
THE EFFECT OF GREEN INVESTMENT ON FIRM VALUE

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Abstract

Indonesia was one of over 40 countries that signed the GlobalCoal to Clean Power Transition declaration at the 26th Climate Change Summit (COP26) and positioned Indonesia as a key green investment destination. Green Investment is an investment activity that focuses on companies or investment prospects that have a commitment to the conservation of natural resources, the production and discovery of alternative sources of new and renewable energy (EBT), the implementation of clean water and air projects, and investment activities that are friendly to the surrounding environment. Green investment as a company's effort to manage environmental problems by reducing the negative impact of business activities on the environment therefore green investment can increase competitive advantage, reputation, and company value. The implementation of green investment is one of the company's strategies in increasing profits without damaging the environment. This study will use the SRIKEHATI index, measurement of Green investment using PROPER ratings There are 5 levels in the PROPER rating, namely the first rank is given a gold color, the second rank is given a green color, the third rank is given a blue color, the fourth rank is given a red color, and the last rank is given a black color, and the company value can be calculated using Tobins Q calculation.

Keywords: Green Investment, Company Value

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1. INTRODUCTION

Indonesia is one of over 40 countries that signed the Global Coal to Clean Power Transition declaration at the 26th Climate Change Summit (COP26). As Southeast Asia's largest economy, Indonesia is committed to achieving a zero-emission target by 2060 or as early as around 2040, subject to receiving financial and technical assistance from the international community. The Ministry of National Development Planning estimates that a low-carbon development pathway to zero carbon emissions by 2045 could generate an average growth rate gross domestic product (GDP) is six percent per year, above current business-as-usual projections. The program is also expected to create 15.3 million jobs and, most importantly, position Indonesia as a major destination for green investments (G20 Indonesia 2022).

The legal basis for the implementation of green investment in Indonesia is regulated in Law (UU) Number 25 of (2007) concerning Investment. Article 3 Paragraph (1) states that investment is carried out based on the principle of environmentally sound. In the same law, Article 16D states that every investor is responsible for preserving the environment. The government also supports green investment by creating various strategic projects that support sustainable development. Indonesia's National Development Planning Agency (BAPPENAS), for example, has developed four main programs related to green investment. The four programs are energy, sustainable landscapes, Special Economic Zones (SEZs), and Green Climate Fund (GCF) preparation.

Green Investment is an investment activity that focuses on companies or investment prospects that are committed to the conservation of natural resources, the production and discovery of alternative sources of new and renewable energy, the implementation of clean water and air projects, and investment activities that are friendly to the surrounding environment. The focus of green economy development must be in line with environmental development goals such as: climate change, control of biodiversity damage and environmental pollution, and the use of new and renewable energy.

According to Muchti and Widyaningsih (2014) the company's activities regarding environmental responsibility will make the company get appreciation from stakeholders. One of the company's responsibilities to the environment is a long-term investment decision, where caring for the environment can improve the company's image which will have an impact on the company's value in the long term. Green investment as a company's effort to manage environmental problems by reducing the negative impact of business activities on the environment therefore green investment can increase competitive advantage, reputation, and company value. The implementation of green investment is one of the company's strategies in increasing profits without damaging the environment (Tanasya and Handayani 2020).

2. LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

2.1 Green Economic

The Green Growth Program seeks to create a conducive environment for green investment and capital raising by assisting governments to build investor confidence, attract capital, and create sustainable 'green' business models that can generate returns, as well as open up new untapped opportunities.

In Phase II of the program, the process of developing green projects in three priority sectors-Sustainable Energy, Sustainable Landscape, and Sustainable

Infrastructure in the context of Special Economic Zones (SEZs)-is being carried out and supported to reach the bankable stage.

There are 4 programs namely:

1. Energy
In collaboration with the Ministry of Energy and Mineral Resources (MEMR), the Green Growth Program supports the energy sector, particularly the renewable energy and energy efficiency sub-sectors. The National Energy Policy aims to increase the share of renewable energy to 16% by 2019 and up to 23% by 2025, to meet national energy needs.
2. Sustainable Landscaping
The program emphasizes a landscape-based approach, as forests, peat and land play an important role in providing various services to society. In collaboration with the Ministry of Environment and Forestry (MoEF), the program mainstreams green growth principles and tools into development and economic planning within a jurisdiction. A wide range of resource-efficient technologies and environmentally friendly practices are needed for the forestry and agriculture sectors.
3. Special Economic Zone (SEZ)
National development plans not only view infrastructure development and improvement as an engine of regional economic growth necessary to overcome connectivity and productivity constraints, but also recognize the need for environmental sustainability. The development of special economic zones (SEZs) is a priority for Indonesian policymakers, as it is seen as a highly effective strategy to attract foreign investment. In collaboration with the National Council for Special Economic Zones (DN KEK) under the Coordinating Ministry for Economic Affairs, the Green Growth Program is developing an integrated framework of guidelines and policy instruments that link fiscal policy and macro investment in SEZs, ultimately encouraging green investment plans and bankable projects in SEZs.
4. GCF Preparation Program
The Green Climate Fund (GCF) is a financing mechanism of the United Nations Framework Convention on Climate Change (UNFCCC) specifically established to help developing countries such as Indonesia achieve their emission reduction targets. The GCF has raised USD 10.3 billion as of January 2018, and plans to mobilize USD 100 billion per year. GCF supports Indonesia by channeling funds to green projects/programs. Such projects/programs can apply for funding to GCF through national or international entities accredited by GCF - and if the projects are in line with national strategies and legislation. The main communication channel between GCF and the country is through the National Designated Authority (NDA). The Fiscal Policy Agency (BKF) under the Ministry of Finance is the NDA for Indonesia (greengrowth.bappenas.go.id).

2.2 Green Investment

Green Investment is an investment activity that focuses on companies or investment prospects that are committed to the conservation of natural resources, production and discovery of alternative sources of new and renewable energy, implementation of clean water and air projects, and investment activities that are

friendly to the surrounding environment. The focus of green economy development must be in line with environmental development goals such as: climate change, control of biodiversity damage and environmental pollution, and the use of new and renewable energy. According to the Indonesian Ministry of Industry, Green Investment must have aspects:

1. Application of the concepts of reduce, reuse, recycle, and recovery.
2. Low input material intensity.
3. Low energy intensity.
4. Low carbon technology.
5. The volume of water used is lower and meets environmental quality standards.
6. Human resources that have a level of competence in their fields and have environmental insights, especially resource efficiency.
7. Use of alternative energy.

2.3 Previous Research

Doval and Negulescu (2014) designed a green investment approach model that has eight relevant sustainable drivers and underlines the implications of the green investment approach, this study provides some recommendations that organizations need to move from passive actions to active approaches regarding green investment in Romania. Doval and Negulescu's (2014) research used a survey/questionnaire method conducted in February 2013, and the questionnaire was addressed online to 75 green companies/industries and the questionnaire was addressed to the top management of the organization. The results showed that there are 5 drivers that influence more than 60% of the organization's investment process to turn green: market competition, scarce raw material resources, new government regulations, smart technology and knowledge and innovation. The main implications of green investment can be found in new consumer markets (33%), higher investment value (19%), stability of MSMEs representing about 19% and new job creation only 14%.

Research by Cakranegara and Sidjabat (2021) uses Porter's framework complemented by environmental, social and governance values so that companies and industries have a competitive advantage using the raw material production sector, namely agriculture, and mining. If a company in an industry ignores environmental, social and governance values, the company will experience a decline in competitiveness. Meanwhile, if the industry does not pay attention to environmental, social and governance factors, the industry will experience a decline compared to other industries that pay attention to environmental, social and governance factors. The results of this study indicate that environmental, social and governance values will affect firm value. Another practical benefit that companies can get by implementing environmental, social and governance values is expanding the company's investor base. The company will convince investors to invest in companies that have high social responsibility values.

Yatie and Tandika (2019) research aims to determine the effect of the Green Investment Index on the Company's Financial Performance and its impact on the Company's Stock Return. The Green Investment Index variable is measured by the Proper Assessment from the Ministry of Environment and the Company's Financial Performance as measured by ROA as an intervening variable between the Green Investment Index variable and Stock Returns, The period used in this study is 4 (four) years, starting from 2014-2017. This research uses quantitative methods. The research

sample was selected using purposive sampling technique so that 9 companies that met the criteria were obtained. The analytical tool used is multiple linear regression with the help of the SPSS 22.0 program. The results of this study indicate that the Green Investment Index variable has a significant effect on Financial Performance as measured by Return On Asset and the Green Investment Index variable has a significant effect on stock returns and Return On Asset has a significant effect on stock returns so that it can be concluded that Return On Asset (ROA) as an intervening variable.

Tanasya and Handayani (2020) examined the effect of corporate governance and green investment relationships on firm value with profitability as a mediating variable. Corporate governance variables are proxied by independent commissioners, audit committees, managerial ownership, and managerial ownership. While the green investment variable is proxied by the PROPER rating. This study used 40 samples of companies listed on the SRI KEHATI Index 2014-2018. The results showed that there is an influence of corporate governance represented by managerial ownership on profitability, this means that the shares owned by management in the company can improve the performance of management so that the profitability obtained by the company is also high. There is an influence of green investment on profitability, this means that the better the company implements a green investment strategy, the better the support from the community for the company's activities, which then affects the profitability obtained. There is an effect of profitability on firm value, which means that higher profitability will make investors want to own company shares which will then affect the value of the company. Profitability is able to mediate the effect of green investment on firm value, this means that higher profitability encourages green investment in increasing company value.

