

THE INTERNATIONAL JOURNAL OF BUSINESS & MANAGEMENT

Determinants of Cash Holding of Shariah and Non-Shariah-Compliant Firms at Indonesia Stock Exchange

Mutiara Cindy

Student, Department of Economics and Business,
Universitas Trisakti, Indonesia

Farah Margaretha Leon

Lecturer, Department of Economics and Business,
Universitas Trisakti, Indonesia

Yosephina Endang Purba

Lecturer, Department of Economics and Business,
Universitas Trisakti, Indonesia

Abstract:

The purpose of this study is to analyze what factors determine the cash holding of Shariah and non-Shariah-compliant firms of the manufacturing sector on the Indonesia Stock Exchange with the variables of leverage, profitability, capital expenditure, net working capital, size, dividend payment, growth opportunity, operation cash flow, cash flow volatility as the determinant of cash holding, as well firm's age as the control variable. This study uses secondary data from the financial statements of manufacturers on the Indonesia Stock Exchange in 2016-2020. To collect data, this study uses a purposive sampling method and obtained 41 firms (31 Shariah-compliant firms and 11 non-Shariah-compliant firms). Data analysis use multiple regression with the Eviews10 program. The result shows that leverage, profitability, capital expenditure, net working capital, size, dividend payment, growth opportunity, operation cash flow, cash flow volatility, and firm's age have a significant relationship on the cash holding of Shariah-compliant firms. For non-Shariah-compliant firms, relevant determinants of cash holding are leverage, profitability, capital expenditure, net working capital, size, operation cash flow, and firm's age. These findings could be a consideration for firms and investors to optimize cash holding to gain profits and avoid financial distress.

Keywords: Cash holding, determinant, manufacture, non-Shariah, Shariah

1. Introduction

Today's businesses are very competitive, making all firms have to fight to maintain their existence. To be able to carry out firm activities, proper cash management is needed so that the firm's operations can run smoothly. The amount of cash owned and used by the firm in carrying out operational activities is called cash holding. Cash holding is very important because if there is no cash availability, the firm's operations cannot run optimally (Astuti, Wiyono, and Mujino 2019). Another reason cash is needed is speculative motives, which are the opportunity to get a profit from the investment made by the firm. In addition, the firm holds cash with a precautionary motive in case of an emergency.

Alnori, Bugshan, and Bakry (2022) state that there are three influential theories that explain a firm's decision to hold cash, including the trade-off theory, the pecking order theory, and the free cash flow theory. The trade-off theory states that each firm sets a cash holding target that balances the gains and losses from holding liquid assets. Pecking order theory, which is based on information asymmetry, states that firms have a funding hierarchy, namely internal funds as their first source of financing, followed by debt and equity. Based on the free cash flow theory, firm managers have the authority to hold more cash to increase control over assets.

Determining the optimal amount of cash holding is very important for financial managers in a firm to maintain the amount of cash according to needs. If the cash is too little, it can disrupt the firm's activities. On the other hand, problems can arise between management and shareholders if the amount of cash owned by the firm is too large. The reduced profit opportunities that firms get from investing cash will harm shareholders because the returns obtained are not optimal (Sari & Zoraya, 2021).

Over the last two decades, shariah-based funding has grown rapidly around the world. Shariah finance has also attracted quite a lot of attention from stock market players, especially in countries with large Muslim populations. Data from The Royal Islamic Strategic Studies Center (RISSC) states that in 2021 Indonesia will be the country with the largest Muslim population in the world, with a total of 231.06 million people (www.katadata.co.id). In the last five years, the number of issuers registered as shariah shares have increased by 31% and reached 434 issuers out of 724 listed on the Indonesia Stock Exchange in March 2021. Seeing this growth trend, the shariah capital market has the potential to

continue to grow. However, the participation of the government and various parties is needed to develop the shariah economy and the halal industry.

Firms implementing shariah principles face certain restrictions that they must follow to maintain their compliance status. These restrictions affect various levels of business, such as financing, operations, investments, and risk management practices. This limitation has a significant effect on the financial decisions of shariah-compliant firms to differentiate the decisions and financial characteristics of conventional firms (Alnori & Alqahtani, 2019). Shariah-compliant firms have little choice in determining external financing, thereby limiting the supply of external financing. This can increase external financing costs and transaction cost motives, as described in the trade-off theory. Furthermore, prioritizing internal financing options, as suggested by the information asymmetry in the pecking order theory, is more suitable for shariah-based firms. Following this line of thinking, the determinants of cash holdings may differ between shariah-compliant firms and non-shariah-compliant firms.

Several previous studies have investigated the determinants of a firm's cash holding and found that the decision to determine cash holding differs between each firm, depending on the specific factors of each firm (Lozano & Yaman, 2020). However, previous studies have not examined the determinants of cash-holding decisions in firms that adhere to Shariah principles and regulations. Alnori et al. (2022) tested and found that there were differences in the determinants of cash holding in shariah and non-shariah-compliant firms. The relevant determinants of cash holding for shariah-compliant firms are leverage, profitability, capital expenditure, net working capital, and operating cash flow. In contrast, the relevant determinants of cash holding for non-shariah-compliant firms are leverage, capital expenditure, and operating cash flow. Other determinants of cash holding are size, dividend payout, growth opportunities, and cash flow volatility. Added a control variable, namely the age of the firm, as a novelty in this study.

The description above serves as a basis for testing the determinants of cash holding by observing two types of firms, namely shariah and non-shariah compliant firms from the manufacturing sector listed on the Indonesia Stock Exchange (IDX) during 2016-2020. The manufacturing sector has proven to play a major role in the country's economy for years, and in 2021 the manufacturing sector is the sector that contributes the most to Indonesia's GDP, which is around 19.25% (www.statista.com).

2. Literature Review

2.1. Cash Holding

According to Wulandari & Setiawan (2019), cash holding is an amount of cash and cash equivalents owned by a firm that is easily liquidated into cash. A sufficient amount of cash holding illustrates the good liquidation ability of a firm so that the firm is able to pay its obligations on time. There are three theories that explain cash-holding decisions in general, namely:

2.1.1. Trade-off Theory

The trade-off theory predicts that the balance between marginal profit and the cost of storing cash determines the optimal level of cash a firm can hold. The main cost in question is the opportunity cost that arises from saving cash with low returns compared to using it for investments that generate a high return on assets. On the other hand, cash holdings can help firms reduce transaction costs and risks and increase the possibility of taking on investment projects with positive Net Present Value (NPV), especially when firms experience difficulties in obtaining external funding as a result of information asymmetry (Habib & Hasan, 2017).

2.1.2. Pecking Order Theory

According to Tijow, Sabijono, and Tirayoh (2018), the pecking order theory explains the existence of information asymmetry and the tendency of firms to use internal funds for investment needs compared to using external funds. There is an asymmetry of information where outsiders such as shareholders and creditors do not have the same information as management regarding projects and firm performance. To compensate for this information asymmetry, external parties demand higher returns to deal with uncertain risks. When a firm finances an investment opportunity externally (debt or equity), the firm is required to provide a higher return because creditors and investors have less information than managers. Debt issuance often signals undervalued shares and a belief by the board that the investment is profitable. On the other hand, funding by issuing equity can give a bad signal. That is, the stock is suspected of being overvalued.

2.1.3. Free Cash Flow Theory

In the theory of free cash flow, it is stated that financial managers have the authority to save more cash to control the firm's investment decisions. Managers are considered to need to maintain cash holdings at a certain level so that the firm can carry out projects without external funding assistance. Thus cash will have a higher marginal value, especially with limited firm access to the capital market, which causes external funding costs to increase. However, this theory has the potential to create a conflict of interest between managers and shareholders. Managers have the discretion to take personal advantage of using cash for unprofitable investments. This is detrimental to shareholders because the returns obtained are not optimal.

