



ORIGINAL CONTRIBUTION

CEO Characteristics on Cash Holdings & Overinvestment: Evidence from Indonesian Firms

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Abstract— The purpose of this research is to analyze the influence of CEO characteristic towards firms' cash holdings and over-investment of free cash flow. This research uses multiple regression on panel data of a sample of 24 companies listed in index LQ45 for the period from 2013 to 2017 with 61 female CEOs and 59 male CEOs in the sample. This research is using CEO gender as independent variable; cash holdings and over-investment of free cash flow as dependent variable. Other CEO characteristic such as age, education, tenure, firm size, market-to-book ratio, leverage, cash flow, capex, networking capital, dividend, free cash flow, managerial and state ownership as control variable. The research finds a positive significant influence between female CEOs, cash holdings and over-investment. The results also show that female CEOs are having a higher level of cash holdings and resulted in lower level of over-investment problems. Female CEO also can mitigate the agency problem in the firm. The UET theory is used to support the findings in which CEO characteristic can influence the company's performance and financial decision. UET literature focuses on executive demographic to explain corporate investment decision while this paper extends the application of the UET in the area of accounting.

Index Terms— CEO gender, Upper Echelons Theory, Cash Holdings, Over-investment.

Received: 30 July 2018; **Accepted:** 5 October 2018; **Published:** 28 December 2018

Introduction

Background

Organizational process and decision-making process include behavioral aspects that reflect the characteristics of decision makers which is the CEO (Zeng & Wang, 2015). CEO characteristics are important because it can estimate the organizational outcomes, choices, and performance levels (Hambrick & Mason, 1984). The characteristics can be peroxide by gender, age, tenure, specialization, and educations (Ting et al., 2015).

Some research consider that the gender of a CEO influences the decision that will be taken. A research shows that women are more likely to avoid any risk rather than men. It is also shows that women are usually more conservative than men who usually more aggressive in making decision (Zeng & Wang, 2015). A research conducted by Agnes regarding the relationship between CEO Gender and financial performance in Indonesian Manufacturing Industry shows that firms with women CEO are showing a better financial performance rather than firms with male CEO. However, based on the result in Women in Business report by Grant Thornton for March 2017 edition shows that the proportion of CEO in Indonesia that are represented by women are only 46% in total, meanwhile, in Japan the gap between men CEO and women CEO are very huge. The women CEO is represented by less than 10% from the proportion of men CEO (Grant

Thornton International, 2017). By looking at the graph, it is reasonable to expect that the business decisions are still majorly held by male CEO. It is not happening only in Indonesia but majority in all countries represented by the graph provided by Grant Thornton. However, the proportion of senior business roles held by women has risen from 34% to 36% in 2017 in ASEAN (Jayaram, 2016).

CEO characteristic can affect corporate decisions regarding cash holdings. Companies around the world have increased their amount of cash holdings over the past two decades (Amess et al., 2015). A recent Deloitte report stated that companies are much more conservative regarding their cash holdings. Between 2008 to 2013, companies are close to double their cash reserve to \$2.88 trillion (Macmillan et al., n.d.). The different decisions that affects the level of cash holdings might be resulted because of different risk preferences by every CEO. Liang et al. (2018) stated that women are more reluctant to take risk or risk-averse, they are more conservative on how the company organize their cash and care more about the way company spent their money. A research also stated that older CEOs are risk-averse rather than younger CEOs. Therefore, every CEO have different risk preferences that results in different attitude in handling and using cash retained thus resulting in different level of cash handlings. CEO characteristics also influence this investment decision. Investment decisions are influenced by the managerial characteristics that include age, gender, tenure, education background, and work experience (Alfian

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& Tresna, 2017; Liang et al., 2018). Huang & Kisgen (2013) stated that firms with female CEO and CFO are less likely to make large acquisitions. This research is conducted to analyze the influence of CEO characteristic towards cash holdings and overinvestment of free cash flow that more

likely to happened if a firm retained a high level of cash.

The research gap between education, gender, tenure, age, cash holdings & overinvestment shown in Table I.

