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DETERMINANTS OF CASH HOLDINGS MODERATED BY FIRM SIZE

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ABSTRACT

The study was conducted on manufacturing companies registered in IDX in 2017-2019 with purposive sampling method. Data is processed and analyzed with Eviews 10. The analytical models used are multiple regression analysis and moderation regression analysis. Data and analysis results show profitability and firm size have no significant effect on determining the amount of cash holdings. Meanwhile, liquidity and net working capital have a significant effect. The results of moderation tests show that firm size is able to moderate the influence of profitability and liquidity on the determination of the amount of cash holdings. Meanwhile, firm size cannot moderate the influence between net working capital and the determination of the amount of cash holdings in.

Keywords*: profitability, liquidity, net working capital, firm size, cash holdings*

1. INTRODUCTION

The adequacy of cash holding in the company will affect the running of the company's operational activities. An adequate amount of cash holdings has an important role to maintaining the company's liquidity [1]. This is to demonstrate the company's ability to complete its short-term obligations and its ability to finance routine operational activities.

Keynes [2] mentioned there are three motives that encourage companies to have cash holdings, namely transaction motive, precaution motive, and speculation motive. Since the Covid-19 pandemic, the main motive for companies to have adequate amounts of cash holdings is precaution motive. The pandemic that occurred since the beginning of 2020 caused a global crisis and impacted the company's operational activities. The company must regulate the availability of cash holdings so that operational activities are not hampered. As per precaution motive, adequate amounts of cash holdings can be a buffer for companies to stay afloat in times of crisis.

In addition to being influenced by the three motives expressed by Keynes [2], the determination of the amount of cash holdings also influenced by company financial performance. Some previous studies have found financial performance that can affect the amount of cash holdings including profitability, liquidity, net working capital, and firm size.

Profitability is used to measure a company's performance in making profits by utilizing its assets. Irwanto, et. al. [3] found a positive relationship between profitability and cash holdings. The Company uses the profits generated for the benefit of shareholders and operations. So the higher the level of profitability, the higher the amount of cash holdings.

Liquidity reflects the company has sufficient current assets to pay off its current liabilities. A high level of liquidity should be supported with adequate cash holdings. Too little cash holdings increases the risk of default for the company in paying off its short-term obligations

and meeting its operational needs. Nafees, et. al. [4] in his research found the higher the level of liquidity, the greater the amount of cash holdings.

Net working capital includes liquid corporate assets because they can be converted into cash quickly with low conversion costs [5]. Thus, net working capital can serve as a substitute for cash in the hands of existing companies [6], [7]. In their research, Guizani [6] and Tayem [7] found that the greater the value of net working capital owned by the company, the smaller the amount of cash holdings.

Large companies have greater resources and opportunities in increasing sales. They have diversified operations and more stable cash flows so are less likely to experience financial difficulties (Guizani, 2017). Large companies could have bigger cash holdings as a reserve for unexpected events in the future [8] or to make investments. Guizani [6] and Romadhoni, et. al. [9] found a significant positive relationship between firm size and cash holdings.

Manufacturing company usually has large amounts or non-current assets because it is used in its activities to process raw materials into finished goods. If the manufacturing company faces unexpected events and requires liquid funds, the company can sell some of its non-current assets but asset sales certainly take time and there are costs that must be incurred by the company. This condition can affect the liquidity of the manufacturing company. Therefore, to minimize such liquidity risk, manufacturing companies must determine the most adequate amount of cash holdings.

Throughout 2020, the COVID-19 pandemic became a negative sentiment for manufacturing industry (see **Figure 1**). This is mainly because the manufacturing industry in Indonesia has a large dependence on obtaining raw materials from China. As a result their supply chains are disrupted, namely experiencing production delays and even experiencing depletion of raw material supply [11].

Bank Indonesia's Prompt Manufacturing Index (PMI) showed that the performance of the processing industry sector decreased in early 2020, but began to show improvement in the fourth quarter of 2020 [12]. This improvement is also shown from the results of the Business Activities Survey (SKDU) which showed a Weighted Net Balance (SBT) of processing industry business activities of -0.47% in the fourth quarter of 2020 which increased from the third quarter of 2020 which was -1.45% (see **Figure 2**).

