

# Corporate Social Responsibility (CSR) and Firm Value:

## The role of investor sentiment in green companies listed on the IDX

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**Abstract**—This study aims to examine the role of investor sentiment on the relationship between corporate social responsibility and corporate value. Based on the previous literature, CSR which is a positive signal revealed by the company will influence investor sentiment. Investors can make decisions to make investments based on signals from the company. So that it can increase the value of the company. The better the company signal, the more confident investors will be in making investment decisions, which will then have an impact on the company's higher value. The sample used in this study is the green company that is listed on the IDX as many as 12 companies. By using a regression panel data analysis, the result is CSR disclosures can increase the value of the company through the mediating role of investor sentiment.

**Keywords**—CSR; firm value; sentiment investor

### I. INTRODUCTION

The issue of global warming has taken place in recent years. These issues cause reactions from various circles so that efforts are needed to overcome them. Familiarizing yourself with environmentally friendly behavior is one of the efforts to overcome global warming. As quoted in Buchdahl et al. which states that the unnatural greenhouse effect triggers excessive planetary warming in recent years [1]. Based on this phenomenon, many scientists are conducting research on various fields that are associated with the concept of environmentally friendly. Groups that care about the environment, ranging from researchers, educators, environmental activists, and other parties try to convince the owners or managers of the company through the facts of observations to consider the environment as one aspect of corporate responsibility for the survival of the planet earth

The responsibility of the company for the survival of the planet earth can be done by applying the concept of environmentally friendly in every operational activity of the company. Because by applying the concept of environmentally friendly, the company will benefit. As quoted in the research of Molina et al., that good environmental conditions will have a positive impact on financial performance [2]. Companies that carry out operational activities with the concept of environmentally friendly (green) or using green management can reduce costs and increase revenue. In addition, by applying

the concept of green management, companies can implement better environmental practices, namely better access to certain markets; product differentiation; controlled pollution with a technology; can manage risks and establish relationships with external stakeholders; material, energy and service costs; capital costs; and labor costs [3]. The form of environmentally friendly concepts carried out by the company is known as corporate social responsibility (CSR).

According to Gray et al. there are two significantly different approaches in researching CSR that appear in some literature, namely, first, CSR is used as an addition to conventional accounting activities and is examined because it provides information on mainstream accounting research [4]. Second, CSR is used as information in relation to the organization and society about the social and environmental activities that have been carried out in the company's operations. As revealed in several studies that companies that have social responsibility and responsibility (CSR) have a positive impact on the value of the company [5-9].

CSR is basically a business operation that has a commitment not only to increase profit financially, but also for the socio-economic development in the company area in a holistic, institutional and sustainable manner. Based on his book [10], there are three important components in sustainable development, namely economic growth, environmental sustainability and community welfare. Where the three components must be the main focus of each company. The company's social concern is mainly based on the reason, that the company's activities have an impact (both good and bad) on the environmental and socio-economic conditions of the community, especially the environment around which the company operates. Research conducted by Crisostomo et al. and Liu explains that CSR activities in companies have a negative impact on company value [11,12].

### II. AGENCY THEORY

Agency theory discusses the problems that surface in the firms due to the separation of owners and managers and emphasises on the reduction of this problem. This theory helps in implementing the various governance mechanisms to control the agents' action in the jointly held corporations [13].

The firm is based on the limited or unlimited contractual relationship between the two interested parties and they are known as the principal and agent [14]. The principal is the person who owns the firm, while agents manage the business of the firm on behalf of the principal. These two parties reside under one firm but have different and opposite goals and interest, so there exists a conflict and this conflict is termed as the agency problem.

Signal discusses the encouragement of a company to disclose more information to external parties due to information asymmetry between management and external parties. Therefore, all information on the company, whether non-financial information must be disclosed by the company. Connely et al. review the main elements of signal theory in the form of a timeline [15]. This timeline includes two main actors, namely signaler and receiver. The timeline can be illustrated in figure 2.

#### A. Signaler

At the essence of signaling theory is that signalers are insiders (e.g., executives or managers) who obtain information about an individual (e.g., [16]), or organization (e.g., [17]) that is not available to outsiders. At a broad level, insiders obtain information, some of which is positive and some of which is negative, that outsiders would find useful.