2.2. Leverage

Leverage as a financial ratio is commonly used as an indicator of a firm's ability to utilize capital in the form of debt that provides fixed costs (fixed cost assets of funds) to increase profits for investors. Bhuiyan & Hooks (2019)

conducted research on 6,174 non-financial firms in the United States during 2004-2010 and found that leverage had a negative effect on firm cash holdings. A study by Bugshan (2021) also states that there is a significant negative relationship between leverage and cash holding of non-financial firms that are included in the Gulf Cooperation Countries (GCC). On the other hand, a study by Ashhari & Faizal (2018) on 100 Small and Medium Firms (SMFs) in Malaysia states that corporate cash holdings are positively affected by leverage.

2.3. Profitability

The pecking order theory predicts that profitability (ROA) has a positive effect on cash holding (Ashhari & Faizal, 2018). Nnubia, Ofoegbu, and Chukwuebuka (2019) conducted a study of 20 consumer goods sector firms in the period 2004-2017. The results stated that ROA, as a proxy for profitability, has an effect on cash holdings. The signaling theory states that an increase in profitability makes the need for cash decrease. Research conducted by Aftab et al. (2018) support the theory. Of the 15 countries included in the Asia-Pacific region with observational data of 33,580 firms, it was found that there is a negative relationship between profitability and cash holding. Apart from that, research conducted by Puteri, Primalia, Verdiansyah, and Leon (2022) stated a different matter. Based on a study conducted on manufacturing firms on the Indonesia Stock Exchange in 2015-2020, it is stated that profitability has no significant effect on cash holdings.

2.4. Capital Expenditures

Trinh and Thuy Mai (2016) define capital expenditure as an investment by a firm using fixed assets as an investment tool. There are different views resulting from studies on capital and cash spending. Research by Bugshan (2021) states that capital expenditure has a negative effect on cash holdings in countries that are members of the Gulf Cooperation Countries (GCC). This is supported by research that states that capital expenditure has a negative effect on the cash holdings of firms in developing market countries ((Clarkson, Gao, and Herbohn, 2020; Guizani, 2017). However, based on the trade-off theory, capital expenditure can create opportunities for financial distress so that firms will have more cash to avoid this condition. This was also conveyed by Maarif et al. (2019). Maarif researched financial service firms listed on the IDX in 2012-2016 and found a positive effect between capital expenditure and cash holding.

2.5. Net Working Capital

Net working capital is an important benchmark for firm management, investors, and creditors because it can provide an overview of the firm's short-term liquidity capabilities. On the other hand, a negative net working capital will send a signal to investors and creditors that the firm does not have sufficient operating income, so it is difficult to pay off business debts. Previous research has found a negative effect between net working capital and firm cash holdings (Bugshan, 2021; Guizani, 2017). In contrast, research by Sanjaya & Widiastara (2019) on consumer goods sector firms on the Indonesia Stock Exchange in 2014-2017 states that net working capital has a positive effect on cash holdings.

2.6. Firm Size

Small firms tend to have difficulty accessing the capital market, so firms will hold larger amounts of cash to become a source of investment funds. Large firms, on the other hand, do not hold large amounts of cash because they have greater access to external financing (Liadi & Suryanawa, 2018). Both of these conditions show a negative effect between firm size and cash holding. However, Yongki, Panjaitan, and Leon (2021) conducted research that gave different results. Observations were made of firms in the consumer goods industry sector on the IDX during 2016-2018, and it was found that firm size had a significant positive effect on cash holdings. Research conducted. This is also stated in research conducted by Kusumawati et al. (2020), where there is a positive influence between firm size and cash holding.

2.7. Dividend Payment

The distribution of the dividend value is determined by the firm's shareholders at the General Meeting of Shareholders (GMS). In this study, the ratio of Dividend per Share (DPS) to Earning per Share (EPS) was used as a measure of dividend payments (Ramadana & Agustina, 2022). A high DPS indicates a good condition of the firm because the firm is able to provide high dividends so that investors will be interested in buying the firm's shares. Sheikh, Mehmood, and Kamal (2018) researched Multi-national Companies (MNCs) in Pakistan and stated that there was a negative effect between dividend payments and firm cash holdings. In contrast, the study by Singh & Misra (2019) states that dividend payments have a significant positive effect on cash holdings.

2.8. Growth Opportunities

Growth opportunity is the rate of growth that gives the firm the opportunity to continue to make profits in a sustainable manner (Saputri & Kuswardono, 2019). In the pecking order theory, it is stated that firms with greater growth opportunities prefer to use their internal funds as a source of investment funding. This is because the cost of obtaining funds from external financing requires a greater cost than internal funding sources. In order to continue running the investment project, the firm will withhold excess cash (Liestyasih & Wiagustini, 2017).

2.9. Operating Cash Flow

A business entity's operating cash flow can provide a more accurate picture of a firm's current cash holdings than artificially low net income because depreciation is not a cash charge. According to the trade-off theory, cash flow is an alternative source of liquidity, especially when income from operations falls unexpectedly. Cash flow provides managers with freedom from any financial constraints imposed on them by the capital market (Chen, Yang, Zhang, and Zhou, 2020;

Chireka & Fakoya, 2017). This implies a negative relationship between cash flows and cash holdings. On the other hand, the pecking order theory states that to minimize asymmetric information costs and other funding costs, firms tend to use retained earnings as the first choice to fund investment (Guizani, 2017). This implies that firms with higher cash flows are expected to have more cash.

2.10. Cash Flow Volatility

The trade-off theory states that higher volatility in cash flows means more likely to be short of cash in any time period. Cash flow volatility causes more constraints on liquidity, causing firms to permanently forego valuable investment opportunities (Chen et al., 2020). As a result, firms with higher cash flow volatility tend to hold more cash which will increase their chances of survival (Bugshan, 2021). The trade-off theory states that there is a positive influence between the volatility of cash flows and cash holding because cash is needed in case of unexpected circumstances in the future. Research by Singh and Misra (2019) also supports this. Research conducted on agricultural sector firms in India from 1995-2016 found that cash flow volatility had a positive effect on cash holdings.

2.11. Firm Age

The trade-off theory predicts that firm age has a negative effect on cash holdings because old and established firms are not susceptible to information asymmetry. Hence, they are able to raise capital from the market at a lower cost than new firms. This is in accordance with research conducted by Magerakis et al. (2020), which states that firm age has a negative effect on cash holdings. On the other hand, the older the firm is, the more successful the firm is and the more internal resources it has. Therefore, firm age can have a positive effect on cash holdings (Tayem, 2017). However, the results of research by Sethi & Swain (2019) on manufacturing firms in India differ from the two theories above. From this study, it is stated that the age of the firm does not have a significant effect on cash holdings.

2.12. Shariah Screening

The principles and regulations of shariah-compliant shariah law originate from three main foundations: the Qur'an, Ijtihad, and Sunnah (Alnori et al., 2022). The constraints faced by shariah-compliant firms can affect cash-holding decisions. The first limitation of concern is that the firm's core activities must be Halal in nature, in contrast to organizational activities related to illicit products such as alcohol, weapons production, pork, pornography, gambling, and financial services. The second limitation is the firm's source of financing. Based on the DES (Shariah Securities List) criteria set by the OJK (Financial Services Authority), the maximum ratio of interest-based debt to the firm's total assets is 45%, and the ratio of total interest income to total operating income is a maximum of 10% (POJK, 2017).

2.13. Conceptual Framework

Determining the optimal level of cash holding is one of the important financial decisions that must be considered by a financial manager. The benefits of cash holding include providing a more optimal investment policy, supporting external funding, and reducing the possibility of financial distress due to unexpected losses. Research conducted by Alnori et al. (2022) determined the factors that influence cash holding in shariah compliant and non-shariah-compliant firms leverage, profitability, capital expenditure, size, dividend payout, growth opportunities, net working capital, operating cash flow, and cash flow volatility.

