# *EFFECT OF PROFITABILITY, FIRM SIZE, AND LEVERAGE ON CASH HOLDING IN MANUFACTURING COMPANIES*

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## *ABSTRACT*

*The purpose of this empirical research is to examine about the effect of profitability, firm size, and leverage on cash holding in manufacturing companies listed on the Indonesia Stock Exchange from 2015 to 2017. The research used 67 manufacturing companies that were selected using purposive sampling method for a total of 201 data in three years. Data processing technique using multiple regression analysis with SPSS version 24.0 . The results of this research shows that all independent variables have influence on cash holding simultaneously. The partially test showed that profitability have positive and significant influence on cash holding, firm size does not significantly influence cash holding, and leverage have negative and significant influence on cash holding.*

***Keywords****:cash holding, profitability, firm size, leverage*

## *ABSTRAK*

Penelitian ini bertujuan untuk menguji pengaruh profitabilitas, ukuran perusahaan, dan *leverage* terhadap *cash holding* pada perusahaan manufaktur yang terdaftar di Bursa Efek Indonesia dari tahun 2015 hingga 2017. Penelitian ini menggunakan 67 perusahaan manufaktur yang dipilih dengan menggunakan metode *purposive sampling*. untuk total 201 data dalam tiga tahun. Teknik pengolahan data menggunakan analisis regresi berganda dengan SPSS versi 24.0. Hasil penelitian menunjukkan bahwa semua variabel independen berpengaruh secara simultan terhadap *cash holding.* Pengujian secara parsial menunjukkan bahwa profitabilitas berpengaruh positif dan signifikan terhadap *cash holding*, ukuran perusahaan tidak berpengaruh signifikan terhadap *cash holding*, dan *leverage* berpengaruh negatif dan signifikan terhadap *cash holding.*

**Kata kunci***: cash holding, profitabilitas, ukuran perusahaan, leverage*

## INTRODUCTION

The increasing number of companies listed on the Indonesia Stock Exchange shows an increase also in competition between companies in the business world. In addition, the rapid development of the economy and technology and information now certainly has an impact on competition between companies in the business world. Every company must have the right strategies and ways to show their existence and worthiness to compete in their respective industries. A common indicator that is often a benchmark of a company is its ability to

maintain liquidity, because companies that have good liquidity make investors more interested in invest money in the company. Liquidity itself refers to the ability of a company to pay off its debt. One or other way to maintain the level of liquidity and minimize various risks related to liquidity is managing the level of cash held by the company.

Cash is the most liquid company assets that are generally used to meet the operational needs of the company. According to Waluyo (2017: 72), cash is defined as an acceptable means of exchange for debt repayment, it can also be accepted as a deposit to the bank. It is important for each company to optimize cash holdings. Gill and Shah (2012) define cash holding as cash in the company or to be invested in physical assets and to be shared with investors.

Holding cash too little is considered not good for operational activities because if cash is too little, the company will have difficulty in repaying and financing the debt and short-term needs. This will certainly cause the company to be seen as bad and illiquid so that there will be doubts from external parties such as stakeholders and investors.

Retention of cash at a level that is too high in the company is considered not good because excessive cash reduces better opportunities to get profits and returns. If the company holds cash until the time will be used for certain needs, then the cash' value will be remain or even decline, but if the cash is invested or used for the development of company activities, the profits obtained from the cash will be more leverage than if the cash is hoarded too long.

The optimal cash level must be accurately estimated by the company so that the company's operational funding needs can be met. Many companies are vulnerable to the liquidity crisis because they tend to store assets in non-current forms, especially manufacturing companies. Manufacturing companies tend to store non-current assets such as machinery for the production or management of raw materials, as well as land and buildings for factory buildings and warehouses.