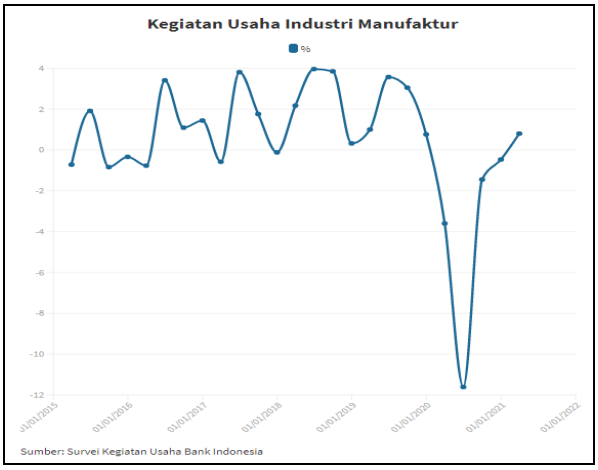

Figure 1 Manufacturing Industry Business Activities [10]

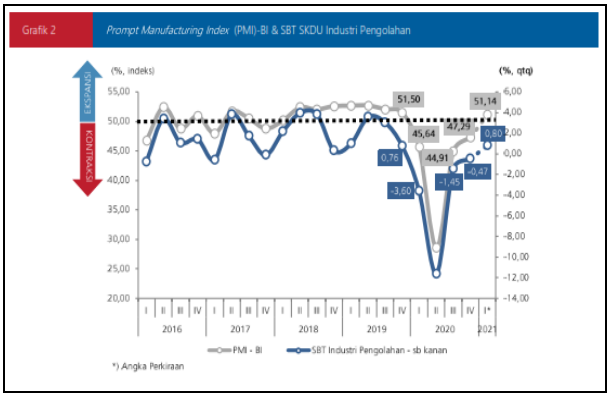

Figure 2 PMI BI & SBT SKDU Processing Industry [12]

To support the growth of the manufacturing industry in Indonesia, companies in the processing industry must have effective cash management so as to determine the optimal level of cash holdings. Learning from the pandemic conditions that have occurred since the beginning of 2020, manufacturing companies need to have adequate cash holdings as reserve funds in overcoming unexpected crisis. Research on cash holdings is still one of the interesting topics to do. Therefore, this study was conducted to find out the factors that affect the determination of cash holdings in the manufacturing industry in Indonesia.

2. THEORETICAL REVIEWS

Trade-off Theory

In this theory, companies can maximize the value they get by exchanging the marginal costs and benefits of having cash holdings at the most optimal level of ownership [7]. Marginal fees illustrate how a company will miss out on the opportunity to get a return from investment because it holds some cash as a reserve fund. Having adequate cash holdings means the company will get marginal benefits. Companies can avoid the cost of converting non-cash assets or fees to obtain external funding if the company needs liquid funds in financing its growth [13]. If the company lacks cash holdings, it can lose investment opportunities and will incur high costs to get additional financing.

When there is cash inflow received by the company, management must determine how the cash holdings will be used. If the company's management has the goal of improving the well-being of shareholders, then having cash holdings will give rise to the opportunity cost of capital divested in the form of liquid assets [14]. The liquid assets will be distributed as dividends for shareholders. Conversely, if management does not aim to improve the well-being of shareholders, then management will utilize the cash at hand to add assets that will be under their control. This condition will certainly cause an increase in the cost of cash ownership and agency fees.

Pecking Order Theory

In this theory, the company will choose to prioritize internal sources of financing rather than external financing sources [15]. The amount of cash holdings can be a buffer between earnings in hold and a company's investment decisions [13]. The existence of positive operating cash flow will increase cash holdings that is beneficial for the company to make investments, pay debts, distribute dividends, and the rest is used as reserve funds.

In accordance with this theory, the amount of cash holdings will depend on investment and financing decisions [6]. If the source of internal funds is sufficient and exceeds the value of the investment, then the company can have a cash balance on hand. Conversely, the amount of cash holdings will be reduced if the value of the investment exceeds the balance of retained earnings [13]. Investment decisions made by companies can potentially reduce the amount of cash holdings. However, companies can avoid external financing by having an adequate amount of cash holdings.