Firms with high leverage have to incur high costs, too, while investing in liquid assets. This makes firms tend to hold less cash. A study by Bugshan (2021) also states that there is a significant relationship between leverage and cash holding of non-financial firms that are included in the Gulf Cooperation Countries (GCC). The pecking order theory predicts that profitability (ROA) has a positive effect on cash holdings (Ashhari & Faizal, 2018). Research conducted by Aftab et al. (2018) support the theory. Of the 15 countries included in the Asia-Pacific region with observational data of 33,580 firms, it was found that there is a negative relationship between profitability and cash holding.

Several studies have produced different views regarding the effect of capital expenditure on cash holdings. Research by Bugshan (2021) found a negative relationship between capital expenditure and cash holding in countries that are members of the Gulf Cooperation Countries (GCC). On the other hand, several studies conducted in developing market countries also state that capital expenditure is negatively related to firm cash holdings (Clarkson et al., 2020; Guizani, 2017).

Several studies state that there is a negative relationship between net working capital and firm cash holdings (Bugshan, 2021; Guizani, 2017). In contrast, Sanjaya and Widiasmara (2019) conducted research on consumer goods sector firms on the Indonesia Stock Exchange in 2014-2017 and stated that there was a positive effect between net working capital and cash holding. From several observations, it is known that small firms hold more cash than large firms because there are high costs associated with external financing. Kusumawsati et al. (2020) show a positive relationship between firm size and cash holding.

The trade-off theory states that dividend payments have a negative effect on cash holdings. This was confirmed by Sheikh et al. (2018), who examined Multi-national Companies (MNCs) in Pakistan and found that dividend payments negatively affect the firm's cash holdings. However, research conducted by Singh & Misra (2019) shows a positive relationship between dividend payments and cash holdings.

According to the pecking order theory, growth opportunities have a positive effect on cash holdings. Therefore, when firms with shariah principles and non-shariah have higher growth opportunities, these two types of firms tend to have larger cash. According to the trade-off theory, cash flow is an alternative source of liquidity, especially when income from operations falls unexpectedly. This implies a negative relationship between cash flows and cash holdings. On the

other hand, the pecking order theory explains that firms with higher cash flows are expected to have more cash (operating cash flow has a positive effect).

Cash flow volatility causes more constraints on liquidity, causing firms to permanently forego valuable investment opportunities (Chen et al., 2020). As a result, firms with higher cash flow volatility tend to hold more cash which will increase their chances of survival (Bugshan, 2021). The trade-off theory predicts that firm age has a negative effect on cash because old and established firms are not susceptible to information asymmetry. Hence, they are able to raise capital from the market at a lower cost than new firms. As a result, new firms are expected to have more cash holdings to be able to meet their investment needs (Sethi & Swain, 2019).

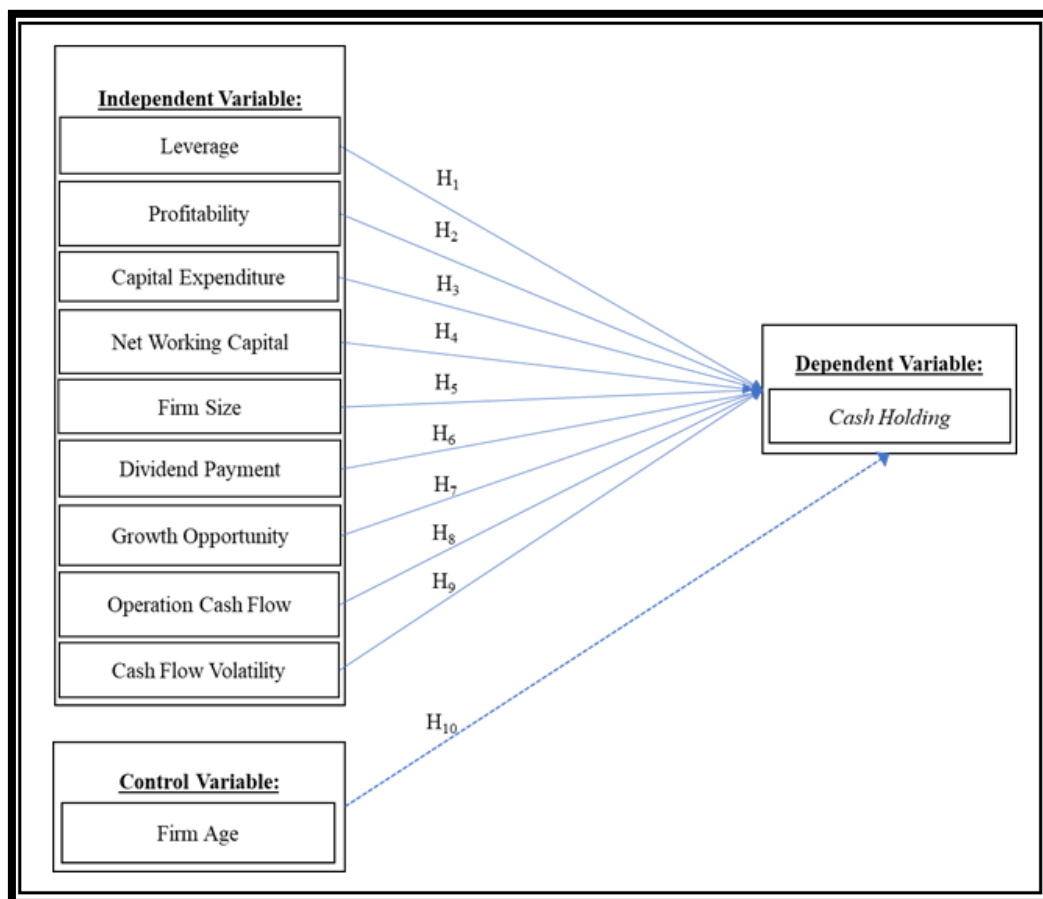


Figure 1: Conceptual Framework

2.14. Hypothesis Development

Several studies have shown that high levels of financial leverage have a negative effect on a firm's cash holdings. Bhuiyan and Hooks (2019) conducted a study of 6,174 non-financial companies in the United States during 2004-2010 and found that leverage had an effect on the firm's cash holdings. A study by Bugshan (2021) also states that leverage has a negative effect on the cash holdings of non-financial companies that are included in the Gulf Cooperation Countries (GCC) countries. Therefore, taking into account previous empirical findings, pecking order theory, and trade-off theory, the hypotheses proposed in this study are as follows:

- H₁: Leverage affects the cash holding of sharia companies and non-sharia companies
The Effect of Profitability on Cash Holding in Sharia and Non-Sharia Companies

The pecking order theory predicts that profitability (ROA) positively affects cash holdings (Ashhari & Faizal, 2018). Nubia et al. (2019) conducted research on 20 companies in the consumer goods sector in the period 2004-2017. The results of the study stated that ROA as a proxy for profitability had an influence on cash holdings. Signaling theory explains that the need to save cash decreases with increasing profitability. Research conducted by Aftab et al. (2018) support the theory. Of the 15 countries included in the Asia-Pacific region with observational data of 33,580 companies, it was found that cash holdings are negatively affected by profitability. According to the empirical findings and the pecking order theory, and signaling theory, the following hypotheses have been proposed:

- H₂: Profitability affects the cash holding of sharia and non-sharia companies

In the pecking order theory, it is explained that companies that have large investment costs can generate less (or no) surplus from internal funds to invest in liquid asset reserves, which will result in them holding small amounts of liquid assets. Research by Bugshan (2021) found that cash holdings are negatively affected by capital expenditure in countries that are members of the Gulf Cooperation Countries (GCC). Several studies conducted in developing market countries also state that capital expenditure is negatively related to corporate cash holdings (Clarkson et al., 2020; Guizani, 2017). Thus, the third hypothesis is as follows:

- H₃: Capital expenditures affect the cash holdings of sharia companies and non-sharia companies

Following the trade-off theory, when a firm is in a cash shortage, it is easy to liquidate liquid assets into cash. Several studies state that there is a negative effect between net working capital and firm cash holdings (Bugshan, 2021; Guizani, 2017). On the other hand, Sanjaya and Widiastara (2019) examined companies in the consumer goods sector in Indonesia in the 2014-2017 period and stated that net working capital affects cash holding positively. Thus, the next hypothesis that can be formulated is:

- H₄: Net working capital affects the cash holding of sharia and non-sharia companies

Small companies have a higher risk of financial difficulties, and hence they tend to save more cash. Yongki, Panjaitan, and Leon (2021) conducted research that gave different results. Observations were made of companies in the consumer goods industry sector on the IDX during 2016-2018, and it was found that firm size had a significant positive effect on cash holdings. This is also stated from research conducted by Kusumawati, Hendra, and Nurlaela (2020), where there is a positive influence between firm size and cash holding.

