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CORPORATE GOVERNANCE, INSTITUTIONAL OWNERSHIP, FREE CASH FLOW AND INVESTMENT EFFICIENCY: EVIDENCE OF INDONESIAN AGRICULTURE FIRM

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Abstract

The purpose of this study is to examine the determinants of investment efficiency with focuses on corporate governance, ownership structure, audit committee and free cash flow as the main factor. The 17 firms of Agriculture sector were selected as the sample from 2007 to 2019, hence this study have an unbalance panel data with total of 178 observations. The listed firm of Agriculture sector still slightly compared to others sectors in Indonesia Stock Exchange. Panel fixed effect model estimation was employed to test the relationship and hypotheses developed. The results show that board size has positive and significant effect on investment efficiency and contrary result to board of commissioners, it has negative insignificant. This indicates that large board size lead to increase the investment decision at optimal level. Moreover, the Audit committee and institutional ownership seem to have negative effect and significantly on investment efficiency. This means that when firms increase the number of audit committee and also the portion of share is owned by institution would lead to decrease investment efficiency. However, free cash flow have positive and significantly affect investment efficiency. This finding supports the expected hypothesis, which is increase the FCF lead to increase the investment efficiency and in this case, the managers act to maximize the firm value.

Keyword: Investment efficiency, board size, audit committee, institution ownership, free cash flow

1. INTRODUCTION

Investment decisions quite related to the sources of financing either internal or external funds. Even though investment decision is independent of debt financing in market friction (Modigliani & Miller, 1958). In fact, empirical studies showed that investment affected by financial factors, and both investment and financing decision are interdependent. Managers play important role to make investment decision, how well firm invest their asset in optimal level, better investment efficiency indicates a more effective firm use of assets and lead to improved company performance (Chen, Sung, & Yang, 2017) and investment decision increase the value of firm (Fama, 1978). However, when firm have positive free cash flow lead to occur overinvestment problem and would affect market performance negatively (Muchtar, Nor, Albra, Arifai, & Ahmar, 2018).

In this study, we examine how corporate governance (i.e. board size and board of commissioners), ownership structure, audit committee and free cash flow affect investment efficiency. The optimal investment can achieved when the firm have good corporate governance principles and practices. Corporate governance is used as a mechanism in firm's operations in order to reach effectiveness and efficiency. Good corporate governance may enhance transparency and accountability of firm financial reporting to stakeholders to mitigate the conflict of interest in corporate form (Andreou, Louca, & Panayides, 2014; Clayman, Fridson, & Troughton, 2012; Liu,

Uchida, & Yang, 2012). Therefore, the firm management must ensure that the principles of good corporate governance are applied in each aspect of the business and at all levels within the firms. Prior studies look deeply to the role of corporate governance mechanism, committee audit, institutional ownership and free cash flow that affected investment efficiency (Chen & Chen, 2017; Chen et al., 2017; Chen, Sun, & Xu, 2016; Nor, Nawawi, & Salin, 2017). The Q theory of investment explicitly assumes value maximization, which suggested that investment is made until the market value of asset is equal to replacement cost of assets (Brainard & Tobin., 1968; Tobin, 1969). Hence, firm maximizing in each period would yield capital stock (Eklund, 2013).

In particular, several earlier studies on investment decisions have been widely discussed in relation of the cash flow and investment efficiency. With regards to the agency cost explanations, the managers have a tendency to wasteful internal fund when firm higher of free cash flow (Richardson, 2006). However, when the structure of firms is dominated by outsiders, firms will have the difficulty to monitor and control the manager actions, in which the difficulty might lead to agency cost and unsuccessful investment option (Marion & Ferdinand, 2004). In addition, Indonesia corporate governance structure adopted two tier board system compared to neighbored countries (i.e. Malaysia, Singapore, Thailand and Brunei Darussalam) with tier boards system (i.e. Board of directors and board of commissioners), this is similarly with China corporate governance system, and they have Board of director and Supervisory Committee. Empirical studies found that Board size has negative effect but insignificant (Chen et al., 2016; Lin, Chen, & Tsai, 2017). Others study of Indonesia firms suggested that corporate governance has positive and significant effect on investment efficiency (Al'Alam & Firmansyah, 2019).

