

DETERMINANTS CASH HOLDING OF COAL MINING COMPANIES LISTED ON THE INDONESIAN STOCK EXCHANGE

Endri Endri, Universitas Mercu Buana
Sulastri Sulastri, Universitas Mercu Buana
Afriapollo Syafarudin, Universitas Mercu Buana
Bambang Mulyana, Universitas Mercu Buana
Erna S. Imaningsih, Universitas Mercu Buana
Sri Setiawati, STIE Manajemen Bisnis Indonesia

ABSTRACT

Determining cash holding level is important to make operational companies activity can run properly. The availability of cash can affected to liquidity company level and reflection to their ability to fulfill the obligation. This study is primarily aimed at identifying significant factors that affect the level of cash holding of coal mining companies listed in the Indonesia Stock Exchange for the period 2010 to 2019. Purposive sampling technique used to select 9 coal mining companies that met the sample criteria. The test was conducted on a panel of random effect model. This study was able to prove that debt to assets ratio and net working capital had a positive effect on holding cash, while firm size, growth opportunity and coal price partially insignificant on the level of cash holding.

Keyword: Cash Holding, Debt to Asset Ratio, Firm Size, Growth Opportunity, Net Working Capital, Coal Price.

INTRODUCTION

Cash or cash equivalents had a vital role in the business activities and operations company. In terms of working capital, cash had a dominant role to daily transaction conducted by the company. Cash is liquid asset that can be cashed immediately (Endri et al., 2019). To achieve the efficiency to carrying out the company's operation activities, proper financial management is required. The effective and efficient cash management can be reflected to their ability to fulfill the obligation. Cash management refers to the financial aspects related to collection, management and cash use. Cash management activities include assessing market liquidity, cash flow and investments and are responsible for preparing a funding strategy to finance short and long term investments (Harahap et al., 2020). Cash holding is the amount of cash stored or available in the company for investment in fixed assets and also can be distributed dividends to investor. Cash holding is important to maintain company liquidity, is the measure of corporation's ability to pay its bills on time event bad situations hits the business activities (Gill & Shah, 2012). Cash flow analysis is important to do to determine the potential income present and future when mining is carried out on a material deposit. Herewith the annual cash analysis of a mining company requires the consideration: 1) Tonnage mined a year and production levels, 2) Royalty payment on mineral selling price income each year, 3) Annual production cost, and 4)

Corporate income tax. The considerations should be made due to different characteristics of the mining companies with other industries. The differences in the cash flow analysis include estimating income, estimating business risk, estimating operating costs, the concept of royalties and so on.

Figure 1 shows the average cash holding of coal mining companies listed in the Indonesia Stock Exchange in 2010-2019. In this picture, 2011 is the highest average of cash holding, 25.26% and furthermore gradually decreased. Generally, mining company's cash flow is negative for several years when the project started (pre-production period) and will be positive during the production period. However, at the end of production period, the cash flow will be decreased as reduced reserves and production and it can be negative due to incur reclamation cost, mine closure cost or other social cost.

