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Determinants of Cash Holding: A Study on Manufacturing Companies Listed on the Indonesian Stock Exchange from 2018 to 2021

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ABSTRACT

This research analyzes the influence of COVID-19, leverage, growth opportunity, net working capital (NWC), dividend, and profitability toward cash holding. The population used is all manufacturing companies recorded on the Indonesian Stock Exchange (IDX) for 2018- 2021. Purposive sampling combined with non-probability sampling was used to determine the research sample, which consisted of 69 manufacturing companies. The research hypothesis was tested using the panel data regression analysis method, namely the Random Impact Model. The research results show that COVID-19, growth opportunity, leverage, NWC, dividend, and profitability impact cash holding. At the same time, it was partially found that COVID-19 had an impact on cash holding, leverage had a significant adverse effect on cash holding, growth opportunity had a negative impact on cash holding, NWC and dividends had an insignificant negative impact on cash holding, and profitability has no significant favorable influence on cash holding. Leverage has a substantial detrimental effect on cash holdings, which suggests that businesses with high levels of leverage are at risk of having liquidity issues. Policymakers may consider providing guidelines or support mechanisms for manufacturing firms to strengthen their financial resilience during uncertain periods.

Keywords: Cash Holding; COVID-19; Growth Opportunity; Leverage; Manufacturing Companies

INTRODUCTION

Cash is the foundation of any organization and is crucial to decision-making in all business operations. The most liquid component of a company's current assets and cash is used to finance a range of needs, including funding operational requirements, enhancing performance, and making emergency payments. Therefore, in order to keep the company's cash flow in line with its needs, effective and efficient cash management is required to manage cash availability. An excessive amount of cash on hand can be bad for a business because it can be wasted.

Both benefits and drawbacks may result from a company's substantial cash reserves. A sizable cash reserve will shield the business from the risk of financial distress and enable it to finance unforeseen financing resulting from unfavorable business conditions. Companies that have a lot of cash on hand, however, will miss out on the chance to make more money because they are unable to achieve more revenue. Additionally, if it invests in the company, it will be able to make more money.

Since the company's cash is merely stored, having an excessive amount of cash on hand can lead to weaknesses in the form of missed opportunities for profit and can hurt shareholders by resulting in low stock returns (Wijaya, 2019). The company's stored value will decline if it only keeps its money and makes no investments. For businesses to meet the demands of their operational activities, including debt payments, cash holdings are crucial. A number of variables, such as leverage and profitability, can affect cash holdings.

Cash holding is the cash that exists to meet various company needs. The advantages of holding cash include protecting the company from the risk of financial distress due to fluctuating economic conditions. Besides that, cash holding can provide investment opportunities when financial needs are complex and reduce costs when using external sources of financing (Arfan et al., 2017). A vital component of business financial management is cash holdings, which operate as a buffer against monetary fluctuations and supply liquidity for both strategic and operational endeavors. Because of the capital-intensive character of the sector, the requirement for ongoing investments in technology and gear, and the unpredictability of raw material prices, cash holdings play an even more important role for manufacturing enterprises. Gaining knowledge about the factors that impact cash holdings in this industry may help businesses manage liquidity to strike a balance between risk, growth, and profitability.

Manufacturing businesses on the Indonesian Stock Exchange (IDX) have certain possibilities and difficulties that are influenced by the country's economic climate. Cash management tactics are heavily influenced by variables, including inflation, changing regulatory frameworks, and shifting currency rates. Furthermore, businesses must carefully manage these outside variables while attending to internal financial concerns like debt, profitability, and firm size as Indonesia maintains its position as a Southeast Asian manufacturing powerhouse. The purpose of this study is to investigate the factors that influence cash holdings among manufacturing firms recorded on the IDX. The study looks for trends and connections that influence cash-holding choices in this industry by examining important financial and operational data. With its useful implications for investors, politicians, and business executives in Indonesia's manufacturing sector, these results are anticipated to add to the larger conversation on corporate liquidity management.

The emphasis on manufacturing firms is especially pertinent because of their substantial employment and GDP contributions to Indonesia. Examining the factors that influence cash holdings might help us better understand how these businesses adjust to changes in the economy and preserve their financial stability. Additionally, the knowledge acquired may guide tactics for maximizing financial reserves, guaranteeing stability during unpredictable times, and improving overall business performance.

The COVID-19 outbreak makes countries vulnerable to economic crises and provides challenges for companies and individuals (Fu & Shen, 2021). The risk of corporate default increases with the occurrence of COVID-19. It also influences cash flow and increases the risk of company rollover (Acharya & Steffen, 2020). Corporate liquidity management became a hot topic at the time of COVID-19. Cash holdings play an essential role amidst attacks on COVID-19. This shock increased liquidity risks for many companies, resulting in an unprecedented rise in liquidity demand for impacted companies (Almeida, 2021). According to research by Qin et al. (2021), having huge cash holdings can assist businesses in overcoming possible crisis risks or difficult situations coming from the COVID-19 pandemic. A manager typically raises the aggregate of cash the business has on hand because the situation was uncertain during COVID-19.