3. RESEARCH METHODS

Green investment measurement as a company's effort to manage environmental problems by reducing the negative impact of business activities on the environment therefore green investment can increase competitive advantage, reputation and company value. There are 5 levels in the PROPER rating, namely the first rank is given a gold color, the second rank is given a green color, the third rank is given a blue color, the fourth rank is given a red color, and the last rank is given a black color (Peraturan Menteri Lingkungan Hidup 2014). The ranking based on this category has been determined and published because it helps facilitate the understanding of investors and the public regarding the assessment of the company's PROPER criteria.

3.1 Research Data

This study uses food and beverage sub-sector manufacturing companies as the research population. From this population, research samples were taken using purposive sampling technique based on the criteria used in this study. The criteria used are food and beverage subsector companies listed on the IDX, researcher can access information about its annual report 2019-2021, and companies that participate in PROPER from KLHK. The companies that became the sample of this study based on the above criteria were 12 manufacturing companies in the food and beverage subsector. The period used in this study is 2019-2021 because this study continues

previous research conducted by Tanasya and Handayani (2020) which used the research period 2014-2018.

Table 1. Research Data

NO	COMPANY	YEAR	PROPER	TOBINS'Q
1	PT Indofood CBP Sukses Makmur Tbk	2019	4	3,67
		2020	3	1,59
		2021	4	1,40
2	PT Mayora Indah Tbk	2019	3	2,89
		2020	3	3,49
		2021	3	2,72
3	PT.Multi Bintang Indonesia Tbk	2019	3	11,88
		2020	3	7,54
		2021	3	6,25
4	PT Garudafood Putra Putri Jaya Tbk	2019	3	2,65
		2020	3	1,96
		2021	3	3,41
5	PT Ultra Jaya Milk Industry & Trading	2019	3	3,08
		2020	3	2,57
		2021	3	2,76
6	PT Siantar Top Tbk	2019	3	2,30
		2020	3	3,83
		2021	3	2,68
7	PT Nippon Indosari CorpindoTbk	2019	3	2,06
		2020	3	2,16
		2021	3	2,33
8	PT Akasha Wira InternationalTbk	2019	3	1,06
		2020	3	1,17
		2021	3	1,74
9	PT Delta Djakarta Tbk	2019	3	3,97
		2020	3	3,04
		2021	3	2,52
10	PT Campina Ice Cream IndustryTbk	2019	3	2,20
		2020	3	1,75
		2021	3	1,33
11	PT Wilmar Cahaya IndonesiaTbk	2019	3	0,90
		2020	3	0,87
		2021	3	0,84
12	PT Budi Starch & SweetenerTbk	2019	3	0,73
		2020	3	0,70
		2021	3	0,81

3.2 Measurement

Company value can be calculated using Tobins Q calculation. Measurement using Tobins Q calculation can provide an overview of the market value of a company.

$$Tobin's\ Q = \frac{(MV + BTL)}{BVA}$$

Description:

MV: Market Value

BVL: Book Value of Liabilities

BVA: Book Value of Asset

The research data were analyzed with descriptive statistics, then conducted classical assumption tests and hypothesis testing. To manage data using SPSS version 25.

4. RESEARCH RESULTS AND DISCUSSION

This research data is processed using Eviews 10 software and before entering the data analysis process, descriptive statistical tests are carried out.

Table 2. Statistic Descriptive

	PROPER	TOBINSQ
Mean	3.055556	2.690278
Median	3.000000	2.315000
Maximum	4.000000	11.88000
Minimum	3.000000	0.700000
Std. Dev.	0.232311	2.141822
Skewness	3.880570	2.607188
Kurtosis	16.05882	11.10188
Jarque-Bera	346.1522	139.2453
Probability	0.000000	0.000000
Sum	110.0000	96.85000
Sum Sq. Dev.	1.888889	160.5591
Observations	36	36

Based on the data above, it can be seen that the companies that are sampled in this study are ranked 3 and 4, which means that the company is quite good at implementing green investment and for the company's value, it is in the range of 2 to 11, which means that the company is high value.

