition of cash holding explains that the motives that influence there are speculative, transactions, and prevention as well as in the free cash flow theory The manager's corrective decision raises the causation of the decision. Therefore, the use of optimal cash holding is still not clearly defined and it can be seen from the various elements that there are similarities and differences, therefore it should not be measured from this study alone, because there are many other variables that can explain this.

7. CONCLUSIONS

Based on the results of the t test, leverage (X1) with the debt to assets ratio (DAR) as the proxy, shows a significant negative effect on cash holdings. This research is the same as that of Nadia (2016), Suherman (2017), Monica et al. (2019), Pasaribu and Nuringsih (2019), Wibowo and Wahyudi (2019), Monica and Suhendah (2020), Octavia and Susanti (2021)), also Marcel and Susanto (2021), who agree with the results of this study.

Firm size (X2), is proxied as the natural logarithm of total assets, this shows an insignificant negative effect on cash holdings. This research agrees with Wijaya and Bangun (2019), Halim and Rasyid (2020), Setiawan (2020), also Davidson and Rasyid (2021) on the results of this study.

Cash flow volatility (X3), which is proxied by dividing the standard deviation of four years' cash flow by total assets, shows no significant negative effect on cash holdings. Research is supported by Uyar and Kuzey (2014), Nadia (2016), Chireka and Fakoya (2017), Pasaribu and Nuringsih (2019) who agree in the results of this study.

Tax avoidance (X4), which is proxied by the amount of actual tax payments paid in cash and divided by income or income before tax (cash effective tax rate), shows a significant positive effect on cash holdings. There is no empirical research evidence that agrees with the results of this study.

The limitations of this study are the subject of this study which only focuses on manufacturing companies on the IDX and eddyelly with predetermined criteria, the sample used is only during the 2020-2021 pandemic period, the variables studied do not provide an overall picture of the independent variables affecting cash holding, replica from the literature of Le et al. (2018), and many more. For further research, use other subjects or add sample data, conduct research with other independent variables outside of this variable, using different proxies.

From the limitations that have been said above, the suggestions that can be given for future research are: (1) Research can look for other subjects in different sectors as well, for example, such as real estate, mining, infrastructure, finance, services and others, so that this broadens one's knowledge about the impact of existing phenomena. (2) Provide additions or reductions in the sample of company data as well as additions to the year of observation to be reviewed, so that this can expand and be more specific at the time of research and the information obtained. (3) Conducting research on other variables such as managerial ownership, tangible

assets, dividends, net working capital, capital expenditure, good corporate governance, and others. It is also possible to replace several variables that have been studied, namely leverage, firm size, cash flow volatility, and tax avoidance, which have a significant or insignificant effect on cash holdings. It is hoped that in this way, future research authors can get various existing references. (4) Calculations on one variable generally have more than one proxy, for example in calculating leverage one can use the debt to equity ratio (DER) or the Degree of Operating Leverage (DOL), cash flow volatility can use cash flow per share, and a tax avoidance opportunity can use market-to-book or current effective tax rate. Therefore, future research is expected to be able to use other proxies, so that the results can be compared with this study.

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