ESG and Performance: Effect of government ownership and green bond issuer

Etikah Karyani, Vina Maulina {etika.karyani@ibs.ac.id}

Indonesia Banking School Kemang Raya no 35. Kebayoran Baru, Jakarta Selatan, Indonesia

Abstract. The environmental, social and governance (ESG) can contribute to an organization's economic performance. Using stakeholder theory as a framework, this study aims to find the impacts of ESG investments on organizational (financial and economic) performance. This study is the first empirical analysis that includes government ownership and green bond issues factors as variables that are interacted with ESG investments. Government ownership is perceived as having the commitment and issuance of green bonds can be seen as a proxy for companies to make environmental-friendly investments and change their ESG profile. Annual ESG index data of ASEAN-5 organisations are used which covers the period 2017 to 2019 and are tested using Ordinary Least Square (OLS). In accordance with the results of previous research, this study finds that ESG investment consistently improves both the financial (profitability) and economic (stock) performance of the company. However, studies cannot prove the effect of the level of government ownership and bond issuance on ESG investment associations with profitability, on the contrary, the stock returns decline when ESG investments from organizations that have greater government ownership.

Keywords: ESG index, government ownership, green bond issuer; profitability, stock returns.

1 Introduction

Pressure on companies to pay attention to environmental, social, and governance (ESG) issues continues to increase. Academics and practitioners emphasize the importance of ESG as one of the main issues related to the opportunities, challenges, and effects of ESG for organisations (see [1], [2], [3]). ESG reporting has also continued to increase in Asian countries by 15% since 2009

[3]. Thus, most executives and investment professionals believe that the ESG program increases firm performance. Therefore, this study aims to investigate the extent of the benefits of ESG on company performance.

According to the results of the Global McKinsey survey (2019) which assesses the ESG program, 83% of practitioners expect that the ESG program will contribute more to shareholders in the long run. They are also willing to pay around 10 percent of the average premium to acquire companies that have a positive record regarding ESG issues. The survey results also show that the ESG program increases shareholder value both in the short and long term. Long-term impacts are felt to exceed the value associated with the governance program. Executives and investment professionals also usually consider using ESG as one of the strategic and operational decision-making tools, including evaluating competitors, supply chains and potential capital projects. In addition, practitioners also consider the impact of ESG practices on various stakeholders.

Today, most executives and investment professionals recognize that ESG practices can affect a company's financial performance because they are monitored and expected by investors, consumers, employees, analysts, and other stakeholders to continue to grow [3]. The growing demands for ESG practices are pushing for more demands on transparency, ESG standardization of data, integrated with financial data, and comparability.

Thus, the shareholder-oriented traditional view [4] which focuses primarily on maximizing financial returns for shareholders has changed. Companies are also beginning to realize that their future can hardly be achieved without regard to sustainability strategies and without disclosing ESG information. In addition, the authors [5,6] prove that companies effectively manage ESG are able to provide higher values for business and society. Porter and Kramer [7] describe the company value as the value of operational policies and practices where the company creates economic value through social benefits, namely the value of economic financing (for example: cost reduction) by reducing negative externalities (for example: reducing waste).

Growing public awareness and company recognition has led to an increase in the number of companies that use sustainability strategies and disclose ESG information globally [8]. Based on the Global Reporting Initiative [9] and Klynveld Peat Marwick Goerdeler (KPMG) reports [11], the majority of ESG disclosures are made by companies in the Asia Pacific region (Asia and Oceania) which is around 78% of the worldwide reporting rate, compared to with only 52% for the Middle East and Africa. ESG integration becomes attractive for investors and even incorporates the ESG factor in their investment analysis. Thus, increasing investor interest shows there is a positive effect of ESG practices on increasing returns [12].

Studies that explain the association between the sustainability assessment and company performance also continue to grow rapidly, but studies investigating the effects of ESG practices and company sustainability are still very limited ([13]; [1]). Studies related to this are also mostly carried out with a sample of companies in Western and developed countries (see [2]; [14-15]), while very limited in the background of developing countries [13].

