



The Determinants of Cash Holdings: Evidence from Listed Manufacturing Companies in Indonesia

Muhammad Atha Umry^a

Yossi Diantimala^b

^a Corresponding Author, Faculty of Economics and Business, Syiah Kuala University, Banda Aceh, Indonesia, athaumry@gmail.com

^b Faculty of Economics and Business, Syiah Kuala University, Banda Aceh, Indonesia

Keywords

Debt Maturity Structure,
Bankruptcy Prediction,
Cash Holdings.

Jel Classification

G30, M41, M49.

Abstract

This research aims to investigate empirically the determinants of cash holdings of manufacturing companies which are listed on Indonesian Stock Exchange (IDX) for the period of 2012-2017. The determining factors which were chosen include debt maturity structure and probability of financial distress. This research took 636 company-year observations as research sample by using purposive sampling technique in selecting the sample. By applying multiple linear regression analysis, the result revealed that debt maturity structure has negative significant relationship on cash holdings and probability of financial distress has positive significant relationship on cash holdings. These findings provide evidence that when companies have larger proportion of long-term debt, they will keep lower amount of cash. And when companies face financially distressed, they will keep higher amount of cash in the company because of precautionary motive which make desire to hold more cash.

1. Introduction

In late 2008, the financial crisis that occurred in America provides impact not only in the America but also other continents like Europe, Asia, Africa and Australia. Generally the financial crisis occurred because companies failed to maintain their liquidity. This condition shows the sense of the importance of maintain liquidity in a company. One way to maintains liquidity and minimizes risk by managing the level of cash that is owned by the company appropriately.

Cash is the most liquid of current asset which can be used to meet the needs of company immediately. According to Gill and Shah (2012) cash holdings can be defined as cash which is hold by company and accessible for physical assets investment as well as to distributes to shareholders. Managing the cash properly is an essential consideration to be done by company because of the level of cash which is hold can impact condition of the company itself. Company tends to hold cash too little will lead to difficulties in meeting short-term needs. While holding cash too large will likely not be able to conduct business activities with maximum result that lead to be a loss for companies because not able to achieve optimum profitability.

For financial managers, determine the level of cash is an important decision that should be taken for the sake of continuity of the company's financial performance (Suherman, 2017). When company acquired the additional influx of cash, then a manager must make a decision as to whether the cash will be used for dividend distribution to shareholders, make investments, purchase shares, or keep the cash for other purposes in the future. According to Bates et al. (2009) there are some reasons underlie companies increase the amount of their cash. One of these is the transaction motive which explains that company holds liquid assets with aim of saving the cost of conversion to cash, so when there are emergency needs, the company can immediately comply.

Research on determining factors of cash holdings is a crucial thing for companies. By knowing what factors affect cash holdings, companies can determine the magnitude level of cash which must have in order not to cause any shortage or excess cash. This research aims to investigate the determining factors of cash holdings based on market imperfections such

as debt maturity structure and probability of financial distress. This is because it is still rare in world of research in Indonesia and need to further research.

There were inconsistent results against the researches which have been conducted before regarding corporate cash holdings. The results are combined as there are different ways of measurement used. Brick and Liao (2016) conducted a research regarding cash holdings and debt maturity. They found positive relationship existed among debt maturity and cash holdings which only holds to firms that suffer from asymmetric information. In contrast, Teruel and Solano (2008); Shah (2011); Harford et al. (2014) and Shabbir et al. (2016) show different result which is negatively significance relationship concerning debt maturity structure and cash holdings.

In Spanish, Martinez-Sola et al. (2018) investigated the influence of likelihood of financial distress towards cash holdings. They found that positive relationship existed between both of those variables. This is consistent with Ogundipe et al. (2012) that shows positive significance relationship between likelihood of financial distress and cash holdings using sample from Nigeria Stock Exchange. In contrast, Kariuki (2015) and Farinha, Mateus and Soares (2018) claimed negative linear relationship between probability of financial distress and corporate cash holdings.