Cash Holdings

Cash holdings is the company's most liquid asset and is necessary to ensure its operations continue to run. Keynes [2] mentioned three motives that encourage companies to have cash holdings, namely transaction motive, precaution motive, and speculation motive. Transaction motive encourages the company to have cash holdings because it will be used to make a number of payments without having conversion of non-cash assets [1]. In precautionary motive, the company has an adequate amount of cash holdings to anticipate unexpected events or contingencies in the future, especially for companies that have a greater level of business risk or companies that have limited access to financing [1]. This motive could be the main motive for companies to have adequate amounts of cash holdings, especially since the Covid-19 pandemic.

Determination of adequate amount of cash holdings can increase the effectiveness and efficiency of operational activities [13]. By having a high amount of cash holdings, the company can maintain its liquidity and can survive in the event of a crisis. However, the company will miss out on opportunities to develop its business and investment.

Miller and Orr [16] stated that when the amount of cash holdings reaches the upper limit, the company will make an investment. Conversely, when the amount of cash holdings is at the lower limit, the company will increase cash holdings by releasing the investment it has. This is in accordance with the pecking order theory, where the amount of cash in the hands of one of them will depend on the company's investment and financing decisions.

Profitability and Cash Holdings

A high level of profitability indicates that a company is using its assets at the maximum level. The company will use the profits generated for the benefit of shareholders and for the company's operations. In addition, by making controlled investment decisions, companies that make a profit can have a larger amount of cash holdings [6].

The high profit generated by the company can indicate the high level of income of the company that is a source of cash inflow for the company. Thus, companies with a high level of profitability will have stable cash flow and have the opportunity to increase the amount of cash holdings.

Irwanto, et. al. [3] found a positive relationship between the level of profitability and the amount of cash holdings. Aftab, et. al. [17] get the opposite result where the higher the level of profitability will decrease the amount of cash holdings. Romadhoni, et. al. [9] and Guizani [6] found the level of profitability does not affect the amount of cash holdings because the cash in the company's profits is not utilized as cash reserves in the hand but will be used for business development and paying dividends.

H_1: Profitability positively affects cash holdings

Liquidity and Cash Holdings

Liquidity reflects the company's ability to use its current assets to pay off its current liabilities. As per pecking order theory, companies with high and profitable financial performance will have a high level of liquidity. The profits earned by the company can be an internal source of funding and can be used to meet its short-term obligations. A high level of liquidity should be supported with adequate cash holdings. Too little cash holdings increases the risk of default for the company in paying off its short-term obligations and meeting its operational needs.

Nafees, et. al. [4], Elnathan and Susanto [18], and Davidson and Rasyid [19] found the significant positive influence between liquidity and cash holdings, but Abdioglu [20], Chireka and Fakoya [21], and Jebran, et. al. [22] found a significant negative influence. Meanwhile, Suherman [23] and Zulyani and Hardiyanto [24] found that liquidity does not affect cash holdings.

H_2: Liquidity positively affects cash holdings

Net Working Capital

As per the trade-off theory, there is an inversely proportional relationship between net working capital and cash holdings [6]. Net working capital includes company assets that are liquid after cash and cash equivalents because they can be converted into cash quickly with low conversion costs [5]. Thus, net working capital can serve as a substitute for cash in the hands of existing companies [6], [7].

Net working capital does not take long to convert into cash. Thus, the greater the value of net working capital results in the smaller cash holdings. Guizani [6], Tayem [7], Aftab, et. al. [17], Jason and Viriany [25], and Sitorus [26] found significant positive influence of net working capital towards cash holdings.

H_3: Net working capital negatively affects cash holdings

Firm Size and Cash Holdings

In pecking order theory, firm size can exert the effect of increasing cash holdings. Large companies have diversified business activities, so they have the ability to generate more stable cash flows. By having more stable cash inflows, large companies can have greater cash holdings.

A number of studies have found that firm size has a positive influence on cash holdings, such as the results from Guizani [6], Romadhoni, et. al. [9], Irwanto, et. al. [3], Alicia, et. al. [8], and Jebran, et. al. [22]. In contrast, Tayem's [7] and Suherman's [23] research concluded that firm size negatively influences cash holdings, while Sitorus [26] and Jovanca, et. al. [27] found firm size had no effect on cash holdings.

