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DETERMINANTS OF CORPORATE CASH HOLDINGS DURING CRISIS PERIOD

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Abstract: This study aims to empirically analyze the determinants of cash holding in manufacturing companies within two specific industry sector in Indonesia: the Consumer Goods industry sector and Automotive sector in 2019-2021 period. The objective of the study is likely to understand the factors that influence the amount of cash that manufacturing companies in these sectors hold during a time of economic uncertainty and disruption. Cash holdings can serve as a buffer against financial distress, allowing companies to cover operational expenses, debt obligations, and investment opportunities, especially during times of crisis like the COVID-19 pandemic. The selected determinants include Firm Size, Leverage using Debt to Assets Ratio, Debt to Maturity Structure, and Probability of Financial Distress.This study took 134 data observations as a sample using purposive sampling technique. Hypothesis testing is done using multiple linear analysis using Eviews 12 software as a data processing. The results of this study concluded that Firm Size has no effect on Cash Holding, Big companies don't need to hold a lot of cash because they are able to carry out business activities more efficiently which is more profitable. Leverage, which is calculated using the Debt to Asset Ratio, has a significant negative effect, with debt the company has an obligation to pay interest expenses and loan principal so that the cash owned by the company will be reduced to pay off these obligations. Debt to Maturity Structure has a significant negative effect on Cash Holding, when companies with a greater proportion of short-term debt will maintain higher cash to avoid the financial pressures faced if their loans fail to be extended. Probability of Financial Distress has a significant effect on cash holding, when companies face financial distress it will cause companies to hold more cash and vice versa.

Keywords: *Corporare Cash Holding, Firm Size, leverage, Debt Maturity Structure, Probability of Financial Distress*

1. Introduction

The Covid-19 pandemic has a wide impact on health and the economy, not only in Indonesia but globally. Minister of Finance (Menkeu) Sri Mulyani Indrawati said that the risk of the world economy has shifted since the Covid-19 pandemic, now the risk comes from global economic

pressures, such as the risk of stagflation, global financial market uncertainty, inflationary pressures, and geopolitical situations. The Director of PT Garudafood Putra Jaya Tbk (GOOD) once said that his party saw that the business prospects in the third quarter of 2020 were still affected by the effects of the Covid-19 outbreak so that the business could not recover as usual. The decline in performance was also experienced by PT Kino Indonesia Tbk (KINO). Quoting the financial report for the first semester of 2020, KINO recorded a net profit of Rp.118.64 billion, down 67.52% compared to the first semester of 2019 which reached Rp.365.29 billion.Automotive companies, whether listed or not on the Indonesia Stock Exchange (IDX), have been severely affected during the Covid-19 pandemic. In 2020, wholesales sales of the automotive industry in Indonesia only reached 530 thousand units. This figure dropped by 50% from normal due to the very limited mobility of people and goods. The situation improved as the Covid-19 cases subsided in the country. In the first semester of 2022, for example, a number of automotive companies managed to score an encouraging performance. Motor vehicle sales figures also crept up.

Data from the Central Statistics Agency (BPS) for Exports and Imports 2020, Indonesia's export value in August 2020 reached US$13.07 billion, a decrease of 4.62 percent compared to July 2020 exports. Meanwhile, compared to August 2019, it decreased by 8.36 percent.This data reflects the economic impact of the COVID-19 pandemic on Indonesia's international trade. The percentages indicate how much these values have changed in the specified time frames. Non-oil and gas exports in August 2020 reached US$12.46 billion, down 4.35 percent compared to July 2020. Meanwhile, compared to non-oil and gas exports in August 2019, it decreased by 7.16 percent. Indonesia's import value in August 2020 reached US$10.74 billion, up 2.65 percent compared to July 2020, but compared to August 2019, it fell 24.19 percent. Non-oil and gas imports in August 2020 reached US$9.79 billion or increased 3.01 percent compared to July 2020, but compared to August 2019 decreased 21.91 percent. Oil and gas imports in August 2020 were valued at US$0.95 billion, down 0.88 percent compared to July 2020. Likewise, compared to August 2019, it decreased by 41.75 percent. These figures highlight the trends in non-oil and gas trade activities, both in terms of exports and imports, as well as the more pronounced decline in oil and gas imports. These changes likely reflect the broader economic impact of the pandemic, including disruptions in supply chains, changes in consumer behavior, and fluctuations in global demand.

