

CASH HOLDING DEVIATION AND SPEED OF ADJUSTMENT OF INDONESIAN FIRMS

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ABSTRACT

1. Background/ Objectives and Goals

Every corporate need cash. Corporate cash holdings always involve a trade-off between benefits and costs. Companies must hold cash on hand for different reasons such for the requirement of liquidating current assets to make payments of the companies transactions, dealing with unpredicted events, and so on. On other hand liquidity has high potential costs that will reduce corporate profit. Cash is unproductive asset that have small added value. In this this study has some specificity. First, this research analyse determinant of optimal cash holding in Indonesan Firms. The Second this research to identify the deviation of Indonesia Firms' cash holding from the targeted level and identify speed of adjustment to reach the targeted cash holding of Indonesian firms.

2. Methods

This research use panel data of Indonesian non-financial listed firms in Indonesian Stock Exchange during the period 2000-2015 with dynamic model. Cash holding of the firm may deviate from the targeted, it is because of adjustment cost. Panel regression analysis has been conducted to determine the major factors affecting cash holdings. these variable are Growth, Firm Size, Leverage, Profitability, Dividend, and Asset tangibility. The Formula is $CH^*_{i,t} = f(\text{Growth, Size, Lev, Prof, Div, Tang})$. The adjustment of the firms for target level cash cannot be immediately achieved due to the associated adjustment costs. The speed of adjustment equation are:

$$CH_{i,t} - CH_{i,t-1} = \alpha_i (CH^*_{i,t} - CH_{i,t-1}) \text{ or } CH_{i,t} = (1 - \alpha_i)CH_{i,t-1} + \delta_{i,t}CH^*_{i,t}$$

3. Expected Results/ Conclusion/ Contribution

Corporate cash holdings always involve a trade-off between benefits and costs. Companies must hold cash on hand for different reasons, but on other hand, over cash holding have consequences. On other hand liquidity has high potential costs that will reduce corporate profit. Cash is unproductive asset that have small added value. The companies in Indonesian need to balance of the benefit and the consequences of cash holding. The optimal Cash holding in Indonesia determined by firm characteristics.

Firms with higher investment opportunities are expected to hold larger amounts of

cash to reduce the likelihood of forgoing these investments. Firms with greater investment opportunities hold cash to reduce financial distress costs. Both of these arguments are consistent with trade-off theory, and therefore, we expect a positive relation between growth opportunities and cash holdings. Pecking order theory suggests that profitable investment opportunities increase a demand for accumulating cash, thus leading to a positive relationship between investment opportunities and cash holding.

Firm Size has positive relationship with cash holding. Larger firms are better diversified and have a lower financial distress. The research confirm the pecking order theory that predicts positive relationship between the firm size and corporate cash holding because large companies usually do better as compared to small companies and for that reason, they must have extra cash.

There is a positive relationship between leverage and cash holding. According to the trade-off theory, highly leveraged firms are likely to face financial distress and go into bankruptcy, and therefore they are expected to hold more cash to reduce this likelihood. Debt maturity influences the level of cash holdings because the use of more short-term debt forces the company to renew it on periodic basis; it puts pressure on the companies to hold higher amount of cash in case of repayment or insolvency.

Profitability has positive relationship with cash holding. Profitability can have positive relationship with cash holding. Based on pecking order theory there is positive relationship between profitability and cash holding because cash is a result of financing and investment activities.

Dividend payout also significantly affects the cash holding level. The companies paying dividend are generally observed to be less risky and therefore, the precautionary motive of cash holding is weak for dividend paying companies as compared to non-dividend paying companies. The companies that paying dividend showed held a lesser amount of cash. These studies found the negative relation between dividend payment and cash holdings

The companies that have fixed asset can be used as collateral, thus higher borrowing reduces the need of holding cash, which means the increase in capital expenditures reduces cash holdings. Firms with more tangible assets are expected to hold less liquid assets since tangible assets can be sold in case of cash shortage, and they can be used as collateral when issuing debt. Thus, we assume a negative relation between cash holdings and asset tangibility.

Firms in Indonesia constantly need to adjust their cash levels to achieve the level of optimal cash holding. The speed of adjustment of Indonesian firm less than 1, it means that the companies in Indonesia need more than one year to reach the targeted cash holding.

Keywords: *Cash Holding, Speed Of Adjustment, Target Cash Holding, Determinant of Cash Holding*

1. Background/ Objectives and Goals

Every company can not avoid to have cash. Companies must hold cash on hand for different reasons such for the requirement of liquidating current assets to make payments of the companies transactions, compensating balance for loan or service provided, dealing with unpredicted events, and speculation to take advantage of bargain, to take discount and so on (Brigham, 2008).