Table I
Research gap

Author	CEO Education	CEO Gender	CEO Tenure	CEO Age	Cash Holding	Overinvestment	Results
Zeng and Wang (2015)		V			V	V	Significant(+)
Liang, Hsieh, Lin and Shih (2018)		V			V	V	Significant(+)
Charness and Gneezy (2012)		V				V	Significant(+)
Serfling (2014)				V		V	Significant(+)
Xie (2015)			V	V		V	Significant(+)
Huang and Kisgen (2013)			V			V	Significant(+)
Jiang (2016)			V			V	Significant(+)
Orens and Reheul (2013)	V		V	V	V		Significant(+)
Chapple and Humphery		V			V	V	Nonsignificant
Vieto and Khan (2013)		V	V				Nonsignificant
Barker and Muller (2012)	V			V	V	V	Significant(+)

Research questions are:

- Does CEO characteristic have influence on firms' policy of cash holdings?
- Do CEO characteristic have influence on firms' over-investment of free cash flow?

Literature Review

Agency theory

Agency problem happens due to different interest between management and shareholders. Agency problem caused by the management who want to make benefits for themselves and cause a loss in shareholders' wealth (Wang et al., 2010). Moreover, large corporations are assumed to have a large amount of cash holdings because the management has more authority and freedom to decide how they are going to manage and spend the cash (Anabestani & Shourvarzi, 2014). Therefore, agency problem can be one of the determination factor of firms' cash holdings and affect managerial behaviors which characterized by people,s rationality that are. Furthermore, Jensen (1986) develops further theory of how agency theory is related with free cash flow that will affect the investment as well.

Cash holdings

Cash refers to short-term investments which can be changed into funds with its risk that are not much. Cash also refers to funds, checking deposits in banks or financial institutions, and foreign currency (Anabestani & Shourvarzi, 2014). Moreover, cash is view as a liquid investment required to support the working capital needed from the firm (Harford et al., 2008). Moreover, cash available or kept in the firms is called cash holdings. Cash holdings can be referred as cash available in the firms or available for investment in physical assets or to be distributed to the shareholders (Gill & Shah, 2012; Purnamasari & Fitdiarini, 2016). Other literature also stated that cash holdings are cash amount of the company and cash equivalents that can be converted into cash easily (Ogundipe et al., 2012).

The advantage of cash holdings is the firms' capabilities to take the opportunity to invest in sudden time and to avoid frequent external financing. Level of cash holdings depend on the operational, investment, and financing needs. Moreover, it also depends on the external environment such as financial crisis. However, firms' optimal cash holding can be determined by the trade-off between lower returns earned by holding liquid asset and the benefit to fund future investment opportunities in the presence of costlier external finance (Amess et al., 2015). The measurement of cash holdings is following (Opler et al., 1999): cash and cash equivalent divided by net asset, where total assets minus cash and cash equivalents.

Motives of cash holdings

According to Anabestani & Shourvarzi (2014), Horne & Wachowicz Jr (2009) and Keown et al. (1996) the cash holdings motives are as follows:

- Transaction motive
- Precautionary motive
- Speculative motive
- Agency motive
- Taxation motive

Free cash flow

Free cash flow is excess cash flow that required to finance all projects with positive net present values (Jensen, 1986). Free cash flow can also be used to maintain assets in place and to finance the anticipated new investments. While over-investment is the investment expenditures required to maintain all assets in place and to finance the expected positive NPV projects or finance new investments (Richardson, 2006). As cash holdings are increasing, means internal funds are increasing as well. The managers must undertake strategic decision whether to distribute the cash to the investor or not, whether to spend it for internal purposes, use it for external acquisition or financing, or whether to continue holding the funds (Bahri et al., 2017; Harford et al., 2008).

Overinvestment

When a firm has excess cash or more than sufficient funds to finance project internally, over-investment problem may arise. The agency cost explained that difficulty in monitoring gives potential for the management to spend the excess funds on projects based on management perspective are beneficial but actually costly based on the shareholders perspective. Poor monitoring leads to inefficiencies in allocating free cash flow as the focus of company,s board of directors are on policies that support management interest at the expense of shareholder value (Endang & Risal, 2017; Hairudinor et al., 2017; Wang et al., 2010). Jensen (1986) develop how agency theory relate to free cash flow theory. Executive levels are likely to have an incentive to increase the amount of cash under their authority to gain power over the firm,s investment decision. Excessive amount of cash can reduce the pressure to increase executives' performance level so that they can invest in the projects that are beneficial for themselves.