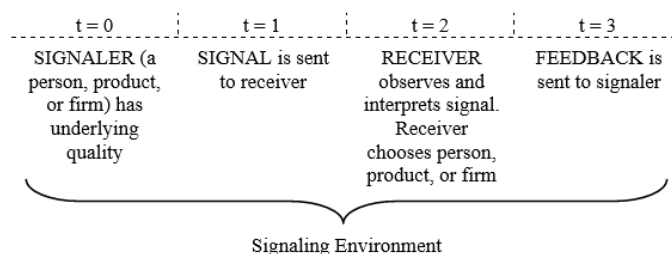
#### B. Signal

Insiders obtain both positive and negative private information, and they must decide whether to communicate this information to outsiders. Signaling theory focuses primarily on the deliberate communication of positive information in an effort to convey positive organizational attributes. With that said, some scholars have examined actions taken by insiders that communicate negative information about organizational attributes. There are two main characteristics of a very important signal, namely:

- Signal Observation, which refers to the extent to which outsiders can pay attention to signals
- Signal costs are very important for signaling theory which some call "costly signaling theory" (e.g., [18]).

#### C. Receiver

The receiver of the signal is the third element in the signaling timeline. According to signaling models, receivers are outsiders who lack information about the organization in question but would like to receive this information. For example, the receiver may make a choice about hiring, purchasing, or investing [15].



Sources:[15]

Fig. 1. Signaling timeline.

### III. RELATIONSHIP BETWEEN CSR, INVESTOR SENTIMENT AND FIRM VALUE

#### A. CSR and Investor Sentiment

In essence the signaler theory is an insider (executive or manager) who gets information about the organization which is not available to outsiders [17]. In general, information that can be obtained by insiders can be either positive or negative information. Where this information can be used by outsiders. This information can include, for example, specific about an organization's product or service. Organizational services that can be provided by an organization can be in the form of corporate social responsibility (CSR) information. Investors will give a positive response if they get positive information from the company.

Martin and Moser study concluded that green investment disclosure has a positive effect on investor reaction [19]. Investors will react positively to green investment disclosures that have social benefits compared to green investments that focus on company costs. Wahba states that Environmental Management measured using ISO 14001 has a positive and significant impact on the company's market value calculated using the Tobin's ratio [20]. While Nakamura resulted that Environment investment had an effect on the economic performance Firm [21]. Based on previous theoretical and research explanations, the research hypothesis formulated is as follows:

H1: The better the CSR disclosure of a company, the better the response of investors.

#### B. Investor Sentiment with Corporate Value

A positive investor sentiment will be the basis for making investment decisions that will ultimately increase the value of the company. Because the higher the Investor Sentiment, the higher the Company Value. Nofsinger define financial behavior that is studying how humans actually behave in a financial determination [22]. In particular, study how psychology influences financial, corporate and financial market decisions.

Dhaoui namely how investor sentiment can make investor behavior in making investment decisions [23]. He tested investor sentiment in the form of optimistic and pessimistic confidence in the future from the stock market at the level of trade. The results of the analysis are obtained that the investor's response (Optimistic and Pessimistic reaction) occurs in an

increase or decrease in trading volume. The response of pessimistic investors will actually increase trading volume, because the attitude of investors is a lot of caution, they have a high sensitivity to the trading experience, and ultimately the market will move well, this is called a pessimistic surprise. Based on previous theoretical and research explanations, the research hypothesis formulated is as follows:

H2: the better the Investor's response to the company, the more the value of the company will increase.

### C. CSR with Corporate Value through Investor Sentiment

Good information obtained from the company will influence investment decisions, so that the value of the company will increase. One of the good information is information related to corporate social responsibility. Companies that care about the environment, will have the bargaining value that investors take into account. So that the better the concern of a company in the environment, the more investors are interested in making investment decisions in the company and ultimately the value of the company will increase.