Meanwhile, from data from the Central Bureau of Statistics related to the import- export economy in Indonesia in 2021, Indonesia's export value in April 2021 reached US$18.48 billion, a slight increase of 0.69 percent compared to exports in March 2021. Compared to April 2020, the export value increased significantly by 51.94 percent. Non- oil and gas exports in April 2021 reached US$17.52 billion, up 0.44 percent compared to March 2021. All companies compete in maintaining their business existence. Efficient cash management is one way for companies to maintain their business. Cash is very important in the company. Without good cash management, a company cannot run its business and other activities. The company will not be able to generate profits if the company's own activities do not run due to the absence of company cash. So Cash Holding is one of the important things as a life support for the company. Because it can play an important role when the company experiences Financial Disstress. Cash holding is one of the

benchmarks used to determine the financial performance and potential of a company. According to Bates et al. (2009) there are several reasons why companies increase their cash. One of them is the transaction motive which explains Maintaining cash for transaction purposes ensures that daily operations run smoothly without interruptions due to cash shortages. This is especially important for businesses that rely on just-in-time inventory management or have recurring operational expenses.

2. Underlying Theory

The focal point of Trade-off Theory is related to the benefits and costs developed by Modigliani and Miller (1963). Trade-off theory explains the optimal level of cash holding in the company. Trade-off theory can also be interpreted as a capital structure theory that shows that corporate leverage is determined by exchanging the tax-saving benefits of debt funding with problems arising from potential bankruptcy (hengjie, Murray and Ali, 2021). In the trade-off theory framework, it is examined that the target debt ratio will differ from one company to another. This theory avoids extreme predictions and rationalizes the debt ratio (Brealey, Myers, and Marcus, 2012). In the context of cash holding, the Trade-off Theory suggests that companies need to find the optimal balance between holding excess cash for financial flexibility and investing excess cash to generate returns. Holding cash provides liquidity and the ability to manage unforeseen circumstances, but it also comes with an opportunity cost since cash is not generating returns like other investment might .

Firm Size and Cash Holdings

In research conducted by Woen Cliff Wibowo and Sugeng Wahyudi stated that Firm size has a negative effect on Cash holding and significance at the 10% level. This is in accordance with the theory of economies of scale (Miller & Orr, 1966); which states that large companies have economies of scale capabilities that make their operations more efficient. As a result, large companies do not need to hold a lot of money because they are able to run business activities more efficiently; and existing cash can be used for other profitable investments. While other researchers such as (Drobetz and Gruninger, 2006) and Ahmed et al., 2018 state that Firm Size has a positive influence on Cash Holdings.

The size of the company can determine the level of difficulty experienced by the company when entering the capital market to obtain external funding sources. There are generally fewer constraints experienced in the capital market by large companies. Compared to small companies, large companies are more likely to engage in investment activities. Small companies are generally more afraid of the risks they will face when investing. Thus, the level of investment in small companies tends to be lower. The existence of sufficient cash is needed to support investment activities to run effectively and efficiently. H1: Firm Size has a positive influence on Cash Holding.