Company decisions on cash holdings have been significantly impacted by the COVID-19 epidemic, particularly because of operational risks and economic upheaval. Many businesses increased their cash reserves as a precaution during the pandemic because of supply chain delays, decreased demand, and liquidity difficulties. Maintaining operational continuity, meeting immediate obligations, and preparing for possible revenue deficits all depend on cash retention. Additionally, during times of crisis, corporations are encouraged to enhance their cash reserves in order to lower the risk of failure because they have limited access to external funding, such as bank loans or bond issuance. The COVID-19 pandemic consequently compelled companies to adopt more prudent financial procedures, like increasing their cash reserves.

Highly leveraged businesses may prefer to use cash to pay down debt rather than hold it since they typically have high interest and debt obligations. Businesses depend on debt management for liquidity because high debt makes it harder for them to raise more money. In contrast to liquidity which focuses on the short term of the company, leverage is longer in relation to the time period (Sukma & Prasetio, 2024). According to Romel and Ekadjaja (2023), leverage is a financial standard used to describe the level to which a company utilizes external funding sources to finance its operations. The relationship between cash holdings and leverage in a business is a crucial aspect of strategic financial management. Theoretically, businesses with a higher debt have a higher cash holding percentage than businesses with a lower leverage. This relates to the need for businesses to ensure that they have liquidity in order to meet the deadlines for interest and leverage payments in a timely manner, hence reducing the risk of default.

However, according to Trade-Off Theory, businesses must also take into account the opportunity costs of having a sizable cash reserve. Potential profits lost if cash funds are not allocated to revenue-generating projects are included in these expenses. In this situation, highly leveraged businesses frequently decide to maximize profitable investments while meeting debt obligations by optimizing cash management. In addition, outside variables like interest rates and the state of the financial markets have an impact on the relationship between debt and cash holdings. Businesses with high debt levels may increase cash holdings to lessen reliance on outside funding sources when access to external financing is costly or difficult. To increase the effectiveness of capital use, businesses typically reduce their cash holdings when interest rates are low and obtaining

outside funding is simpler. All things considered, the relationship between debt and cash holdings is complicated and influenced by the market, the company's financial strategy, and the risk and liquidity preferences of management. Companies must have a thorough understanding of this relationship in order to create balanced financial policies that can promote long-term growth and operational sustainability.

Cash is necessary for businesses with significant growth opportunities to finance investments and future expansion. A business with cash reserves can take advantage of investment opportunities without relying on costly or challenging-to-get outside financing. Risk and uncertainty are frequently associated with projects or growth opportunities. Businesses must have sufficient cash on hand to handle unforeseen circumstances like project delays or the need for extra funding. Businesses can guarantee seamless operations even in the event of a disruption in cash inflow by keeping more cash on hand. Growth opportunities are a combination of a company's actual assets and potential future investment opportunities. The ability of a business to appear in the broader economic organization or within the same industry is another measure of growth opportunity (Hayati, 2020).

Decisions about cash holdings are influenced by net working capital (NWC) since both are associated with managing a company's liquidity. NWC measures a company's ability to use its available assets to meet short-term obligations by deducting current liabilities from current assets. Because current assets, like inventory or utilities, can be quickly turned into cash when needed, a company with a high NWC is more likely to want to manage its liquidity. Businesses might not feel the need to keep sizable cash reserves in these circumstances. The corporation may decide to raise cash reserves in preparation for urgent communications or needs, however, if the NWC is low because it carries a larger risk of liquidity. A company with a high NWC has other current assets (like inventory and accounts receivable) that can be used to meet liquidity needs, which lessens the need to hold cash on hand. Businesses can replace cash with other current assets. One estimate of a company's capacity to pay off debt is its NWC (OCBC, 2022).

A successful business is more likely to pay dividends, reinvest in expansion plans, and raise its profile in the marketplace. Because dividend payments demand accessible cash, which has a direct impact on a company's cash reserves, dividends have a big impact on cash-holding decisions. Regular dividend payers need to make sure they have adequate cash on hand to fulfill their obligations, particularly if the dividend policy is set or anticipated by shareholders. In order to preserve their reputation and investor confidence, businesses in this scenario typically keep larger cash reserves in anticipation of dividend payments. Additionally, businesses that pay out substantial dividends or have aggressive payout programs typically have higher liquidity challenges. As a result, they manage their funds more carefully to make sure they can pay dividends and operating demands at the same time. On the other hand, businesses that do not pay dividends or have a flexible dividend policy could have more leeway in deciding how much money to put toward investments, debt repayment, or other purposes, which is why they typically have larger cash holding levels.