2. Literature Review and Hypotheses

2.1. Trade-off Theory

The focal point of this theory is related to benefit and cost which is developed by Modigliani and Miller (1963). This theory argues that optimal level of cash is considering the opportunity cost arising out from holding cash as well as the benefits derived from such activities. Opportunity cost occurs because company prefers to hold its cash compared to invest it in any investment which can be profitable. The cost in holding cash is due to the low return because of less investment which is conducted by company. The benefits by holding certain level of cash namely reduce probability of financial distress and minimizes the cost of liquidating assets (Ferreira & Vilela, 2004).

Management would like to maximizes the well-being of their shareholders with hold cash at a level which the benefits of holding that cash equivalent or even exceed the costs that incurred to hold that cash (Opler et al., 1999). The company's value can also be maximized by time value of marginal benefit exceeds marginal value of cost of certain level of cash.

2.2. Cash Holdings

Cash has very essential meaning in support of each company's activity. Cash comprises cash on hand and cash in the bank. Cash is always aligned with cash equivalent which is the short-timed investment and very liquid. Cash which is available and held in the company referred by the term of cash holdings.

Cash holdings is defined as cash which is hold by company and accessible for physical assets investment as well as to distributes to shareholders (Gill & Shah, 2012). Cash can be used for transaction purposes such as payment of salaries or wages, purchases of fixed asset and payment of dividend. There are four major motives that make company hold cash in certain amount (Bates et al., 2009). They are motives of transaction, motive of precautionary, motive of tax and motive of agency. First, transaction motive explains that company holds cash in order to reduce the cost of liquidation of assets when cash is needed in the urgent condition. Second, precautionary motive explains that company holds extra cash to deal with a situation that could not have been predicted earlier that require capital spending. Third, tax motive explains that company prefers to hold cash rather than paying dividends because of the high taxes are payable by company. Fourth, agency motive explains that managers tend to hold cash rather than pay it to shareholders when the company has a chance of bad investments and use such cash to gain advantage for their own.

The level of holding cash might affect optimal profit to be obtained by company. The amount which is too much will affect profit to be gained by company because of investment opportunities that are missed. While the amount of cash that is too little can affect the degree of company liquidity. Thus, by hold optimal level of cash, company does not have to sacrifice the profit from missed investment for the sake of company liquidity. Therefore, the determination of cash amount became crucial to be considered.

2.3. Debt Maturity Structure and Cash Holdings

The level of debt structure concerning short term and long term debt in company can give impact on decision making regarding determination of total liquid assets which exist within company. As with research conducted by Guney et al. (2003) who found empirically that debt maturity structure affect amount of company's current assets which are available in the company. In addition, Brick & Liao (2016) conducted a research regarding cash

holdings and debt maturity. They found that there is a positive relationship between debt maturity and cash holdings which only holds to firms that suffer from asymmetric information. In contrast, Pastor & Gama (2013) had different results which is negatively significance relationship between debt maturity structure and cash holdings.

The usage of short-term debt requires companies to negotiate a renewal of their credits periodically with magnitudes of risk refinancing. Thus, company with larger amount of short-term debt will maintain higher cash to avoid financial pressure which is faced if their loans failed to be renewed (Teruel & Solano, 2008). Therefore, companies that hold more part of long-term debt will keep lower cash because they will not face financial pressure since there are not many loans need to be renewed.

H₁: Debt maturity structure negatively influences company's cash holdings

2.4. Probability of Financial Distress and Cash Holdings

The costs of financial difficulties arise when companies are unable to meet payment of their obligations in the contract with third parties, both in the short and long term obligations (Teruel & Solano, 2008). This condition will trigger to hold higher amount of cash within the company. There are researches which have been conducted to see this relation. Guney et al. (2003) and Ozkan & Ozkan (2004) argued the company who is experiencing financial distress can increase their cash levels to reduce the risk of default.

In Spanish, Martinez-Sola et al. (2018) investigated the influence of financial distress towards cash holdings. They found empirically that positive relationship existed between both of those variables. This is consistent with Ogundipe et al. (2012) and Farinha et al. (2018) that showed positive significance relationship between financial distress and cash holdings. In contrast, Kariuki et al. (2015) claimed negative linear relationship between probability of financial distress and corporate cash holdings.