## THEORETICAL BASIS

The trade-off Theory was first discovered by Modigliani and Miller in 1958. According to Cheryta et al. (2017), trade-off theory is a theory that defines that companies use debt to the maximum level, because it can provide benefits in tax savings This is due to the interest in each debt installment payment, so that the debt can be recognized as a burden and reduce profit of a company that has an impact on the reduced tax that must be paid.

Fereira and Vilela (2004) state that the trade-off theory is a theory which suggests that a company will establish an optimal level of cash holding based on consideration of the costs and benefits of holding cash. There are three benefits of cash holding, which can reduce the possibility of financial distress, enable investment policies in times of financial difficulties, and reduce the expensescaused by the conversion of the company's assets to cash. This makes the existence and level of cash holding one of the factors that should be considered and well planned in a company.

Cash consists of coins, banknotes, checks, money orders (money orders or postal transfers in the form of bank drafts or bank checks), and cash in the hands or deposits in banks or deposits (Gunawan, 2016). The forms of cash are very susceptible to manipulation of both the reporting amount and the existence and use by certain parties because of that, it is necessary to manage and implement the optimal cash holding policy in a company.

According to Gill and Shah (2012), cash holding is cash in companies that are used to invest in physical assets and to be distributed to investors. The benefits of holding cash include utilizing a trade discount, maintaining a credit rating, and for fulfill unexpected needs (Brigham and Ehrhardt (2008: 781). In order to fulfill all these objectives, the application of cash holding rate that is in accordance with the condition of a company.

There are 4 motives for holding cash according to Bates et al. (2009), including transaction motives, guard motives, tax motives, and agency motives. The transaction motive is related to the need to finance the company's operational activities. Shabbir et al. (2016) Shabbir et al. (2016) states that companies must hold sufficient cash for financing for unexpected events, which is in accordance with the motive of holding cash motives just in case. Speculation motives in a company aim to gain profits by knowing well what conditions and situations have the potential to generate profits. The motive for holding tax motives is one of the motives for holding cash, which is the time when companies choose to hold cash and not pay it to shareholders because companies have to pay taxes (Liadi and Suryanawa (2018). The company chooses to fulfill its own needs first. related to taxes rather than distributing cash to fulfill the demands from their shareholders, this is because if cash is not enough to pay corporate tax, it can result in companies subject to various kinds of charges such as interest charges, administrative charges and criminal charges. By such charges can result in companies losing trust from external parties such as shareholders and creditors.The agency motive is related to the relationship between management and shareholders.The management's obligation is to act and run the company's business in a way that maximizes shareholder welfare. That is because shareholders and management have different views (Chireka&Fakoya, 2017).

According to Weygandt et al. (2015: 671), profitability is a ratio that measures income or success of a company's operational activities for a certain period. Profitability measures income or success of a company's operational activities for a certain period. The high and low profitability of a company can affect a company's ability to obtain debt and equity financing.

Firm size is a measure related to the size of the company that can be measured in various ways. According to Uyar and Kuzey (2014) firm size can be measured by the proxy of the natural logarithm of total assets. The size of the company can be a benchmark in the ease of the company to obtain access to funding from external parties in the context of financing internal activities.

Leverage is a ratio that describes the relationship between a company's debt to capital. This ratio illustrates how far the company's financing is financed by external debt and their capital. The framework in this study is described as follows:

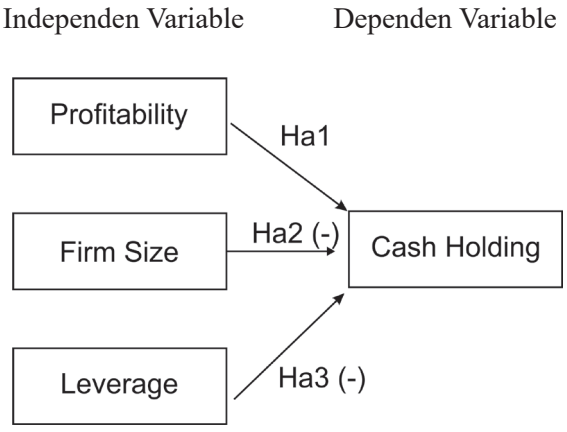


Figure 1: Framework

The research hypothesis is formulated as follows:

H1: Profitability has a significant negative effect on cash holding.