Another crucial element is the company's size, which indicates its operational capability, market influence, and leverage (Gunadi et al., 2024). Prioritizing dividend payments depletes funds that could be allocated to investments or business growth. Because they place a higher priority on profit distribution, companies with high dividend policies might have less cash on hand. Businesses that pay dividends infrequently or never tend to have more cash on hand for unforeseen market conditions or future investments.

The capability of a business to turn a profit increases with its level of profitability. An organization's cash reserves increase in proportion to its capacity to generate a profit. Businesses can use internal funding when they have large cash holdings. Profitability is a financial performance that illustrates a company's volume to make money over a given time period by utilizing all of its assets and resources. A high profit margin contributes to a high level of efficiency and productivity for the company. Conversely, low profitability indicates that the aforementioned company is inefficient in using its capabilities. Profitability may have an impact on cash holdings because as profitability rises, so will the amount of money received from growing profit (Romel & Ekadjaja, 2023).

From the description above, it can be concluded that liquidity management is the main topic of the Chief Financial Officer (CFO) (Florackis & Sainani, 2018). Research of CFO companies in twenty-nine countries found that three-quarters of the financial functions that play the most role in determining company value are project-related to liquidity financial (Lins et al., 2010). Cash holding is the most common way to express a company's liquidity (Almeida et al., 2014). However, many companies still focus on excessive company expansion, so managers ignore optimizing cash holdings. This causes cash problems in operational activities and meeting the company's maturing obligations. Extensive research on themes of cash holding has yielded mixed results. This shows that management cash holding has varying goals between companies. According to Ali et al. (2016), there are three reasons why companies manage cash holding. One transaction motive is that cash is used to meet the needs of incoming and outgoing cash flows. Two, a vigilant motive, that is, the company holds cash because the company cannot predict future events. Third, the speculative motive is that the company holds cash to guard against future increases in interest rates.

Based on the description above, this research aims to examine the impact of COVID-19, leverage, growth opportunity, NWC, dividends, and profitability against the level of cash holding. For companies, this research is expected to provide information about several factors that need to be considered in determining cash holding in a company's cash management.

LITERATURE REVIEW

Cash holdings are cash grasped by a company to invest in physical assets and give them to shareholders (Gill & Shah, 2012). According to Hanafi (2018), there are four motives for companies to hold cash. One, precautionary motive is that money is needed for transactions by the company. Two, the precautionary motive protects the company from an uncertain future. For example, to finance a project, the company must have cash. Third, future needs; for example, a company will release a new product, which requires a lot of money. Fourth, there is a minimum cash balance, and banks often set a minimum cash that a company has in the bank.

Le et al. (2018) identify several theories related to cash holding. First, the Trade-off Theory highlights the balance between benefits and costs. Modigliani and Miller (1963) propose that optimal cash holding involves weighing the opportunity costs of holding cash against the benefits derived from such activities. Opportunity costs arise when companies hold cash instead of investing in profitable opportunities, while the cost of holding cash stems from low returns due to limited investment activities. Second, the Agency Theory, also known as the Free Cash Flow Theory, posits that managers may choose to retain cash rather than increase dividend payments to shareholders, particularly when faced with limited investment opportunities, to ensure funds are available for unforeseen expenses (Jensen, 1986). Lastly, the Pecking Order Theory suggests that there is no universally ideal cash level. Instead, companies follow a

financial hierarchy to minimize the costs associated with information asymmetry (Myers, 1984; Myers & Majluf, 1984).

The transfer of some decision-making authority to the agent illustrates how Agency Theory is a contract between the head and the associated agent. In this case, the company's management is the agent, while the shareholders are the principals. According to this theory, the agent only cares about the outcome of the compensation they receive for running the business, whereas the principal only cares about the return on investment. According to Agency Theory, both the representative and the leader are susceptible to conflict since each person acts in accordance with their own interests (Jensen & Meckling, 2019).

Darmaji and Fakhrudin (2011) interpret leverage as a tool used to determine the extent of a company's dependence on external sources of financing to finance assets. A company with high leverage significantly depends on financing its assets; companies with low leverage indicate that they fund their assets using more capital.

An investment opportunity that a business can utilize is known as a growth opportunity. Companies going through growth are likely to have larger cash holdings as a result of the increase in company sales. Businesses can use their profit growth rate to identify areas for expansion. If a company is growing rapidly and its growth potential gives investors hope for future returns or profits, the market responds favorably to it (Angela & Iskak, 2020). Growth prospects refer to the potential for future expansion of the business through capital investment opportunities, which will raise the company's worth (Gunawan, 2016). The growth benchmark presented by Gaver and Gaver (1995) states that investment choices in the future can be seen from companies that can take advantage of opportunities to gain profits compared to comparable companies in the same industry.