- H₅: Firm size affects the cash holding of sharia and non-sharia companies

The trade-off theory states that dividend payments have a negative effect on cash holdings because companies that pay dividends can replace cash holding costs by reducing the value of the dividends distributed (Alnori et al., 2022). This was confirmed by Sheikh et al. (2018), who examined multi-national companies (MNCs) in Pakistan. From this study, it was found that dividend payments have a negative effect on the firm's cash holdings. Therefore, following previous empirical findings and the trade-off theory, the proposed hypotheses are:

- H₆: Dividend payments have an impact on the cash holdings of sharia companies and non-sharia companies

According to the trade-off theory, there is a positive influence between cash holding and growth opportunities. Companies that have high growth opportunities tend to hold more cash to reduce the risk of underinvestment in the future (Alnori et al., 2022). The same thing is stated by the pecking order theory, namely, growth opportunities have a positive effect on cash holdings. Therefore, when companies with Islamic principles and non-Islamic principles have higher growth opportunities, both types of companies tend to hold more cash. This leads to the following hypothesis:

- H₇: Growth opportunities affect the cash holdings of sharia companies and non-sharia companies

The pecking order theory states that to minimize asymmetric information costs and other capital costs, retained earnings are used as the main option for investment capital (Guizani, 2017). This implies that companies with high cash flows are also expected to have more cash holdings. Thus, the hypothesis proposed is as follows:

- H₈: Operating cash flow affects the cash holding of sharia companies and non-sharia companies

Cash flow volatility causes more constraints on liquidity, causing companies to permanently forego valuable investment opportunities (Chen et al., 2020). As a result, companies with high cash flow volatility will choose to save more cash to increase their chances of survival (Bugshan, 2021). The trade-off theory states that cash holdings are positively influenced by the volatility of cash flows because cash is needed to meet unexpected events in the future. From the explanation above, the proposed hypothesis is:

- H₉: The volatility of cash flows affects the cash holdings of sharia and non-sharia companies

The trade-off theory predicts that firm age has a negative effect on cash holdings because old and established companies do not face information asymmetry problems. Hence, they are able to raise capital from the market at a lower cost than new companies. Therefore, new companies are expected to have more cash holdings to be able to meet their investment needs (Sethi & Swain, 2019). This is similar to the study by Marakis, Gkillas, Tsagkanos, and Siriopoulou (2020). The research was conducted on 6629 non-financial companies in the UK during 2010-2018. The results of the study state that cash holdings are negatively affected by firm age. Thus, the hypothesis proposed is:

- H₁₀: Firm age affects the cash holding of sharia and non-sharia companies

3. Research Method

3.1. Data Collection

The types of data used are quantitative data and secondary data from the financial reports of manufacturing sector firms listed on the IDX in the 2016-2020 period accessed from the official IDX website, the official website of each firm, and other data sources such as books, journals, and websites.

3.2. Sampling Method

The sample population used is shariah and non-shariah-compliant firms in the manufacturing sector recorded during the 2016-2020 period. The classification of shariah firms is taken from the DES (Shariah Securities List) issued by the OJK (Financial Services Authority). Meanwhile, the sample of non-shariah firms is classified as manufacturing firms listed on the IDX, which is not included in the DES.

The sampling method in this study was non-probability sampling using purposive sampling. Purposive sampling was used to determine the number of samples in this study, amounting to 201 firms for 5 years, resulting in a total of 205 observational data. The variables used, measurement methods, and references can be seen as follows:

Variable Name	Measurements	Reference
Dependent Variable		
Cash holding (CashNet)	$\frac{\text{Total Cash and equivalent}}{\text{Total assets} - \text{Total Cash and equivalent}}$	Alnori et al. (2022)
Cash holding (CashTA)	$\frac{\text{Total Cash and equivalent}}{\text{Total assets}}$	Alnori et al. (2022)
Independent Variables		
Leverage (LEV)	$\frac{\text{Total Liabilities}}{\text{Total assets}}$	Alnori et al. (2022)
Profitability (PROF)	$\frac{\text{Net income}}{\text{Total assets}}$	Alnori et al. (2022)
Capital Expenditure (CAPEX)	$\frac{\text{Net fixed assets}}{\text{Total assets}}$	Suk et al. (2019)
Net Working Capital (NWC)	$\frac{\text{Current Assets} - \text{Current Liabilities}}{\text{Total assets}}$	Alnori et al. (2022)
Firm Size (SIZE)	$\ln(\text{total assets})$	Alnori et al. (2022)
Dividend Payment (DIV)	$\frac{\text{Dividend per share (DPS)}}{\text{Earnings per share (EPS)}}$	Ramadana dan Agustina (2022)
Growth Opportunities (Q)	$\frac{\text{Total asset year } i - \text{Total asset year } (i - 1)}{\text{Total asset year } i}$	Wulandari dan Setiawan (2019)
Operation Cash Flow (OCF)	$\frac{\text{Operating Cash Flow}}{\text{Total assets}}$	Alnori et al. (2022)
Cash Flow Volatility (CFVol)	$\frac{\sigma \text{ Operating Cash Flow}}{\text{Total assets}}$	Aftab et al. (2018)
Control Variable		
Firm Age (AGE)	$\ln(\text{year of observation} - \text{year of firm establishment})$	Tayem (2017)

Table 1: Variables dan Measurements

3.3. Panel Regression Model Selection Method

The regression model estimation method using panel data can be done through three approaches, namely: the Common Effect Model, Fixed effect model, and Random Effect Model. The Chow test and Hausman test were carried out to determine the most appropriate regression model between CEM, FEM, or REM.

The Chow test gave the results of the selected FEM, followed by the Hausman test, which stated that the FEM was selected. The final results conclude that the shariah CashTA, shariah CashNet, non-shariah CashTA, and non-shariah CashNet models are the fixed effect models.

Model	Dependent	Chi-square	Prob	Decision
Shariah	CashTA	270.2196	0.0000	H ₀ rejected, Fixed effect selected
Shariah	CashNet	247.6563	0.0000	H ₀ rejected, Fixed effect selected
Non-Shariah	CashTA	43.7141	0.0000	H ₀ rejected, Fixed effect selected
Non-Shariah	CashNet	70.14941	0.0000	H ₀ rejected, Fixed effect selected

Table 2: Chow Test of CashTA and CashNet

Model	Dependent	Chi-square	Prob	Decision
Shariah	CashTA	37.593153	0.0000	H ₀ rejected, Fixed effect selected
Shariah	CashNet	39.779434	0.0000	H ₀ rejected, Fixed effect selected
Non-Shariah	CashTA	41.276127	0.0000	H ₀ rejected, Fixed effect selected
Non-Shariah	CashNet	87.729867	0.0000	H ₀ rejected, Fixed effect selected

Table 3: Hausman Test of CashTA and CashNet

3.4. Hypothesis Significance Test

3.4.1. Simultaneous Test (F Test)

Based on the test results, the probability F-statistic on the shariah and non-shariah CashTA and CashNet models produce a value of 0.000000 < 0.05. This shows that together the independent variables, namely leverage, profitability,

capital expenditure, net working capital, size, dividend payout, growth opportunities, operating cash flow, and cash flow volatility, and the control variable, namely firm age, have an influence on the dependent variable, namely Cash asset ratio and net cash ratio in shariah and non-shariah firms so that the regression model is feasible to use in this study.