H_4: Firm size positively affects cash holdings

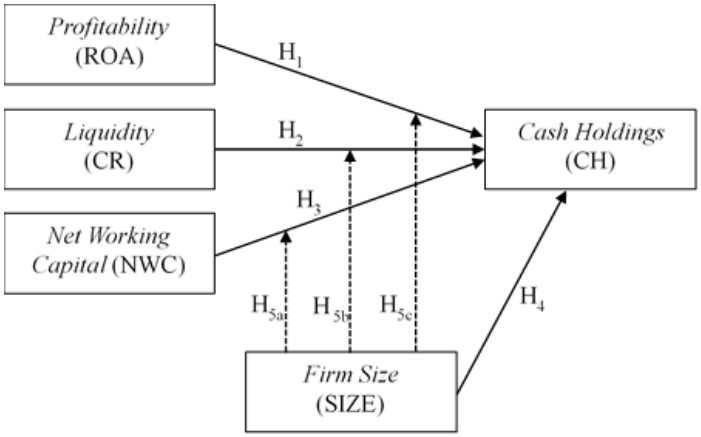

Figure 3 Research Model

Moderation of Firm Size

The financial performance of large companies tends to be better than small companies because large companies have more resources. In pecking order theory, the larger the size of a company, the greater the company's chance to have cash holdings in the larger amount. Large companies tend to have more stable operations and more stable cash inflows than small companies. With a high level of profitability, large companies will be able to have large cash holdings to maintain liquidity and operational activities. However, cash holdings can also be used by large companies to add non-cash assets, so that the larger a company will also have large non-cash assets.

The larger the company, the higher the amount of cash holdings owned by the company. Rahman [28] in his research found firm size was able to moderate the influence of profitability and net working capital on the amount of cash holdings, but could not moderate the effect of liquidity. Ridha, et. al. [29] also found that firm size can moderate the relationship of profitability with cash holdings. If firm size gets bigger, then the company's ability to generate profits will increase which will encourage an increase in cash holdings [29].

H_5: Firm size can moderate the relationship of profitability, liquidity, and net working capital with cash holdings.

The hypotheses developed in this study is described in the research model in **Figure 3**.

3. METHODOLOGY

The data used is secondary data derived from the historical financial statements of manufacturing companies registered in IDX for 2017-2019. All data used is accessed through the company's website and IDX website [30]. Sampling method with purposive sampling and the sample data processed with EViews 10. The sample criteria are manufacturing companies registered in IDX consecutively during 2017-2019, do not conduct IPOs, do not delist or be suspended during the observation year, and do not experience losses in any of the research periods.

The test consists 367escriptivee statistical tests, multicollinearity tests, hypothesis tests (t tests and F tests), and determination coefficient (R2) tests. Dependent and independent variables can be seen in **Table 1**. The size of the company is also a moderation variable.

Table 1 Variable Operational Summary

Variable		Measurement	References
Cash Holding (CH)	Y	$\frac{\text{Cash and Cash Equivalent}}{\text{Total Assets}}$	Guizani (2017), Jebran, et. al. (2019)
Profitability (ROA)	X_2	$\frac{\text{Net Income}}{\text{Total Assets}}$	Romadhoni, et. al. (2019), Irwanto, et. al. (2019)
Liquidity (CR)	X_3	$\frac{\text{Current Liabilities}}{\text{Current Assets}}$	Nafesh, et. al. (2017), Davidson & Rasyid (2020)
Net Working Capital (NWC)	X_4	$\frac{\text{Current Assets} - \text{Current Liabilities} - \text{Cash and Cash Equivalent}}{\text{Total Assets}}$	Guizani (2017), Aftab, et. al. (2018)
Firm Size (SIZE)	X_1	*Ln Total Assets*	Guizani (2019), Romadhoni, et. al. (2019)

This study used two analyses: multiple regression analysis and moderation regression analysis shown with two equations. The first equation is:

$$\mathbf{CH = a + b_1\,ROA + b_2\,CR + b_3\,NWC + b_4\,SIZE + e} \quad \textbf{… (1)}$$

The second equation is:

$$\mathbf{CH = a + b_1\,ROA + b_2\,CR + b_3\,NWC + b_4\,SIZE + b_5\,ROA*SIZE + b_6\,CR*SIZE + b_7\,NWC*SIZE\ e} \quad \textbf{… (2)}$$

4. RESULTS AND DISCUSSIONS

Descriptive-Statistics Tests

Descriptive statistics (see **Table 2**) show that CR and SIZE variables have standard deviation values that are lower than their average values. This means a low variation in CR variables from the sample company. Conversely, cash holding, ROA, and net working capital variables have an average value that is higher than the standard deviation value which means the high variation of these variables.