Leverage and Cash Holding

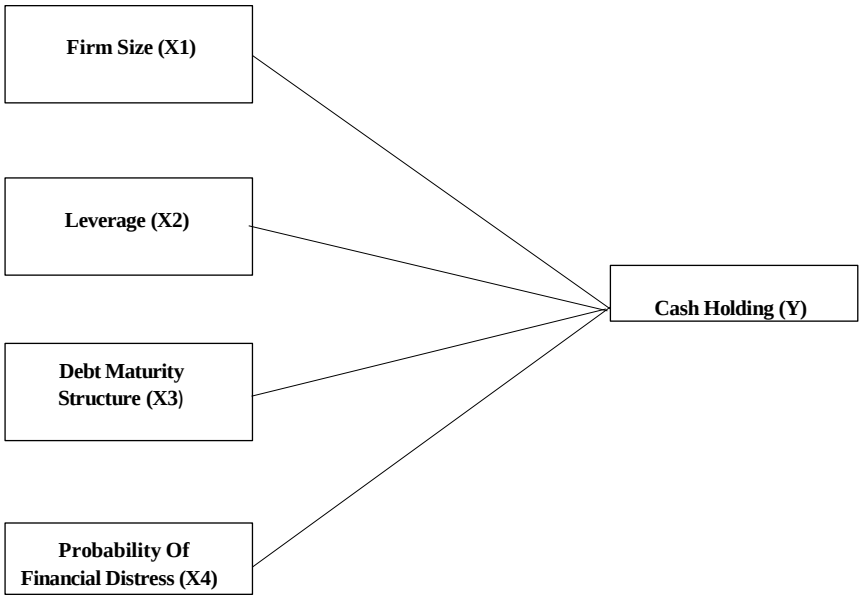
In research conducted (Angelia & Dwimulyani, 2019) states that cash holding is influenced by the company's leverage because when the company pays its obligations, it will affect the company's cash in accordance with accounting principles, namely if Liability decreases, the value of Assets will also decrease, assets here can be interpreted as company cash. In research (Alicia, Putra, Fortuna, Felin, & Purba, 2020) states that leverage has a positive effect on cash holding. Highly leveraged companies generally maintain lower cash holdings because they have higher interest rates on debt.

A high level of leverage can be a sign that the company can access the debt market more easily, so that the company does not need to hold more cash. A high level of leverage can be a sign that the company can access the debt market more easily, so the company does not need to hold more cash. Leverage can act as a substitute for cash. Companies with high debt ratios have low cash reserves because they have to pay their debt installments plus interest and cash utilization can also be used as a profitable investment for the company.
H2: Leverage has a positive influence on Cash Holding

Debt Maturity Structure and Cash Holding
According to (Hujie, 2019) Cash Holding and Debt to Maturity Structure are significantly negatively correlated. This means that the more short-term debt the company has, the greater the cash holdings. This means that the company is able to mitigate the risk of refinancing due to short-term debt through more cash holdings. Second, the company's cash holding decision is significantly influenced by monetary policy. When monetary policy is tightened, listed companies will be cautiously motivated and increase cash holdings; third, the longer the debt maturity of the company, the lower the refinancing risk, the less cash holdings of issuers with longer debt maturities during the period of tightening monetary policy; and finally, compared to state-owned enterprises, cash holdings of state-owned enterprises are more influenced by debt maturity structure and monetary policy. Thus, companies prefer to use long-term debt rather than spending their cash on asset purchases.

In the research of Matthias Nnadi et al (2019) and Umry, M. A (2018) mentioned that the significant positive effect on debt maturity indicates that the level of cash holdings increases with debt maturity. Although this contradicts the argument of Harford et al. (2014) that firms with shorter debt maturities can hold larger cash balances to reduce refinancing risk, Sun (2014) argues that firms can simultaneously borrow long- term debt and keep cash inventories when they expect to face uncertain future financing conditions. This finding is consistent with Brick and Liao (2016).
H3: Debt Maturity Structure has a positive influence on Cash Holding