Model	Dependent	F-Statistic	Prob	Decision
Shariah	CashTA	182.3426	0.000000	H ₀ rejected
Shariah	CashNet	158.1198	0.000000	H ₀ rejected
Non-Shariah	CashTA	38.41727	0.000000	H ₀ rejected
Non-Shariah	CashNet	17.62429	0.000000	H ₀ rejected

Table 4: F Test Results of CashTA and CashNet

3.4.2. Goodness of Fit Test (Adjusted R²)

Model	Dependent	R ²	Adjusted R ²
Shariah	CashTA	0.984767	0.979367
Shariah	CashNet	0.982475	0.976261
Non-Shariah	CashTA	0.957624	0.932697
Non-Shariah	CashNet	0.912028	0.860279

Table 5: Goodness of Fit Test Result of CashTA and CashNet

4. Results and Discussion

4.1. Descriptive Statistics Result

The cash asset ratio (CashTA) has an average value of 0.148524 with a standard deviation of 0.120469. PT. Wilmar Cahaya Indonesia Tbk has the lowest cash asset ratio value with a value of 0.000864 in 2018, while the firm that has the highest cash asset ratio value is PT. Delta Djakarta Tbk amounted to 0.632315 in 2018. The net cash ratio (CashNet) has the lowest value with 0.008966, namely the firm PT. Wilmar Cahaya Indonesia Tbk in 2018, while the highest CashNet value was 1.719716, namely PT. Delta Djakarta Tbk in 2018. The average Cash Net Ratio is 0.208137, and the standard deviation is 0.253105.

Leverage (LEV) has a standard deviation of 0.172031, while the average value is 0.357156. The firm that has the highest leverage value with a value of 0.789518 is PT. Indomobil Sukses Internasional Tbk in 2019, while the lowest value is 0.146324, namely the firm PT Chitose Internasional Tbk in 2018. Profitability (PROF) has the highest value of 0.580292, namely PT Multi Bintang Indonesia Tbk in 2016, while the firm PT. Indo Kordsa Tbk in 2020 has the lowest profitability value of -0.013959. The average value of profitability is 0.100378, and the standard deviation is 0.094486.

Capital expenditure (CAPEX) has an average value of 0.349557 with a standard deviation value of 0.216757. PT. Delta Djakarta Tbk has the lowest capital expenditure value, with a value of 0.059200 in 2018, while the firm that has the highest capital expenditure value is PT. Fajar Surya Wisesa of 0.7370430 in 2020. Net working capital (NWC) has the lowest value with -0.18681, namely the firm PT. Unilever Indonesia Tbk in 2016, while the highest net working capital (NWC) value was 0.795687, namely PT. Delta Djakarta Tbk in 2017. The average value of net working capital is 0.283451, and the standard deviation is 0.217942.

Size (SIZE) has a standard deviation of 1.605578, while the average value is 29.58638. The firm that has the highest leverage value, with a value of 33.49453, is PT. Astra International Tbk in 2019, while the lowest value was 26.71307, namely the firm PT Chitose Internasional Tbk in 2016. Dividend payments (DIV) had the highest value of 3.521127, namely PT. Trisula International Tbk in 2017 while the firm PT. Indo Kordsa Tbk in 2020 has the lowest dividend payout value of -3.297525. The average value of dividend payments is 0.565057, with a standard deviation of 0.426182.

Growth opportunities (Q) have an average value of 0.072977 with a standard deviation value of 0.119812. PT Kabelindo Murni Tbk has the lowest growth opportunity value with a value of -0.264516 in 2019, while the firm that has the highest growth opportunity value is PT Indofood CBP Sukses Makmur Tbk of 0.626316 in 2020. Operating cash flow (OCF) has the lowest value of -0.087738, namely the firm PT Kabelindo Murni Tbk in 2019, while the highest operating cash flow value with a value of 0.548768, namely PT Multi Bintang Indonesia Tbk in 2016. The average operating cash flow (OCF) value is 0.127169 and has a standard deviation of 0.106986.

Cash flow volatility (CFVol) has a standard deviation of 0.026002, while the average value is 0.046762. The firm that has the highest cash flow volatility value with a value of 0.201148 is PT Supreme Cable Manufacturing & Commerce Tbk in 2016, while the lowest value is 0.015200, namely PT Nippon Indosari Corpindo Tbk firm in 2019. Firm age (AGE) has the highest value of 4.510859, namely PT Multi Bintang Indonesia Tbk in 2020, while the firm PT Indofood CBP Sukses Makmur Tbk in 2016 had the lowest age of 1.945910. The average age of the firm is 3.626124, and the standard deviation is 0.457865.

	Mean	Median	Min	Max	Std. Dev
Whole					
<i>CashTA</i>	0.148524	0.110162	0.000864	0.632315	0.120469
<i>CashNet</i>	0.208137	0.123800	0.000865	1.719716	0.253105
LEV	0.357156	0.339278	0.044014	0.789518	0.172031
PROF	0.100378	0.075321	-0.015339	0.580292	0.094486
CAPEX	0.367298	0.348532	0.059200	0.737043	0.162770
NWC	0.283451	0.283731	-0.256181	0.795687	0.217942
SIZE	29.58638	29.14825	26.71307	33.49453	1.605578
DIV	0.426182	0.360760	-3.297525	3.521127	0.565057
Q	0.072977	0.068392	-0.264516	0.626316	0.119812
OCF	0.127169	0.106270	-0.087738	0.548768	0.106986
CFVol	0.046762	0.042158	0.015200	0.201148	0.026002
AGE	3.626124	3.713572	1945910	4.510859	0.457865
Syariah					
<i>CashTA</i>	0.151072	0.136277	0.000864	0.415624	0.100002
<i>CashNet</i>	0.195816	0.157782	0.000865	0.711228	0.154110
LEV	0.320872	0.304761	0.044014	0.726385	0.154168
PROF	0.095983	0.078802	-0.015339	0.446746	0.074860
CAPEX	0.373804	0.378703	0.089806	0.692213	0.138157
NWC	0.303917	0.305248	-0.256181	0.714206	0.178461
SIZE	29.32678	29.03509	26.71307	32,72561	1.365579
DIV	0.379892	0.365439	-3.297525	1,766841	0.485757
Q	0.075891	0.067568	-0.264516	0,626316	0.122603
OCF	0.120542	0.109279	-0.087738	0,419830	0.089011
CFVol	0.050104	0.044876	0.015200	0,201148	0.027541
AGE	3.586198	3.688880	1.945910	4,465908	0.399369
Non-Syariah					
<i>CashTA</i>	0.141575	0.074136	0.008886	0,632315	0.164817
<i>CashNet</i>	0.241742	0.080072	0.008966	1,719716	0.418221
LEV	0.456113	0.494176	0.146324	0,789518	0.180527
PROF	0.112365	0.067216	-0.013959	0,580292	0.134401
CAPEX	0.349557	0.270311	0.059200	0,737043	0.216757
NWC	0.227635	0.119016	-0.186811	0,795687	0.295339
SIZE	30.29436	31.14176	27.02399	33,49453	1.973694
DIV	0.552427	0.306567	-0.126135	3,521127	0.730031
Q	0.065030	0.074274	-0.173832	0,448232	0.112543
OCF	0.145244	0.087233	-0.054713	0,548768	0.144652
CFVol	0.037648	0.029720	0.018273	0,083886	0.018589
AGE	3.735015	3.828641	2,484907	4.510859	0.579118

Table 6: Descriptive Statistics

4.2. Discussion

The results of the regression test show that there is a positive and significant influence between leverage and cash holding as measured by cash asset ratio (*CashTA*) in shariah and non-shariah compliant firms. This implies that the greater the leverage, the greater the firm's cash holding. Firms with high leverage pose high financial risks, so firms will tend to hold larger amounts of cash to guard against the possibility of financial distress. The results of the regression test on cash holding as measured by Net cash ratio (*CashNet*) also give the same result that leverage has a positive and significant effect on cash holding, both in shariah and non-shariah compliant firms.