These excessive amounts of cash in profitable firms with limited investment opportunities can cause a disadvantage to shareholder value if the funds are invested in unprofitable projects (Burki, 2017; Jensen, 1986). It

also can be used for investment in risky activities such as, Research and Development (R&D) project and mergers and acquisition (M&A) where R&D is a long-term project with a high level of probability to fail and M&A often be seen as projects that brings no value for shareholders. This process can cause an overinvestment of free cash flow of the firm (Hunter et al., 2015).

Over-investment can happen in firms with high level of free cash flow (Richardson, 2006). Firms with fluctuated cash flows will want to hold cash for the period when cash flow is low and those firms who are having difficulties to raise external capital will desire larger cash holdings. Several studies suggest that managers have motives to invest more, even at the expense of shareholders' interests. Investment can provide promotion opportunities for middle management, which can motivate managers to invest more. Managers can decrease a firm's investment by paying dividend. However, management may invest more on project that beneficial for the management rather than distribute the cash to the shareholders (Jiang, 2016).

CEO characteristics

CEO Characteristics is defined by the Upper Echelons Theory (UET).

The theory states that the managerial background or characteristics can be used to estimates the organizational outcomes, choices, strategies, effectiveness and the performance levels. It reflects the cognitive foundations and values of the powerful people in the organization. Examining the UET can provide three benefits. Firstly, it offers greater possibility to predict organizational results. Secondly, the benefit can be offer to those responsible in selecting and developing top executives and the last benefit can be offered for strategist to predict the competitors' moves (Hambrick & Mason, 1984).

According to Barker III & Mueller (2002), Faccio et al. (2016), King & Srivastav (2016), Richardson (2006), Xie (2015), Ting et al. (2015) the CEO characteristics consist of the followings.

- Gender
- Age
- Tenure
- Education

Conceptual framework

Conceptual framework of this research is shown in Figure 1

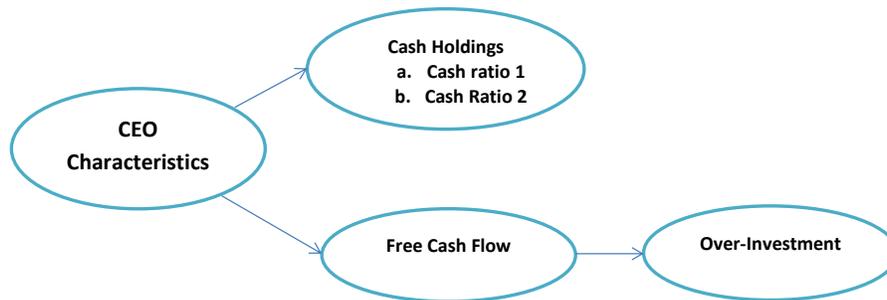


Fig. 1. Conceptual framework

Hypothesis

Based on the research problems and conceptual framework above therefore the hypotheses of this research are as follows:

- CEO characteristics does not influence firms' cash holdings.
- CEO characteristics does not influence firms' over-investment of free cash flow.

Research Method

This research uses all companies listed in index LQ45 based on the list provided by Indonesia Stock Exchange (IDX). The sampling method chosen is purposive sampling. The companies chosen are 24 companies that are constantly listed in index LQ45 starting from 2013 to 2017 excluding banks and financial services. The variable are CEO gender with 1 if it is female and 0 for male as independent variables. The examination of CEO gender as very limited number then it is included the female directors. While the dependent variables are cash holding represented by cash holding ratio 1 based on net asset and 2 based on total assets and overinvestment.