Table 2 Descriptive Statistical Test Results

	CH	ROA	CR	NWC	SIZE
Mean	0.117537	0.085358	2.734780	0.130592	28.71111
Median	0.073639	0.055065	1.963076	0.138105	28.54084
Maximum	0.723993	0.920997	21.70452	0.819643	33.49453
Minimum	0.000864	0.000282	0.049815	-0.906819	25.79571
Std. Dev.	0.130156	0.108600	2.337654	0.197008	1.563497

Source: Data results with Eviews 10 (2021)

Multicollinearity Test

The results of the multicollinearity test showed that the correlation coefficient result for each variable against the other variable was below 0.80 which means in this study there was no multicollinearity (see **Table 3**)

Table 3 Multicollinearity Test Results

	ROA	CR	NWC	SIZE
ROA	1.000000	0.074714	-0.037965	0.125074
CR	0.074714	1.000000	0.488227	-0.279874
NWC	-0.037965	0.488227	1.000000	-0.197298
SIZE	0.125074	-0.279874	-0.197298	1.000000

Source: Data results with Eviews 10 (2021)

Chow Test and Hausman Test

The probability of the Chow test result for the two equations indicates a cross-section chi square value of 0.000 which means the fixed effect model is a better estimation model. The probability value of the Hausman test result for equation one is 0.0001 and equation two is 0.0003. Both values are smaller than 0.05 which means the better estimation model is the fixed effect model (see **Table 4**) [31].

Table 4 Chow Test and Hausman Test Results

Equations	Chow Test		Hausman Test	
	Cross-section Chi-square	Results	Cross-section random	Results
Equation 1	Prob. = 0,0000	*Fixed Effect Model*	Prob. = 0,0001	*Fixed Effect Model*
Equation 2	Prob. = 0,0000	*Fixed Effect Model*	Prob. = 0,0003	*Fixed Effect Model*

Source: Data results with Eviews 10 (2021)

Regression Test Results

Based on the results of the multiple regression test (see **Table 5**) shows the multiple regression equations formulated as follows:

CH = -0.341266 + 0.089117 ROA + 0.010769 CR – 0.211846 NWC + 0.015653 SIZE + e

The probability value of F Statistic is 0.000000 less than 0.05, meaning the regression model in this study meets the goodness of fit. It can be concluded that profitability, liquidity, net working capital, and firm size together have a significant influence on cash holdings. The results of the determination coefficient test in **Table 5** showed an adjusted R Square of 0.887270. This figure shows 88.73% of the value of cash holdings can be influenced by profitability, liquidity, net working capital, and firm size, and the remaining 11.27% influenced by other factors that were not tested in this study.

Table 5 Multiple Regression Test Results

Total panel (balanced) observations: 216

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.341266	0.754663	-0.452210	0.6518
ROA	0.089117	0.052423	1.699955	0.0914
CR	0.010769	0.003285	3.277654	0.0013
NWC	-0.211846	0.032219	-6.575109	0.0000
SIZE	0.015653	0.026277	0.595693	0.5523
R-squared		0.926594		
Adjusted R-squared		0.887270		
F-statistic		23.56273		
Prob(F-statistic)		0.000000		

Source: Data results with E-views 10 (2021)

The Effect of Profitability on Cash Holdings

Profitability in this study has a positive coefficient value of 0.089117. Profitability as measured by ROA exerts a positive influence on cash holdings but is not significant as indicated by the probability value of 0.0914 which is greater than 0.05. H_1 which states the probability positively affect cash holdings is rejected. A coefficient value of 0.089117 means a one-unit increase in profitability rate will only increase the amount of cash holdings by 8.91% of the profits the company makes. This value means that the level of profitability has no significant effect on cash holdings.

The results in this study can be interpreted that the high level of profit generated by the company has not been utilized to increase the company's internal funding. Increased profits and cash inflows for companies are more utilized to add non-cash assets and not as reserve funds, so the addition of cash holdings is not significant. The results of this study can also be concluded that the increase in company profits are used as a source of funds to conduct business development and dividend distribution to shareholders so that the increase in the amount of cash in the hand is not significant [9].

The results of this study are in line with Romadhoni, et. al. [9] and Guizani [6], but not in line with Irwanto, et. al [3] that found a significant positive relationship between profitability and cash holdings, and Aftab, et. al. [17] that found the opposite result where increase in profitability will decrease cash holdings.