Furthermore, audit committee become important role for effective corporate governance, which is the effective audit committee oversight, is a vital process for protecting investors and the health of the capital markets. The audit committee has duty to oversee the system of internal controls and ensure that the company is compliant with laws and regulations. Thus, audit committee is considered vital to maintaining transparency in the firm (Bansal & Sharma, 2016). Other study proposed that audit committee seems to have good monitoring corporate mechanism tools to discipline managers related to the corporate investment (Nor, Nawawi, & Salin, 2018). Hence, the financial expertise of audit committee has positive and significant effect on investment efficiency (Zalaghi, Norouzi, Asadi, & Kazazi, 2019). Moreover, institution shareholders play important role to monitoring the managerial staff effectively, which results in improved performance and minimized the agency cost (Azhar, Abbas, Waheed, & Malik, 2019). The relationship between ownership structure and investment efficiency has been examined in prior study (Anela & Prasetyo, 2020; Chen et al., 2017). Other empirical studies proposed that institutional ownership has positive but insignificant effect on investment efficiency, as well as the number of audit committee (Lin et al., 2017). Other results found that institutional ownership have positive but insignificant on investment efficiency (Azhar et al., 2019).

Several studies of the relationship between free cash flow and efficiency investment have done. The free cash flow is the cash flow that is available in the firms after investing in the project that has a positive NPV (Jensen 1986). Thus, with positive cash flow, it could help to enhance firm's performance in the future. One of the most important purposes of free cash flow is to allow the firm to pursue investment opportunities that can guarantee shareholders' wealth. This is consistent with the maximising theory of firm, where the objective of the firm is to maximise shareholders' wealth. Therefore, overall, the existence of free cash flow indicates that the company has an ability to undertake new projects with the net positive value, even though higher free cash flow has its implication on higher agency cost and overinvestment problems. Hence, past studies have been proposed that free cash flow have positively and significant effect on efficiency investment (Chen et al., 2016). Another study documented that free cash flow has positive effect on overinvestment (Yu & Li, 2011; Zhang, Cao, Dickinson, & Kutan, 2016).



This study contributes to the extant literature on firm investment with related to corporate governance mechanism and free cash flow. Most previous studies focus on asymmetric information and agency problem in the firm between shareholders, managers and debtholders. This paper organized as follow. Section 2 described the data and methodology. Section 3 provided the findings and discussion based on the three models estimation, and section 4 conclusions.

2. IMPLEMENTATION METHOD

2.1 Data and Methodology

In this section, we describe the resource of data, population and sample selection, measurement of all research variables are used in this study, and the panel model estimation are presented.

2.2 Data sources and sample selection

This study pays attention on listed companies in Indonesia Stock Exchange (IDX) mainly for Agriculture sector. The sample selection is used purposive sampling based on the certain criteria has determined of 20 companies. Thus, the number of sample selected for this study is 17 companies. Just for info, the total listed companies for Agriculture sector is slightly compared with others sectors, and most of the sample is sub-sectors of plantations. The data sources collected from various sources, such as the data of financial statement retrieve from data base of Data-Stream and financial report that available in website of IDX. The data for this study apply yearly unbalance data for 17 companies and the period from 2007 to 2019. The listing firm within less than 3 years was excluded in the sample, so that this study has 178 observations.

2.3 Measurement research variable

The research variables of this study consist of one dependent variable, five independent variables and three control variables. The investment efficiency is defined as dependent variable. To measure the investment efficiency we have developed investment model estimation, and for this study we use and follow the investment model developed by Richardson (2006) and Chen et.al (2017) and several approaches are also used to build investment models as follows:

$$INVESTMENT_{it} = \beta_0 + \beta_1 Tobins_{Q_{it}} + \beta_2 CASH_{it} + \beta_3 LEVERAGE_{it} + \beta_4 F_SIZE_{it} + \varepsilon_{it} \quad (1)$$

where INVESTMENT is capital expenditure (CAPEX), measured using Net Plant, Property and Equipment (NPPE) current year less NPPE last year add by depreciation. The formula of CAPEX as below:

$$CAPEX_{it} = (NPPE_t - NPPE_{t-1} + DEPRESIASI_{it}) / Total Asset_{it} \dots\dots\dots (2)$$

Others research variable used in the model are TOBINS_Q, Cash, leverage and firm size. TOBINS_Q measures the market value, defined as the total market value of equity plus the book value of total debt scaled by the book value of total assets. Cash is measures the net cash flows scaled by the book value of total assets. LEVERAGE is the debt to equity ratio, defined by the total debt scaled by total equity. F_SIZE is measures the natural logarithm of total sales (Chen et al., 2017; Muchtar, Nor, Albra, Arifai, & Ahmar, 2018).

