

# Analysis of Firms Size and Profitability on Cash Holding in Manufacturing Companies Listed on BEI 2016-2018

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**Abstract:** *Cash is the most liquid asset that functions as a driver of a company's regular operations. Therefore, the increasing importance of managing the ideal amount of cash for a company has raised an attention of various groups of executives, analysts, and investors towards cash holdings. The objective of this study was to find out and analyze the relationship between firm size and profitability on cash holding in manufacturing companies listed on the Indonesia Stock Exchange in the period of 2016-2018. The study was a quantitative study with secondary data obtained from the companies' annual financial reports used as a sample in this study. The analysis used in this study was multiple linear regression analysis that sees the effect of the independent variable to the dependent variable b, both independently and dependently. The samples used were 53 companies each year.*

**Keywords:** Firm Size, Profitability, Leverage and Cash Holding.

## 1. Introduction

Cash is the most liquid asset that functions as a driver of a company's regular operations. Therefore, the increasing importance of managing the ideal amount of cash for the company has raised an attention of various groups of executives, analysts and investors towards cash holdings (Brown Christine, Chen Yangyang, Shekhar Chander, 2011).

Christine et al., (2011) explained, cash holding is defined as cash that is in a company or available for investment in physical assets and to be distributed to investors. Cash holding is an essential asset in a company. Determination of the cash holding level is one of the crucial decisions that must be taken by the company's financial manager. The problem for every financial manager, in general, is to run his company's activities on a regular basis while maintaining the balance of the amount of cash in the company (not too much, not too little).

Having cash in large amounts can provide various kinds of benefits for the company, but can also provide losses for the company. These benefits are for example profits from trade discount, maintained company's financial position in the credit rating and to finance the needs of unexpected expenses (Kim, 2014). On the other hand, saving too much cash will also cause losses for the company. Cash that is stored too much causes the profit that should be obtained from the use of cash to conduct business activities can not be obtained to the maximum.

Companies must hold optimal cash levels for different reasons, such as investing in new infrastructure, dividend payments or share repurchases, surviving during an economic crisis, and dealing with unexpected events (Shabbir M, Hashmi SH, Chaudary GM, 2016)

Cash holdings have many advantages that are directly related to investment activities, especially in flexibility and

taking advantage of opportunities. Companies with high cash holdings can take advantage of more investment opportunities without being too restricted by capital, ensuring adequate capital for planned or unplanned opportunities (business expansion, market opportunities during the financial crisis, when unexpected news lowers stock prices, real estate agreements, business opportunities, etc.) (Ogundipe, Ogundipe, & Ajao, 2012).

## 2. Literature Review

### 1) Cash Holding

Carmen and Carracal (2010) argued that cash holding is a ratio that compares the amount of cash and cash equivalents owned by a company with the total assets of the company as a whole. According to Phung and Nguyen (2018), cash holding is defined as cash that is in the company or available for investment in physical assets and to be distributed to investors. In the cash holding theory, the benefits of cutting for companies, according to Rakow (2016):

- a) The company can save transaction costs and does not need to liquidate assets if the company requires cash.
- b) If sources of funding outside of cash are difficult to obtain or very expensive.
- c) Having cash is very useful as a source of financing, especially when a credit crunch occurs. The trade-off theory states that a cash holding company is managed by taking into account the boundary between costs and benefits obtained from cash holding (Tae, 2014).

Each company has a different cash holding policy. It is caused by differences in circumstances faced by the company and also different motivations in cash holding.

### 2) Cash Holding

Taani et al., (2011) states that there are three motives for having cash, which are:

**a) Transaction Motive**

Transaction Motive means the company provides cash to pay for various business transactions.

**b) Precautionary Motive**

The precautionary motive is intended to maintain cash balance to meet unexpected cash demands. If all cash expenses and income could be predicted very accurately, the cash balance for precaution would be deficient. Besides the accuracy of cash predictions, if the company has strong access to external funding sources, the cash balances will also be low. This precautionary motive appears in the policy of determining a minimum cash balance in preparing the cash budget.

**c) Speculative Motive**

The speculative motive is intended to make a profit from owning or investing cash in the form of highly liquid investments. The type of chosen investment is usually an investment in securities. If the interest rate is expected to fall, the company will turn cash into shares, with the expectation that stock prices will rise if all investors believe that interest rates will (and may have) gone down.