Probability of Financial Distress on Cash Holding
According to Umry, M. A (2018) in his research states that there is a positive influence between Financial Distress and Cash Holding. Trade Off Theory is related to benefits and costs according to Modigliani and Miller (1963). This theory argues that the optimal cash level considers the opportunity cost arising from cash holding and the benefits obtained from these activities. Opportunity costs occur because companies prefer to hold their cash compared to investing in any investment that can be profitable. The impact of holding cash is due to non-optimal profits due to little investment made by the company. The benefits of holding certain cash, namely reducing the Probabilty of Financial distress and minimizing asset liquidation costs (Ferreira &; Vilela, 2004) in the book Research Anthology on Strategies for Maintaining Succesful Family Firms (2022).
H4: Probability of Financial Distress has a positive influence on Cash Holding



3. Methodology

Research Object. This research is focused on all manufacturing companies listed on the Indonesia Stock Exchange for the 2019-2021 period whose financial reports are obtained from www.idx.co.id. Hypothesis testing was carried out using multiple linear regression analysis using Eviews 9 software as a data processor. The sample selection was carried out by purposive sampling method with the criteria determined in the sampling of this study, namely: (1) Manufacturing companies in the Consumer Goods industry sector and the Food and Beverage Sub-sector as well as Automotive which are consistently listed on the Indonesia Stock Exchange (IDX). (2) Manufacturing companies that present audited financial reports as of December 31. (3) Manufacturing companies that present financial statements using rupiah currency. The number of samples used in this study was 134 data.

The dependent variable in this study consists of the independent variables firm size, leverage, Debt Maturity Structure, and Probability on Financial Distress, and cash holding as the dependent variable. Cash holding in this study uses the Cash Ratio (CR) proxy, or which according to (Trinh and Mai, 2016) can be formulated as follows:

Statistical Test Results

Descriptive statistical tests have the aim of describing the variables by calculating the minimum, maximum, mean and standard deviation values. Based on the results of descriptive analysis, cash holding has a median of 0.057528, a mean of 0.106392, a maximum value of 0.621063, a minimum value of 2.69 and a standard deviation value of 0.125187. Firm Size has a median value of 26.80209, a mean of 25.22035, a maximum value of 33.49453, a minimum value of 12.95702 and a standard deviation of 4.842551. Leverage (DAR) has a median value of 0.231849, a mean of 0.342556, a maximum of 8.2077, a minimum of 0.0030 and a standard deviation of 0.718931. Debt to Maturity Structure has a median value of 0.327624, a mean of 0.361469, a maximum of

0.9591, a minimum of 0.00000 and a standard deviation value of 0.228203. Financial Distress has a median value of 0.913213, a mean of 1.528868, a maximum of 12.8044, a minimum of 0.0313 and a standard deviation of 2.129544.

Chow Test

The chow test is conducted to compare or choose which is best between the Common Effect Model or the Fixed Effect Model. Decision making by looking at the probability value (p) for Cross-Section F. If the p value> 0.005 then the selected model is the Common Effect Model. But if p < 0.05 then the model chosen is the Fixed Effect Model.

Table 1. Chow Test Results

Effects Test	Statistic	d.f.	Prob.
Cross-section F	21.503563	(44,85)	0.0000
Cross-section Chi-square	334.43522	44	0.0000

Based on the Chow test table above, both Cross Section F and Chi square probability values are smaller than Alpha 0.05, thus rejecting the null hypothesis. So it shows fixed effect, the best model to use is the model with fixed effect method. Based on the Chow test results that reject the null hypothesis, the data testing continues to the Hausman test.

Hausman test

The Hausman test is conducted to compare or choose which is the best model between the Fixed Effect Model and the Random Effect Model. Decision making by looking at the probability value (p) for Cross Section Random. If the p value> 0.05 then the selected model is the Random Effect Model. But if p < 0.05 then the model chosen is the Fix Effect Model.

Table 2. Hausman Test Results

Test Summary		Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	3.311318	4	0.5071	

The test results show a significance result of 0.5071 which means p>0.05, so the selected model is the Random Effect Model (REM).