Moreover, the residual value (ε) from the model (1) will produce positive and negative signs. Next, the investment efficiency itself measured by used the absolute values of residual (ε).

Furthermore, the independent variables of corporate governance factors are Board Size, Board of Commissioner (BOARD_COM), AUDIT_COM, INS_OWNRS and FCF. The Board of directors, defined as the total number of directors in the firm, meanwhile BOARD_COM is board of commissioners, calculate by the number of commissioners, as well as AUDIT_COM is the total number of audit committee. Institutional ownership (INS_OWNRS) defined as the number of share owned by institution outside of the company. The INS_OWNRS measured by the number of

institutional share scaled by the number of outstanding share. However, the FCF is the excess net cash flow in the firm. The FCF measures from cash from operation (CFO) less capital expenditure (CAPEX) divided the book value of total assets. This study also used three control variables, namely return on asset (ROA) is the ratio of net income divided by total assets. LEVERAGE is the debt ratio, measured by total liabilities to total equity. The rest is GROWTH, measured by the growth of total assets.

2.4 Model estimation

This study used a static panel model to investigate the effect of corporate governance factors and free cash flow on investment efficiency and inefficiency. We used the appropriate model estimation is panel fixed effect models. The general equation is presented as follow:

$$Y_{it} = \beta_{t0} + \sum_{k=1}^K \beta_{tk} Xk_{it} + \varepsilon_{it} \quad (1)$$

Where Y is dependent variable comprise of investment efficiency (INVEST_EFF). This model in fact represents a set of five additives multiple regressions of Y on BOARD_SIZE, BOARD_COM, AUDIT_COM, INS_AWNR and FCF, with a control variable ROA, LEVERAGE and GROWTH. Thus the empirical model is presented with the following general equation:

$$\text{INVESTMENT_EFF}_{it} = \beta_0 + \beta_1 \text{BOD}_{it} + \beta_2 \text{BOC}_{it} + \beta_3 \text{AUDIT_COM}_{it} + \beta_4 \text{INS_OWNR}_{it} + \beta_5 \text{FCF}_{it} + \beta_6 \text{ROA}_{it} + \beta_7 \text{LEVERAGE}_{it} + \beta_8 \text{GROWTH}_{it} + \varepsilon_{it} \dots \quad (2)$$

3. EMPIRICAL RESULTS AND DISCUSSION

3.1 Descriptive Statistic

The preliminary results of this study are presented in descriptive statistic of all research variables used in this study, with those for the entire sample presented in Table 1. The average of investment efficiency (INVEST_EFF) value is 0.0841. The number of BOD and BOC has the average of 5.37 and 4.82 or is about 5 persons, it is less value compared to study in China is about 8 and 9 person of directors (Nor, Nawawi, & Salin, 2018).

Table 1: Descriptive Statistic

VARIABLES	Mean	Median	Maximum	Minimum	Std. Dev.	Obs.
INVESTMENT_EFF	0.0841	0.0411	0.7598	0.0002	0.1183	179
BOARD_SIZE	5.3799	5.0000	11.0000	3.0000	1.3370	179
BOARD_COM	4.8268	4.0000	10.0000	2.0000	2.0218	179
AUDIT_COM	3.0782	3.0000	9.0000	2.0000	0.6400	179
INS_OWNRS	0.6850	0.7400	97.0000	0.0300	0.1916	179
FCF	0.0333	0.0230	0.6926	-0.4892	0.1633	179
ROA	0.0482	0.0363	0.4074	-0.7163	0.1052	179
LEVERAGE	1.2106	0.9341	7.4996	0.0852	1.1488	179
GROWTH	0.1602	0.0886	2.5983	-0.9239	0.3871	179

Notes: INV_EFFICIENCY is investment efficiency, BOARD_SIZE is number of board of directors, BOARD_COM is number of board of commissioners, AUDIT_COM is number of audit committee, INS_OWNR is institutional ownership, FCF is free cash flow, Leverage is the debt ratio and GROWTH is growth of total assets.