Table 7 shows that there is a negative and significant influence between profitability and cash holding as measured by cash asset ratio (*CashTA*) in shariah compliant firms. These results support the research conducted by Aftab et al. (2018), who examined 15 countries included in the Asia-Pacific region and found that there is a negative relationship between profitability and cash holding. This is in accordance with the signaling theory, namely, increasing profitability can reduce the need to hold cash reserves. On the other hand, the test results show that profitability has no significant effect on *CashTA* in non-shariah-compliant firms. This is in accordance with research conducted by Puteri et al. (2022). Based on a study conducted on manufacturing firms on the Indonesia Stock Exchange in 2015-2020, it is stated that profitability has no significant effect on cash holdings. Table 7 shows that there is a negative and significant influence between profitability and cash holding as measured by Net cash ratio (*CashNet*) in shariah compliant firms. However, in non-shariah compliant firms it is shown that there is no significant effect between profitability and cash holding as measured by Net cash ratio (*CashNet*). These results support the results of the regression test with the dependent variable Cash Asset Ratio.

Table 7 shows that there is a negative and significant influence between capital expenditure and cash holding as measured by cash asset ratio (*CashTA*), both in shariah and non-shariah compliant firms. This supports the pecking order

theory, which states that firms with higher investment costs will generate less (or no) surplus from internal funds to invest in liquid asset reserves, resulting in fewer cash holdings. Table 7 shows that capital expenditure has no significant effect on cash holdings as measured by the net cash ratio (CashNet) in shariah firms. This can be explained by the fact that shariah-compliant firms, compared to non-shariah-compliant firms, rely heavily on limited liquid funds to finance investment needs.

Based on the test results, it can be seen that there is a significant positive effect between net working capital and cash holding as measured by the cash asset ratio (CashTA) in shariah and non-sharia compliant firms. Based on the test results, it was also found that net working capital had a significant positive effect on the size of the net cash ratio (CashNet) for both shariah and non-shariah compliant firms. Thus it can be stated that the test results support the proposed hypothesis. This happens because net working capital is a substitute for cash. Net working capital is a firm asset that is easily converted into cash. This is in accordance with research conducted by Sanjaya and Widiastara (2019).

Table 7 shows a significant positive effect between firm size and cash holding as measured by cash asset ratio (CashTA) and net cash ratio (CashNet) in shariah compliant firms. This is in accordance with research conducted by Yongki et al. (2021). The explanation is that a firm with a larger size has a high sales yield and therefore generates a larger amount of cash. However, in non-shariah-compliant firms, firm size has a negative and significant effect on cash holdings as measured by both the cash-asset ratio and the net cash ratio. This is in accordance with research conducted by Alnori et al. (2022). Small firms have difficulty accessing capital markets, resulting in a tendency.

Table 7 shows that dividend payments have a negative and significant effect on cash holdings in shariah compliant firms, measured by the cash asset ratio and net cash ratio. This is in line with the trade-off theory, which states that the distribution of cash to shareholders results in a reduction in cash funds, so firms that distribute cash dividends have less cash. This is also in accordance with research conducted by Sheikhet et al. (2018). However, the results of tests on non-shariah compliant firms show different things, namely, dividend payments do not have a significant effect on cash holdings, both in terms of cash asset ratio and net cash ratio. This is in accordance with the results of research conducted by Alnori et al. (2022).

Based on the test results, it can be stated that growth opportunities have a positive and significant effect on cash holdings as measured by the cash asset ratio and net cash ratio in shariah-compliant firms. This result is in line with the pecking order theory, which states that firms with high growth opportunities tend to use internal funding to avoid the possibility of financial distress so that firms will save larger amounts of cash. However, for non-shariah-compliant firms, growth opportunities do not have a significant effect on cash holdings (CashTA and CashNet). This is in accordance with the results of a study by Alnori et al. (2022)

Table 7 shows operating cash flow has a positive and significant effect on cash holdings of shariah and non-shariah-compliant firms as measured by cash asset ratio (CashTA) and net cash ratio (CashNet). These results are consistent with the predictions of the pecking order theory, which states that firms tend to use internal funds in the form of retained earnings as the first option in investment funding to minimize information asymmetry and external funding costs. The results of this test also support the results of previous studies (Alnori et al., 2022; Bugshan et al., 2021; Lozano & Yaman, 2020; Marwick et al., 2020).

Table 7 shows that there is a significant positive effect between cash flow volatility and cash holding as measured by the net cash ratio in shariah compliant firms. However, no significant effect is found on the cash-asset ratio proxy. Likewise, for non-shariah compliant firms, there was no significant influence between cash flow volatility and cash holding as measured by both CashTA and CashNet. Cash flow volatility causes restrictions on liquidation so that the firm loses valuable investment opportunities. The positive effect of cash flow volatility on shariah-compliant firm cash holding is in line with that proposed by the trade-off theory. Shariah-compliant firms depend on internal funds as a source of liquidation compared to external funding due to shariah-compliant restrictions, so firms tend to hold more cash.

Based on the test results, it can be stated that firm age has a significant negative effect on cash holding in shariah compliant firms (CashTA and CashNet). This is consistent with the trade-off theory where a new firm or one with younger people will have a larger amount of cash to meet investment needs due to information asymmetry, where investors charge a higher premium because there is not much information about the firm. The results of research conducted by Marakis et al. (2020) also support this result. On the other hand, it was found that there was a significant positive effect between firm age on non-shariah compliant firm cash holdings. This is because the older the firm is, the more successful it is and the more internal resources it has (Tayem, 2017).

	CashTA		CashNet	
	Syariah	Non-Syariah	Syariah	Non-Syariah
Constant	-2.350 (-2.538)	4.283 (1.653)	-6.229 (-4.427)	6.625 (2.760)
LEV	0.151*** (3.045)	0.393*** (3.147)	0.228*** (3.110)	0.599*** (5.534)
PROF	-0.308*** (-5.047)	-0.019 (-0.132)	-0.354*** (-3.728)	-0.070 (-0.411)
CAPEX	-0.116** (-2.179)	-0.244** (-2.419)	-0.118 (-1.469)	-0.385*** (-3.365)
NWC	0.670*** (12.605)	0.241*** (2.959)	1.087*** (13.727)	0.272*** (2.898)
SIZE	0.096*** (2.831)	-0.228** (-2.702)	0.232*** (4.545)	-0.347*** (-5.010)
DIV	-0.017*** (-5.730)	0.017 (1.047)	-0.020*** (-4.562)	0.027 (1.228)
Q	0.038** (2.530)	0.032 (0.775)	0.076*** (2.921)	0.054 (0.810)
OCF	0.413*** (8.972)	0.232** (2.093)	0.569*** (8.441)	0.268*** (5.482)
CFVol	1.232 (1.914)	-1.804 (-0.699)	3.591*** (3.878)	-2.805 (-1.240)