**3) Cash Holding Theory****a) Trade-off Theory**

The trade-off theory states that the company's cash holding is managed by considering the boundary between costs and benefits obtained from cash holding (Tae, 2014).

**Transaction Costs Model**

Transaction costs model describes that one of the advantages of holding liquid assets is the ease of converting them into cash. This model assumes that there are no different costs for the number of liquid assets held. If a company faces a crisis in liquid assets, then it can be compensated through reducing dividends and investments or raising funds through the liquidity of assets and securities. The higher the impact of the liquid asset crisis, the more serious the impact, which is an increase in costs because it suppresses investment and increases external fundraising. Because of the increasing costs and the likelihood of a liquid asset crisis, it will force companies to hold more liquid assets (Achmad, 2007; 175).

**Baumol Model**

The Baumol model states that there is a trade-off in cash holding, in which if a company's cash balance is considerable, then the company will lose the opportunity to convert these funds into alternative investments. Conversely, if the cash balance is too low, then the company will experience difficulties in liquidity problems (Alwi, 2013; 204).

**b) Pecking Order Theory**

According to Brown et al., (2011), pecking order theory suggests the existence of a source of funding in making corporate funding decisions. Based on this theory, when a company needs funds to finance its investment financing needs, the company should finance investment opportunities with internal funds first. If the need for investment cannot be obtained from internal funding, the company will use an external approach to debt as the second source of funding, and equity as the final source of funding. In the Pecking

Order Theory, cash will be a buffer between retained earnings and investment needs. This theory makes the company does not have an optimal cash target, so the company will tend to save the remaining cash from the results of its operational activities.

**4) Company Size**

Company size is an investor's perception of the company's success rate, which is often associated with Kotler's share price (2010). According to Mc. Sawir (2014), stock price is defined as: "The price at which stock sells in the market." Meanwhile, the market price of shares is the market value of securities that investors can obtain if investors sell or buy shares, which are determined based on the closing price or closing price on the exchange on a relevant day. Thus, the closing price is the last time stock price when changing hands at the end of the trade. High stock prices make the size of the company also high. Large company size will make the market believe not only in the company's current performance, but also in the company's prospects. Besides, company size can provide maximum shareholder prosperity if the company's share price increases. With a large company size, it is expected that the welfare of shareholders will be fulfilled.

Munawir (2014) stated that there are quantitative variables that can be used to estimate the value of a company, including book value, stock market value, appraisal value, and cash flow value. Book value is the total assets of the balance sheet minus existing liabilities or owner's capital. Book value does not calculate the market value of a company as a whole because the calculation of book value is based on historical data from company assets.

According to Halim (2015), company size illustrates the size of a company as indicated by total assets, total sales, average sales, and average total assets. Achmad (2007) argues that large companies tend to invest the funds they have in different growth opportunities. It aims to diversify the company's operational areas.

**5) Profitability**

Profitability or company's profit is the company's ability to generate profits in a specified period at the level of sales, assets, and share capital (Sung and Shaw, 2015). The profitability of a company can be assessed in various ways depending on the profits and assets or capital that will be compared with each other (Tae-Nyun, 2014).

Some types of profitability ratios that are often used to review a company's ability to generate profits in types of financial accounting, according to Monzurul (2016) are:

**a) Gross Profit Margin**

Gross profit margin (GPM) is the profitability ratio to assess the percentage of gross profit to net income generated from sales. The GPM, which is influenced by the cash flow statement, explains the amount obtained by the company by considering the costs used to produce products or services.

