

## Investment Opportunity, Institutional Ownership, and Excess Cash Holdings with Financial Constraint as Moderation

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### Abstract

This study examines the effect of investment opportunity and institutional ownership on excess cash holdings with financial constraint as the moderating variable. Holding more cash is often rated as a negative signal for shareholders, because of the probability to use the cash inappropriately and increase the agency cost. Another side, excess cash can give a good impact on the company when is more expensive to access the external financing, or the situation make the firm had financial constraints. This study uses excess cash holdings as a dependent variable with few references and a high chance for further research. Generalized least square (GLS) is employed to analyze the hypothesis with observations during 2015-2020 in listed companies on Indonesia Stock Exchange (IDX). The result of this research shows that investment opportunity has a positive influence on excess cash holdings. If there is a financial constraint, it will decrease the effect of Investment opportunity to the level of excess cash holdings. This study was unable to capture the impact of institutional ownership on excess cash holdings in constraint nor unconstraint firms. The study was robust enough when the proxy of excess cash changed and when using the lag variable to confirm the primary result.

### Article info

Article history:

Received : 20 May 2023

Received in revised form : 01 July 2023

Accepted : 31 July 2023

Available online : 31 July 2023

**Keywords:** Excess cash holdings, Investment Opportunity, Institutional Ownership, Financial constraint,

**How to Cite:** Putri, I.P. & Lantara I.W.N. (2023). Investment Opportunity, Institutional Ownership, and Excess Cash Holdings with Financial Constraint as Moderation. *Journal Ilmiah Manajemen dan Bisnis*, 9 (2), 191 – 203.

## INTRODUCTION

Cash, part of capital, is the popular way for companies to maintain liquidity (Keynes in Almeida et al, 2014). Cash also plays an important role in financial management strategy, which is not only related to operating activities and increasing the value of the company but also related to corporate governance for institution's sustainability. Generally, there are three reasons for companies hold cash or do cash holdings. First, the transaction purpose is to bridge cash inflows and cash outflows in the short term. Second, the precautionary purpose, the company carries out cash holdings based on unpredictable future liabilities. Third, is the speculative purpose, the company holds cash because of the possibility of increasing in interest rates in the future (Keynes in Ali et al, 2016).

There is another purpose, named the tax purpose, created for multinational corporations to retain their income, and hold it in cash (Bates, et.al, 2009). Multinational corporations usually have incentives to maintain the income of companies abroad, so they keep cash in large amounts. In addition, there is also an agency purpose, the manager of the company tends to hold more cash rather than increase

dividend payments for shareholders (Jensen, 1986).

Two sides can be seen in the cash holdings of a company. First, the composition of cash holdings provides flexibility to avoid costs incurred when companies invest in activities or something lower than expected (underinvestment). Second, composition cash holdings can also be allocated inefficiently and abused internally. With an important role in the company, its existence needs to be used properly so as not to add new conflicts within the company or increase agency problems. Multiple studies argue and show that excess cash can benefit the company because it minimizes the need to finance future investment opportunities rather than accessing expensive external financing (Almeida, et.al, 2004; Kim, et.al, 1998; Acharya, et.al, 2007).

A survey from Powell in 2018 to 250 Chief Financial Officers (CFOs) in Indonesia excluding financial firms, shows that 83% of managers respond to agree or strongly agree that firms prefer to hold larger cash balances to avoid the risk of financial distress or bankruptcy. 57% of managers agree or strongly agree regarding there is a relationship between leverage and cash holdings at higher debt levels in companies with greater uncertainty, in future cash flows tend to save more money to prevent financial difficulties when there are profitable projects in the future. This study confirms that companies in Indonesia prioritize saving a large amount of capital in the form of cash compared to carrying out other actions while waiting for the right investment potential.