The Effect of Liquidity on Cash Holdings

In this study, liquidity has a coefficient value of 0.010769 with a significance level of 0.0013 which is below 0.05. This means that H_2 is acceptable. This value indicates that an increase in liquidity will increase cash holdings significantly. These results indicate that the company reserves sufficient amount of cash holdings to meet its short-term obligations and may have excess cash holdings to finance its operations.

In pecking order theory, the level of profit and liquidity has a directly proportional relationship. If the company has a profitable performance, then the company will be able to maintain its liquidity level. The profits a company generates can be an internal source of funding and can be used to meet its short-term obligations. However, a high level of liquidity should be supported with adequate cash holdings. If the amount of cash holdings in the

company's current assets is too little, it increases the risk of default for the company in paying off its short-term obligations.

The results of this study are in line with Nafees, et. al. [4], Elnathan and Susanto [18], and Davidson and Rasyid [19]. Their research found the higher the level of liquidity, the greater the amount of cash holdings. The results of this study are not in line with Abdioglu [20], Chireka and Fakoya [21], and Jebran, et. al. [22] which stated a significant negative influence of liquidity on cash holdings. The results of this study also contradict Suherman [23] and Zulyani and Hardiyanto [24] that found no significant effect of liquidity on cash holdings.

The Effect of Net Working Capital on Cash Holdings

Net working capital in this study has a negative coefficient value of -0.211846 and a probability value below the significance level of 0.05 which is 0.000. This means that Ha3 is acceptable. These results suggest that net working capital is giving negative effect and may lower the amount of cash holdings significantly.

A coefficient value of -0.211846 indicates that any increase of one unit in net working capital will decrease the amount of cash holdings by 21.18%. These results are in line with trade off theory which indicates an increase in the company's net working capital will have a significant negative influence on the amount of cash holdings. The company believes that the existence of large net working capital can be utilized in operations to generate profits but can be quickly converted into cash if the company has sudden cash needs. So that the need for the amount of cash holdings can be replaced by the existence of non-liquid assets (net working capital) in the company.

The results of this study support the results of previous studies conducted by Guizani [6], Tayem [7], Aftab, et. al. [17], Jason and Viriany [25], and Sitorus [26]. The results of previous studies showed that the greater the net working capital, the smaller the amount of cash holdings.

The Effect of Firm size on Cash Holdings

Regression test results showed firm size had a positive coefficient value of 0.015653. However, the results of the study also showed a probability value of 0.5523 which was greater than the significance level value (α) of 0.05. H_4 which stated firm size positively affect cash holdings is unacceptable. Although firm size a positive influence on the amount of cash holdings but has no significant effect.

In pecking order theory, firm size can exert the effect of increasing the amount of cash holdings. The greater the company, the greater the opportunity for the company to use the resources it has to make a profit. The profits generated will be a steady source of cash inflows so that large companies have the opportunity to have greater cash reserves in hands. Cash holdings can be an internal source of funding for the company. So that the larger the company, the higher the amount of holdings.

The results of this study are not in line with the pecking order theory which shows that increasing in firm size cannot increase the amount of cash holdings significantly. The coefficient value of 0.015653 indicates that an increase in firm size as measured by an increase in the number of assets by one unit will only increase the amount of cash holdings

by 0.015653 or only by 1.57%. This results show that firm size can not be a significant factor that encourages the increase in cash holdings.

Large companies with a high number of assets have the opportunity to have large profits and cash inflows that are used to increase of non-cash assets rather than keep them as reserve funds. Large companies assume that non-cash assets can be converted at any time into cash if needed. So that the larger of firm size does not directly guarantee the cash holdings will be large as well.

The results of this study are in line with the results of research from Sitorus [26] and Jovanca, et. al. [27] which found that firm size had no effect on cash holdings. Guizani [6], Romadhoni, et. al. [9], Irwanto, et. al. [3], Alicia, et. al. [8], and Jebran, et. al. [22] found that firm size had a significant positive influence on cash holdings. In contrast, Tayem's [7] and Suherman's [23] concluded that firm size had a negative influence.