Furthermore, this study is expected to fill the research gap by contributing to investigate the benefits of ESG disclosure in two ways. First, the study focuses on the coverage of the Association of Southeast Asian Nations (ASEAN) countries. Previous studies ([2]; [13]; [14]; [15]) focused on one country. While international studies are carried out in Europe (for example, [16]) and Asia ([17]; [1]). Studies with an ASEAN background are very promising because ESG investment by ASEAN companies is carried out implicitly and not systematically [18]. Second, to our knowledge, this study is the first to investigate global problems by linking the effects of government ownership and green bond issuers using the ESG index by disclosure score provided by Morgan Stanley. This is important because it needs to be tested whether investors can see that ESG is really embedded in the whole organization rather than solely for financial reasons or as a specific project, or ownership level and green bond issuers factors.

This paper is then organized as follows. Section 2 discusses ESG in the ASEAN context, the theoretical foundation, and the development of this research hypothesis. Section 3 explains the models, data, and variables used. Section 4 presents descriptive results and empirical findings. Section 5 concludes with a summary and future research.

2 ESG in the context of ASEAN, literature review, and hypothesis development

2.1 ESG in the ASEAN Context

Environmental, Social, and Governance (ESG) refers to three main factors in measuring the sustainability and social impact of investments in organizations [19]. The threat related to climate change and the depletion of resources continues to increase so that this becomes a demand from investors to capture the environmental criteria as a sustainability issue in their investment choices. Social criteria concern how the company manages relationships with employees, suppliers, customers, and the communities in which it operates. While governance is related to corporate leadership, executive salaries, audits, internal controls, and shareholder rights.



Fig. 1. Quality of ESG Disclosures in ASEAN Source: [18] adapted from the ASEAN CSR Network and NUS Business School

(2016)

According to [18], the trend of ESG activity or investment in ASEAN-5 countries (Indonesia, Malaysia, Thailand, Singapore, and Vietnam) shows an increasing trend, although efforts are still underway for other member countries. The regulator in this country seems to be one of the drivers of this change by initiating related regulations. The National Center for Sustainability Reporting, for example, is formed by Indonesia, Business Sustainability Program by Malaysia, National Renewable Energy Program 2011-2013 by the Philippines, Sustainable Singapore Blueprint by Singapore, Feed-in premium program by Thailand, and Climate Investment Funds' Clean Technology Fund by Vietnam. In addition, the five countries (other than the Philippines) require listed companies to report ESG in their reports. Figure 1 below explains the level of ESG disclosure based on criteria and overall ESG.

Other member countries, such as Brunei, there has not been an independent nongovernmental organization that promotes ESG related to its practice and supervision until now. While Lao-PDR as the most active country in promoting responsibilities related to the agricultural industry, there is no obligation for issuers to do transparency sustainability. Likewise, Myanmar is only limited by voluntary reporting. The Philippines is a country that requires sustainability reports for listed companies, but there are no obligations regarding the "E" and "S" elements in ESG.

It can be concluded that ESG investment in ASEAN is carried out implicitly and not systematically which implies the growth potential of ESG investment. The challenge faced by companies in this region is the difficulty of fully integrating ESG practices in their core business strategies. It can be caused by several factors, including a) wrong perceptions of ESG investments, b) limited ability to fully integrate ESG investments, c) inadequate guidelines and support from the stock market and the government, and there is still a relationship weak between ESG investments, and d) achievement of Sustainable Development Goals (SDGs).

2.2 Literature review and hypothesis development

Eccles et al [20] states that the ESG criteria can help determine a company's financial performance better in the future (return and risk). The existence of the ESG program encourages companies with higher financial performance to be able to compete [3]. In addition, ESG investment helps companies reduce costs and increase revenue and profits. The profitability of ESG companies is, on average, higher than non-ESG companies. The ratio of net income to total revenue is 11.4% for ESG companies compared to 9.6% for non-ESG companies. Using data from 65 Indian public companies from 2015-2017, [21] also found that disclosure of good company ESG improves economic performance.

Survey of [3] further shows that the majority of practitioners (57%) believe that the ESG program creates shareholder value. While only three percent of respondent states that this program reduces shareholder value, and the rest doubt its effect (no effect). Thus, the majority of respondents who believe that they would increase the share value interpreting the importance of the ESG program to meet stakeholder expectations. AJP adds that the ESG factor should be a priority for all investors, including investors in the real sector or entrepreneurs. Other studies (([8], [22], [23]) find that increasing transparency and accountability of ESG plays a role in increasing company value. Thus, market forces generally value companies that have high ESG investments. The principle underlying the association behind ESG investment and economic performance lies in the identification and measurement of intangible values held by companies that are environmentally & social-friendly responsible with strong governance policies [1]. In accordance with studies conducted by Oxford University which confirm that good ESG activities are correlated with lower operating costs, better profitability, and superior stock price performance [24]. In addition, in line with stakeholder theory, agency theory and information asymmetry theory, managers who disclose ESG investment can reduce a company's exposure to risk in the future, which in turn creates value for investors and other stakeholders with a long-term business model.