Kusnadi (2011) states that cash holdings are positively related to future investments done by the company. Investment opportunity or other terms investment opportunity set (IOS) is future investment opportunities that provide an increase in the assets of the company or project that has a positive NPV (Kallapur and Trombley, 2001). Because it is an opportunity, it is an investment choice that may or may not be taken by the company. Investment is an important part of the journey company. If the cash available to the company is not sufficient, this has the effect of losing money on profitable investment opportunities. Unless, if the company has the ability others to choose external funding, it will incur additional costs (Ferreira and Viela, 2004).

Institutional ownership has a relationship with information transparency. Existence institutions as shareholders require a company to provide more information open. In this study, institutional ownership that reflects the company's transparency will include as a factor the company tends to reduce cash holdings. Currently in Indonesia also not many researchers use excess cash holdings as the dependent variable. Previous research has shown that institutional ownership affects cash holdings (Azinfar dan Shiraseb, 2016). More specifically other studies that show institutional ownership has a positive effect on cash holdings (Khan, Bibi, and Tanveer, 2016; Im, Park, Pathan, and Yu, 2018). Different from the research, institutional ownership has a significant influence negative on cash holdings (Christina, 2014). Institutional investors are better able to improve governance corporate governance and reduce agency conflicts due to their monitoring capabilities (Ilyas, 2021).

Duchin (2010) also mentions that there is a relationship between financial constraints and governance companies, and their relationship to investment opportunities. This financial limit is known

as financial constraints. Holding cash for precautionary purposes is irrelevant to the company which is not a financial constraint so it should be suspected that there are other motives. Companies that do not have Financial constraints should not maintain excessive amounts of cash. This matters because the company will lose due to the costs of holding cash which will exceed the benefits (Frésard and Salva, 2010). Companies that do not experience financial constraints should be able to manage cash for investment, so the benefits of holding cash are good for the company.

Financial constraints will be involved in moderating this research. Based on keyword analysis that appears related to excess cash using VOSviewer over the past six years, cash holdings have been most often associated with corporate governance, Besides that, it is also related to sharing ownership and financial constraints, but nothing has been found yet related to investment opportunities. Compared to mapping using the word the key to cash holdings only, the existence of excess cash is still small and not many have researched it. from a thing, In this case, the researcher tries to take a loophole by taking this topic.

So, based on what has been described, cash is an important part of the company and can be further explored, especially regarding excess cash holdings. This study will examine the effect of investment opportunities and institutional ownership in excess cash holdings with financial constraints as moderation. This research is intended to contribute to the topic of excess cash holdings through empirical evidence related to cash holdings, and new references for further researchers both in terms of empirical evidence and data analysis for further research development.

The trade-off theory states that some benefits and costs hold some cash. Holding cash brings benefits and costs but on the other hand, holding cash will help companies to fund investments. The benefit of holding cash is that it acts as a buffer allowing companies to avoid costs associated with the use of external funds or fees to liquidate assets if the company lacks cash so that the company can invest (Opler et.al, 1999).

## **METHOD**

This study choose quantitative research design that tests the proposed hypothesis, measure made systematically before the data is tabulated and standardized, data in the form of numbers of measurement precision, a theory is mostly causal and deductive, and analysis is carried out using statistics, tables, or graphs and shows how the relationship to answer the hypothesis (Neuman, 2014). The research method used is causal which, if detailed again, will enter into a formal study. The purpose of a formal research design is to test hypotheses or answer research questions posed (Schindler, 2019). This research conducted an empirical study on public companies listed on the Indonesia Stock Exchange (IDX) for the 2015-2020 period. This study excludes the financial industry because the financial industry has different standards in its calculations. This study selects a sample with a purposive sampling method, which is a sample selection based on criteria. The analysis carried out is panel data analysis and the analysis will use Stata 16.