According to Gray et al. there are two significantly different approaches in researching CSR that appear in some literature [4], namely, first, CSR is used as an addition to conventional accounting activities and is examined because it provides information on mainstream accounting research. Second, CSR is used as information in relation to the organization and society about the social and environmental activities that have been carried out in the company's operations. As expressed in several studies that companies that have social responsibility and responsibility (CSR) has a positive impact on the value of the company [5-9]. Based on previous theoretical and research explanations, the research hypothesis formulated is as follows:

H3: the better the CSR disclosure, the better the response of the investor so that the value of the company will increase.

## IV. METHOD

### A. Population and Sample

The population used in this study are all go public companies listed on the Indonesia Stock Exchange, with the sample of the company being Accepted Firm, which is a company that is accepted because it meets the green criteria [24]. So the sample taken is the company that entered the Sri Kehati index for 5 consecutive years.

### B. Variable Measurement

1) *Independent variables:* CSR Disclosures. Al-Tuwaijri et al. define environmental disclosure as a collection of information related to environmental management activities by companies in the past, present and future [25]. This information can be obtained in many ways, such as qualitative statements, assertions or quantitative facts, forms of financial statements or footnotes. Measurement of CSR using ESG Bloomberg Score [26].

2) *Dependent variable:* Company Value (FV). Brigham and Houston define corporate values as follows: "Corporate value which is the value of expected free cash flow, discounted at a weighted leverage cost of capital" [27]. Firm value is the present value of future free cash flow at the discount rate according to the weighted average cost of capital.

Tobin's Q is intended to assess the company's ability to manage assets to create a profitable capital market value. Tobin's Q value describes a condition of investment opportunities that a company has or the company's growth potential. According to Tobin, Tobin's Q is the ratio calculated by comparing the market value of equity and corporate liabilities with the corresponding book value [28]. The formula is as follows:

$$\text{Tobin's } Q = \frac{\text{Equity Market Value} + \text{Liabilities Market Value}}{\text{Equity Book Value} + \text{Liabilities Book Value}}$$

3) *Mediation variables:* Investor Sentiment. Investor sentiment is defined as confidence in future cash flows and investment risks that are not supported by fundamental information. Second, ignoring investor sentiment is costly and expensive [29]. This is because rational investors or arbitrage actors cannot always control prices, or in other words in behavioral finance are said to be limited to arbitrage (limited to arbitrage).

Measurement of investor sentiment by using the Relative Index (RSI) according to Chen et al. [30].

$$RSI_t = 100 \times RS_t / (1 + RS_t)$$

### C. Research Model

The analytical tool used in this research is panel data regression that has been done classical assumption test to see heteroscedasticity, multicollinearity, and autocorrelation. Regression model that will be developed in this research as follows:

1) *Regression model that uses the common effect as follows:*

$$FV_{it} = \beta_0 + \beta_1 CSR_{it} + \beta_2 IS_{it} + e_{it}$$

2) *Fixed effect model with dummy variable as follows:*

$$FV_{it} = \beta_0 + \beta_1 CSR_{it} + \beta_2 IS_{it} + \beta_3 D_{1i} + \beta_4 D_{2i} + \beta_5 D_{3i} + \beta_6 D_{4i} + e_{it}$$

The regression developed in this study according to the hypothesis is as follows:

$$\text{Log IS} = a + b \text{ log CSR} + e \quad (1)$$

$$\text{Log FV} = a + b \text{ Log IS} + e \quad (2)$$

$$\text{Log FV} = a + b_1 \text{ Log CSR} + b_2 \text{ Log IS} + e \quad (3)$$

## V. RESULTS AND DISCUSSION

### A. Data Description

Based on the data selection criteria described earlier, the green companies in the sample are companies that are included in the Sri Kehati index for 6 years (2011 to 2016). A total of 72 observations were obtained.

### B. Classic Assumption Testing

1) *Normality test*: Normality testing in this study uses the Jarque Bera method. The results of the normality test of this research data show that the Jarque-Bera value is 2.557957 with a probability of 0.278321, this means that the Probability of Jarque-Bera > Alpha 0.05 value is that the residuals are normally distributed, so that the classical assumption of normality in the fixed effect model is fulfilled.