This research also use control variables as control variables namely firm size use natural logarithm, leverage with DER ratio: total debt divided by total assets, market to book ratio computed by market value of equity divided plus book value of liabilities divided by total assets, cash flow use

ratio earnings after interest, dividend, taxes before depreciation divided by net assets, networking capital use networking capital by counting current assets minus current liabilities minus cash and cash equivalent divided by net assets, capital expenditure use the ratio of capital expenditure divided by net assets, dividend is a dummy variable with 1 a compay pays dividend and 0 does not pay, age reflected by years, tenure represented by how long the employee perform the service for a company, education and state ownership calculated by state ownership share divided by total assets and education with five point scale namely 1 for technical secondary school or below, 2 for college degree, 3 for undergraduate degree, 4 for master degree and 5 for PhD degree. The The data is processed by multiple regression using SPSS 24 statistical tool. The classical assumptions conducted prior to the multiple regression model examination.

Research Results

The results of the first and second regressions i.e. CEO characteristic influence firms' cash holdings, CEO characteristics does influence firms' over-investment of free cash flow to answer the first and second hypothesis.

Table II
T-test result for cash holding 1 & 2 and over-investment

	Cash Ratio 1	Cash Ratio 2		Over-Investment
Gender	0.063 (0.024)**	0.036 (0.026)**	Gender	-0.080 (0.035)**
Firm Size	0.032 (0.065)*	-0.004 (0.570)	Free Cash Flow	0.191 (0.440)
Leverage	-0.162 (0.164)	0.049 (0.336)	Gender*FCF	-0.433 (0.228)
Market-to-Book	0.003 (0.815)	-0.014 (0.000)***	Firm Size	-0.062 (0.018)**
Cash Flow	0.131 (0.326)	0.648 (0.000)***	Leverage	0.062 (0.667)
Networking Capital	-0.011 (0.866)	0.034 (0.321)	Market-to-Book	-0.002 (0.759)
Capital Expenditure	0.025 (0.889)	-0.089 (0.304)	Age	-0.011 (0.000)***
Dividend	-0.006 (0.941)	0.023 (0.608)	Tenure	0.001 (0.876)
Age	-0.003 (0.228)	-0.003 (0.010)***	Education	0.049 (0.098)
Tenure	0.003 (0.536)	0.001 (0.801)	State Ownership	0.701 (0.000)***
Education	-0.073 (0.002)***	0.016 (0.163)		
Managerial Ownership	0.376 (0.398)	0.330 (0.141)		
State Ownership	0.095 (0.111)	0.130 (0.000)***		

The equation regression for cash holding 1 is as follows:
Cash Ratio 1 = -0.475 + 0.063 Gender + 0.032 Firm Size - 0.162 Leverage + 0.003 MKT Book + 0.131 Cash Flow - 0.011 NWC + 0.025 Capital Expenditure - 0.006 Dividend - 0.003 Age + 0.003 Tenure - 0.073 Education + 0.376 Managerial Ownership + 0.095 State Ownership - 0.007 Dummy Industry + 0.041 D2014 + 0.054 D2015 + 0.090 D2016 + 0.031 D2017 + E

From the result, gender, firm size, market-to-book, cash flow, capex, tenure, managerial, and state ownership have a positive influence on model cash ratio 1. Meanwhile, leverage, networking capital, dividend, age, and tenure have a negative influence on model cash ratio 1. Meanwhile, the other variables are not significantly influencing the cash ratio 1. This is reflected by the adjusted square is 13.6% means only 13.6% explained by research variable while the rest explained by other variables than research variables.

The equation regression for cash holding 2 is as follows:
Cash Ratio 2 = 0.236 + 0.036 Gender - 0.004 Firm Size + 0.049 Leverage - 0.014 MKT Book + 0.648 Cash Flow + 0.034 NWC - 0.089 Capital Expenditure + 0.023 Dividend - 0.003 Age + 0.001 Tenure - 0.016 Education + 0.330 Managerial Ownership + 0.130 State Ownership - 0.004 Dummy Industry - 0.001 D2014 - 0.001 D2015 + 0.008 D2016 + 0.018 D2017

From the result above, gender, leverage, cash flow, networking capital, dividend, tenure, education, managerial, and state ownership have a positive influence towards model cash ratio 2. Meanwhile, firm size, market-to-book, capex, and age have a negative influence towards model cash ratio 2. However, the variables that have significant influence towards cash ratio 2 are only gender, market-to-book, cash flow, age, and state ownership. Meanwhile, the other variables are not significantly influencing the cash ratio 2 with 39.2% R square.