Corporate liquidity enables firms to invest, thus avoiding transaction costs from debt and equity issuance and associated financing costs. Internal funds also alleviate information asymmetry and agency costs associated with external capital (Opler et al., 1999). Cash holdings enable firms to invest even when they are financially constrained (Almeida, Campello, and Weisbach, 2004) and can guarantee long-term investments such as research and development (Brown and Petersen, 2011). Finally, cash holdings can serve as a defense mechanism against possible takeovers (Faleye, 2004).

On other hand liquidity has high potential costs that will reduce corporate profit. Cash is unproductive asset that have small added value (Brigham, 2004). Cash holdings allow opportunistic managers to invest in negative net present value projects or spend firm resources to their own benefit thus destroying shareholder wealth (Dittmar and Mahrt-Smith 2007; Pinkowitz, Stulz, and Williamson 2006 in Lozano & Durán, 2016). Opler et al. (1999) states that there are trade-off between the marginal costs and benefits of holding liquid assets determines a firm's optimal cash holdings. This refer on trade off theory suggests that firms set their optimal cash holding level by considering the trade-off between the marginal benefits and the costs of keeping such liquid assets (Al-Najjar and Belghitar, 2011).

In several studies, it is found out that cash provides lower cost of financing for the company because increasing external financing is more expensive due to information

asymmetry (Myers & Majluf, 1984), agency problems (Myers, 1984), and asset substitution (Jensen & Meckling, 1976). Therefore, managers are required to maintain adequate internal financial flexibility to reduce the costs related to external financing in imperfect capital markets. Myers and Majluf (1984) on Pecking Order Theory suggests that firms have a tendency to rely on internal sources of funds primarily and external funds secondarily. Cash is used as a buffer between retained earnings and investments (Ferreira and Vilela, 2004). Behavior trade-off and pecking order proved not mutually exclusive. This study refer to Shyam-Sunder and Myers (1999) add model of the pecking order and trade-off theory of in a single specification.

Different studies which analyzed cash holdings and its determinants with reference to target level of cash holdings are consistent with studies on leverage (Jani *et al.*, 2004). By considering transaction costs, agency problems and information asymmetry, the debate on corporate cash holdings features trade off theory and pecking order theory by Myers (1984) and free cash flow hypothesis by Jensen (1986) very prominently.

Based on the dynamic trade-off theory of cash holding, corporate are periodically adjusted to the target level. Target level of cash holding is estimated. Target cash holding determined by many factors. Rehman (2015) China Firms determined by firms and industry characteristic, Chang, Deng & Wang (2016) firms characteristic and economic condition. Uyar & Kuzey (2014) add internationalization for factors that determined the cash holding of the firms.

In this This study has some specificity. First, this research analyse determinant of cash holding in Indonesan, using firms characeristic. The Second this research to identify speed of adjustment to the targeted cash holding of Indonesian firms.

2. Methods

This research use panel data of Indonesian non-financial listed firms in Indonesian Stock Exchange during the period 2000-2015 with dynamic model. Cash holding of the firm may deviate from the targeted, it is because of adjustment cost. Panel regression analysis has been conducted to determine the major factors affecting cash holdings. these variable are Growth, Firm Size, Leverage, Profitability, Dividend, and Asset tangibility. The Formula is $CH^*_{i,t} = f(\text{Growth, Size, Lev, Prof, Div, Tang})$. The adjustment of the firms for target level cash cannot be immediately achieved due to the associated adjustment costs. The speed of adjustment equation are:

$$CH_{i,t} - CH_{i,t-1} = \alpha_i (CH^*_{i,t} - CH_{i,t-1})$$

or

$$CH_{i,t} = (1 - \alpha_i) CH_{i,t-1} + \delta_{i,t} CH^*_{i,t}$$

3. Results

Companies that observed in this research are non financial company that listed in Indonesian Capital Market, in 15-years observation period, unbalance sampel, so that the number of observations is 4654. The descriptive statistics of a sample of firms in this study are listed in Table 3.1.

	CH	GROWTH	SIZE2	TANG	DIV	LEV1	PROF
Mean	0.04753	1.062527	20.34931	0.027725	0.268673	0.58191	0.077267
Median	0.026238	0.095344	20.46469	0.004297	0	0.509653	0.070344
Maximum	0.81587	1652.413	26.03005	0.960881	60.77076	14.73516	12.98195
Minimum	0	-0.948747	11.17337	0	0	0.000279	-3.216874
Std. Dev.	0.064597	27.88652	1.989946	0.072235	1.66135	0.589459	0.262292
Observations	4654	4654	4654	4654	4654	4654	4654