The audit committee is around 3 persons. Meanwhile the ratio of institutional ownership recorded by the average value is 0.6850. Moreover, the average of free cash flow for all samples is 0.0333 and negative FCF for the sample of Over-investment with the average of -0.0348. Then, it is seems positive FCF with the average of 0.1052 for the sample of Under-investment. The average of ROA for the whole sample is 4.8 percent, and 6,8 percent for the sample firm over-investment, then 2.6 percent the average of ROA for the sample Under-investment. However, the average of leverage seems have the same values are about 120 percent for all sample as well as by sub-sample.

The results of bivariate analysis of this study reported in Table 2. The correlation between all research variables and investment efficiency find that BOARD SIZE has negative relation with investment efficiency. Similarly with BOARD_COM and AUDIT_COM have negative relation but insignificant. Meanwhile, INS_OWNR and FCF have positive and significant relation with investment efficiency. This implies that increase institutional ownership and higher free cash flow would lead to improve investment efficiency.

Table 2: Summary of Analysis Correlation

Correlation t-Stat. Prob.	INVESTMENT_ EFF	BOARD SIZE	BOARD_COM	AUDIT_COM	INS_OWNR	FCF	ROA	LEVERAGE
BOD	-0.1243 -1.6671*	1.0000 -----						
BOC	-0.1005 -1.3437	0.5960 9.8752***	1.0000 -----					
AUDIT_COM	-0.0712 -0.9495	0.4575 6.8454***	0.3101 4.3397***	1.0000 -----				
INS_OWNR	0.2455 3.3692***	-0.0635 -0.8470	-0.0588 -0.7837	0.0305 0.4054	1.0000 -----			
FCF	0.1589 2.1416**	0.0904 1.2073	0.1042 1.3942	0.1037 1.3872	-0.0090 -0.1201	1.0000 -----		
ROA	-0.0652 -0.8692	0.2038 2.7696***	0.1779 2.4048	0.1870 2.5328***	-0.0828 -1.1049	0.1179 1.5795	1.0000 -----	
LEVERAGE	0.0684 0.9122	0.0699 0.9326	0.0309 0.4107	-0.0505 -0.6732	-0.2409 -3.3024***	-0.0259 -0.3451	-0.4048 5.8893***	1.0000 -----
GROWTH	0.2039 2.7710***	0.0225 0.2991	0.0035 0.0470	0.0091 0.1216	-0.0504 -0.6718	-0.3257 4.5835***	-0.1142 -1.5293	0.2061 2.8021***

Notes: INVESTMENT_EFF is investment efficiency, BOARD SIZE is number of board of directors, BOARD_COM is number of board of commissioners, AUDIT_COM is number of audit committee, INS_OWNR is institutional ownership, FCF is free cash flow, Leverage is the debt ratio and GROWTH is growth of total assets. The parenthesis are presented as ***, ** and * with significant level at 1%, 5% and 10% respectively.

The results of the panel analysis regression using fixed effect model (FEM) are presented in Table 3. The results show that BOARD SIZE (BOD) has positive and significant influence on investment efficiency at 5 percent. This findings support the theory of Resource Dependency (RDT) and expected hypothesis mean that large board size lead to increase the investment level at optimal level. Indicates that the board of directors have good expertise, ability and good knowledge in managed the companies, that create more investment efficiency (Javed, Saeed, Lodhi, & Malik, 2013; Pfeffer & Salancik, 2003). The results is in line with previous study (N. Nor et al., 2017; Salin, Nor, & Nawawi, 2018). However, the BOARD_COM (BOC) does not restrict the role of investment efficiency. This mean, the number of commissioners does not play an important role in efforts to encourage the investment to optimal levels. The reason is that the BOC in

Indonesia does not perform the function of supervision and good control of the board of directors. The board of commissioners only becomes a "beautiful ornament" and a "stamper" of the activities of the board of directors.