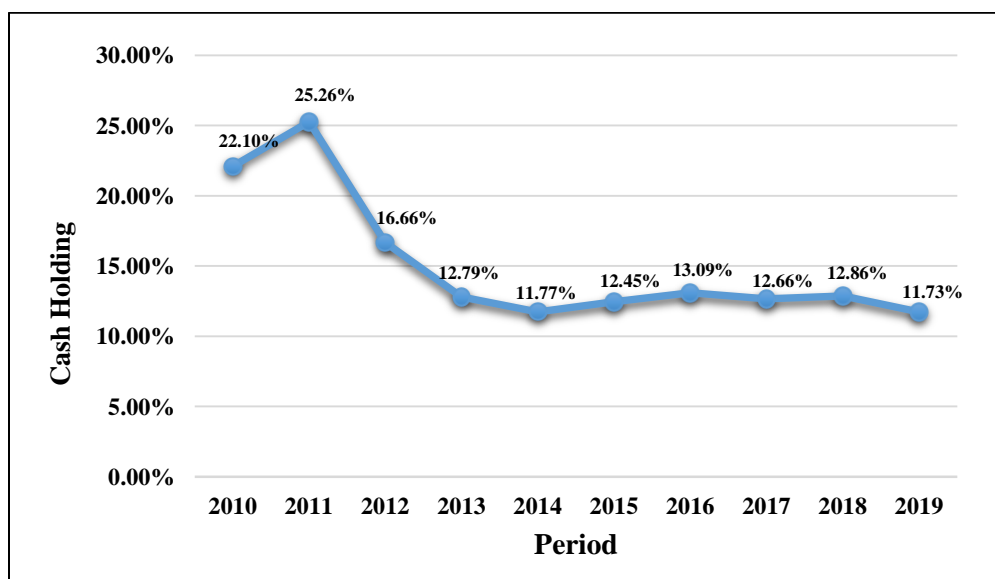


FIGURE 1
AVERAGE CASH HOLDING OF COAL MINING COMPANIES PERIOD 2010-2019

This study aims to determine factors that affect the level of cash holding of coal mining companies listed in the Indonesia Stock Exchange for the period 2010 to 2019. William & Fauzi (2013) studied about factors that effected to cash holding in mining companies period 2009-2011. The study used net working capital, cash conversion circle and growth opportunity as independent variabls and shows significant relationship with cash holding. Another study conducted by Andika et al. (2017) shows in a sample of customer good industry; it was found there was insignificant effect between net working capital and cash holding while cash conversion circles, debt to asset ratio and growth opportunity had a positive relationship with cash holding. Ogundipe et al. (2012) conducted a study on the factors that influence cash holding in non-financial companies in Nigeria showing that net working capital and firm size have negative effect with cash holding, while the relationship between debt to asset ratio and growth opportunity has a positive effect to cash holding. Aftab et al. (2018); Al-Najjar (2013) and Gill & Shah (2012) investigated that firm size had a negative impact to cash holding, this is contrast to Sutrisno & Gumanti (2016) that found firm size has a positive impact to cash holding. Arora (2019); Aftab et al. (2018) and Shabbir et al. (2016) concluded that growth opportunity has a

positive effect to cash holding. Meanwhile Anjum & Malik (2013) and Thu (2018) said that growth opportunity is insignificant impact to cash holding.

LITERATURE REVIEW

Cash held by company is cash holding. Ogundipe et al. (2012) said that cash holding is an amount of cash held by the company that can be converted into cash easily. According to Keynes theory (Bouhdaoui & Bounie, 2012) the company have three motives of holding cash, there are transaction motive, speculative and precautionary motive, and then compensation motive. In addition to Keynes's theory, there are two models that explain the determination of target cash balances, Baumol Model and Miller Orr Model. The Baumol Model describes the supply of cash balances and the Miller Orr Model which determines the limits in cash balances.

Debt to assets ratio is leverage ratio that shows the comparisons between amount of debt and amount of assets (Endri et al., 2020). Arfan et al. (2017) explain that if financial leverage is considered as company's ability to issue debt, the effect of financial leverage on cash holding is negative. However, if a large financial leverage is considered as a potential bankruptcy due to high agency problem of the debt, then the effect of financial leverage on the cash holding is positive. This opinion is supported by the statement of Al-Najjar (2013) which said that according to trade off theory, firm operating with high leverage likely to stockpile more cash due to their higher probability of financial distress. Ogundipe et al. (2012) argue that companies can use debt as a substitute for holding cash because leverage acts as a proxy for the company's ability to issue debt. Meanwhile, Anjum & Malik (2013) said that there is negative impact between cash holding and debt to asset ratio due to company with higher debt should be paid their responsibility, so they have less cash. In this investigation, we develop hypothesis relating to influence of debt to asset ratio on the level of cash holding as follows:

H₁ Debt to Assets Ratio have influence to Cash Holding of coal mining companies listed on the Indonesia Stock Exchange in 2010-2019

Firm size is an important determinant of cash holding. Ogundipe et al. (2012) explained that smaller companies tend to have more financial constraints to make them keep more cash. Lined with Al-Najjar (2013) opinion that large firms are found to hold less cash than their small counterparts because the economic scale. The large firms have cash less because their can be got the external founding with the lower cost easily. However, Singh & Misra (2019) found that larger companies achieve growth through profitability and are likely to retain more cash than smaller one. Moreover, companies operating in large competitive industries hold larger cash reserves as compared to other industries and the companies having large access to capital market raise fund from external investor (Shabbir et al., 2016). In this investigation, we develop hypothesis relating to influence of firm size on the level of cash holding as follows:

H₂ Firm Size have influence to Cash Holding of coal mining companies listed on the Indonesia Stock Exchange in 2010- 2019