	CashTA		CashNet	
	Syariah	Non-Syariah	Syariah	Non-Syariah
AGE	-0.168*** (-2.719)	0.707*** (3.327)	-0.264*** (-2.923)	1.065*** (3.271)
Observations	150	55	150	55
Number of firms-iden	30	11	30	11
Adj R-Squared	0,979	0,933	0,976	0,860
Estimation Test				
Chow Test	0,0000	0,0000	0,0000	0,0000
Hausman Test	0,0000	0,0000	0,0000	0,0000
Estimator	FE	FE	FE	FE

Note: t-Statistics dalam tanda kurung; *** significant at 1%; ** significant at 5%

Table 7: Summary of T- Test Results of CashTA and CashNet

5. Conclusions and Implications

5.1. Conclusions

- Leverage partially has a significant positive effect on the cash asset ratio and net cash ratio of shariah and non-shariah-compliant firms.
- Profitability partially has a significant negative effect on the cash-asset ratio and net cash ratio of shariah and non-shariah-compliant firms.
- The effect of capital expenditure on cash holding as measured by the cash asset ratio and net asset ratio are:
 - Capital expenditure partially has a significant negative effect on the cash-asset ratio in shariah and non-shariah-compliant firms
 - Capital expenditure partially does not have a significant effect on the net cash ratio of shariah compliant firms. However, it has a significant negative effect on the net cash ratio of non-shariah-compliant firms.
- Partial net working capital has a significant positive effect on the cash asset ratio and net cash ratio of shariah and non-shariah compliant firms.
- Firm size partially has a significant positive effect on the cash-asset ratio and net cash ratio of shariah compliant firms. However, it has a significant negative effect on the cash-asset ratio and net cash ratio of non-shariah-compliant firms.
- Partial dividend payments have a significant negative effect on the cash-asset ratio and net cash ratio of shariah compliant firms. However, they have no significant effect on the cash-asset ratio and net cash ratio of non-shariah-compliant firms.
- Growth opportunities partially have a significant positive effect on the cash-asset ratio and net cash ratio of shariah compliant firms. However, they do not have a significant effect on the cash asset ratio and net cash ratio of non-shariah-compliant firms.
- Partially, operating cash flow has a significant positive effect on the cash asset ratio and net cash ratio of shariah and non-shariah compliant firms.
- The effect of cash flow volatility on cash holdings as measured by the cash asset ratio and net asset ratio are:
 - ✓ Partially cash flow volatility has a significant positive effect on the net cash ratio of shariah compliant firms but does not have a significant effect on the net cash ratio of non-shariah-compliant firms.
 - ✓ Partially, cash flow volatility has no significant effect on the cash asset ratio and net cash ratio for both shariah and non-shariah compliant firms.
 - ✓ Firm age partially has a significant negative effect on the cash asset ratio and net cash ratio of shariah compliant firms but does not have a significant effect on the cash asset ratio and net cash ratio of non-shariah-compliant firms.

5.2. Implications

5.2.1. Firm

The results of the study stated that the factors that influence the cash holding of shariah-compliant firms are leverage, profitability, capital expenditure, net working capital, size, dividend payout, growth opportunities, operating cash flow, cash flow volatility, and firm age. In non-shariah-compliant firms, it is found that the determinants of cash holding are leverage, profitability, capital expenditure, net working capital, size, operating cash flow, and firm age. Thus, the firm needs to consider these factors to be able to determine the right and efficient amount of cash in order to avoid excess cash so that it can provide maximum profit for the firm.

5.2.2. Investors

Investors need to pay attention to factors that have a negative and significant influence with a large degree of influence on cash holdings, both for CashTA and CashNet. If these factors increase, then CashTa and CashNet will decrease. This study shows that the factors that influence CashTA negatively and significantly in shariah compliant firms are profitability, capital expenditure, dividend payout, and firm age. In contrast, the factors that have a significant negative effect on CashNet shariah compliant firms are profitability, dividend payout, and firm age. In non-shariah-compliant firms,

factors that have a negative and significant influence are CashTA and CashNet, namely profitability, capital expenditure, size, and cash flow volatility. Investors need to pay attention to these factors to get optimal returns on the funds invested in the firm.

5.2.3 Future Research

The independent variables in this study simultaneously have a significant effect on CashTA and CashNet with an adjusted R² level of 86-98%, so further research can use variables that have a significant effect and increase the adjusted R² on CashTA and CashNet. Growth opportunity variables in future research can be measured using an indicator that can describe market expectations of growth opportunities better, for example, Tobin's q ratio (Saputri & Kuswardono, 2019; Alnori et al., 2022).

6. References

- i. Aftab, U., Javid, A. Y., & Akhter, W. (2018). The Determinants of Cash Holdings around Different Regions of the World. *Business & Economic Review*, 10(2), 151-182. <https://doi.org/10.22547/ber/10.2.7>
- ii. Alnori, F., & Alqahtani, F. (2019). Capital structure and speed of adjustment in non-financial firms: Does sharia compliance matter? Evidence from Saudi Arabia. *Emerging Markets Review*, 39, 50-67. <https://doi.org/10.1016/j.ememar.2019.03.008>
- iii. Alnori, F., Bugshan, A., & Bakry, W. (2022). The Determinants of Corporate Cash Holdings: Evidence from Shariah-Compliant and Non-Shariah-Compliant Corporations. *Managerial Finance*. <https://doi.org/10.1108/MF-02-2021-0085>
- iv. Ashhari, Z. M., & Faizal, D. R. (2018). Determinants and Performance of Cash Holding: Evidence from Small Business in Malaysia. *International Journal of Economics, Management, and Accounting*, 26(2), 457-473. <https://journals.iium.edu.my/enmjjournal/index.php/enmj/article/view/636>
- v. Astuti, A. W., Wiyono, G., & Mujino, M. (2019). Analisis Cash Holding Berbasis Kekuatan Kas dan Modal Kerja Bersih. *JBTI : Jurnal Bisnis Teori Dan Implementasi*, 10(2). <https://doi.org/10.18196/bti.102123>
- vi. Bhuiyan, M. B. U., & Hooks, J. (2019). Cash holding and over-investment behavior in firms with problem directors. *International Review of Economics and Finance*, 61, 35-51. <https://doi.org/10.1016/j.iref.2019.01.005>
- vii. Bugshan, A. (2021). Oil price volatility and corporate cash holding. *Journal of Commodity Markets*, 28, 100237. <https://doi.org/10.1016/j.jcomm.2021.100237>
- viii. Chen, H., Yang, D., Zhang, J. H., & Zhou, H. (2020). Internal controls, risk management, and cash holdings. *Journal of Corporate Finance*, 64, 101695. <https://doi.org/10.1016/j.jcorpfin.2020.101695>
- ix. Chireka, T., & Fakoya, M. B. (2017). The determinants of corporate cash holdings levels: Evidence from selected South African retail firms. *Investment Management and Financial Innovations*, 14(2), 79-93. [https://doi.org/10.21511/imfi.14\(2\).2017.08](https://doi.org/10.21511/imfi.14(2).2017.08)
- x. Chukwuebuka Nnubia, I., Nyereugwu Ofoegbu, G., & Chukwuebuka, I. (2019). Effect of Profitability on Cash Holdings of Quoted Consumer Goods Companies in Nigeria Corporate Social Responsibility (CSR) Activities of Listed Firms on Nigeria Stock Exchange View project Fair Value Measurement, Depreciation and Profitability of Listed Manufacturing Companies in Nigeria View project Effect of Profitability on Cash Holdings of Quoted Consumer Goods Companies in Nigeria. In *International Journal of Research and Innovation in Applied Science (IJRIAS) |*: Vol. IV. www.rsisinternational.org
- xi. Clarkson, P., Gao, R., & Herbohn, K. (2020). The relationship between a firm's information environment and its cash holding decision. *Journal of Contemporary Accounting and Economics*, 16(2). <https://doi.org/10.1016/j.jcae.2020.100201xii>
- xii. Guizani, M. (2017). The financial determinants of corporate cash holdings in an oil-rich country: Evidence from Kingdom of Saudi Arabia. *Borsa Istanbul Review*, 17(3), 133-143. <https://doi.org/10.1016/j.bir.2017.05.003>
- xiii. Habib, A., & Hasan, M. M. (2017). Social Capital and Corporate Cash Holdings. *International Review of Economics & Finance*, 52, 1-20. <https://doi.org/10.1016/j.iref.2017.09.005>
- xiv. Kusumawati, S., Hendra Ts, K., & Nurlaela, S. (2020). Determinan Cash Holding pada Perusahaan Property dan Real Estate di Bursa Efek Indonesia. *Jurnal Penelitian Ekonomi Dan Akuntansi (JPENSI)*, 5(1). <http://jurnalekonomi.unisla.ac.id/index.php/jpenssi>
- xv. Liestyasih, L. P. E., & Wiagustini, L. P. (2017). Pengaruh Firm Size dan Growth Opportunity terhadap Cash Holding dan Firm Value. *E-Jurnal Ekonomi Dan Bisnis Universitas Udayana*, 6(10), 3607-3636. <https://doi.org/DOI:10.24843/EEB.2017.v06.i10.p07>
- xvi. Lozano, M. B., & Yaman, S. (2020). The European Financial Crisis and Firms' Cash Holding Policy: An Analysis of the Precautionary Motive. *Global Policy*, 11(S1), 84-94. <https://doi.org/10.1111/1758-5899.12768>
- xvii. Maarif, S., Anwar, C., & Dharmansyah, D. (2019). Pengaruh Interest Income Growth, Net Working Capital, dan Capital Expenditure terhadap Cash Holding dengan Aktivitas Dewan Komisaris sebagai Variabel Moderasi. *JURNAL MADANI: Ilmu Pengetahuan, Teknologi, Dan Humaniora*, 2(1), 163-173. <https://doi.org/10.33753/madani.v2i1.42>
- xviii. Magerakis, E., Gkillas, K., Tsagkanos, A., & Siriopoulos, C. (2020). Firm Size Does Matter: New Evidence on the Determinants of Cash Holdings. *Journal of Risk and Financial Management*, 13(8), 163.