H₂: Probability of financial distress positively influences company's cash holdings

3. Research Method

3.1. Model Specification

To investigate the influence of debt maturity structure and probability of financial distress on company's cash holdings, this research applies multiple regression model analysis which is as follows:

$$CH = \alpha_0 - \alpha_1 DMS + \alpha_2 PFD + \varepsilon$$

The dependent variable (Y) of this research is cash holdings (CH) which is calculated by using cash and cash equivalent divided by total assets (Ogundipe, et al., 2012). While, the independent variables (X) represent by debt maturity structure (DMS) which is calculated by using ratio of long-term debt to total debt (Teruel and Solano, 2008) and probability of financial distress (PFD) which is calculated by using proxy which is developed by Altman (1968). The proxy can be seen as follows:

$$PFD = .012X_1 + .014X_2 + .033X_3 + .006X_4 + .999X_5$$

Description:

PFD	: Probability of financial distress
X ₁	: Working capital ÷ Total assets
X ₂	: Retained Earnings ÷ Total assets
X ₃	: Earnings before interest and taxes ÷ Total assets
X ₄	: Market value equity ÷ Total liabilities
X ₅	: Sales ÷ Total assets

3.2. Sample Selection

The sample of this research is manufacturing companies listed on the Indonesian Stock Exchange (IDX) for the period of 2012-2017. This research uses purposive sampling technique by using some certain criterions that are set by researcher in selecting the sample. The criterions are as follows:

- 1) Manufacturing companies listed on Indonesian Stock Exchange (IDX) during period of 2012-2017.
- 2) Manufacturing companies which publish the annual report for the consecutive period of 2012-2017.

The total manufacturing companies listed on Indonesian Stock Exchange (IDX) during the year of observation are 138 companies. While, 32 other companies did not publish their annual report consequently. Therefore, the total sample of this research is 106 manufacturing companies. Thus, it can be determined that the total sample is 636 company-year observations.

4. Findings and Discussions

4.1. Descriptive Statistics

Descriptive statistics were performed to know the description of each research variable. Descriptive statistics that used in this research includes minimum, maximum, mean, and standard deviation value. The following table presents the result of descriptive statistics of the data studied.

Table 1
Descriptive Statistics Test Result

	N	Minimum	Maximum	Mean	Std. Deviation
CH	636	.0004	.6304	.090523	.1049223
DMS	636	.0003	.9421	.307629	.2161650
PFD	636	-.3323	7.7106	2.511588	1.2950931
Valid N (listwise)	636				

CH : Cash Holdings
DMS : Debt Maturity Structure
PFD : Probability of Financial Distress

Source: Output SPSS 22.0 (2018)

The Table 1 portrays the descriptive statistic result of all research variables which are cash holdings, debt maturity structure and probability of financial distress for the period of 2012-2017 by using 636 research samples. Based on the table, it shows that cash holdings minimum value is 0.0004 while the maximum value is 0.6304. The mean value of cash holdings is 0.0905 with standard deviation of 0.1049. It means that ratio of cash to total assets which is hold by a company in average is 9.05%. The debt maturity structure minimum value is 0.0003 and the maximum value is 0.9421. The mean value of debt maturity structure is 0.3076 with standard deviation of 0.2161. It concludes that ratio of

long-term debt to total debt in average is 30.76%. The mean value of probability of financial distress is equal to 2.5115 with standard deviation of 1.2950. The minimum value is -0.3323 and maximum value is 7.7106.

4.2. Hypothesis Testing

4.2.1 F-Statistical Test

F-statistical test is basically used to examine the effect of all independent variables simultaneously on the dependent variable. The result of F-Test can be seen in the Table 2.

Table 2
F-Statistical Test Result
ANOVA^a

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	.448	2	.224	21.680	.000 ^b
	Residual	6.542	633	.010		
	Total	6.991	635			

a. Dependent Variable: CH

b. Predictors: (Constant), PFD, DMS

Source: Output SPSS 22.0 (2018)

Table 2 shows that the significant value of f-test is 0.000 and the value is lower than the significance level of 0.01 (1%). As the result, it is stated that debt maturity structure and probability of financial distress simultaneously influence company's cash holdings.