Bigelli & Sánchez-Vidal (2012) explained that private companies with high growth opportunities as relating to high cash holding level. Arora (2019) claim that there is a positive impact between cash holding and growth opportunity, based on trade off theory. A similar opinion is expressed by Shabbir et al. (2016) that companies also consider growth opportunities while optimizing the level of cash holding. Companies having more growth opportunities are

expected to carry a higher level of investment into the liquid assets. Therefore, companies with high growth opportunity have more cash reserves. Most of the empirical studies show positive impact between growth opportunity and cash holding. In this investigation, we develop hypothesis relating to influence of growth opportunity on the level of cash holding as follows:

H₃ Growth Opportunity have influence to Cash Holding of coal mining companies listed on the Indonesia Stock Exchange in 2010-2019

Ogundipe et al. (2012) found negative coefficient of net working capital which is proxy for liquidity variable that firms with more liquid assets will tend to reduce their cash levels, since these assets can be used as cash substitutes. In specific period the company only maintains one of cash or liquid assets at a high level. Occasionally, net working is also necessary to sustain activities of the company without having to wait for revenue from the main activity such as sales, so that if the company has a high net working capital, it will automatically reduce their cash balance (Arfan et al., 2017). Anjum & Malik (2013) studied determinants of cash holding of non-financial companies in Pakistan, they found that net working capital has positive significant relationship with cash holding and an increase in net working capital leads to higher cash balance therefore highly liquid firms tend to have higher cash balance as against lesser liquid firms. In this investigation, we develop hypothesis relating to influence of net working capital on the level of cash holding as follows:

H₄ Net Working Capital has influence to Cash holding of coal mining companies listed on the Indonesia Stock Exchange in 2010 – 2019

As one of the worldwide largest coal exporting countries, Indonesia becomes a world coal price reference. Coal price fluctuations make determining coal price in the sale and purchase agreement more difficult (Anindita, 2017). Coal price decreases were caused by excess coal stock while the emergence of new energy sourcing reduces the coal demand rate and makes it difficult for firms to get the liquidity level as they want, resulting in difficulty selling the inventories by producers in obtaining cash assets to maintain liquidity. This issue makes the company more conservative and tries to minimize the liquidity risk by maintaining the liquidity level with managing the level of cash the firm has. In this investigation, we develop hypothesis relating to influence of coal price on the level of cash holding as follows:

H₅ Coal price have influence to Cash Holding of coal mining companies listed on the Indonesia Stock Exchange in 2010-2019

RESEARCH METHODOLOGY

This research was conducted at coal mining companies on the Indonesia Stock Exchange in 2010 - 2019. There are total 22 coal mining companies that listed on Indonesia Stock Exchange. The research sample was selected based on purposive sampling technique according to the predetermined criteria and 9 companies that met these criteria were selected. The data used in this research is panel data which is a combination of cross section data and time series. Panel data regression analysis model which aims to determine the effect of debt to assets ratio, firm size, growth opportunity, net working capital and coal price on cash holding. Meanwhile, the data analysis used is the panel least square. The results of the Chow, Hausman, and Lagrange Multiplier tests to determine the common effect regression model (CEM), the fixed effect model

(FEM) and the random effect model (REM) show that the random effect model is most suitable for the analysis.

The research model in this research can be seen in Figure 2 below.

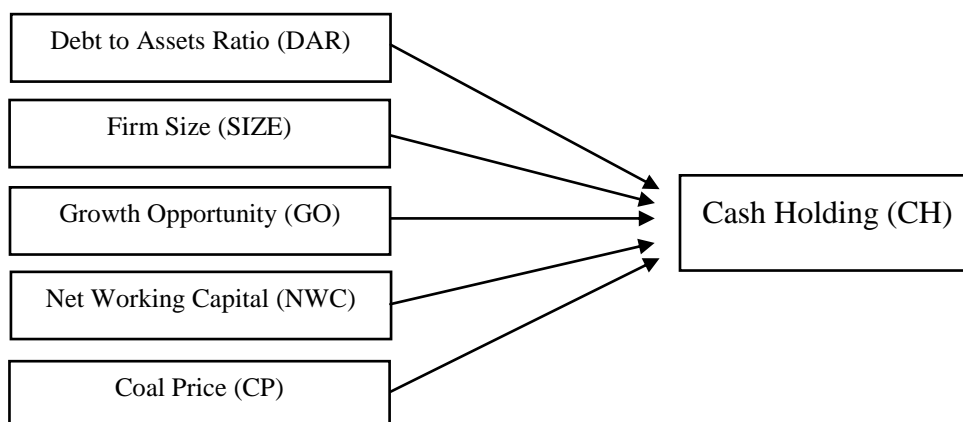


FIGURE 2
THEORETICAL FRAMEWORK

Measurement

The following are the measurements of the variables which are used in this study:

- Cash holding (CH) is calculated by dividing cash and cash equivalents by the total assets owned by the company.
- Debt to asset ratio (DAR) is a ratio which is used to measure the comparison between total debt and total assets.
- Growth opportunity (GO) is proxied by sales calculated from sales in period t minus sales in period t-1 divided by sales in period t-1.
- Net working capital (NWC) is determined by the difference between current assets and current debt and then compared with the total assets
- The coal price (CP) is obtained from the reference coal price (HBA) at 6322 kcal calories per kg of GAR. Coal price is calculated by HBA in period t minus HBA in period t-1 then divided by HBA t-1.