The equation regression for overinvestment is as follows:
Over Investment = 2.882 - 0.080 Gender + 0.191 FCF/TA - 0.443 FCF*Gender - 0.062 Firm Size + 0.062 Leverage - 0.002 MKT-Book/TA - 0.011 Age + 0.001 Tenure + 0.049 Education + 0.701 State Ownership/TA - 0.033 Dummy Industry + 0.006 D2014 + 0.040 D2015 + 0.049 D2016 + 0.075 D2017

From the result above, free cash flow, leverage, tenure, education,

and state ownership have a positive influence towards model over-investment. Meanwhile, gender, FCF*gender as mediator variable, firm size, market-to-book, and age have a negative influence towards model over-investment. However, the variables that have significant influence towards over-investment are only gender, firm size, age, and state ownership. Meanwhile, the other variables are not significantly influence the over-investment with 61.7%.

Discussion

Research model cash ratio 1 and cash ratio 2 are used to test the hypothesis one. The result for cash ratio 1 and 2 are both significant (0.029) and (0.000) so CEO gender is able to influence the cash holding 1 & 2 with all control variables in the model. Therefore, the first alternative hypothesis is accepted. This is in line with the research conducted by Zeng & Wang (2015) and Liang et al. (2018). The female CEOs tend to have higher level of cash holdings rather than male CEOs.

Based on the t-test for cash ratio 1 and 2, the CEO gender has a positive significant influence on firms' cash holdings with the significant level of 0.024 and 0.026. This is in line with the research from (Zeng & Wang, 2015). It is supported by a research of Faccio et al. (2016) states that female CEOs are risk-averse and tend to make less risky in financing options. Female CEOs are more likely to have conservative characteristics, due to the focus on precautionary motive of cash. Female CEOs are also preferred more in using internal financing rather than external financing to fund new investment (Kurniawati & MeilianaIntani, 2016; Liang et al., 2018).

In addition to that, education has negative influence on cash holdings 1 of 0,002 significant. It means that the more educated the CEOs are having lower level cash holdings. This is supported by Orens & Reheul (2013) that educated CEOs are more likely to have a lower level of cash holding. Higher educated CEOs are more likely to take risk, and they are well known about the external environment, so that they will not focus with the precautionary motive of cash. They also open to changes and many investment opportunities; therefore, high educated CEOs are more likely to spend more cash for new better investments.

Cash flow has a positive significant influence on cash holdings 2 with the significant level of 0.000, meaning that the higher the level of cash flow will result in higher level of cash holdings. The result is in line with Megginson et al. (2014) stated that firms are holding a large amount of cash to anticipate the volatile of cash Flow. According to Amess et al. (2015) a positive association between cash holdings and cash flows exist. Firms with increasing cash flow tend to keep its income by retained cash used later for investment activities or when there is a financial distress (Opler et al., 1999).

The age has a negative significant influence on cash holdings 2 with the significant level of 0.010, meaning that the older CEOs will tend to keep lower level of cash holdings. The reason is due to reluctance of older CEOs to make changes as to how to run a company, it may probably because of their previous incorrect chosen decision. Moreover, the CEO age hypothesis explains that the firm value is decreasing in line with the CEO age due to changes in cognitive ability as a person is getting older Cline & Yore (2016) but cash holdings is one of the indicator showing the firms' wealth. It can be supported as well by the fact that younger CEOs are becoming more risk-averse, which can lead to conservative behavior towards financial policies. This risk-averse occurs due to lower reputation rather than older CEOs. Younger CEOs are facing the higher probability to be punished due to the poor performance, which encourage conservative character to show (Serfling, 2014).

State ownership also has a positive significant influence on cash holdings 2 with the significant level of 0.000. It means that the state ownership is increases, the cash holdings in the firms are also increasing. This result is supported by the fact that state ownership firms are less likely to be the subject of political extraction than non-state ownership firms (Kusnadi et al., 2015). It is happening because non-state ownership firms are usually getting disadvantaged by higher tax rates, or difficulties to have a bank loan. Therefore, non-state ownership firms tends to have a lower level of cash holdings rather than state ownership firms (Johnson et al., 2000).