**Table 1.** Sources of data collection from variables

Data	Variable	Data Source
Tobin's q	Investment Opportunity	Osiris
Institutional Ownership	Institutional Ownership	Annual Report of each company
Shares Outstanding		Thomson Reuters
Cash& Cash Equivalent	Excess cash holdings	Osiris
Total Assets		Osiris
Dividend	Financial constraint	Yahoo Finance Website
Market to Book Ratio		Osiris
Cash Flow		Osiris
Debt		Osiris
	Control Variables	Osiris

Estimating the excess cash value is determined by the positive residual value from the cash holdings regression which is based on previous research (Opler et al., 1999; Huang., 2018). Excess cash value in the form of the residual regression value is calculated by the model of determination as follows,

$$CASH_t = \alpha - \beta_{mtb}MTB_{it} + \beta_{size}Size_{i,t} + \beta_{RnD}RnD_{i,t} + \beta_{REG}REG_{i,t} + \varepsilon_{i,t}$$

CASH is the natural log of cash and short-term investments, and SIZE is calculated from the natural log of net assets. RnD is research and development expenditures measured by sales, and REG is a dummy variable, with a value of one if it is included in the regulated industry category, and zero if it is not. (Remember Huang; 2018, which are included in the regulated industries are railroads (SIC code 4011), trucking (SIC code 4210 and 4213), airlines (SIC code 4512), and telecom (SIC code 4812 and 4813).

This study will use a price-based proxy to measure investment opportunity, namely Tobin's Q (Skinner, 1993

### **Investment Opportunity**

$$\text{Investment Opportunity} = \text{Tobin's } Q_{i,t}$$

### **Institutional Ownership**

Institutional Ownership according to Chang dkk. (2017) are:

$$\text{Institutional Ownership}_{i,t} = \frac{\text{Institutional Shares above } 5\%_{i,t}}{\text{Share Outstandings}_{i,t}}$$

### **Financial Constraints**

Companies are classified as companies without financial or non-financial restrictions constraints (NFC) and companies with financial constraints (FC). The score is worth 1 if the company does not experience financial constraints (NFC) and the score is 0 if the company experiences financial

constraints (FC). The criteria used are compound criteria, by combining several criteria, namely by looking at dividend payments, cash flow, the book to market ratio, and debt (Hendrawaty, 2017).

**Table 2** Steps for Classification of Compound Criteria Financial constraint

Criterion 1	Criterion 2
Pay dividend: 1 Not pay: continue with the second criteria	Cash flow > average cash flow: 1 Cash flow < average cash flow: go to the third criterion
Criterion 3	Criterion 4
Book to market < average book to market: 1 Book to market > average book to market: proceed to the fourth criterion	Utang < average debt of the entire sample: 1 Utang > average debt of the entire sample: 0

Source: Hovakimian dan Titman, 2006

## RESULTS AND DISCUSSION

The results of descriptive statistical analysis of the research sample are as follows.

**Table 3.** Descriptive Statistics of Research Variables

Year	Variable	Mean	Std. Dev.	Min	Max	Obs
<b>2015-2020</b>	EC	0,051	0,064	0,0000126	0,627	772
	INV	1,079	1,813	0,016	23,11	772
	KI	0,627	0,241	0	0,999	772
	FC	0,290	0,454	0	1	772
	ROA	5,513	10,39	-57,28	60,54	772
	LEV	0,508	0,376	0,0034534	5,167	772
<b>2015-2019</b>	EC	0,049	0,063	0,0000532	0,6278	515
	INV	1,108	1,899	0,016	23,11	515
	KI	0,634	0,233	0	0,9999	515
	FC	0,401	0,490	0	1	515
	ROA	6,327	10,33	-37,51	60,54	515
	LEV	0,505	0,374	0,0076232	5,0732	515
<b>2020</b>	EC	0,053	0,067	0,0000126	0,4027	257
	INV	1,021	1,628	0,03	15,519	257
	KI	0,614	0,257	0	0,9976	257
	FC	0,066	0,249	0	1	257
	ROA	3,882	10,33	-57,28	47,95	257
	LEV	0,514	0,380	0,0034534	5,167	257

Source: Data Processing Results with Stata 16.0

Table 3 presents descriptive statistics of the variables to be used. EC is the company's excess cash; INV is an investment opportunity calculated by Tobins'q; KI is institutional ownership which is calculated from the number of institutional share ownership divided by the number of outstanding shares; FC is a financial constraint which is a dummy variable based on multiple criteria; ROA is profit after tax divided by total assets; LEV is the leverage of total assets divided by total debt; there are three

observations by year, namely 2015-2020, 2015-2019 (outside the pandemic), and 2020 (pandemic period).