H2: Firm Size has a significant negative effect on cash holding.

H3: Leverage has a significant negative effect on cash holding.

## RESEARCH METHOD

Research on the factors that influence the cash holding has a research design, namely descriptive research. Descriptive research in this study is used to find out how the influence between independent variables and dependent variables, test hypotheses, and describe the facts that occur in several variables studied.

The population that will be used in this study are companies in manufacturing which are listed on the Indonesia Stock Exchange in the period 2015-2017. The object of research in this study consisted of cash holding as the dependent variable, as well as profitability, firm size, and leverage as independent variables. The subjects in this study were companies in manufacturing which were divided into several sectors listed on the Indonesia Stock Exchange during 2015-2017.

The research technique used in this study was purposive sampling. In purposive sampling, sample selection is applied by applying the required sample criteria first. The criteria applied in the selection of this research sample are: Manufacturing companies that are consistently listed on the Indonesia Stock Exchange (IDX) for the period 2015-2017; Manufacturing companies that have not just conducted IPOs for the period 2015-2017; Manufacturing companies that did not experience losses during the 2015-2017 period. Manufacturing company that presents financial statements in rupiah during the period 2015-2017; and manufacturing companies that present annual financial statements ending December 31, 2015-2017. The amount of data that fulfills the requirements is 201 data then in the outlier to 133 data.

Cash holding is the amount of cash and cash equivalent in the company. Cash holding can be measured by the following formula:

$$CashHolding = \frac{Cash \wedge Cash\ Equivalents}{Total\ Asset}$$

According to Weygandt et al. (2015) one measure that can be used to measure the level of profitability by using the Return on Assets (ROA) ratio indicator stated in the formula as follows:

$$Profitability = \frac{Net\ Income}{Total\ Assets}$$

Firm size is a scale regarding the size or size of a company according to various factors, including the size of sales and total assets. According to Uyar and Kuzey (2014) firm size can be measured by the following formula:

$$Firm = Natural\ logarithm\ of\ total\ assets$$

Leverage is a comparison between the level of debt and capital used to finance a company. One measure of leverage is using the scale indicator Debt to Total Equity Ratio (DER). The Debt to Total Equity Ratio (DER) is stated in the formula as follows:

$$Leverage = \frac{TotalDebt}{TotalEquity}$$

In this study used the Descriptive Statistics Test, then the classic assumption test which included Normality Test, Heterocedasticity Test, Multicollinearity Test, and Autocorrelation Test. Hypothesis testing uses T Test, F Test, and Determination Coefficient Test.

## RESULTS AND DISCUSSION

The results of the descriptive statistical test show that the amount of data used is 133 data. The sample variables to be examined are cash holding (CH) as the dependent variable, and profitability (ROA), firm size (SIZE), and leverage (DER) as independent variables.

In the variable cash holding (CH), the smallest value is 0.0193 while the largest value of the variable cash holding is 0.63044. The mean value of the cash holding variable is 0.1376201, this value indicates that the average amount of cash held by the manufacturing companies sampled is 13, 76% compared to the total assets of the company.

Variable profitability (ROA) has a minimum value of 0,00018 and a maximum value of 0,43170. The average value of profitability is 0.864751, where the value indicates that the average ability of manufacturing companies to be sampled in generating profits is 8.65% of total assets with a standard deviation of 0.08181476.

Firm size (SIZE) variable has a minimum value of 25.61948 and a maximum value of 33.32018. The average value of the variable firm size is 28,2813054 with a standard deviation of 1.64590055.