As that have stated before, companies must hold cash on hand for different reasons, but on other hand, over cash holding have consequences. Ferreira and Vilela (2004) pointed out three benefits of cash holdings: it reduces the possibility of financial distress; allows the pursuance of investment policy when financial constraints are met; and minimizes the costs

of raising external funds or liquidating assets. Keynes (1936) in Rehman & Wang (2015) argued that three motives drive the demand for money. These motives are transactionary, precautionary and speculative motives. Cash is held by corporation to meet day to day demand and to manage operationa. This demand for cash is raised due to the difference in cash inflow and cash uotflow. This motive for cash termed as transactionary mative. Money is als held a safety margin for some unforeseen events and future uncertainties. In speculative motive money is held by corporations for earning profit. However holding excess cash has its costs. This cost is the opportunity cost. Holding excess cash may leads to agency conflicts between firm's management and sharehoolder (Jensen, 1986). Censentrating on the determinant factors of holding cash, manager can be able to make necessary adjustments about the level of cash to attain an optimal cash level. Optimal cash holding was etimated. Estimation optimal cash holding using panel regression analysis has been conducted to estimate optimal cash holding that is determined the major factors affecting cash holdings. These variable are Growth, Firm Size, Leverage, Profitability, Dividend, and Asset tangibility. The Formula is $CH^*_{i,t} = f(\text{Growth, Size, Lev, Prof, Div, Tang})$.

Identify Determinant of Cash Holding

Testing of the factors that determine the cash holding based on a static model to estimate the targeted cash holding, as shown in Table 2. The results of this analysis based Panel Least Squares, Cross-section fixed (dummy variables). This study follow refer to the study of Rehman & Wang (2015); Uyar and Kuzey (2014); Shabbir, Hashmi, & Chaudhary, (2015), that the firm characteristic determine the firm's cash holding, but in this study is not include board characteristic. The analysis firm characteristic that determine the cash holding listed in Table 2.

**Table 2 Results Analysis of Factors Determining Optimal Cash Holding
To Estimate Targeted cash holding by Panel Least Squares, Cross-section
fixed (dummy variables).**

Total panel (unbalanced) observations: 4672

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.095476	0.019264	-4.956209	0.0000
GROWTH	-2.58E-05	2.95E-05	-0.876264	0.3809
SIZE	0.007049	0.000936	7.530366	0.0000
TANG	0.010652	0.014184	0.750996	0.4527
DIV	-0.000785	0.000506	-1.551101	0.1210
LEV	-0.001767	0.001883	-0.938602	0.3480
PROF	0.008163	0.003258	2.505218	0.0123
Cross-section fixed (dummy variables)				
R-squared	0.395196	Adjusted R-squared	0.337156	

a. Growth

Firms with higher investment opportunities are expected to hold larger amounts of cash to reduce the likelihood of forgoing these investments. Moreover, Ferreira and Vilela (2004) in Uyar and Kuzey (2014) argue that firms with greater investment opportunities hold cash to reduce financial distress costs. Both of these arguments are consistent with trade-off theory, and therefore, we expect a positive relation between growth opportunities and cash holdings. Pecking order theory suggests that profitable investment opportunities increase a demand for accumulating cash, thus leading to a positive relationship between investment opportunities and cash holding. This analysis tell that Growth has negative relationship with cash holding, but not significant.

b. Firm Size

Larger firms are better diversified and have a lower financial distress (Rajan and Zingales,

1995). These factors suggest a negative association between firm size and cash holdings. On the other hand, the pecking order theory predicts positive relationship between the firm size and corporate cash holding because large companies usually do better as compared to small companies and for that reason, they must have extra cash (Opler et al.,1999). The analysis tell that Size has positive relationship with cash holding, and significant..

c. Leverage

According to the trade-off theory, highly leveraged firms are likely to face financial distress and go into bankruptcy, and therefore they are expected to hold more cash to reduce this likelihood (Ferreira and Vilela, 2004; Al-Najjar and Belghitar, 2011; Kim et al., 2011). The pecking order theory suggest when the investment greater than the retained earnings, the company will get external financing, the debt level will be growth and cash holding will be fall. So there is a negative relationship between leverage and cash holding (Uyar and Kuzey, 2014). On other hand Debt maturity influences the level of cash holdings because the use of more short-term debt forces the company to renew it on periodic basis; it puts pressure on the companies to hold higher amount of cash in case of repayment or insolvency. So there is a positive relationship between leverage and cash holding (Guney et al., 2007). The analysis tell that leverage has negative but not significant relationship with cash holding.

d. Profitability

Shabbir, Hashmi, & Chaudhary (2015) stated that profitability can have positive and negative relationship with cash holding. Based on the trade-off theory, there is negative correlation between cash holding and profitability; because a profitable firm has sufficient cash flows, and the firms will use the cash to invest in another asset to avoid the

underinvestment problems Kim et al (1998). On the other hand, pecking order theory expects a positive relation between profitability and cash holding because cash is a result of financing and investment activities (Dittmar et al., 2003). The analysis tell that Profitability has positive and significant relationship with cash holding.