The formula for calculating GPM is:

$$GPM = \frac{\text{gross profit}}{\text{Total income}} \times 100\%$$

**b) Net Profit Margin**

Net Profit Margin (NPM) is the profitability ratio that assesses the percentage of net income earned after-tax deduction from the revenue derived from sales. This NPM is also called as the profit margin ratio. This ratio measures net profit after tax on sales. The higher the NPM, the better the operation of a company. The amount of NPM is calculated using the following formula:

$$\text{NPM} = \frac{\text{Profit After Tax}}{\text{Operating revenues}}$$

**c) Return on Asset**

The rate of return of assets is the profitability ratio to assess the profit process (profit) obtained by a company related to resources or total assets so that the efficiency of a company in managing its assets can be seen from this ratio. The ROA formula is:

$$\text{ROA} = \frac{\text{Laba Bersih}}{\text{Total Asset}}$$

**d) Return on Asset Equity**

The Return on Assets (ROE) ratio is the profitability ratio to assess a company's ability to generate profits from a company's shareholders investment stated in the process. ROE is calculated from the income of the company against the capital invested by the shareholders (ordinary shareholders and preferred shareholders). ROE shows that the company is successful in managing its capital (net worth), so that the level of profit is measured by the investment of the capital owner or shareholder of the company. ROE is calculated using the formula:

$$\text{ROE} = \frac{\text{Net Income After Tax}}{\text{Shareholders' Equity}}$$

**e) Return on Sales Ratio**

The return on sales ratio shows the level of profit of the company after paying the variable costs of production such as labor costs, raw materials, etc. before deducting taxes. This ratio shows the level of profit gained from each selling rupiah, which is also called the operating margin. The formula for calculating return on sales is:

$$\text{ROS} = \frac{\text{Profit before tax}}{\text{Sales}} \times 100\%$$

**Research Methods**

This research was a descriptive quantitative research. The data obtained were in the form of numbers which were then processed and analyzed to get a representation and the relationship between the variables used in this study (Sugiyono, 2014). This research was also called descriptive research because it tried to provide a detailed description of the characteristics of the respondents used in this study (Moleong, 2014).

Sample criteria used in this study were:

- 1) Listing in a row from 2016 to 2018
- 2) Have consecutive earnings in 2016-2018.
- 3) Publish financial reports for 2016 to 2018

The number of samples used in this study was taken based on the opinion of Arikunto (2014) which was a number of 53 samples per year during 2016-2018.

**Hypothesis**

Hypothesis is a provisional conjecture raised by researchers that still needs to be proven by research analysis (Moleong, 2014). The hypotheses used in this study were:

**1) The Effect of Company Size on Cash Holding**

Company size is another important factor that has a negative effect on cash holding because companies are required to hold cash amounts lower due to economies of scale (Bates, Kahle, & Stulz, 2009). According to the trade-off theory, cash ownership and company size must have an inverse relationship; because larger companies can benefit from economies of scale (Mulligan, 1997), more diversification, greater constant cash flow and the possibility of lower financial difficulties (Titman and Wessels, 1988) and reduce borrowing costs and are less likely to go bankrupt (Ferreira & Vilela, 2004).

The results of a study conducted by Ferreira and Vilela (2004) found that firm size has a negative effect on cash holding. The same thing was found by Bates (2009), Kim et al. (2011), Gill and Shah (2012), and D'Mello (2005). Based on the trade-off theory, there is a negative relationship between firm size and cash holding because the larger the company, the easier it is to obtain external financing so that companies are more likely not to hold large amounts of cash or not make cash reserves. Kim et al., (2011) said that large companies are not like small companies that face limitations in funding because large companies have access to good capital markets at lower costs. Therefore, the larger the company, the easier it will be to obtain external financing so that the company is more likely not to hold large amounts of cash or not make cash reserves.

From this explanation, the first hypothesis in this study is:

H<sub>1</sub>: Firm Size has a negative effect on cash holding of manufacturing companies.

**2) The Effect of Profitability on Cash Holding of Banking Company**

Profitability is the profit generated by the company in a certain period (Evgeny and Bernardino, 2016). The greater profits generated by the company, the company's ability to provide cash holding is also getting better. The greater the profits generated, the greater the company's cash holding value (Monzorul (2016). The size of the cash that must be held by the company in addition to meeting investment needs is also a representation of the size of the company's profits generated in a certain period of time

Along with the leverage and size of the company, profitability also affects the level of cash retention by the company. A profitable company is expected to save a smaller amount of cash because of the greater availability of cash flow from operations (Kim et al., 1998). According to the trade-off theory, there is a negative correlation between cash holding and profitability because profitable companies have sufficient cash flow to avoid the problem of underinvestment (Bates et al., 2009; Kim et al., 1998; A. Ozkan & N. Ozkan, 2004). On the other hand, pecking order theory expects a positive relationship between profitability and cash holding because cash is the result of funding and investment activities (Dittmar et al., 2003). Ferreira and

Vilela (2004) and Almeida et al. (2004) also support the pecking order theory because more profitable companies have easy access to external capital markets at lower costs, pay dividends to their owners, and pay their debts. Therefore, they tend to raise more money to avoid unexpected profits or lack of liquidity. Thus, there is a normal positive relationship between cash holding and profitability and we predict a significant positive or negative effect of profitability on cash holding.