One way to think of NWC is as the internal strength of the business's operations. The sum of money used to produce the company's short-term revenue (current income) during the accounting period is also known as NWC. Therefore, in order for the business to continue operating economically, efficiently, and effectively, NWC needs to be managed carefully to ensure that it is adequate (Audrey et al., 2023). NWC is working capital based on the perception of numbers, which indicates that one of the current assets that will be utilized to satisfy the operational requirements of the business without compromising its liquidity is NWC (Riyanto, 2011). This means optimal working capital management is needed to ensure adequate company operations.

Dividends are defined as company profits distributed to investors or shareholders. Al-Najjar & Belghitar (2011) said that companies can minimize the cost of holding cash by reducing dividends. Profitability is the company's capacity to profit within a limited period at the level of assets, sales, and stock profits (Hermuningsih, 2013). Profitability assessment is measured in many ways, depending on the profits and assets considered.

Figure 1. Research Framework

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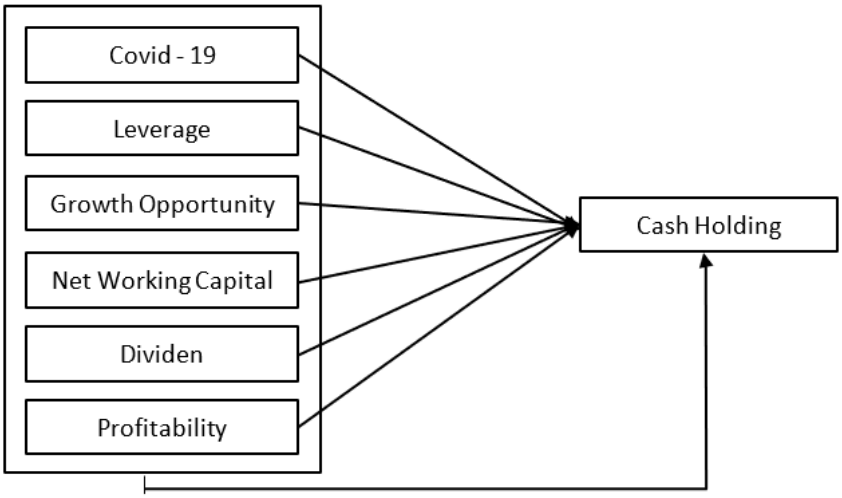

Figure 1 illustrates the conceptual framework of the study, which examines the relationship between multiple independent variables—COVID-19, leverage, growth opportunity, NWC, dividends, and profitability—and the dependent variable, cash holding. Based on this framework, the following hypotheses are proposed:

H1: COVID-19, leverage, growth opportunity, NWC, dividends, and profitability have a joint effect on cash holding.
H2: COVID-19 has a significant positive effect on cash holding.
H3: Leverage has a significant negative effect on cash holding.
H4: Growth opportunity has a significant positive effect on cash holding.
H5: NWC has a significant negative effect on cash holding.
H6: Dividends have a significant negative effect on cash holding.
H7: Profitability has a significant negative effect on cash holding.

RESEARCH METHOD

This research is a comparative causal research, where a causal relationship analysis is carried out on the dependent variable if there is a change in the independent variable. Secondary data that is quantitative in nature is utilized. The method for this research is quantitative research. The quantitative approach is a positivist-based research methodology that is used to analyze particular populations and samples. To test the hypothesis, data is gathered using research tools and statistically examined (Sugiyono, 2019).

Manufacturing companies that were recorded between 2018 and 2021 on the Indonesia Stock Exchange are the subject of the study. There are 211 companies in the population. 69 businesses were selected as samples using the purposive sampling technique and the non-probability method. A panel data regression model is used in the study. The Fixed Effect Model (FEM), Common Effect Model (REM), and Random Effect Model (REM) are the methods used to estimate the regression model. The Chow, Hausman, and Lagrange multipliers were among the tests used to evaluate the chosen estimation model.

RESULTS

The results of this research are presented in three forms of analysis: descriptive statistical analysis, regression model analysis, and hypothesis testing.

Descriptive Statistical Analysis
The outcome of descriptive statistical analysis of research data is presented in Table 1.