**Tabel 4.** Regression Test Results

A. Dependent Variable: Excess cash holdings (Y); Independent Variable: Investment Opportunity (X)			
Variable	2015-2020	2015-2019	2020
INV	0,177 * (1,793)	0,443*** (3,442)	0,084 (0,590)
FC	-0,039 (-0,568)	0,086 (1,085)	-0,636** (-2,091)
ROA	0,043*** (5,562)	0,021*** (3,362)	0,026* (1,838)
LEV	-0,332*** (-2,905)	-0,367** (-2,265)	-0,971* (-1,809)
Constant	-0,147 (-1,557)	-0,209* (-1,746)	0,441 (1,400)
Obs	696	516	106
B. Dependent Variable: Excess cash holdings (Y); Independent Variable: Institutional Ownership (X)			
Variable	2015-2020	2015-2019	2020
KI	-0,127 (-0,865)	0,196 (0,847)	0,632 (1,362)
FC	0,032 (0,477)	-0,045 (-0,540)	-0,613* (-1,973)
ROA	0,025*** (6,641)	0,016** (2,332)	0,029** (2,042)
LEV	-0,417*** (-3,674)	-0,908*** (-4,438)	-1,070* (-1,909)
Constant	0,142 (1,093)	0,274 (1,340)	0,142 (0,304)
Obs	772	409	106
C. Dependent Variable : Excess cash holdings (Y); Moderating Variable: Investment Opportunity*Financial constraint (X)			
Variabel	2015-2020	2015-2019	2020
INV	0,125* (1,963)	0,176*** (2,596)	0,067 (0,452)
FC	0,086 (0,823)	0,294** (1,976)	-0,841** (-2,074)
INV_FC	-0,172** (-2,026)	-0,449** (-2,152)	0,247 (1,019)
ROA	0,041*** (5,340)	0,036*** (4,068)	0,026* (1,757)
LEV	-0,515*** (-2,745)	-1,035*** (-4,152)	-1,003* (-1,844)
Constant	-0,039 (-0,319)	0,129 (0,781)	0,472 (1,451)
Obs	644	480	106

D. Dependent Variable: Excess cash holdings (Y); Moderating Variable: Institutional Ownership*Financial constraint (X)			
Variable	2015-2020	2015-2019	2020
KI	-0,127 (-0,689)	0,167 (0,596)	0,447 (0,890)
FC	0,030 (0,171)	-0,094 (0,156)	-1,527* (-1,946)
KI_FC	0,002 (0,009)	0,075 (-0,277)	1,204 (1,080)
ROA	0,025*** (6,633)	0,016** (2,350)	0,048** (2,167)
LEV	-0,417*** (-3,672)	-0,905*** (-4,450)	-0,783 (-1,253)
Constant	0,143 (0,954)	0,291 (1,307)	0,007 (0,013)
Obs	772	409	95