H<sub>3</sub>: Profitability has a positive effect on cash holding of manufacturing companies.

### 3. Results and Discussion

#### 1) Classic assumption test

##### a) Normality Test

**Table 1:** Analysis of Research Variable Factor of Normality Test Results Summary

Variable	N	Profitability Value (P)		Notes
		P	α	
Profitability	153	0,795	0,05	Normal
Firm Size	153	0,976	0,05	Normal
Cash holding	153	0,693	0,05	Normal

Source: Primary Data Processed, 2019

As seen in Table IV.9, the results of the CFA variables used in this study, 3 variables, show all the variables that have good validity where the factor loading value is >0.5, so that all variables can be used for research.

##### b) Heteroscedasticity Test

**Table 2:** Heteroscedasticity Test Results

Variable	Sig	Standard	Conclusion
Profitability	0,487	> 0,05	heteroscedasticity does not occur
Firm size	0,270	> 0,05	heteroscedasticity does not occur

Source: Appendix 3

Based on these results, at a significance level of 5%, all the regression coefficients are not significant (with a significance level of >0.05), so it can be concluded that there is no heteroscedasticity in the equation.

##### c) Autocorrelation Test.

**Table 3:** Autocorrelation Test Results

	Test Result	d <sub>U</sub> > DW	DW > 4 - d <sub>U</sub>	Conclusion
Durbin Watson	1,759	2,987 > 1,759	1,759 > 1,013	There is no autocorrelation

Based on the calculation results obtained by the Durbin Watson value of 2.001 in the statistical table using a significant level of 5%, K = 3 and N = 153, it is obtained dL = 1.575 and dU = 2.987.

Because the value of 1.759 is below dU (2.987 > 1.759) and is above 4 - dU (1.759 > 1.013), it can be concluded that the regression under study has been freed from the autocorrelation problem.

#### d) Multicollinearity Test

**Table 4:** Summary of Multicollinearity Test Results

Variable	Tolerance	Standard	VIF	Standard	Notes
Profitability	0,980	> 0,100	1,021	< 10,000	Multikol free
Firm size	0,987	> 0,100	1,014	< 10,000	Multikol free

Source: Appendix 3

Based on Table IV.6 above, it can be seen that the regression model does not occur multicollinearity because the VIF value < 10 and Tolerance > 0.1; and it is strengthened by the results of the coefficient of determination test which shows that the value of R<sup>2</sup> is 0.769, so it does not exceed 0.9.

#### 2) Multiple Regression Analysis

##### a) Regression Model

**Table 5:** Multiple Regression Test Results

Variable	B
Constant	-0,016
Profitability	0,252
Firm size	-0,468

$$CH = -0,016 + 0,252X_1 - 0,333X_2 - 0,468X_3$$

Notes

CH : Cash holding

a : Constant

X<sub>1</sub> : Profitability

X<sub>2</sub> : Leverage

X<sub>3</sub> : Firm size

##### b) Model Accuracy Test (F/Overall Test)

The model accuracy test (F/overall test) is used to test the significance of all independent variables simultaneously or together on the dependent variable. If the results obtained from the test are F<sub>count</sub> > F<sub>table</sub>, then the independent variable influences the dependent variable. Conversely, if the results obtained that F<sub>count</sub> < F<sub>table</sub>, the independent variable does not have a significant effect on the dependent variable.