The leverage variable (DER) has a minimum value of 0.10058 and a maximum value of 4.18971. The average value of leverage (DER) is 0.7420785 where the value indicates that the average debt held by a number of manufacturing companies sampled is 7.42% of the total equity that it has with a standard deviation of 0 , 56897928.

Classic assumption test. Before the hypothesis testing is carried out, the classic assumption test is done first in the regression model. Normality testing in this study used the Kolmogorov-Smirnov (K-S) non-parametric statistical test. The Unstandardized Residual has an Asymp value. Sig. (2-tailed) of 0.200, this indicates that the value of Asymp. Sig. (2-tailed) greater than 0.05 which means that it can be concluded that in the regression model, the residual variable has been normally distributed. Multicollinearity test is done by looking at tolerance values and VIF. Based on the results of multicollinearity tests, each independent variable (profitability, firm size, and leverage) in this study has a tolerance value greater than 0.1 while the VIF value of each variable has a value of less than 10, so the regression model in this study does not occur correlation between independent variables or multicollinearity does not occur so that it can be used in testing multiple regression analysis. The heterocedasticity test in this study used the Glejser test. Based on the results of the glejser test, the significance value of profitability (ROA), firm size (SIZE) leverage (DER) has a significance value of more than 0.05. This shows that all independent variables consisting of profitability, firm size, and leverage do not occur heteroscedasticity problems in the regression model. In the results of the autocorrelation test, the DW value has a value between -2 and 2. This indicates that there is no autocorrelation in the regression model so that the results of the normality test, ranging from multicollinearity, heteroscedasticity, and autocorrelation show that the regression model in this study proper to use.

The regression equation used is as follows:

$$Y' = 0{,}118 + 0{,}566X_1 + 0{,}001X_2 - 0{,}071X_3 + \varepsilon$$

The constant coefficient has a value of 0.1118. This shows that if the independent variable includes profitability, firm size, and leverage equal to zero, the variable cash holding is 0.118.Regression coefficients for profitability variables (X1) have a value of 0.566, meaning the profitability variable has a positive relationship with the cash holding (Y). If the profitability variable (X1) increases by one unit, the cash holding (Y) will increase by 0.566 units with the assumption that the other independent variables

are constant and vice versa if the profitability variable (X1) decreases by one unit, then the cash holding (Y) will decreased by 0.566 units assuming the other independent variables are constant.

Regression coefficient for firm size (X2) variable has a positive value of 0.001. If the firm size (X2) variable increases by one unit, then the holding cash (Y) will increase by 0.001 units with the assumption that the other independent variables are constant and vice versa if the firm size (X2) variable decreases by one unit, then the holding cash (Y ) will decrease by 0.001 units assuming the other independent variables are constant.

The regression coefficient for leverage (X3) has a value of -0.071 which means the leverage variable (X3) has a negative relationship to the holding cash (Y). If the leverage variable (X3) increases by one unit, then the cash holding (Y) will decrease by 0.071 units with the assumption that the other independent variables are constant and vice versa if the leverage variable (X3) decreases by one unit, then the cash holding (Y) will increase by 0.071 units assuming the other independent variables are constant.

The t test in this study was used to determine the effect of independent variables including profitability, firm size, and leverage on cash holding. The results of the t test can be seen in the following table:

**Table 1**
**The Result of t Test**

| Model | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|---|---|---|---|---|
| | B | Std. Error | Beta | | |
| (Constant) | .118 | .149 | | .791 | .430 |
| ROA | .566 | .106 | .395 | 5.335 | .000 |
| SIZE | .001 | .005 | .012 | .160 | .873 |
| DER | -.071 | .015 | -.345 | -4.667 | .000 |
| a. Dependent Variable: CH | | | | | |

Based on the results of the partial test (t test) presented in table 1 above, the variable profitability (ROA) has a significance value of 0,000, where the value is smaller than 0.05. Variable profitability (ROA) has a calculated t value of 5.335. Based on these values it can be concluded that profitability has a significant positive effect on cash holding, so Ha1 is not accepted because the direction of correlation is different from that hypothesized.