Table 3: Summary Results of Investment Efficiency Regression

VARIABLE	Coefficient	t-Statistic
BOARD SIZE	0.0108	2.4275**
BOARD_COM	-0.0003	-0.1002
AUDIT_COM	-0.0410	-3.1175***
INS_OWNR	-0.0071	-2.9389***
FCF	0.2173	2.1956**
ROA	-0.0003	-0.0066
LEVERAGE	0.0145	2.9957***
GROWTH	0.0985	5.7510***
R-squared		0.5405
Adjusted R-squared		0.4689
F-statistic		7.5486***
Durbin-Watson stat		2.0778

Notes: The FEM models are used to estimates the coefficients. The p-value are reported in parentheses ***, **, * with significant at 1%, 5% and 10% level of significance respectively.

Furthermore, the result of the influence of Audit committee on investment efficiency is negative and significant at 1 percent level of significance. This finding indicates that the audit committee does not carry out their function as a committee member to implement of good corporate governance. Instead, the audit committee is working to maximize value for themselves by ignoring shareholder wealth. As a result, the presence of higher audit committee created an agency problem with shareholders. The findings inconsistent to RDT theory and in line with (Chen et al., 2017). Additionally, the coefficient of institutional ownership (INS_ONWRS) is - 0.0071 with a t-test statistic of -2.9389. These findings suggest that institutional ownership has a significant negative effect on investment efficiency. The negative influence of institutional ownership on investment efficiency indicates that institutional ownership is not a mechanism for good corporate governance of the agricultural sector in Indonesia. Thus, it can be concluded that institutional ownership do not used as a monitoring tool for companies then lead to reduce investment efficiency. In the context of agency theory, institutional ownership creates an agency conflict between the institution's owner and the manager. This conflict leads to inefficient investment decision-making. This finding support the agency theory (Jensen & Meckling, 1976) and consistent with past studies (Chen et al., 2017). However, the results is contradicted with study by Handayani, Rohman, Chariri, and Pamungkas (2020).

The interesting finding in the relationship between free cash flow and investment efficiency is perform in which FCF positive and significantly affect investment efficiency. The positive coefficient implies that higher free cash flow lead to increase investment efficiency. This finding consistent with expected hypothesis, in which firm with positive free cash flow has the capacity to generate cash internally, the greater the opportunity to invest at a low cost of capital (Richardson, 2006). This finding also consistent with free cash flow hypothesis, which it has positive relation between free cash flow in investment (Jensen, 1986). This results are in line with past studies (Al'Alam & Firmansyah, 2019).

The rest is control variables; show that ROA has negative but insignificant effect on investment efficiency. Moreover, Leverage have positive and significant effect on investment efficiency. Indicates that higher leverage lead to increase efficiency and would also increase firm value (Modigliani & Miller, 1958), and leverage can mitigates the inefficiency investment (Chen et al., 2017; Moez & Amina, 2018). The results is not in line with past study (Stevanovic, Ivanovic-Djukic, & Lepojevic, 2017). Lastly, firm growth have positive effect and significant on investment efficiency. This mean the higher growth of firm would be the managers invest at optimal investment and lead to reduce the under-investment (Moez & Amina, 2018; Wang, Zhu, & Hoffmire, 2015).

4. CONCLUSION

This study examined the influence of the number of boards of directors, board of commissioners, audit committee, institutional ownership, and free cash flow on investment efficiency. The results of this study provide additional empirical evidence on investment efficiency. Good corporate governance will result in the right investment decision making. The results of this study show that the board of directors and free cash flow has an effect on improving investment efficiency. These findings show the board of directors to be a good corporate governance mechanism for efficient investment decision making. Free cash flow is also utilized by companies to invest efficiently in the right projects. In contrast, the audit committee and ownership of institutions negatively affect investment efficiency. The audit committee and the institutional ownership do not support the corporate governance mechanisms. The audit and ownership committees of institutions have opportunistic interests at the expense of other stakeholders. As a result, the presence of audit committees and institutional owners encourages inefficient corporate investment.

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