Otherwise, ESG investment can not only provide an important signal for investors, but ESG can also maximize profits for all companies. ESG investment can even help new companies and small and medium-sized companies to increase their productivity and competitiveness. Therefore, all companies, regardless of their size and whether they are listed on the stock market, must integrate ESG investments in their core business strategies and consider ESG investments as an important part of growth strategies. The first hypothesis of this study is:

H1: ESG investment has a positive effect on the company's performance

Ferrarese & Henmer [25] investigates the association between scores and characteristics of corporate bond issuers. They find the integration of ESG characteristics and corporate bond portfolios could add value by increasing performance and reducing company volatility. This is due to the monotonous relationship between the company's ESG score and the 5-year bond spread. Companies with higher ESG scores are associated with lower credit spreads. In line with their study, [26] further prove that ESG has a positive impact on investment grade bonds in Europe. In addition, ESG factors have so far been taken into consideration by fixed income investors through imposing higher interest costs on debt if they have bad ESG credentials. Thus, ESG investment can be an additional or complementary factor when considering companies' ability to pay their obligations. Thus, the second hypothesis of this research is:

H2: Corporate bond issuer reinforces the positive effect of ESG investment on the company's performance

There is a phenomenon in emerging markets that the government is the main actor investing with other investors in publicly traded securities. This study carries this idea by investigating the possible effects of state ownership on the involvement of companies with environmental problems. Thus, this study focuses on whether state ownership plays a complement to ESG so that it reinforces this effect on company performance. Hsu et al [27] document that state ownership in developing capital markets reached 25% compared to developed companies, which were only 4% of public companies. They also find that state ownership promotes environmental involvement as a political endeavor.

In accordance with stakeholder theory, when the institutional owner (government) controls the company, the company decision is determined by the level of pressure from the government. If governments lack interest in environmental protection, companies will not likely increase their investment in environmental protection practices. Thus, ESG invested by government-owned companies will be more valued by stakeholders (a positive signal) because of the government's commitment to be more involved in sustainability issues and to have better ESG activity.

H3: Government ownership strengthens the positive effect of ESG investment on the company's performance

3 Data and research method

3.1 Data

The analysis of this study is based on firm-level data in ASEAN-5 (Indonesia, Malaysia, the Philippines, Singapore and Thailand) during 2017-2019 (as of December 31). In this study, we use secondary data from the annual report and the ESG dataset that provides credible data for 2017-2019. Annual report is used to obtain the dependent data (ROA, stock return) and several other independent variables. ESG as an independent variable was obtained from the Morgan Stanley Climate Index (MSCI) in the form of indexes or MSCI ESG Indexes. This index is designed to represent the performance of the most common ESG investment approach by entering, reconsidering or excluding companies by utilizing ESG criteria. During the observation period, the total number of companies listed in ASEAN rated ESG was 83 companies or 249 observations.

Furthermore, this study uses a moderating variable that is the dummy of the green bond issuer (GB) and the percentage of ownership by the government or

stated-owned organization (SOE). Specifically, the five other drivers of company performance for organizations (control variables) selected are firm size (SIZE), firm leverage (LEV), industry/organizational sector (IND), and Gross Domestic Product Growth (GDPG). Firm size (SIZE) is controlled due to the firms that have the same dimensions must be in the same stage of maturity and have access to similar resources - financial, intellectual, and technological. Firm size is represented in the dollar amount of total assets. Specifically, the natural logarithm of Total Assets has been used as a proxy for measures to standardize measurements given the significant differences in the value of Total Assets over time and between different firms, allowing correction of outliers. The leverage ratio (LEV) is the ratio used to measure how much the company's debt is financed by assets and equity. In this study, leverage is calculated by Debt to Asset Ratio (DAR). Low value LEV shows a better level of security of funds. Sector or industry (IND) is used to control the possibility of different risk effects because companies belonging to the same industry are characterized by similar business models and face equal business risks. Companies in the sample from various industries and henceforth are divided into financial and non-financial industries.