e. Dividend

Dividend payout also significantly affects the cash holding level. The companies paying dividend are generally observed to be less risky and therefore, the precautionary motive of cash holding is weak for dividend paying companies as compared to non-dividend paying companies (Afza &Adnan, 2007; Opler et al.,1999). The companies that paying dividend showed held a lesser amount of cash. These studies found the negative relation between dividend payment and cash holdings (Shabbir, Hashmi, & Chaudhary, 2015).The analysis tell that Dividend has negative relationship but not significant with cash holding.

f. Asset Tangibility

The companies that have fixed asset can be used as collateral, thus higher borrowing reduces the need of holding cash, which means the increase in capital expenditures reduces cash holdings (Dittmar et al., 2003). Firms with more tangible assets are expected to hold less liquid assets since tangible assets can be sold in case of cash shortage, and they can be used as collateral when issuing debt (Drobotz and Grüninger, 2007). Thus, we assume a negative relation between cash holdings and asset tangibility. The analysis tell that asset tangibility has positive relationship but not significant with cash holding.

Speed Of Adjustment to the Optimal Cash Holding

Based on the dynamic trade-off theory of cash, the optimal level of cash is not the same across firms or over time. Firms constantly need to adjust their cash levels to achieve the level of cash that balances the benefits and costs of liquidity in each specific scenario and at each point in time.

When cash holding is viewed as a target-adjustment model, corporate cash holdings are periodically adjusted to the target level or optimal level. In this sense, The firms are not always at their optimal level, they may carry high cash balances or low cash balances. Firms with cash holdings higher than the optimal level are prone to having different financial characteristics from those with an optimal level or insufficient cash holdings. Firms may hold large amounts of cash when seeking financial flexibility to avoid the need to raise outside capital. Of course, they also risk accumulating cash in excess. In this case, the cost of cash holding can be too high when the firm loses investment opportunities, when managers have the incentive to accumulate cash to invest in negative net present value projects, or when the firm suffers from organizational inefficiencies that destroy shareholder wealth (Jensen 1986).

The empirical evidence indicates that excess cash accumulation can be expensive for shareholders (Opler et al. 1999). In contrast, firms can also carry less than optimal cash balances. This kind of firm sacrifices its financial flexibility by not accumulating sufficient cash due to the associated high agency costs. These firms can easily resort to capital markets but must take the risk of not being financially flexible and, in extreme situations, the higher risk of bankruptcy. The target ratio adjustment of both types of firms will be faster or slower depending on opportunity costs (Lozano & Durán, 2016).

The adjustment of the firms for target level cash cannot be immediately achieved due to the associated adjustment costs. Equation $CH_{i,t} - CH_{i,t-1} = \alpha_i (CH^*_{i,t} - CH_{i,t-1})$ implies to the following relationship between current cash holding and cash holding at time

$t-1$. Thus the term γ (speed of adjustment) take value 0 to 1. If $\gamma=0$ it means $\text{cash}_{it}=\text{cash}_{it-1}$. This mean implies that the firm want to remain with the same level of cash due to high cost of adjustment to achieve a target level corporate cash holdings. However if $\gamma=1$ then $\text{cash}_{it}=\text{cash}^*_{it}$, this refers that in such a case a firm will opt to achieve its target level of cash immediately

Adjustment coefficient in China for state owned enterprises is 0,42, while for non state owned enterprises is 0.47. This means that state-owned enterprises in China takes relatively more time to adjust to their target cash levels (Rehman & Wang, 2015). This adjustment speed is relatively less as compared adjustment speed found by ozkan and ozkan (2004) for UK's firms (0,605) and less than adjustment speed for French and Japanese firms (0.0561).

Based on analysis speed of adjustment company is Indonesia to reach the optimum cash holding, with Panel Least Square, Panel Unbalance observation, we can see that Indonesian firms need to adjust their cash levels to achieve the optimal level of cash holding and the speed of adjustment are listed in Tabel 3.

Tabel 3 Speed Of Adjustment Company In Indonesia

To Reach Optimum Cash Holding Or Cash Holding Targeted

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.000809	0.005226	-0.154802	0.8770
CHTL	0.314542	0.015175	20.72779	0.0000
CHEST	0.713328	0.109681	6.503654	0.0000
Cross-section fixed (dummy variables)				
R-squared	0.450534	Mean dependent var	0.047556	
Adjusted R-squared	0.398369	S.D. dependent var	0.064786	

The Tabel 3 tell that speed of adjustment to the targeted cash holding company in Indonesia are 0,69. It mean that cash holding of Indonesian firm has not achieve the optimal cash holding, so they need time more than one year to reach o adjust their cash holding targeted.

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