LM (Lahrange multiplier) test

LM test to find out the Random Effect model is better than the Common Effect (OLS) method and is also used to ensure that the Fixed Effect and Random Effect results models are inconsistent in the previous test.

Table 3. LM Test Results

	Test Hypothesis		
	Cross-section	Time	Both
Breusch-Pagan	98.12454	0.565807	98.69035
	(0.0000)	(0.4519)	(0.0000)
Honda	9.905783	-0.752201	6.472560
	(0.0000)	(0.7740)	(0.0000)
King-Wu	9.905783	-0.752201	1.329831
	(0.0000)	(0.7740)	(0.0918)
Standardized Honda	10.30933	-0.423387	2.282986
	(0.0000)	(0.6640)	(0.0112)
Standardized King-Wu	10.30933	-0.423387	-0.778151
	(0.0000)	(0.6640)	(0.7818)
Gourieroux, et al.	--	--	98.12454
			(0.0000)

From the output results above, it can be seen that the prob value. Breusch-Pagan (BP) of 0.0000 is smaller than alpha 0.05, thus rejecting the null hypothesis. So based on the Lm test above, the best model to use is the Random effect Model. Based on the results of the research conducted, the researcher tries to provide the main points of research findings as a whole. The results of multiple regression analysis, it can be concluded that the regression model equation is:

Cash ratio = 0.243052 -0.058375SIZE - 0.075809DAR - 0.169445DMS + 0.026996FD + e

The F statistical test is used to determine whether the regression model can be used as a predictive analysis. The F statistical test is also the initial stage of identifying whether the estimated regression model is feasible or not.

Table 4. F Statistical Test

Results
Prob(F-statistic)
0.000006

Based on table 3 above, the significance of the F statistical test is 0.000006 <0.005. These results indicate that the regression model in this study is feasible to be used to explain the effect of Firm Size, Leverage (DAR), Debt to Maturity Structure, and Probabilty of Financial Distress on cash holding. The t test (partial) is a test used to test the relationship individually between the independent variable and the dependent variable. To test the null hypothesis is rejected or accepted, the starting point is if prob> 0.05, it indicates that the independent variable has no significant effect on the dependent variable individually.

Table 5. Results of the t Statistical Test

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.243052	0.143392	1.695022	0.0925
Firm Size	-0.058375	0.044807	-1.302827	0.1950
Debt to Assets Ratio	-0.075809	0.014043	-5.398435	0.0000
Debt Maturity Strcuture	-0.169445	0.052764	-3.211382	0.0017
Financial Distress	0.026996	0.011622	2.322751	0.0218

The results of table 5 show that the constant value obtained from the multiple linear regression equation is 0.243052. This value indicates that if firm size as X1, Debt to Assets Ratio as X2, Debt Maturity Strcuture as X3, and Financial Distress as X4 have a value of zero or constant, then the value of cash holding (Y) is 0.243052 units. The regression coefficient (β) of the firm size variable is -0.058375. This value indicates that if the firm size value increases by one unit, the cash holding value will decrease by 0.058375. The regression coefficient (β) of the leverage variable (DAR) is -0.075809. This value states that if the leverage value (DAR) increases by one unit, the cash holding value will decrease by 0.075809. The regression coefficient (β) of the Debt to Maturity Structure variable is -0.169445. This value indicates that if the profitability value increases by one unit, the cash holding value will decrease by 0.075809. decreased by 0.169445. The regression coefficient (β) of the Probability of Financial Distress variable is 0.026996. This value states that if the Probability of Financial Distress value increases by one unit, the cash holding value will increase by 0.026996.

Based on the results of statistical testing and hypothesis testing that has been done, it shows that (X1) Firm size has no effect on cash holding. Leverage (DAR) has a negative influence on cash holding. Leverage (X2) has a significance level of 0.000. The significance value is lower than the significance level of 0.05 (5%). Therefore, it shows that Leverage affects cash holding. Debt to maturity Structure has a t value of -3.211382 with a significance level of 0.0017. The significance value is lower than the significance level of 0.05 (5%). This means that debt maturity structure

affects cash holdings. Probability of financial distress (X4) has a t value of 2.322751 with a significance level of

0.021. The significance value is lower than the significance level of 0.05 (5%). Therefore, it shows that the probability of financial distress affects cash holdings.