ANALYSIS AND RESULTS

The average cash holding value of 15% indicates that cash and cash equivalents have a relatively large proportion compared to assets other than cash. The minimum value is 0.00513 and the maximum value is 0.63961 and the standard deviation is 0.13682 shows (Table 1) the difference of the company's strategies in holding cash.

Table 1						
DESCRIPTIVE STATISTICS						
	DAR	SIZE	GO	NWC	CP	CH
Mean	0.48039	18.51037	0.12397	0.12701	0.03118	0.15137
Median	0.40549	18.46399	0.026	0.16593	-0.04791	0.12432
Maximum	2.99814	27.60867	2.3036	0.85731	0.38946	0.63961
Minimum	0.07115	12.31274	-0.74087	-1.94502	-0.21291	0.00513
Std. Dev.	0.39524	4.2661	0.49081	0.35763	0.21839	0.13682

Skewness	4.62862	0.78365	2.10239	-3.26698	0.38167	1.61582
Kurtosis	27.74393	2.8893	9.71632	18.43866	1.52338	5.67348

The difference in cash holding strategies in this study is thought to be caused by information asymmetry that is reflected in the standard deviation of firm size and growth opportunity.

No	Method	Test	Result
1	Chow Test	Common Effect vs Fixed Effect	Fixed Effect
2	Hausman Test	Fixed Effect vs Random Effect	Random Effect
3	Lagrange Multiplier BP	Common Effect vs Random Effect	Random Effect

Based on the paired test results using the Chow test, the Hausman test, and the Breusch-Pagan Lagrange Multiplier test on the three panel data regression models above which can be seen in Table 2, it can be concluded that the random effect model is chosen to estimate and analyze the cash holding determinants of the coal mining companies listed on the Indonesia Stock Exchange in 2010 - 2019.

Estimation Model

The regression equation model of random effect model in this study can be mathematically expressed by:

$$Y_{it} = \alpha_1 + \sum_{k=2}^N \alpha_k D_{ki} + \beta X_{it} + \varepsilon_{it}$$

Through the estimation results with the Eviews 10 software are generated the estimation of panel data regression random effect model white cross section (no-heteroscedasticity) that can be seen on the Table 3 below:

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.012339	0.110732	0.111435	0.9115
DAR	0.250367	0.067401	3.714587	0.0004
SIZE	-0.00039	0.004761	-0.08159	0.9352
GO	-0.01794	0.018855	-0.9515	0.3441
NWC	0.206763	0.087957	2.350734	0.0211
CP	0.061384	0.041274	1.487227	0.1407

The estimation results can be written in the following equation:

$$CH = 0.0123394594768 + 0.250367354229 DAR - 0.000388480020258 SIZE - 0.0179403688422 GO + 0.206763201672 NWC + 0.0613844917879 CP$$

Debt to asset ratio (DAR) has a β coefficient with a positive value of 0.250367 with a t-count value of 3.714587 and a significance value of 0.0004 which is smaller than $\alpha = 0.05$. This shows that the DAR is proven to have a positive and significant effect on the cash holding of

coal mining companies listed on the Indonesia Stock Exchange in 2010 - 2019. Firm Size (SIZE) has a coefficient of β with a negative value of 0.000388 with a t-count value of -0.081589 and a significance value of 0.9352 greater than $\alpha = 0.05$. This shows that the SIZE is proven to have no effect on the cash holding of coal mining companies listed on the Indonesia Stock Exchange in 2010 - 2019. Growth opportunity (GO) has a β coefficient with a negative value of 0.017940 with a t-count value of -0.951496 and a significance value of 0.3441 greater than $\alpha = 0.05$. This shows that the GO is proven to have no effect on the cash holding of coal mining companies listed on the Indonesia Stock Exchange in 2010-2019. Net working capital (NWC) has a coefficient of β with a positive value of 0.206763 with a t-count value of 2.350734 and a significance value of 0.0211 which is smaller than $\alpha = 0.05$. This shows that the NWC is proven to have a positive and significant effect on the cash holding of coal mining companies listed on the Indonesia Stock Exchange in 2010 - 2019. Coal price (CP) has a β coefficient with a positive value of 0.061384 with a t-count value of 1.487227 and a significance value of 0.1407 greater than $\alpha = 0.05$. This shows that the CP is proven to have no effect on the cash holding of coal mining companies listed on the Indonesia Stock Exchange in 2010 - 2019.