Profitability is a measure of a company's ability to utilize the entire assets it clicks to generate profits or profits for a certain period. Based on the results of the Ha1 test table above, the profitability variable has a regression coefficient (B) of 0.566 and is positive, while the significance value is 0,000 smaller than 0.05 which indicates that profitability has a significant effect on cash holding. The test results indicate that profitability has a significant positive effect on cash holding.

Companies that have high profitability are considered to be in better condition and their reputation is better in paying dividends and paying debt to external parties compared to companies with low profitability. Therefore companies with higher profitability need to hold more cash in order to maintain that reputation and to pay dividends and debts to external parties such as investors and shareholders of the company.

Based on the motive of holding cash, namely the motive of the transaction, the company will choose to hold more cash. This is because adequate cash holdings can be useful to facilitate operational activities and facilitate daily transactions that take place regularly and regularly in the company. Adequate cash can also provide a number of benefits such as giving a trade discount from the supplier (supplier) which is usually given if the company can pay bills faster before maturity. Companies with cash

levels that can adequately pay these bills during the period of the trade discount are still valid, so they get a discount and can reduce the cost of obtaining a number of raw materials. In addition, based on the motive of holding other cash, namely the tax motive, the company chooses to hold cash and not pay it to the shareholders because the company must pay taxes. Companies that have higher profits, of course, have to pay higher taxes too, so companies must hold more cash to pay taxes to the government. Therefore, companies with higher profits tend to hold more cash related to the motive of holding cash.

The results of this study are in line with the research of Ali et al. (2016), Cheryta et al (2017), Hapsari (2015), Shabbir et al (2016), and research by Simanjuntak and Wahyudi (2017) which state that profitability has a significant positive effect on cash holding. This study shows results that contradict the research conducted by Christian and Fauziah (2017) which states that profitability has a negative and significant effect on cash holding.

Based on the results of the partial test (t test) presented in table 1 above, it can be seen that the firm size (SIZE) variable has a t value of 0.160 and has a significance value of 0.873 where the significance value is greater than 0.05. This states that the firm size does not have a significant effect on the cash holding, so Ha2 is not acceptable.

Based on the results of hypothesis testing that has been done, it can be concluded that the firm size does not have a significant effect on the cash holding. The statement is obtained from the results of statistical tests t the significance value of firm size is 0.873 for the cash holding with a regression coefficient (B) of 0.001. The results of this study are in line with Basheer's research (2014), Cheryta et al. (2017), Hapsari (2015), Simanjuntak and Wahyudi (2017), Uyar and Kuzey (2014), and Wassiziusaman (2013) which states that firm size does not have a significant effect on cash holding. This study contradicts the research of Ali and Yousaf (2013) who say that firm size has a significant negative effect on cash holding, and the research of Ali et al. (2016), Prasetiono (2016), and Shabbir et al. (2016) which states that firm size has a positive and significant effect on cash holding.

Based on the results of the partial test (t test) presented in table 1 above, it can be seen that the leverage variable (DER) has a calculated t value of -4.667 and the leverage variable (DER) has a significance value of 0,000, where the significance number is smaller than 0.05. It states that leverage has a significant negative effect on cash holding, so Ha3 is accepted.

Based on the results of hypothesis testing that has been done, it can be concluded that leverage has a significant negative effect on cash holding. The statement is obtained from the results of statistical tests t the significance value of leverage of 0,000 for cash holding with a regression coefficient (B) of -0,071. The results of this study are in line with the research of Ali et al. (2016), Ali &Yousaf (2013), Basheer (2014), Prasetiono (2016), Shabbir et al. (2016), Uyar and Kuzey (2014), and Wassiziusaman (2013) whose research results show that leverage has a significant negative effect on cash holding. This study contradicts the research of Amalia et al. (2018) and Cheryta et al. (2017) which states that leverage has a significant positive effect on cash holding, and contradicts the research of Christian and Fauziah (2017), Hapsari (2015), and Simanjuntak and Wahyudi (2017) whose research results show that leverage does not have a significant effect on cash holding.