Source: Data Processing Results with Stata 16.0

Table 4 presents the results of testing hypothesis one. Investment opportunity (INV) is obtained from the value of Tobin's q. Institutional Ownership (KI) is obtained from the value of share ownership by the institution divided by the number of shares outstanding. INV\_FC is obtained from the interaction of investment opportunity variables with financial constraints. INV\_FC is obtained from the interaction of investment opportunity variables with financial constraints. ROA = net income/total laser. leverage = total debt/total assets. T-statistics are in brackets under the constant. Significant at level \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Table 4 Panel A presents the results of the first hypothesis test. The test results show the coefficient investment opportunity (INV) is positive and significant in the two observation periods, namely 2015- 2020 for the 10% significance level and 2015-2019 for the 1% significance level. Positive results significantly indicate that companies that have high investment opportunities will hold cash excess, which indicates that the first hypothesis is supported. Insignificant results in 2020 marked the probability value of investment opportunities above the alpha value. The financial constraint variable is negative and significant only in 2020. Variable ROA is positive and significant at the 1% level for 2015-2019 and 2015-2020 and signed with a 5% level by 2020.

Panel B in Table 4 presents the results that examine the role of institutional ownership on excess cash holdings. The existence of high institutional ownership does not increase cash holdings excessively, this is indicated by the insignificant results in the three observation periods. Role institutional ownership does not harm excess cash holdings. So big or reduce the number of shareholders in the institutional category, no visible role in influencing the height low cash holdings by the company. The second hypothesis in this study is not supported. Panel C presents the test results involving the interaction variables of investment opportunities and financial constraints. The results of these interactions are significant at the 5% level for 2015-2020 and 2015-2015, respectively. 209, and is not significant in 2020. The significant value is negative which indicates when the company is experiencing financial limitations when the company has investment opportunities there is the tendency for the

company to reduce the level of excess cash holdings. So the hypothesis second in this study is not supported.

Panel D shows the results of testing the fourth hypothesis that examines the interaction between ownership institutional with financial constraint and its effect on excess cash holdings. Results show positive signs but are not significant in the three observation periods. The magnitude of the effect of the obstacle or financial constraints on moderating institutional ownership of excess cash holdings cannot weaken its negative influence. These results do not support the fourth hypothesis in this study.

The results of testing the first hypothesis support the statement that companies that have opportunities to invest tend to hold funds in the form of cash. The results of this study support the trade model off developed by Kim et al. (1998), research by Nguyen, et.al. (2006), and Opler et al. (1999) which explained that investment opportunities and cash holdings are positively related. The company holds cash excess as anticipation if there are expenses related to the company's investment. Study This also supports the research of Saddour (2006) which also uses a proxy-based on price, namely Tobin's Q to measure investment opportunities. In addition, testing the first hypothesis according to pecking order theory, which states that a high level of investment opportunity will provide demand for cash supply is high. Companies that have a high level of profit those with higher income tend to have lower debt levels. This research also supports the statement of Pinkowitz and Williamson (2004) who argue that the marginal value of cash is higher for firms with greater investment opportunities.

The institutional ownership variable is not significant to excess cash holdings in the problem agency events that occur in the company, even though the direction is in line with predictions. Institutional Ownership companies that are high still tend to hold a lot of cash, just like companies that have high low institutional ownership tend to have little cash. Institutional ownership useful concept for a supervisor used to improve company performance. Results This study supports the research of Ozkan and Ozkan (2004) which describes institutional ownership in the company does not affect cash holdings, the reason is that the owners of institutional supervision are passive which results in a lack of supervision and discipline in managers.

The results of this study also support the research of Ilyas, et.al (2021) that institutional investors do not affect excess cash holdings, especially domestic institutional shareholders. It supports the idea that investors have fewer incentives to influence corporate and governance decisions corporate governance (Chen et al., 2007). Institutional investors from countries with good governance and strong investor protection will play a prominent monitoring role but will apply On the other hand, if investor protection and corporate governance are weak, the impact of monitoring institutional investors is not visible.

Based on Deni's (2010) research, companies experiencing financial constraints may tend to have fewer excess cash holdings. Many findings show that cash holdings are more valuable to constrained firms because it allows for increased investment in value-enhancing projects, but some companies are legally constrained Finance has very low cash reserves. This research supports this statement.