- <https://doi.org/10.3390/jrfm13080163>
- xix. Puteri, A. N., Primalia, K., Verdiansyah, G. M., & Leon, F. M. (2022). Pengaruh Struktur Kepemilikan Terhadap Cash Holdings pada Perusahaan Manufaktur di Indonesia. *JURNAL SEKURITAS (Saham, Ekonomi, Keuangan Dan Investasi)*, 5(2), 181-195.
<http://openjournal.unpam.ac.id/index.php/SKT/article/view/15459/9048>
- xx. Ramadana, S. W., & Agustina. (2022). Pengaruh Dividend Payment dan Leverage terhadap Cash Holding pada Perusahaan Building Construction Bursa Efek Indonesia. *Jurnal HEI EMA*, 1(2).
<http://jurnal.stisalhilalsigli.ac.id/index.php/jhei/article/view/67>
- xxi. Sanjaya, Y. D., & Widiasmara, A. (2019). Analisis Faktor-Faktor Yang Mempengaruhi Cash Holding Pada Perusahaan Sektor Industri Barang Konsumsi Di BEI Tahun 2014-2017. *Seminar Inovasi Manajemen, Bisnis, Dan Akuntansi I*.
<https://www.semanticscholar.org/paper/Analisis-Faktor-Faktor-Yang-Mempengaruhi-Cash-Pada-Sanjaya-Widiasmara/833a20e4f43b04855f4bd9695c985101032fec93#citing-papers>
- xxii. Saputri, E., & Kuswardono, A. (2019). Pengaruh Profitabilitas, Leverage, Firm Size, dan Growth Opportunity Terhadap Cash Holding Perusahaan (Studi Kasus Perusahaan Manufaktur yang Terdaftar Pada Bursa Efek Indonesia Periode Tahun 2013-2017). In *Management, and Industry (JEMI) (Vol. 2, Issue 2)*.
<https://journal.bakrie.ac.id/index.php/JEMI/article/view/1889>
- xxiii. Sari, M., & Zoraya, I. (2021). Analisis Faktor- Faktor yang Memengaruhi Cash Holding pada Perusahaan Industri Sektor Barang Konsumsi yang Terdaftar di Bursa Efek Indonesia Tahun 2009-2018. *Managament Insight: Jurnal Ilmiah Manajemen ISSN*, 16(1), 61-80.
<https://doi.org/10.33369/insight.16.1.61-80>
- xxiv. Sethi, M., & Swain, R. K. (2019). Determinants of Cash Holdings: A Study of Manufacturing Firms in India. *International Journal of Management Studies*, VI(2(2)), 11.
[https://doi.org/10.18843/ijms/v6i2\(2\)/02](https://doi.org/10.18843/ijms/v6i2(2)/02)
- xxv. Sheikh, N. A., Mehmood, K. K., & Kamal, M. (2018). Determinants of Corporate Cash Holdings: Evidence from MNCs in Pakistan. *Review of Economics and Development Studies*, 4(1), 71-78.
<https://doi.org/10.26710/reads.v4i1.282>
- xxvi. Singh, K., & Misra, M. (2019). Financial determinants of cash holding levels: An analysis of Indian agricultural enterprises. *Agricultural Economics (Czech Republic)*, 65(5), 240-248.
<https://doi.org/10.17221/240/2018-AGRICECON>
- xxvii. Suk, K. S., Haryanto, M., & Purba, J. T. (2019). Cash Holdings of Business Group-Affiliated Firms in Indonesia. *DLSU Business & Economics Review*, 29(1), 40-57.
https://www.researchgate.net/publication/334671319_Cash_Holdings_of_Business_GroupAffiliated_Firms_in_Indonesia
- xxviii. Tayem, G. (2017). The Determinants of Corporate Cash Holdings: The Case of a Small Emerging Market. *International Journal of Financial Research*, 8(1), 143.
<https://doi.org/10.5430/ijfr.v8n1p143>
- xxix. Tijow, A. P., Sabijono, H., & Tirayoh, V. Z. (2018). Pengaruh Struktur Aktiva dan Profitabilitas terhadap Struktur Modal pada Perusahaan Sektor Industri Barang Konsumsi yang Terdaftar di Bursa Efek Indonesia. *GOING CONCERN : JURNAL RISET AKUNTANSI*, 13(04).
<https://doi.org/10.32400/gc.13.03.20375.2018>
- xxx. Wulandari, E. A., & Setiawan, M. A. (2019a). Pengaruh Growth Opportunity, Net Working Capital, Cash Conversion Cycle, dan Dividend Payout terhadap Cash Holding. *Jurnal Eksplorasi Akuntansi*, 1(3), 1259-1274.
<https://doi.org/https://doi.org/10.24036/jea.v1i3.141>
- xxxi. Wulandari, E. A., & Setiawan, M. A. (2019b). Pengaruh Growth Opportunity, Net Working Capital, Cash Conversion Cycle Dan Dividend Payout Terhadap Cash Holding. *Jurnal Eksplorasi Akuntansi*, 1(3), 1259-1274.
<https://doi.org/10.24036/jea.v1i3.141>
- xxxii. Yongki, Panjaitan, R., & Leon, F. M. (2021). Dampak Manajemen Modal Kerja terhadap Cash Holding pada Industri Consumer Goods Indonesia. *Jurnal Keuangan Dan Bisnis ISSN*, 19(1), 62-78.
<https://journal.ukmc.ac.id/index.php/jkb/article/view/110/108>