Discussion

Based on the results of statistical testing and hypothesis testing that has been carried out, it shows that (X1) Firm size has no effect on cash holding. The results of this study are consistent with research (Trinh and Mai, 2016; Chireka and Fakoya, 2017). The results of this study are inconsistent with research conducted by (Ahmed et al., 2018; Arata et al., 2015; Magerakis et al., 2015; Le et al., (2018) The results of this hypothesis are not in accordance with the theory of economies of scale (Miller & Orr, 1966); which states that large companies have economies of scale that make their company operations more efficient. As a result, large companies do not need to hold much cash because they are able to carry out business activities more efficiently and the existing cash can be used for other profitable investments.

Leverage (DAR) has a negative effect on cash holding. These results are consistent with research conducted by (Magerakis et al., 2015; Ahmed et al., 2018). The results of this study are inconsistent with research conducted by (Arata et al., 2015; Chireka and Fakoya, 2017; Le et al., 2018). Leverage (DAR) has a negative effect on cash holding and is significant. This is in accordance with agency theory (Jensen, 1986); which claims that debt can be a control tool in managing cash. With debt, the company has an obligation to pay interest expenses and loan principal so that the cash owned by the company will be reduced to pay off these obligations. It can be concluded that hypothesis 2 in this study is supported.

Debt to maturity structure affects cash holdings. These results are in line with research conducted by Harford et al. (2014) Shabbir et al. (2016) and Umry, M. A and diantimala (2018) who found empirically that the debt maturity structure affects cash holdings. The results obtained from this study support the expected hypothesis. Therefore, it is evident that firms with large long-term debt will retain a smaller amount of cash as they will not face financial pressure due to not much borrowing. Therefore, when firms with a larger proportion of short-term debt will retain higher cash to avoid the financial stress faced if their loans fail to renew. This suggests a negative relationship between debt to maturity structure and cash holding.

Probability of financial distress affects cash holdings. These results are supported by Umry, M. A & Diantimala (2018) and Farinha et al. (2018) who investigated the effect of financial distress on cash holdings. They found a positive significance relationship between Financial Distress and Cash holding. The results obtained from this study are in accordance with the expected hypothesis. Therefore, when the company faces financial distress, it will cause the company to hold more cash and vice versa. Ferreira & Vilela (2004) in the book Research Anthology on Strategies for Maintaining Succesful Family Firms (2022) argue that companies experiencing financial distress can increase their cash level to reduce the risk to their company.

4. Conclusions

This study examines empirically the effect of Firm Size, Leverage, Debt maturity Structure, and probability of Financial Distress on the company's cash holdings using hypothesis testing design. Based on the test results, it is known that Firm Size has no influence on Cash Holding. While other variables, namely Leverage, Debt to maturity Structure, have a negative influence on Cash Holding. And the probability of financial distress is positively related on cash holdings. Therefore, this proves that when companies have a greater proportion of long-term debt, it will make them hold less cash. And when firms face financial distress, it will trigger them to hold more cash than usual due to the precautionary motive to effectively handle unexpected events that require cash expenditure. However, this study only uses 4 independent variables as a proxy for cash holding, namely Firm Size, Leverage, Debt to Maturity Structure and Probability of Financial Distress. The author's limitations in data collection are that there are several companies that do not publish their financial reports consecutively in the year used by the author and the author only has a short time in writing to data processing. Meanwhile, there are still many other variables that can be tested to measure the company's cash holding such as growth opportunity, net income, and cash flow, working capital, capital expenditure (CAPEX) and dividend policy. As a recommendation from the author, this research should be extended in the future.

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