2) *Multicollinearity*: Multicollinearity testing in this study using the Variant Inflation Factor (VIF). The results of data processing show the following results:

TABLE I. MUTICOLINIERITY TEST CSR = A + B. IS + E

	Coefficient	Probability
Constant	40,58667	0,0000
Investor Sentiment (IS)	-0,253702	0,1561
R-Squared	0,028528	
N	72	

Sources: Data Processed with E-Views 8

$$\begin{aligned} \text{VIF} &= 1/(1-R^2) \\ &= 1/(1-0,028528) \\ &= 1,029366 \end{aligned}$$

$$\begin{aligned} \text{TOL} &= 1/\text{VIF} \\ &= 1/1,029366 \\ &= 0,971472 \end{aligned}$$

VIF values <10 and TOL > 0.10, this means that CSR variables do not have the classic multicollinearity assumption deviation

TABLE II. MULTICOLINIERITY TEST IS = A + B. CSR + E

	Coefficient	Probability
Constant	51,73043	0,0000
CSR	-0,112447	0,1561
R-Squared	0,028528	
N	72	

Sources: Data Processed with E-Views 8

$$\begin{aligned} \text{VIF} &= 1/(1-R^2) \\ &= 1/(1-0,028528) \\ &= 1,029366 \end{aligned}$$

$$\begin{aligned} \text{TOL} &= 1/\text{VIF} \\ &= 1/1,029366 \\ &= 0,971472 \end{aligned}$$

VIF values <10 and TOL > 0.10, this means that Investor Sentiment variables do not have the classic multicollinearity assumption deviation

3) *Heteroscedasticity*: Heteroscedasticity test in this study uses the Glejser Test, which is by using the residual absolute value as the dependent variable in the regression equation. The results can be seen in the following table 3:

TABLE III. HETEROSCEDASTICITY TEST WITH GLEJSER TEST

Variable	Coefficient	Probability	Information
constant	-1,026509	0,2820	
CSR	0,026913	0,0201	There is no heteroscedasticity
Investor Sentiment	0,005472	0,7486	There is no heteroscedasticity

Sources: Data Processed with E-Views 8

Based on table 3, the results show that the independent variable coefficient of CSR and investor sentiment is not significant with a probability value of more than 5%. This means that the model predicted to have no heteroscedasticity.

4) *Autocorrelation*: Autocorrelation test in this study uses Durbin Watson, namely comparing the DW values on the results of the data with the acceptance or rejection criteria of DW. The results of the analysis obtained the following results:

TABLE IV. AUTOCORRELATION TEST DURBIN WATSON TEST

LOG(FV) = 0.0851*LOG(IS)-0.0266*LOG(CSR) + 0.3594+ [CX=F]		
R-Squared = 0,894166		
N = 72		
DW = 1,691142		

Sources: Data Processed with E-Views 8

Based on table 4, the DW value is 1,691142, which is in the area between 2 and 4-du means there is no autocorrelation.

### C. Regression Panel Data Analysis

Selection of the most appropriate model in this study is to compare between common effect models and fixed effects models.

The results obtained from the fixed effect model regression analysis and the common effect model can be seen in the following table 5:

TABLE V. REGRESS FIXED EFFECT AND COMMON EFFECT

Variable	Fixed Effect Model		Common Effect Model	
	Coefficient	Probability	Coefficient	Probability
Constant	-0,043466	0,6413	1,585797	0,1174
CSR	0,009472	0,4445	0,475954	0,6356
IS	0,004294	0,6107	0,428120	0,6699
SSRU	21,49778			
SSRR			120,4392	
N	72	F critics 1%	4,04	
k	3	F critics 5%	2,72	
q	4			

Sources: Data Processed with E-Views 8

$$F = \frac{(SSRR - SSRU) / q}{SSRU / (n/k)}$$

$$F = \frac{(120.4392 - 21.49778) / 4}{21.43778 / (72/3)}$$

$$F = \frac{1.4006}{0.995741}$$

$$F = 1.563622$$

F stat (1,563622) < Critical F 5% (2.72) then the right model to use is the common effect compared to the fixed effect.