This study uses panel data, namely combined data between cross section data and time series data. In panel data regression there are 3 models, namely Common Effect, Fixed Effect, and Random Effect. The first step is to choose the best model using the Chow Test, Hausman Test, and Langrage Multiplier Test. The criteria for choosing the best model are as follows:

Table 3. Model selection criteria

Testing	Results	Conclusion
Uji Chow	Probability > 0.05	Common Effect Model
	Probability < 0.05	Fixed Effect Model
Uji Hausman	Probability > 0.05	Random Effect Model
	Probability < 0.05	Fixed Effect Model
Uji Langrange Multiplier	Probability > 0.05	Common Effect Model
	Probability < 0.05	Random Effect Model

4.1 Model Estimation

1. Chow Test

Table 4. Chow Test Results

Effects Test	Statistic	d.f.	Prob.
Cross-section F	11.592481	(11,23)	0.0000
Cross-section Chi-square	67.629015	11	0.0000

Source: Processed eviws 10 results

From the Chow Test results, the probability value is 0.0000, which is < 0.05 , so the selected model is the Fixed Effect Model and the test proceeds to the Hausman test.

2. Hausmann Test

Table 5. Hausmann Test Result

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	0.232908	1	0.6294

Source: Processed eviws 10 results

From the results of the Hausman Test, it can be seen that the probability value is 0.6294, which is > 0.05 , it can be concluded that the selected model is Random Effect, therefore it is continued with the Langrange Multiplier Test.

3. Langrange Multiplier (LM) Test

Table 6. Langrange Multiplier Test Results

Null (no rand. effect)	Cross-section	Period	Both
Alternative	One-sided	One-sided	
Breusch-Pagan	20.96481 (0.0000)	0.900594 (0.3426)	21.86540 (0.0000)

Source: Processed eviws 10 results

From the LM test results, it can be seen that the probability value is 0.0000, which is < 0.05 , it can be concluded that the selected model is Random Effect.

4.2 Classical Assumption Test

1. Normality Test

Table 7. Normality Test Results

Jarque-Berra	139.7986
Probability	0.000000

Source: Processed eviws 10 results

From the results above, a probability value of 0.0000 is obtained, which means < 0.05 , so it is concluded that the data is not normally distributed. Therefore, data

transformation is carried out, namely the Company value data is transformed into logartima (Log Tobins Q).

Table 8. Normality Test Results after data transformation

Jarque-Berra	0.361060
Probability	0.834828
<i>Source: Processed eviews 10 results</i>	

After transforming the data on variable Y (Company value), the probability value becomes 0.8348 which means it is > 0.05 and this means that the data used in this study is normally distributed.

2. Heteroscedasticity Test

Table 9. Heteroscedasticity Test Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.068556	0.682569	0.100437	0.9206
PROPER	0.142065	0.220017	0.645701	0.5228

Source: Processed eviews 10 results

From the test results, the probability value is 0.5228, which means it is greater than 0.05, so there are no symptoms of heteroscedasticity.

3. Autocorrelation Test

Table 10. Autocorrelation Test Results

Durbin-Watson stat	1.323293
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Source: Processed eviews 10 results

From the results above, the DW value is 1.3232 which is still between the value range of 1-3 which means there are no symptoms of autocorrelation (Field 2018).

4.3 Simple Regression Test

Table 11. Simple Regression Test Result

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.466716	3.662752	0.127422	0.8994
PROPER	0.727711	1.181883	0.615722	0.5422

Source: Processed eviews 10 results

After testing the model assumptions and classical assumptions, simple regression testing is carried out and the signification result is 0.5422, which means that green investment has no effect on firm value. This can occur due to a paradigm shift among investors who no longer focus on PROPER indicators alone. Investors tend to find it difficult to know whether the company is doing green investment or not because in the annual report or PROPER indicator there are several things that are not disclosed so that they cannot affect the company's value (Pratiwi and Setyoningsih 2017).

5. CONCLUSIONS, LIMITATIONS, AND SUGGESTIONS

Green Investment is an investment activity that focuses on companies or investment prospects that have a commitment to the conservation of natural resources, production and discovery of alternative sources of new and renewable energy (EBT), implementation of clean water and air projects, and investment activities that are friendly to the surrounding environment. Green investment as a company's effort to manage environmental problems by reducing the negative impact of business activities on the environment therefore green investment can increase competitive advantage, reputation, and company value. The implementation of green investment is one of the company's strategies in increasing profits without damaging the environment (Tanasya and Handayani 2020).

The results of the study say that green investment has no effect on firm value. This can occur due to a paradigm shift among investors who no longer focus on PROPER indicators alone. Investors tend to find it difficult to know whether the company is doing green investment or not because in the annual report or PROPER indicator there are several things that are not disclosed so that they cannot affect the company's value (Pratiwi and Setyoningsih 2017).

This study has limitations, including a research sample that only uses food and beverage companies so that the results of the study cannot be generalized, and further research can expand the sample. In addition, the research period used is also only 3 years so that it cannot accurately describe how the actual influence of green investment on the company's value, further research can consider a fairly long research period.

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