GDPG is a macroeconomic variable that has been found to be an important factor explaining economic growth. When GDP growth is strong, companies employ more workers and are able to pay higher salaries and wages, which leads to more consumer spending on goods and services. Furthermore, the high level of demand has the potential to increase company performance. The following models are used to estimate the effect of ESG on company performance.

$$\begin{aligned} \text{ROA}_{i,t} &= \alpha_0 + \alpha_1 \text{ ESG}_{it} \\ &+ \alpha_2 \text{ GB} + \alpha_3 \text{ GOV} + \alpha_4 \text{ ESG} * \text{GB} + \alpha_5 \text{ ESG} * \text{GOV} + \alpha_6 \text{ SIZE}_{it} \\ &+ \alpha_7 \text{ LEV}_{it} + \alpha_8 \text{ GDPG}_{it} + \alpha_9 \text{ IND}_{it} + \varepsilon_{it} \end{aligned}$$

(1)

$$\begin{aligned} \text{RETi, t} &= \beta_0 + \beta_1 \text{ESG}_{it} \\ &+ \beta_2 \text{GB} + \beta_3 \text{GOV} + \beta_4 \text{ESG} * \text{GB} + \beta_{-5} \text{ESG} * \text{GOV} + \beta_6 \text{SIZE}_{it} \\ &+ \beta_{-7} \text{LEV}_{it} + \beta_8 \text{GDPG}_{it} + \beta_9 \text{IND}_{it} + \epsilon_{it} \end{aligned}$$

(

2)

Where,

ROA = Return on Assets, RET = Stock Return, ESG = environmental, social, and governance, GB = dummy - green bond, GOV = percentage of government owned (SOE), SIZE = Total Assets, LEV = total debt / total assets, GDPG = GDP growth, IND = dummy industry, ε = error term, i = company, t = annual reporting period, $\infty 1 \dots \beta 9$ = Regression coefficient.

4 Empirical results

4.1 Descriptive statistics

Table 1 explains the descriptive statistics of the variables used in this study.

		Standard				
Variable	Mean	Deviation	Maximum	Minimum	Skewness	Ν
ROA (%)	5.028	4.032	21.000	7.000	1.409	249
RET (%)	10.147	15.473	86.500	-68.400	0.461	249
ESG index	2685	1098	7062	976	1.179	249
GB – dummy	0.040	0.197	1.000	0.000	4.684	249
GOV/SOE (%)	15.989	23.627	70.000	0.000	1.028	249
SIZE (USD billion)	12,134	21,949	99,437	1,034	2.635	249
LEV (%)	44.149	23.132	91.000	0.042	0.246	249
GDPG (%)	3.616	1.037	5.400	-0.410	-1.326	249
IND - dummy	0.289	0.454	1.000	0.000	0.930	249

Table 1. Statistic descriptive

Notes:

ROA = Return on Assets, RET = Stock Return, ESG = environmental, social, and governance, GB = dummygreen bond, GOV = percentage of government owned (SOE), SIZE = Total Assets, LEV = total debt / totalassets, GDPG = GDP growth, IND = dummy industry.

The average level of company profitability (ROA) in ASEAN-5 is 5% which is lower than the average level of stock returns (10%). Average stock returns are supported by the most financial industry sector. ESG index with an average of 2,685, the average return on ROA is lower. Furthermore, this study transforms variables (non-dummy) that have a fairly high level of skewness using natural logarithms, namely the ESG Index (ESG), bank size (SIZE), and gross domestic product growth (GDPG). Table 2 describes the correlation matrix between variables.

	ROA	RET	LNESG	GB	GOV	LNSIZE	LEV	IND
RET	0.035	1.000						
LNESG	-0.034	0.096	1.000					
GB	-0.075	-0.029	0.057	1.000				
GOV	0.022	-0.109*	0.105	-0.012	1.000			
LNSIZE	-0.146**	0.069	0.101	-0.053	0.206***	1.000		
LEV	-0.314***	-0.089	0.143**	0.054	0.085	0.135**	1.000	
IND	-0.288***	0.095	0.316***	0.139**	0.018	0.359***	0.137**	1.000
LNGDPG	-0.198***	-0.051	-0.127**	0.006	-0.141**	-0.015	0.076	0.022

Table 2. Correlation matrix of main variables

Notes:

ROA = Return on Assets, RET = Stock Return, ESG = environmental, social, and governance, GB = dummy - green bond, GOV = percentage of government owned (SOE), SIZE = Total Assets, LEV = total debt / total assets, GDPG = GDP growth, IND = dummy industry. Standard error *, **, *** shows the significance at 10%, 5% dan 1%; Sources: author' s calculation.