So, the regression model obtained is as follows:

Firm Value = 0,1174 + 0,6356 CSR + 0,6699 Investor Sentiment

R Square = 0,005061

F = 0,177500

1) *Test hypothesis 1:* The results shown in table 6 are CSR significant influences on Investor Sentiment. CSR probability value (0.0996) is less than the 20% alpha. But the relationship between CSR and investor sentiment is negative based on the CSR coefficient of -0.066005.

So the hypothesis which states that the better the CSR disclosure of a company, the better the investor's response will be rejected

TABLE VI. TEST HYPOTHESIS 1 (LOG IS = A + B LOG CSR + E)

Variable	Coefficient	Probability
constant	4,076606	0.0000
Log CSR	-0.066005	0.0996
R Square	0.038260	
F	2,7847	
n	72	

Sources: Data Processed with E-Views 8

Good information from the company will make investors more careful in making investment decisions. The reaction of investors who are more cautious in receiving this information is a pessimistic attitude of investors. In the study Nofsinger, the investors were pessimistic, the attitude of investors was a lot of caution, they had a high sensitivity to the trading experience, and in the end the market would move well, this was called a pessimistic shock [21].

2) *Test hypothesis 2:* The results of testing hypothesis can be shown in table 7 below:

TABLE VII. TEST HYPOTHESIS 2 (LOG FV = A + B LOG IS + E)

Variable	Coefficient	Probability
constant	0.160094	0.8897
Log IS	0.114614	0.7009
R Square	0.002120	
F	0.148739	
n	72	

Sources: Data Processed with E-Views 8

In table 7 it can be explained that investor sentiment has no effect on increasing the value of the company based on statistical value. (probability of investor sentiment (0.8897 > alpha value of 20%). So that hypothesis 2, investor sentiment has a positive effect on the value of the company is rejected.

Many factors can affect the value of the company, both from internal companies and external companies. In this study investor sentiment as an external variable of the company whose influence cannot be controlled by the company. So that if it is connected as the only variable that influences the value of the company, then it cannot be significantly affected. So that investor sentiment has an indirect influence on the value of the company.

3) *Test hypothesis 3:* The results of testing hypothesis 3 can be shown in table 8. Based on the results of the analysis it was found that with investor sentiment, CSR statistically had a positive and significant effect on the firm's value at the alpha level of 20% (CSR Probability value 0.1350 < alpha 20%). This means that the better investor sentiment in a company, the better the investment decision in the company so that the value of the firm will increase. Good investor sentiment is influenced by good information from the company, namely information about corporate social responsibility (CSR). So hypothesis 3 is accepted.

TABLE VIII. TEST HYPOTHESIS 3 (LOG FV = A + B<sub>1</sub> LOG CSR + B<sub>2</sub> LOG IS + E)

Variable	Coefficient	Probability
constant	-0.673621	0.5964
Log CSR	0.153244	0.1350
Log IS	0.203442	0.5004
R Square	0.034135	
F	1.219279	
n	72	

Sources: Data Processed with E-Views 8

There are 4 (four) regulations that require certain companies to run corporate social responsibility programs or CSR and one ISO 26000 Guidance as references in carrying out CSR. These regulations include Keputusan Menteri BUMN about Program Kemitraan Bina Lingkungan (PKBL), Undang-Undang Perseroan Terbatas Nomor 40 Tahun 2007, Undang-Undang Penanaman Modal Nomor 25 Tahun 2007 and Undang-Undang Minyak dan Gas Bumi Nomor 22 Tahun 2001.

According to Wibisono, there are four benefits obtained by the company by implementing CSR [31]. First, the existence of the company can grow and be sustainable and the company gets a positive image from the wider community. Second, companies are more likely to gain access to capital. Third, companies can maintain quality human resources. Fourth, companies can improve decision making on critical matters (critical decision making) and facilitate management of risk management (risk management).

## VI. CONCLUSION

This study aims to examine the influence of information conveyed by the company in the form of CSR disclosures on Firm Value through investor sentiment. The results of the analysis obtained can be summarized as follows:

- Good information from the company will make investors more attentive in making investment decisions.
- Investor sentiment has no direct effect on the value of the firm.
- The better investor sentiment in a company, the better the investment decision in the company so that the value of the firm will increase. Good investor sentiment is influenced by Corporate Social Responsibility (CSR).

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