Table 1. Descriptive Statistical Test Results

Variable		Min	Max	Mean	Std. Deviation
AND	Cash Holding	0.000864	0.632315	0.129801	0.114568361
X1	COVID-19	0	1	0.5	0.500908266
X2	Leverage	0.063029	0.792736	0.393982	0.176282512
X3	Growth Opportunity	-0.47092	1.273016	0.097181	0.207251809
X4	Net Working Capital	-0.25188	4.594764	0.283221	0.338639619
X5	Dividends	0	82.2381	0.708223	4.960296181
X6	Profitability	0.000156	1.900987	0.090025	0.129434552

The descriptive statistics in Table 1 provide detailed insights into the distribution and variability of the variables under consideration. The cash holding variable (AND) has a minimum value of 0.000864, a maximum value of 0.632315, a mean of 0.129801, and a standard deviation of 0.114568361. The lower standard deviation relative to the mean indicates low variability, suggesting that cash holdings are relatively stable across observations.

The COVID-19 variable (X1), being binary, has a mean of 0.5 and a standard deviation of 0.500908266, reflecting its categorical nature, where values alternate between 0 and 1. The leverage variable (X2) shows a minimum of 0.063029 and a maximum of 0.792736, with a mean of 0.393982 and a standard deviation of 0.176282512. The relatively small standard deviation implies moderate consistency in leverage across observations.

The growth opportunity variable (X3) demonstrates more variability, with a minimum value of -0.47092, a maximum of 1.273016, a mean of 0.097181, and a standard deviation of 0.207251809. The higher standard deviation relative to the mean indicates heterogeneous data. Similarly, NWC (X4) has a wide range, with a minimum of -0.25188, a maximum of 4.594764, a mean of 0.283221, and a standard deviation of 0.338639619, also highlighting heterogeneity.

The dividends variable (X5) has the largest range, from 0 to 82.2381, with a mean of 0.708223 and a standard deviation of 4.960296181, reflecting significant variability in the dividend distribution. Lastly, profitability (X6) ranges from 0.000156 to 1.900987, with a mean of 0.090025 and a standard deviation of 0.129434552, indicating moderate variability.

Overall, variables with higher standard deviations (growth opportunity, NWC dividends, and profitability) exhibit more dispersed data, while those with lower standard deviations (cash holding and leverage) suggest more consistent observations.

Selection of Panel Data Regression Models
Chow Test
The analysis results using the Chow test are presented in Table 2.

Table 2. Chow Test

Effects Test	Statistic	Df	Prob.
Cross-section F	1.343732	(68.201)	0.0601
Cross-section Chi-square	103.424948	68	0.0036

The results analysis in Table 2 shows a probability number of 0.0036 because the probability number is 0.0036 <0.05, so the estimation model used is the fixed effect model (FIVE).

Hausman Test
The analysis results using the Hausman test are presented in Table 3.

Table 3. Hausman Test

Test Summary	Chi-Sq. Statistic	Chi-Sq. df	Prob.
Cross-section random	3.226879	6	0.7799

From the Hausman test in Table 3, the probability number obtained is 0.7799. The probability value is 0.7799 > 0.05, so the random effect model (BRAKE) is the estimation model used. The Chow and Hausman test results concluded that the model suitable for use in regression analysis is the REM.

Hypothesis Testing
The results of research data hypothesis testing are presented in Table 4.

Table 4. Panel Data Regression Results (F-Statistical Test, Statistical Test T, R^2)

Variable	Coefficient	T-Statistics	Prob.
X1	0.1239	0,2031	0.0392
X2	-5.3584	-3.18325	0.0016
X3	-4.6892	-3.45041	0.0006
X4	-0.2095	-0.24114	0.8096
X5	-0.0246	-0.45336	0.6507
X6	2.8734	1.38496	0.1672
C	-0.3829	-0.41628	0.6775
Weighted Statistics			
R- Squared	0.1819		
F. Statistics	5.0893		
Prob (F-Statistic	0.000057		

The regression equation based on hypothesis testing is:

$$Y= -0,38 + 0,12X_1 – 5,36X_2 – 4,69X_3 – 0,21X_4 – 0,02X_5 + 2,87X_6$$

Coefficient of Determination Test (R^2)
Table 4 shows the coefficient of determination using values Adjusted R-squared amounting to 0.151913 or 15.19%. This value shows if the variable is independent of COVID-19, leverage, growth opportunity, NWC, dividends, and profitability can explain the dependent variable worth 15.19%, while 84.81% is explained by other independent variables whose influence was not tested in this research.

F Statistical Test
The F count, which is ≤ 0.05, was determined using the hypothesis test and had a value of 5.089316 at a significance level of 0.000057. Therefore, it can be concluded that there is an impact of independent variables, specifically COVID-19, leverage, NWC, dividends, growth opportunity, and profitability, on the dependent variable cash holdings. Hence, H1 is accepted. This indicates that cash holding can be described by COVID-19, leverage, growth opportunity, NWC, dividends, and profitability.