**Table IV.8:** Model Accuracy Test Results

Variable	F <sub>count</sub>	F <sub>table</sub>	Sig	Standard	Notes
Independent Variable	27,652	3,05	0,038	0,05	Model Layak

Source: Appendix 3

##### c) Hypothesis testing (t-Test)

The parameter accuracy test (t-test) is used to determine how significant the profitability, leverage, and firm size variables affect the cash holding. If t<sub>count</sub> > t<sub>table</sub> so the variable is significant. Conversely, if t<sub>count</sub> < t<sub>table</sub> then the variable is not significant. The results of hypothesis analysis in this study can be seen in the following Table IV.14:

**Table IV.14:** Hypothesis Test Results

Variable	t <sub>count</sub>	t <sub>table</sub>	Sig	Standard	Notes
Profitability	5,486	1,654	0,028	0,05	Accepted
Firm size	-1,579	1,654	0,033	0,05	Accepted

##### d) Determination Coefficient Test (R<sup>2</sup>).

Determination Test Results (R<sub>2</sub>)

Model	R	R Square	Adjusted R Square
1	.877	.769	.707

Source: Appendix 4



Based on the results of calculations performed with statistical analysis of 159 companies, the R Square value ( $R^2$ ) is 0.769 and the *Adjusted R Square* (*Adjusted R<sup>2</sup>*) value is 0,707.

Based on the results of these calculations, it can be concluded that the model used by the independent variables made a positive contribution of 76.9% to the dependent variable. While other variables that give effect to cash holding but not included as variables in this study are 23.1%.

#### 4. Discussion

##### a) Hypothesis 1 (Firm Size has a negative and significant effect on Cash Holding)

The results of the first analysis are the Firm size variables that give negative and significant effect. The negative effect provides statistical evidence that the size of a large company is inversely proportional to the provision of cash in the company, the larger the size of the company, the smaller the cash provided by the company and vice versa. The negative and significant effect between firm size on cash holding is in line with previous studies that have been conducted.

Company size is another important factor that has a negative effect on cash holding because companies are required to hold cash amounts lower due to economies of scale (Bates, Kahle, & Stulz, 2009). According to the trade-off theory, cash ownership and company size must have an inverse relationship because larger companies can benefit from economies of scale (Mulligan, 1997), more diversification, greater constant cash flow and the possibility of lower financial difficulties (Titman and Wessels, 1988) and reduce borrowing costs and are less likely to go bankrupt (Ferreira & Vilela, 2004).

##### b) Hypothesis 2 (Profitability has a positive and significant effect on Cash Holding)

The third analysis shows that the higher the profitability of the company, the more proportional the value of cash holding. This means that the higher/greater the profitability, the higher/greater the cash holding the company has, and vice versa. T-test results in this study of the relationship between profitability variables and cash holding are in line with previous studies that have been conducted.

A profitable company is expected to keep a smaller amount of cash because of the greater availability of leverage flows from operations (Kim et al., 1998). According to the trade-off theory, there is a negative correlation between cash holding and profitability because profitable companies have sufficient leverage current to avoid the problem of underinvestment (Bates et al., 2009; Kim et al., 1998; A. Ozkan & N. Ozkan, 2004). On the other hand, pecking order theory expects a positive relationship between profitability and cash holding because cash is the result of funding and investment activities (Dittmar et al., 2003). Ferreira and Vilela (2004) and Almeida et al. (2004) also support the pecking order theory because more profitable companies have easy access to the external market at a lower cost, pay dividends to their owners, and pay off their debts. Therefore, they tend to raise more money to avoid unexpected profits or lack of liquidity. Thus, there is a normal positive relationship

between cash holding and profitability and we predict a significant positive or negative effect of profitability on cash holding.

#### 5. Conclusion and Suggestion

##### a) Conclusion

This research is a quantitative research that is a research carried out effectively in detail and in-depth of an organization, institution and certain symptoms. It consists of three independent variables (profitability, leverage, and firm size) and one dependent variable (profitability). The population in this study are manufacturing companies listed on the Indonesia Stock Exchange in the 2016-2018 period, with a sample of 53 manufacturing companies in each financial year. Based on the results of the analysis using SPSS 25.0 for Windows, the results that tested the hypothesis in this study concluded that the independent variables (profitability, leverage and firm size) used in this study affect the dependent variable either partially or jointly.

##### b) Suggestion

Suggestions that the researchers can convey regarding this study are:

- 1) For further research, it is expected to be able to conduct research on all types of companies, so that a more objective and generally applicable representation can be obtained.
- 2) It is recommended to increase the number of variables that contribute to the dependent variable, for example stock prices.

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