Denis (2010) considers three mutually exclusive options regarding holding behavior the cash. One possibility is that low cash holdings are the result of the agency problem. If some managers tend to invest inefficiently, their boards maybe limit the amount of cash available to avoid inefficient spending. As alternatively, managers may routinely waste cash reserves, leaving the firm with low cash holdings. The second possibility, the limited company shows a weakness in financial health, so that they cannot collect cash reserves or are forced to withdraw on cash balance previously. Third possibility if the very low cash holdings of some companies cannot be explained by the agency costs of overinvestment or more external costs of low finance. So when there are financial constraints, companies that have investment opportunities high can also have a tendency not to increase their excess cash holdings.

The results of statistical tests show that the financial constraint variable does not affect the relationship between institutional ownership of excess cash holdings. Based on the results of the second hypothesis, institutional ownership does not show a statistically significant effect on excess cash holding. If there is no influence at the beginning, it will be difficult to see a strengthening relationship or weaken the moderating variable. This type of institutional investor plays an active role in reducing the financial constraints of companies that are supposed to present a level of information higher asymmetry. However, if the supervisory role of institutional investors does not work by the should be, more or less the company's cash holding does not have a significant impact when the company is indicated by financial constraints. According to Ashbaugh et al. (2004), the size of the level of institutional ownership in the company's share capital does not necessarily influence the actions of investors against the company. This is due to the possibility of a large enough cost for these investors in carrying out supervisory actions against the company.

### **Robustness Test**

A robustness test was conducted to test the consistency of the research results. This test replaces the calculation of excess cash holdings with the measurement used by (Christina, 2014).

$$EC_{i,t} = \frac{\text{Cash\&Cash Equivalent}_{i,t} - \text{Cash\&cash equivalent 3 years before}_{i,t}}{\text{Total Assets}_{i,t}}$$

This study conducted the robustness test twice. The next robustness test is with using the lag time model by changing the independent variable into a lag variable. Variable lag can be used if there is a possibility that the current level of the dependent variable is determined by the level or previous time. The approach used is to predict the value at the previous time (t-1). Overall the test results by changing the measurement of excess cash holdings are consistent with previous tests which state that there is an investment opportunity for a company, that make the company decide to hold excess cash. So that this result is robust and supports the hypothesis. The role of institutional ownership does not appear to harm excess cash holdings. The effect of investment opportunities on excess cash holdings will increase when: The company is experiencing financial constraints. And, the result of the interaction between

institutional ownership shows a positive sign but is not significant in the three observation periods. The results are the same of previous tests, except for the fourth hypothesis.

## **CONCLUSION**

The test results reveal that investment opportunities have a positive and significant effect on excess cash holdings. A positive value asserts that as a firm's investment opportunities increase, The company holds excess cash because of investments that are considered to be profitable for the company in the future. The test results reveal that institutional ownership is not significantly affected excess cash holdings. Financial constraints significantly influence the effect of investment opportunities on excess cash holdings.

This can be seen from the margin split which shows an increase in the upward curve. However, the effect of institutional ownership on excess cash holdings is not statistically significant because the effect of institutional ownership on excess cash holdings is also not significant in this study prior to moderation. This study changes the measurement of excess cash holdings in the test robustness to see the consistency of the analysis. The results are stated to be consistent in all research hypotheses whether influential or not. This means that the company's reasons for holding cash excess are related to future investment opportunities, but is not related to shareholding. This research has limitations and is expected to be a guide for future research for the better.

The research only uses linear regression and GLS methods to test the data that have been collected. Future research would be better if using an estimation method than different methods, such as Two-stage Least Square (2SLS) and Generalized Method of Moment (GMM). Some other variables may capture the effect of excess cash holdings. Next researcher can see other variables that are more influential on the behavior of companies doing excess cash by bibliometric analysis so that in the future it can include other variables in the model study. Researchers only use two control variables, because the variables that are considered to be able to control variables are used for other parameters excess cash in the robustness test. The next researcher can add more control variables to prevent biased calculations.

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