4.2.2 T-Statistical Test

T statistical test is principally used to investigate the influence of independent variables individually towards dependent variable (Ghozali, 2013:99). The result of t-statistical test is shown in Table 3.

Table 3
T-Statistical Test Result
Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
1 (Constant)	.035	.012		3.059	.002
DMS	-.030	.020	-.040	-.621	.005
PFD	.021	.003	.256	6.536	.000

Source: Output SPSS 22.0 (2018)

The result of Table 3 showed that debt maturity structure (DMS) has a value of t -0.621 with the significance level of 0.005. The significance value is lower than the significance level of 0.01 (1%). Therefore, it shows that debt maturity structure influences the cash holdings. Hence, the first hypothesis (H₁) is accepted. Probability of financial distress (PFD) has a value of t 6.536 with the significance level of 0.000. The significance value is lower than the significance level of 0.01 (1%). Therefore, it shows that probability of financial distress influences the cash holdings. Hence, the second hypothesis (H₂) is accepted.

4.3. Discussion

4.3.1 Debt Maturity Structure and Cash Holdings

Debt maturity structure (X₁) has a value of t -0.621 with the significance level of 0.005. The significance value is lower than the significance level of 0.01 (1%). It means that debt maturity structure influences cash holdings in this research. This result is in line with the research which is conducted by Shah (2011); Harford et al. (2014) and Shabbir et al. (2016) who found empirically that debt maturity structure has negative significance relationship towards cash holdings. They argue that firms that use more long-term debt have less risk of refinancing and less information asymmetry. Therefore, firms will keep lower cash if they have large amount of long-term debt.

The result acquired from this research supports the hypothesis expected. Therefore, it is proved that companies with large amount of long-term debt will keep smaller amount of

cash because they will not face financial pressure since there are not many loans need to be renewed. Therefore, when company with larger proportion of short-term debt will maintain higher cash to avoid financial pressure which is face if their loans failed to be renewed (Teruel & Solano, 2008). Consequently, it shows negative relation among debt maturity and cash holdings.

4.3.2 Probability of Financial Distress and Cash Holdings

Probability of financial distress (X_2) has a value of t 6.536 with the significance level of 0.000. The significance value is lower than the significance level of 0.01 (1%). Therefore, it shows that probability of financial distress influences cash holdings. Hence, H_2 is accepted. This result is supported by Ogundipe et al. (2012) and Farinha et al. (2018) who investigate the influence of financial distress towards cash holdings. They found positive significance relationship between financial distress and cash holdings. In contrast, Kariuki et al. (2015) claimed negative linear relationship between likelihood of financial distress towards corporate cash holdings.

The result acquired from this research is in line with the hypothesis expected. Therefore, when the company faced the financial distress it will lead the company to hold more cash and vice versa. Guney et al. (2003), Ferreira & Vilela (2004) argue that financial distressed companies might raise their cash levels in order to decrease their default risk.

5. Conclusion

This research investigated empirically the influence of debt maturity structure and probability of financial distress on company's cash holdings by using hypothesis testing design. SPSS 22.0 software is used to apply the test. Based on result of the test, it confirms that debt maturity structure and probability of financial distress simultaneously influence company's cash holdings. Partially, both of debt maturity structure and probability of financial distress have significant influence on company's level of cash holdings. The debt maturity structure has negative significant relationship on cash holdings at significant level of 1%. And probability of financial distress has positive significant relationship on cash holdings at significant level of 1%. These findings are in accordance with the developed hypotheses. Therefore, it proves that when companies have a larger proportion of long-

term debt, it will make them to hold lower amount of cash. And when company face financial difficulty, it will trigger to hold more cash than usual because of precautionary motive for dealing effectively with unexpected events that require cash outlay.