Statistical Test t

COVID-19 on Cash Holdings
The study finds that COVID-19 did have an impact on cash holding, but the effect is not consistently positive, leading to a partial acceptance of H2. The significance value of 0.039 and the coefficient of 0.124, both of which are below the 0.05 threshold, indicate that the value of cash holdings increased during the COVID-19 pandemic. This suggests that businesses responded to the uncertainty caused by the pandemic by increasing their cash reserves. However, the effect was not universally positive, and the study does not indicate a clear, sustained positive influence. Thus, while there was an increase in cash holdings, the overall impact is partially consistent with the hypothesis that COVID-19 has a positive effect on cash holding.

Leverage on Cash Holdings
The coefficient value for leverage is -5.358, and the significance threshold is 0.05, with a value of 0.002. Therefore, it may be said that leverage has a negative impact on cash holdings, which confirms H3. This demonstrates the validity of the theory. According to Trade-Off Theory, where the company uses leverage as cash substitution because it can reduce holding costs (opportunity cost) so that companies can be more productive because companies can invest in other forms, such as securities, but the company becomes less liquid.

Growth Opportunity on Cash Holdings
Growth opportunity shows a coefficient value of -4.689 with a significance value of 0.042 < the significance level of 0.05. So, it could be interpreted that growth opportunity significantly negatively affects cash holding, which rejects H4.

Net Working Capital (NWC) on Cash Holdings
NWC shows a coefficient value of -0.2096 with a significance level of 0.089 > from a significance level of 0.05. So that concludes the NWC has an insignificant negative influence on cash holding. This shows that H5 is rejected. NWC, which has no influence holding, shows that the company still has cash regardless of the size of NWC.

Dividends on Cash Holdings
Dividends show a coefficient value of -0.025 with a significance value of 0.65 > from a significance level of 0.05. So, the dividend conclusion is drawn as an insignificant negative effect on cash holding. This means that H6 is rejected. Companies that are short of cash can generate money that is easy to disburse at low costs by reducing the value of dividends for shareholders.

Profitability on Cash Holdings
Profitability shows a coefficient value of 2.873 with a significance value of 0.167 > from a significance level of 0.05. So, it can be concluded that profitability has an insignificant positive impact on cash holding. It appears that H7 is rejected. The size of the profits generated by the company is not the basis for resolving the level of cash holding.

DISCUSSION

Cash is one of the assets which is highly liquid and plays a remarkable role in operational activities. A company's cash availability is crucial because its functional activities cannot function at their best without enough cash. The business operations of the company may be impacted if it has limited cash reserves (Rompas et al., 2024). A cash holding is a kind of liquid asset that is a sum of money that belongs to a business and is kept in cash drawers, cash registers in the money market, and banks. The goal of cash holding is to keep money available for the business to conduct operations, particularly to finance those operations. The business will be at risk if there is limited cash available. This will

make it difficult to spend money on different company payments. This cash shortage has a lot of effects, including making it difficult to pay bills that have become a burden on the business and making it harder for it to operate because it cannot pay employees or purchase raw materials. Additionally, the company will be viewed negatively and declared illiquid, which will make people less trusting of it.

However, different companies have different funding capacities, so it is important to check if these companies can quickly increase their cash holdings in accordance with their needs. Apart from that, it was found that Indonesian companies' credit ratings were declining (Kurniawan & Bertuah, 2022). According to Le et al. (2018), there are several theories about cash holding. These include the Trade-Off Theory, which theory is related to benefits and costs. Modigliani and Miller (1963) stated that optimal cash is by comparing or paying attention to the opportunity costs of holding cash with the profits from these activities. Research on growth opportunity costs on cash holdings of manufacturing companies shows a negative influence. Cash holding is low because a lot of cash is used to finance operational activities and increase sales levels. This is in line with Sudarmi and Nur in Chandra (2022), who show growth opportunity has a significant negative impact on cash holding.

Due to the company's ability to produce steady internal cash flows, high profitability can lower cash holding levels. Profitable businesses occasionally keep cash on hand as strategic reserves, though. In an attempt to reduce risk, businesses were compelled to boost their cash reserves when the COVID-19 epidemic brought on a great deal of economic unpredictability. Everyday activities and economic absorption activities have drastically become smaller as a result of the COVID-19 epidemic that has swept the globe, including Indonesia. Some businesses have even filed for bankruptcy because they are unable to compete with other businesses and meet deadlines. In order to survive in these circumstances, a business needs to be able to raise the amount of cash it has on hand.

COVID-19, Leverage, Growth Opportunity, NWC, Dividends, and Profitability Collectively Affect Cash Holding

The findings indicate that cash holdings are influenced by a combination of independent variables, namely COVID-19, leverage, growth opportunity, NWC, dividends, and profitability, supporting the acceptance of H1. This suggests that these variables collectively explain variations in cash holdings. However, the individual effects of the variables reveal nuances: while leverage and growth opportunity significantly influence cash holdings negatively, the impact of NWC and dividends is negative but insignificant. Furthermore, profitability does not have a significant influence on cash holdings, and the impact of COVID-19, though present, is not entirely consistent in its direction. These mixed outcomes highlight the complexity of factors driving cash-holding behavior and underline the need for further investigation into the contextual and dynamic interactions among these variables.