Table 2 explains that stock returns (RET) are affected negatively and significantly by all control variables both at the firm level (LnSIZE and LEV) as well as the sector (IND) and country (LnGDP) levels. While these four variables do not affect profitability (ROA), neither do the other independent variables. Government ownership is positively and significantly correlated (at the 10% level) with stock returns. This correlation shows that there is a tendency for unfavorable stock performance if the greater the organization is owned by the government. In general, all correlation coefficients between endogenous variables do not indicate the possibility of serious problems related to multicollinearity in the estimated model because the value is <0.90 [28]; [29].

4.2 Regression results

Table 3 presents the differences in the results of panel data regression with the Ordinary Least Square (OLS) model. Diagnostic tests show that all models are good. The adjusted R-Squared test results also show a sufficient and higher value for the model with the dependent variable is ROA (around 67%). While the significance level of the F-statistic test for all models is very high which interpret

these models very well and can be used for prediction or forecasting. Model results (1) to (4) also state that the coefficient of the main independent variable (ESG) is positive and statistically significant which is consistent with the results of recent studies.

Dependent /Independent	Predicti	ROA	ROA	RET	RET
Variables	OII	Model 1	Model 2	Model 3	Model 4
LnESG	+	0.009 ***	0.009***	0.015 ***	0.020 ***
GB	+	-0.002	0.027	-0.010	0.122
GOV	+	0.004	-0.012	-0.049 ***	0.249 ***
lnESG*GB	+		-0.004		0.014
lnESG*GOV	+		0.002		-0.038 ***
LnSIZE	+/-	0.002 ***	0.002***	0.004 ***	0.006 ***
LEV	+/-	-0.045 ***	-0.044***	-0.017 **	-0.013 *
IND	+/-	-0.024 ***	-0.024***	0.026 ***	0.025 ***
lnGDPG	+/-	-0.016 ***	-0.015***	-0.015 **	-0.016 ***
Adj R-squared F-statistics (p		0.673	0.662	0.307	0.581
value)		0.000	0.000	0.000	0.000
Obs.		243	243	243	243

Table 3. ESG model regression results in ASEAN-5 countries

Notes:

ROA = Return on Assets, RET = Stock Return, ESG = environmental, social, and governance, GB = dummy - green bond, GOV = percentage of government owned (SOE), SIZE = Total Assets, LEV = total debt / total assets, GDPG = GDP growth, IND = dummy industry.

Standard error *, **, *** shows the significance at 10%, 5% dan 1%;

Sources: author' s calculation.

The above table explains the regression results regarding whether ESG has an impact on company performance using two performance proxies, namely profitability (ROA) and economic performance or in this case is stock returns (RET). Models 1 and 3, models without moderation, show that the coefficient of ESG is positive and significant. Both of these regression results are consistent with models 2 and 4 which add interacting variables, namely LnESG * GB. This can be interpreted that ESG investment can improve company performance both profitability and stock return. These results are consistent with the predictions and previous studies (see [2]; [1]).

The study results explain that there is no difference in company performance between those which issue green bonds (GB) and those which do not. GB also fails to moderate the effect of ESG investment on these two types of company performance. Meanwhile, whether the higher the level of government ownership will further improve the performance it turns out it is only proven to stock returns. Furthermore, the greater government ownership weakens the effect of ESG investment on stock returns. In other words, ESG investments of state-owned companies have actually worsened the company's stock returns. This result is not in line with the prediction. This study suggests that there is a possibility of domination of the block of shares owned by the state. As stated by [30] that stateowned companies perform worse than private companies because the greater ownership by the government leads to lower labor productivity and profitability.

Finally, there is a consistency of the regression results for the control variables both with/without moderating variables that the firm size (InSIZES) has a positive effect on ROA and stock returns. The greater the investment in assets the more likely it is to be a predictor of company performance [31]. Companies with large sizes tend to have good business continuity and are better able to generate profits that can be distributed to shareholders.