DISCUSSION OF FINDING

Debt to asset ratio has positive significant effect on cash holding. Firms with large leverage ratio will increase their cash holding to reduce the financial distress possibility. Firms with high leverage level get external debt easily because trusted by creditors. The firm loan capability is used to cash substituting to maintain sufficient balance for the firm's operation. When crisis period, the company will increase their debt to gain more cash (Jebran et al., 2019). The result is consistent with Ogundipe et al. (2012); Gill & Shah (2012) and Jebran et al. (2019) that debt to asset ratio has positive effect to cash holding. Whereas study of Arfan et al. (2017), Thu (2018); Maheswari & Rao (2017); Al-Najjar (2013) and Uyar & Kuyez (2014) showed negative effect between cash holding and debt to asset ratio. Firm size has an insignificant effect to cash holding. Most companies in Indonesia are conglomerate or families companies whose have one ultimate owner, so the cash holding level regulacy controlled by the ultimate (Fathony et al., 2020). This result is supports study of Thu (2018) in Energy companies on Vietnam stock market; they found that firm size has an insignificant effect to cash holding. Consistent with Arora (2019) who reported the absence of relationship between cash holding and firm size on 266 companies in India period 2005-2015. This result is contradiction with Singh & Misra (2019) and Al-Najjar (2013) who explained that firm size has negative effect to cash holding. Meanwhile, Jebran et al. (2019) study in 280 companies listed on Pakistan stock exchange found that firm size have positive effect to cash holding. Growth opportunity has an insignificant effect to cash holding due to sales growth insignificant relationship with cash holding. This result lined with Jebran et al. (2019) states that the growth opportunity doesn't take important role in determining cash holding level in Pakistan. Thu (2018) also explained that growth opportunity has insignificant effect to cash holding in 28 Energy companies listed on Vietnam stock exchange 2010-2016. However Uyar & Kuyez (2014) argue that as partially, growth opportunity has a positif significant effect on cash holding level of non financial companies in Turkey. Ogundipe et al. (2012) showed that growth opportunity has a positive effect to cash holding of non financial companies in Nigeria.

An increase in net working capital leads to a higher cash balance because highly liquid companies tend to have more cash balance and vice versa. Cash is part of net working capital, so when cash increases, net working capital also increases. In addition, current assets beside cash

can't be used as a substitute for cash at any time because under certain condition due to current asset difficult converted into cash. Therefore, company manager usually make cash reserves to maintain the liquidity. This result supported to Anjum & Malik (2013) in Pakistan that found positive significant between net working capital and cash holding. However this result are different from previous studies conducted in various countries such as seperti Ogundipe et al. (2012) di Nigeria; Bayyurt & Nizaeva (2016) in Turki; and Gill & Shah (2012) that found negative effect between net working capital and cash holding. The result shows that firms with more liquid assets will tend to reduce their cash level because these assets can be used as a substitute for cash. Finally, this result indicated that the decision on the cash holding level of coal mining companies listed on Indonesia stock exchange in 2010-2019 is not determined by coal price reference because coal prices are very sensitive to political and economic situation of state. According to Keynes in Endri (2019) one of holding cash motive by firm is speculative and precautionary motive, so firms should be ensured the cash availability in whatever situation.

CONCLUSION

A higher leverage level and an increase net working capital leads to a higher cash balance due highly liquid companies tend to have more cash balance and able to comply their short term debt on time. So the operational activities can be running properly and efficiently. The companies also get opportunity to invest with their cash. As generally, the investor looked the leverage as company's capability to satisfy their third parties, that is crediture who provide loans to the company, however some investors view that growing companies will definitely need debt as additional capital to support their operational cost which impossible to using their own capital. Cash holding in this study only revolves around the coal mining company, in further research it can be expanded to the entrie mining sector or the other industry. Furthermore, the research can be added internal ratio of firm and other external factor that are not used in this study. This research can be developed using a co cointegration panel data regression model which considers that the mean (mean) and variance are constant over time so that the estimation results are expected to be better.

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