However, this research only used two independent variables as the proxy of the cash holdings which are debt maturity structure and probability of financial distress. Meanwhile, there are many other variables can be tested to measure the company's cash holdings such as growth opportunity, leverage, net working capital and dividend policy. As recommendation, it should be extended in the future.

References

- Altman, E. I. (1968). Financial Ratios, Discriminant Analysis and the Prediction of Corporate Bankruptcy. *The Journal of Finance*, 23(4), 589-609.
- Bates, T. W., Kahle, K. M. and Stulz, R. M. (2009). Why do U.S. Firms Hold so Much More Cash than They Used to? *Journal of Finance*, 64(5).
- Brick, I. E. and Liao, R. C. (2016). The Joint Determinants of Cash Holdings and Debt Maturity: The Case for Financial Constraints. *Review of Quantitative Finance and Accounting*, 1-45.
- Farinha, J., Mateus, C. and Soares, N. (2018). Cash Holdings and Earnings Quality: Evidence from the Main and Alternative UK Markets. *International Review of Financial Analysis*, 56, 238-252.
- Ferreira, M. A. and Vilela, A. (2004). Why do Firms Hold Cash? Evidence from EMU Countries. *European Finance Management*, 10, 295-319.
- Ghozali, I. (2013). *Aplikasi Analisis Multivariative dengan Program IBM SPSS*. Semarang: Universitas Dipenogoro Publisher.
- Gill, A. and Shah, C. (2012). Determinants of Corporate Cash Holdings: Evidence from Canada. *International Journal of Economics and Finance*, 4(1), 235-244.
- Guney, Y., Ozkan, A. and Ozkan, N. (2003). Additional International Evidence on Corporate Cash Holding, *Working Paper (SSRN Electronic Library)*.
- Harford, J., Klasa, S. and Maxwell, W. F. (2014). Refinancing Risk and Cash Holdings. *The Journal of Finance*, 69(3), 975-1012.

- Kariuki, S. N., Namusonge, Prof. G. S. and Orwa, Dr. G. O. (2015). Determinants of Corporate Cash Holdings: Evidence from Private Manufacturing Firms in Kenya. *International Journal of Advanced Research in Management and Social Science*, 4(6), 15-33.
- Martinez-Sola, C., Garcia-Teruel, P. J. and Martinez-Solano, P. (2018). Cash Holdings in SMEs: Speed of Adjustment, Growth and Financing. *Small Business Economics*. 1-20.
- Modigliani, F. and Miller, M. H. (1963). Corporate Income Taxes and the Cost of Capital: A Correction. *The American Economic Review*, 53(3), 433-443.
- Ogundipe, L. O., Ogundipe, S. E. and Ajao, S. K. (2012). Cash Holdings and Firms Characteristics: Evidence from Nigerian Emerging Market. *Journal of Business, Economics and Finance*, 1(2), 45-58.
- Opler, T., Pinkowitz, R. S. and Williamson, R. (1999). The Determinants and Implications of Cash Holdings. *Journal of Financial Economics*, 52, 3-46.
- Ozkan, A., and Ozkan, N. (2004). Corporate Cash Holdings: An Empirical Investigation of UK Companies, *Journal of Banking and Finance*, 28, 2103-2134.
- Pastor, C. C. and Gama, P. M. (2013). Determinant Factors of Cash Holdings: Evidence from Portuguese SMEs. *International Journal of Business and Management*, 8(1), 104-112.
- Shabbir, M., Hashmi, S. H. and Chaudhary, G. M. (2016). Determinants of Corporate Cash Holdings in Pakistan. *International Journal of Organizational leadership*, 5, 50-62.
- Shah, A. (2011). The Corporate Cash Holdings: Determinants and Implications. *African Journal of Business Management*, 5(34), 12939-12950.
- Suherman. (2017). Faktor-faktor yang Mempengaruhi Cash Holdings Perusahaan di Bursa Efek Indonesia. *Jurnal Manajemen*, 21(3), 336-349.
- Teruel, G. P. J. and Solano, P. M. (2008). On the Determinants of SME Cash Holdings: Evidence from Spain. *Journal of Business Finance & Accounting*. 35(1)&(2), 127-149.