COVID-19 Partially Has a Positive Effect on Cash Holding

The findings suggest that COVID-19 had an impact on cash holding, though not consistently positive, leading to the partial acceptance of H2. During the pandemic, companies were incentivized to increase cash reserves to maintain liquidity amid revenue declines and heightened uncertainty. The economic upheaval caused by COVID-19, including supply chain disruptions, reduced consumer demand, and liquidity challenges, prompted businesses to adopt precautionary measures by holding more cash. This aligns with the primary goal of cash retention during crises: safeguarding against systemic risks and ensuring operational continuity.

Qin et al. (2021) similarly found that COVID-19 significantly influenced firms to enhance their cash holdings, highlighting the link between pandemic-induced uncertainty and financial conservatism. By prioritizing cash reserves, businesses sought to mitigate the risks of financial distress and maintain flexibility in meeting immediate obligations. The reduced availability of external financing options, such as bank loans or bond issuances, further motivated firms to strengthen their liquidity buffers. Thus, the pandemic underscored the importance of prudent financial practices, as firms adjusted to a volatile environment by increasing their cash holdings to ensure stability and resilience.

Leverage Has a Significant Negative Effect on Cash Holding

The findings confirm that leverage has a significant adverse effect on cash holding, supporting the acceptance of H3. Companies with higher leverage are less inclined to hold substantial cash reserves, as funds are often allocated toward debt repayment or investment in higher-yield assets rather than remaining idle. This relationship aligns with research conducted by Jinkar (2013), Margaretha and Dewi (2020), and Ozkan and Ozkan (2004), all of whom identified a negative influence of leverage on cash holding. Leverage reflects a company's capacity to secure external funding, as noted by Maryanto and Cahyono (2024), and highly leveraged firms prioritize efficient cash utilization to minimize costs associated with holding idle cash.

Firms with higher leverage often aim to optimize their capital structure by reducing excess liquidity, viewing cash holdings as yielding lower returns compared to other potential investments. Abbas et al. (2020) found similar effects when studying leverage, NWC, and growth opportunity in the context of cash holdings, further affirming that leverage plays a critical role in shaping a firm's liquidity management strategies. Consequently, businesses with substantial leverage maintain moderate cash levels, as access to external funding diminishes the necessity to hold large cash reserves. Conversely, firms with lower leverage are more likely to hold higher cash balances to mitigate risks and ensure liquidity in the absence of significant borrowing capacity.

Growth Opportunity Has a Negative Effect on Cash Holding

Growth opportunities are seen as potential future investments supported by a company's assets, as highlighted by Sari and Hastuti (2020). According to the Pecking Order Theory, companies are often motivated to retain significant cash reserves to finance future growth prospects. Expanding businesses need more funding to capitalize on these opportunities. In industries with intense competition, such as the automotive sector, there is ample room for growth, which requires companies to constantly innovate and release new products to stay competitive (Anggrahini et al., 2023).

However, the results of this study led to the rejection of H4, as growth opportunities were found to have a negative impact on cash holdings. Large businesses with room for growth tend to allocate more resources toward operational activities, especially during periods of high sales. As a result, much of the cash reserves are used to fund operations and boost sales, leading to lower overall cash holdings. This finding aligns with research by Endri et al. (2020), who suggest that growth opportunities have a detrimental effect on cash holdings. On the other hand, Mohd-Ashari and Faizal (2018) argue that growth opportunities typically increase cash holdings, as businesses seek to ensure financial stability to navigate the challenges posed by growth and competition. Companies in growth-oriented industries must maintain sufficient cash reserves to mitigate potential cash flow issues or disruptions to their expansion goals. A higher level of cash holdings provides a cushion to address any obstacles that might arise along the way.

NWC Shows an Insignificant Negative Impact

The study's findings indicate that while NWC exhibits a negative relationship with cash holding, the impact is statistically insignificant, leading to the rejection of H5. This suggests that the level of net working capital does not play a decisive role in influencing a firm's cash-holding decisions within the scope of this research. Although higher NWC might theoretically reduce the need for large cash reserves by providing sufficient liquidity for operational needs, the insignificant effect implies that other factors likely dominate the decision-making process regarding cash management. This finding highlights the complexity of cash-holding behavior and suggests that firms may not rely solely on NWC levels when formulating their liquidity strategies.