Moderation of Firm size on Cash Holdings

Table 6 showed moderation regression test results with the following equation:

CH = 0.214108 – 3.298628 ROA – 0.227374 CR + 0.653331 NWC – 0.005205 SIZE + 0.123206 ROA*SIZE + 0.008813 CR*SIZE – 0.031612 NWC*SIZE + e

Table 6 Moderation Regression Test Results

Total panel (balanced) observations: 216

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.214108	0.767444	0.278989	0.7807
ROA	-3.298628	1.567779	-2.104014	0.0372
CR	-0.227374	0.106142	-2.142161	0.0339
NWC	0.653331	1.019375	0.640913	0.5226
SIZE	-0.005205	0.026825	-0.194020	0.8464
ROA_SIZE	0.123206	0.057107	2.157455	0.0327
CR_SIZE	0.008813	0.003951	2.230317	0.0274
NWC_SIZE	-0.031612	0.036334	-0.870024	0.3858
R-squared	0.931275			
Adjusted R-squared	0.892147			
F-statistic	23.80074			
Prob(F-statistic)	0.000000			

Source: Data results with EViews 10 (2021)

By including the interaction of firm size on the relationship between profitability and cash holdings, it was found that the negative effect of profitability turned into positive effect with a coefficient value of 0.123206 and a significance level of 0.0327 which was lower than 0.05. These results show that firm size is able to moderate the effect of profitability on cash holdings significantly. The results of the moderation test in this study were in line with those found by Ridha, et. al. [29] and Rahman [28]. The larger a company with higher level in profitability will drive an increase in the amount of cash holdings.

The same result was found in the interaction of firm size on the relationship between liquidity and cash holdings. The negative relationship of liquidity changed to positive indicated from the coefficient value of 0.008813 and the significance level of 0.0274 which is below 0.05.

Firm size can moderate the effect of liquidity on holdings. If the size of the company increases, then companies with a high level of liquidity will increase the amount of cash holdings. However, the results of moderation in this study are not in line with Rahman's study which found that firm size did not moderate the relationship of liquidity with cash holdings [28]. This is allegedly because the company has a large source of external funding so it does not require high cash holdings [28].

The interaction of firm size to the net working capital relationship with cash holdings indicates a significance level of 0.3858 greater than the significance level of 0.05 with a coefficient value of -0.031612. These results indicate that firm size is insignificant in moderating the influence of net working capital on the amount of cash holdings. An increase in net working capital will decrease the amount of cash holdings but not be affected by firm size. If a company decides to make an investment by increasing the amount of non-cash assets, then the decision will have an impact on reducing the amount of cash holdings. The results of this moderation are not in line with Rahman [28] who found firm size moderates the influence of net working capital on cash holdings.

5. CONCLUSION

Data analysis showed that profitability and firm size have no significant effect on determining the amount of cash holdings. Meanwhile, an increase in liquidity indicates it can increase the amount of cash holdings significantly and an increase in net working capital will decrease the amount of cash holdings significantly.

A boost in profit rates and increases in firm size can be an opportunity for companies to gain additional stable cash inflows. However, additional cash inflows are utilized by the company not to add liquid assets in the form of cash reserves in the hand, but used to make profitable investments or add non-cash assets. Meanwhile, the company believes that the increase in liquidity should be supported by an adequate amount of cash holdings. Then, the existence of large net working capital can be utilized in operations to generate profits but can be quickly converted into cash if the company has sudden cash needs. So that the need for the amount of cash holdings can be replaced by the existence of non-liquid assets.

The results of moderation tests showed that firm size is able to moderate the influence of profitability and liquidity on the determination of cash holdings. The larger the size of the company, the increase in profitability and liquidity will drive a significant increase in the amount of cash holdings. Meanwhile, firm size cannot moderate the influence between net working capital and the determination of the amount of cash holdings.

The results of this study need attention from investors, especially those related to the decision to use funds to be made by the company. The use of funds by the company can be used for profitable investments or adding non-cash assets, but the decision will have the effect of lowering the amount of cash holdings even though the company can be categorized as a large company.

The results showed that there was still an 11.27% determination of cash holdings that were influenced by factors beyond the factors tested and analyzed in this study. Therefore, for further research can be added other factors that are suspected to affect the determination of cash holdings. The existence of corporate governance mechanisms in the company could be a

form of supervision to the company's management in deciding the amount of cash holdings in the company.

This study only took samples from manufacturing companies that during the pandemic experienced a large decline in performance. Further research can be done by taking samples of companies from the pharmaceutical industry, tourism industry, or from other industries that are also affected by the Covid-19 pandemic.

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