There is a negative effects of corporate leverage (LEV) and a country's GDP growth rate (lnGDPG) on ROA and stock returns. In line with the findings of [32], the higher leverage tends to have the potential for corporate solvency so as to disrupt profitability and stock returns. While the negative impact of GDPG on ROA and stock returns is in line with the view that high economic growth improves the business environment of business (competitive) and reduces barriers to bank entry. As a result, increased competition reduces bank profitability and ultimately decreases stock returns [33].

Testing of the effects of the industrial sector shows the opposite result that the financial sector has a smaller ROA and vice versa has a greater stock return than the non-financial sector. In accordance with the results of the correlation (see the correlation matrix table) and Ahem's survey (2020) that the average ROA of financial corporate very low (around 1%), while the ROA value for non-financial corporate is above 2%. While financial company stock returns are higher due to this business tends to face higher risks related to financial instruments so that investors demand higher returns.

Robustness Test

Furthermore, this study conducts a robustness test on the main model by carrying out two steps. First, eliminate Singapore data due to this country is the only one that

is categorized as a developed country. Secondly, rerun without the 2019 data due to avoid the possible effects of Covid-19. Both of these steps are taken to avoid bias on corporate financial statement data and macro data. Table 4 explains the robustness test results which can be concluded that the main regression results are robust.

Dependent /Independent	Predictio	ROA	ROA	RET	RET	
Variables	n	ASEAN-4	2017-2018	ASEAN-4	2017-20	018
LnESG	+	0.011 ***	0.009***	0.013 *	0.020	**
GB	+	0.049	-0.089	-0.205 **	-0.173	
GOV	+	-0.002	0.163 *	0.184	0.325	**
lnESG*GB	+	-0.007	0.009	0.025	0.153	
lnESG*GOV	+	0.001	-0.021 *	-0.029 **	-0.051	**
LnSIZE	+/-	0.003 ***	0.002**	-0.001	-0.002	
LEV	+/-	-0.039 ***	-0.044 _{***}	-0.004	-0.038	** *
IND	+/-	-0.024 ***	-0.023 ***	0.037 **	0.031	** *
lnGDPG	+/-	-0.017 ***	-0.044 _{***}	-0.021 **	-0.033	**
Adj R-squared F-statistics (p value) Obs		0.519 0.000 231	0.657 0.000 154	0.304 0.000 231	0.383 0.000 154	
Obs.						

Notes:

ROA = Return on Assets, RET = Stock Return, ESG = environmental, social, and governance, GB = dummy - green bond, GOV = percentage of government owned (SOE), SIZE = Total Assets, LEV = total debt / total assets, GDPG = GDP growth, IND = dummy industry. Standard error *, **, *** shows the significance at 10%, 5% dan 1%; Sources: author' s calculation.

5 Conclusions

In this paper, we do a comprehensive dataset covering all listed companies in ASEAN rated by the environmental, social and governance (ESG) index. This study, to the best of the researchers' knowledge, is the first empirical analysis covering factors of government ownership and green bond issuers to explain their effect on the association of ESG investment and company performance. Consistent

with previous studies, the ESG investment not only plays a role in increasing profitability, but is also valuable for investors. However, the corporate value declines with the increasing level of ownership by the government. These results are robust after removing Singapore samples and the year of 2019. The implication of the results of this study is that ESG investment must be further promoted and supported by the stock market and the government. The company must also give its commitment to continue to do the ESG practices.

This study, however, has limitations so that improvements can be made for subsequent research. First, in measuring investment using an index, issued by MSCI ESG, then it becomes limited to explain ESG investment in detail. For this reason, subsequent research needs to divide ESG investment into three categories, namely environmental performance, social performance, and governance performance (see [1]). Second, this study is also limited in explaining the effects of ESG investment on performance (financial and economic). While company performance can be demonstrated by increasing top-line growth, reducing costs, minimizing regulatory and legal intervention, increasing employee productivity, and focusing on investment and capital expenditure ([3]). The measurement of a green bond issuer is also limited only by a dummy. The next study can use the MSCI ESG green bond index dataset. Finally, the proxy of company performance is represented by ROA and stock returns. The next study can use other proxies, such as ROE, Tobin's Q, Earnings per share (EPS), net income, and others.

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