**Table 2**
**The Result of F Test**

| Model | Sum of Squares | Df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Regression | .550 | 3 | 0.183 | 18.712 | 0.000[b] |
| Residual | 1.263 | 129 | 0.010 | | |
| Total | 1.813 | 132 | | | |

*a. Dependent variable: CH*

*b. Predictors: (Constant), DER, SIZE, ROA*

Anova test or F test aims to show whether all the independent variables consisting of profitability, firm size, and leverage in the regression model together have a significant effect on the dependent variable in this study, namely cash holding. Table 2 show that the results of the F test in this study has a significance value (Sig) of 0,000. The significance value is less than 0.05 (Sig <0.05), so this indicates that the independent variables include profitability, firm size, and leverage simultaneously have a significant effect on cash holding with a confidence level of 95%.

**Table 3**
**Determination Coefficient Test Results ($R^2$)**

***Model Summary***

| *R* | *R Square* | *Adjusted R Square* | *Std. Error of the Estimate* |
|---|---|---|---|
| .551 | .303 | 0.287 | .09895289 |

*a. Predictors: (Constant), DER, SIZE, ROA*
*b. Dependent Variable: CH*

Table 3 show that the Determination Coefficient Test in this study shows a value of 0.287 or 28.7%. This shows that 28.7% of the cash holding variable is influenced by the variables in this study, namely profitability, firm size, and leverage while the remaining 71.3% is influenced by other factors other than the variables used in this study.

**Table 4**
**Correlation Coefficient Test Results (R)**

***Model Summary***

| *R* | *R Square* | *Adjusted R Square* | *Std. Error of the Estimate* |
|---|---|---|---|
| .551 | .303 | .287 | . 09895289 |

*a. Predictors: (Constant), DER, SIZE, ROA*
*b. Dependent Variable: CH*

From table 4, the results of the correlation coefficient test above show that the value of the correlation coefficient (R) is 0.551. Based on the criteria described earlier, the value of R located between 0.40-0.599 indicates that the relationship between the independent variable and the dependent variable has a moderate level of significance, so it can be concluded that the relationship of profitability, firm size, and leverage to cash holding is moderate.

The results of statistical testing with a partial test show that the profitability variable has a significantly positive effect on the cash holding. The results of statistical testing with partial tests indicate that the firm size variable does not significantly influence the cash holding. The results of statistical testing with partial tests indicate that the leverage variable has a significant negative effect on cash holding.

## CONCLUSIONS AND SUGGESTIONS

Based on the results of testing the data in this study indicate that profitability and leverage have a significant effect on cash holding, while firm size does not significantly influence cash holding.This study has limitations including: (1) Limited number of samples used in the study, 133 data. This is due to the sampling criteria that cannot be fulfilled. (2) The observation period is relatively short, which is only for 3 years in the period 2015-2017. (3) The variables used

are limited to only 3 independent variables. This causes this study cannot describe the overall factors that can affect cash holding. (4) The sample sectors of the company are limited to the manufacturing sector.

Based on these limitations, there are several suggestions that can be given, among others: (1) Further research is expected to be able to add or expand the sector studied so that the amount of data obtained will be more. (2) Further research is expected to be able to add or use other variables other than those used in this study which are considered to affect cash holding, such as liquidity, net working capital, cash flow, and dividend payments. (3) Further research is expected to extend the research period to more than the period observed in this study, which is more than three years. A longer research period will also have an impact on the sample used where the amount will be more and the results of his research can better describe the actual situation as a whole and the wider scope. (4) Further research is also expected to be able to use companies from various sectors. This study only uses samples from manufacturing companies, therefore further research is expected to be able to use other sectors such as the service sector, banking, and state-owned companies (BUMN).

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