Moreover, firm size, leverage, networking capital, capital expenditure, dividend, and tenure are not significantly influence both model cash ratio 1 and cash ratio 2. This insignificant condition could be occurred due to the research sample that only consist of companies that are listed in index LQ45 which means the company that are large companies, with a good performance. Those companies have a good financial condition, high growth prospect and high transaction value. Therefore, the data used for sample are not varying and does not have a major impact to the result. For example, the value of firm size in most of the companies are around 20 trillion rupiah.

Research model over-investment is used to test the hypothesis two. The result from the model over-investment is significant and it can be concluded that the independent variable is able to influence the dependent variable with the controlled variable in the model. Therefore, the second alternative hypothesis is accepted, which is in the model over-investment, there is a significant influence of CEO characteristics towards firms' over-investment. It is supported by the research from Zeng & Wang (2015) and Liang et al. (2018) which also reported the same results as we obtained in this research. The result concluded that female CEOs tend to have lower level of over-investment problem rather than male CEOs.

Based on the *t*-test result in over-investment, the independent variable has a direct negative significant influence on firms' cash holdings with the significant level of 0.035, meaning that female CEOs are influence directly to over-investment and female CEOs having a lower level of over-investment rather than male CEOs. The result is in line with the research from Zeng & Wang (2015), the result shows that there is a negative influence between female CEOs towards firms' level of over-investment problem. It is supported by the fact that female CEOs are more conservative rather than male CEOs. Female CEOs are more risk-averse than male

CEOs that resulted with a better investment decision rather than male CEOs. Female CEOs are less likely to invest in unprofitable projects (Charness & Gneezy, 2012).

The control variables that have significant influence on firms' over-investment are age, firm size, and state ownership. CEO age is also having a negative relationship with over-investment and age is significantly influence the over-investment (0.000). Therefore, the older the CEO has lower level of investment and the influence of age towards cash holdings is significant in model over-investment due to risk-averse as the CEO is getting older. Older CEOs preferred safe investment, they are more conservative towards risky investment opportunities. Meanwhile, younger CEOs are more likely to take risk and more likely to invest in risky investment. Younger CEOs are having riskier investment strategies rather than older CEOs (Serfling, 2014).

Furthermore, over-investment is negatively correlated with firm size. Firm size with the level of Sig. 0.018 is under 0.05 meaning that the influence of firm size towards overinvestment is significant. This result means that the larger the firms, will having less over-investment problem. The result is supported by the previous research that resulted that small firms invest more rather than large firms. The research suggests that the firm size effect reflects the mismeasurement of firms' unobservable real investment opportunity (Gala & Julio, 2016).

Regarding the state ownership, there is a positive relation as well between state ownership and the influence is significant. It is supported by the result that state ownership firms increase the over-investment of free cash flow (Wu et al., 2012).

Conclusion and Recommendations

Based on the hypotheses and the result of the research, the conclusion of this research is as follows

- First hypothesis states that CEO characteristic does not influence cash holding that is rejected. There are justified as female CEOs tend to have higher cash holding than male CEOs for cash holding 1 and 2. Only education of control variable has positive influence on cash holding 1, while age has negative influence and state ownership has positive influence on cash holding 2.
- Second hypothesis states that CEO characteristic does not influence over-investment that is rejected. The reason are as follows. Gender and age have negatively correlated with over-investment while state ownership is positively correlated with overinvestment. In addition to that the moderating variables (gender*FCF) is not significantly influence overinvestment.
- To examine the effect of CEO characteristics towards other financial aspect that never been discussed before, using sample size that is not only large companies but also small companies.
- This research can be useful for companies to provide opportunities to female to reach the executive levels so that the companies can increase the proportion of women in executive levels. This choice could give firms a better financial performance, higher firms' wealth. Furthermore, female CEO can reduce the agency problem between the management and shareholders.
- This result can give additional reference for the regulators, for example Otoritas Jasa Keuangan (OJK) to encourage or to make a regulation regarding CEO gender issue in which will expand the probability or the proportion of female to be chosen as CEO.

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