Dividends Show an Insignificant Negative Impact on Cash Holding

According to Wulandari and Setiawan (2019), dividends had no effect on cash holding. In contrast, research by Farinha and Borges (2017) found that dividend payments significantly positively affected cash holding. Aftab et al. (2018) found that dividends significantly negatively affect cash holding. This is not in line with the Trade-Off Theory, which says that dividend payments have a negative effect on cash holding. Instead of using previously saved capital to save dividends, businesses frequently employ operational cash flow or other funding sources. As a result, choices about a company's cash holding levels are typically not significantly influenced by dividend distributions. Businesses with consistent dividend policies also typically use other tactics to keep their finances in check, such as employing credit lines or effectively managing operating cash flow.

The findings reveal that dividends have an insignificant negative effect on cash holding, leading to the rejection of H6. This suggests that the presence or absence of dividend payments does not have a decisive influence on a firm’s cash-holding decisions. High dividend-paying companies may retain additional cash to ensure consistent dividend payouts, especially during periods of uncertain cash flows, as dividends are often perceived as a signal of financial stability. Conversely, firms that do not pay dividends may also hold significant cash reserves, often to fund expansion plans or maintain operational flexibility. However, the study indicates that the link between dividends and cash holdings is not direct. While dividends reduce retained earnings, these reductions are not always reflected as a decrease in cash but may instead be directed toward investments in fixed or non-cash assets, which firms consider more productive or strategically advantageous. Consequently, dividends do not substantiate a meaningful effect on cash holdings in this context.

Profitability Does Not Have a Significant Positive or Negative Impact on Cash Holding

The study findings indicate that profitability does not have a significant positive or negative impact on cash holding, leading to the rejection of H7. While cash holdings can provide businesses with the flexibility to invest and potentially increase profitability, the results do not establish a direct relationship between profitability and the amount of cash retained by firms. Profitability reflects a company's ability to generate income from its operations and is often associated with strong financial performance, which can attract investors due to rising share prices (Hidayati & Ratnawati, 2024). This aligns with the Pecking Order Theory, suggesting that organizations prioritize internal funding over external sources to finance their operations. However, profitability does not always translate into higher cash reserves.

Firms may allocate profits toward other uses, such as dividend payments or investments in productive assets, rather than increasing cash holdings. Silaen and Prasetiono (2017) found that profitability does not affect cash holdings, while other studies show conflicting

results. For example, Aftab et al. (2018) reported a significant negative relationship between profitability and cash holding, whereas Margaretha and Dewi (2020) observed a significant positive effect. This inconsistency highlights the multifaceted nature of profitability's influence on cash holding, which depends on factors such as financial obligations, debt usage, and the company's strategic allocation of resources. Firms with high profitability may prefer to reinvest earnings in growth opportunities rather than retain excessive cash reserves, thus maintaining a balance between liquidity and investment needs (Kumajas et al., 2021).

CONCLUSION

Based on the analysis of the collected data, the following research conclusions are derived: (1) COVID-19, leverage, growth opportunity, net working capital (NWC), dividends, and profitability collectively have a significant effect on cash holding, confirming H1; (2) There is a difference in cash holding before and after COVID-19, with an increase in cash holding during the COVID-19 period for manufacturing companies listed on the IDX from 2018 to 2021, partially accepting H2, as it demonstrates an impact but does not specify a consistently positive effect; (3) Leverage has a significant negative effect on cash holding in manufacturing companies, supporting H3; (4) Growth opportunity negatively influences cash holding in manufacturing companies, rejecting H4; (5) NWC has an insignificant impact on cash holding, which leads to the rejection of H5; (6) Dividends have an insignificant negative impact on cash holding, rejecting H6; (7) Profitability has an insignificant positive influence on cash holding, which results in the rejection of H7.

Businesses should have backup procedures in place to manage financial reserves in the event of a pandemic or other emergency. This may involve updating cash management strategies to maintain liquidity and reduce financial challenges during recessions. Leverage has a substantial detrimental effect on cash holdings, suggesting that businesses with high levels of leverage are at risk of encountering liquidity issues. Excessive reliance on debt can limit the amount of cash available for day-to-day operations, increasing the risk of default or making it more difficult to meet immediate obligations. To mitigate this risk, businesses should consider redistributing funds to reduce their dependence on debt. Increasing the proportion of equity in their capital structure can improve financial stability and alleviate pressure on cash holdings.

Based on the findings and limitations of this study, several recommendations can be made for future research. First, it is suggested that future studies incorporate additional independent variables, such as cash flow and firm size, to better understand their potential effects on a company's cash holdings. Second, expanding the scope of the research to include additional sectors could provide more comprehensive and applicable insights for a broader audience. Lastly, extending or prolonging the study period is recommended to capture long-term trends and provide a more in-depth analysis of the factors influencing cash holdings over time.

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The author(s) declared no conflict of interest.

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