EXTERNAL PARTY RECOGNITION ON ESG DISCLOSURE TO STOCK PRICE: A CASE STUDY OF ESG DISCLOSURE AWARDS IN INDONESIAN STOCK EXCHANGE

Dwi Octavia[1], Helen Jayanti[2], Jayson Gautama Lee[3], Richard Arlie[4], Lindrianasari[5*]

[1,2,3,4]Accounting Department, School of Accounting, Bina Nusantara University, Jakarta, Indonesia, 11480

[5]Accounting Department, University of Lampung, Kota Bandar Lampung, Indonesia, 35134

[1]dwi.octavia@binus.ac.id , [2]helen.jayanti@binus.ac.id, [3]jayson.lee@binus.ac.id,
[4]richard.arlie@binus.ac.id, [5]lindrianasari17@gmail.com

ABSTRACT

This research aims to find further empirical evidence of the connection of environmental disclosure with the share price. We considered potential investor doubt on company ESG disclosure because of potentially biased reporting from management predicted by agency theory and attempted to study the effects when this doubt is removed by external recognition of the company's ESG disclosures. Abnormal returns of companies are tracked using daily closing price data from Bloomberg, and further testing is done using the binomial distribution. Our study has found that companies that obtain external recognition experience an increase in abnormal returns after the award announcement date. This finding implies that external parties' recognition of the company's environmental performance will obtain positive market sentiment and is indicated by increased stock returns.

Keywords: ESG, CSR, Environmental Performance, Abnormal Returns

INTRODUCTION

Environmental performance and disclosure positively affect financial performance, which could be represented by the company's ROA and ROE (Haninun, Lindrianasari, & Denziana (2018). Environmental performance indicates how well a company can follow environmental regulations and is measured by a supervisory program called Corporate Performance Rating Assessment, or PROPER. Every company is responsible for disclosing its operational and non-operational activities that impact the environment to society; it is part of Corporate Social Responsibility (CSR). The reason for all of those is that a company's performance valuation is no longer taken from only financial information but also from non-financial information disclosed by the company itself and external parties.

Despite environmental concerns, concern about social and governance issues has also been rising for several years. Investors and the public can see how sustainably a company operates through its ESG implementation. ESG consists of three pillars: environmental, social, and governance. Those three pillars are part of three bottom-line in the sustainability report known as 3P: People, Profit, and Planet (Bala, 2022). Therefore, companies with good ESG disclosures are also expected to have good environmental disclosures, exhibiting the same expected effects of increased financial performance. We believe that ESG disclosure positively affects the company's financial performance, which could later be shown in its stock price in the market. A positive ESG disclosure that results in good financial performance attracts investors to invest their money in a company due to good credibility that leads to a sustainable company. Therefore, it is taken into investors' consideration in making transactions at the capital market. Abnormal return is an indicator

that investors use to look at the current market response to disclosure and financial performance (Syafrullah, 2017).

However, ESG disclosure reported by a company often leads to a biased performance valuation, which makes stakeholders worry about its validity. This concern can be solved using external parties' valuation as an ESG benchmark. Lately, every year many governmental and non-governmental foundations give the "ESG Award" to companies in almost every industry sector that successfully and truthfully implement ESG. The reason is to motivate companies to pay more attention to the environment, society, and governance.

Compared to the previous research, we use ESG disclosure to predict firms with high financial performance and share price instead of only using one of the ESG pillars, environmental disclosure. The basis for using ESG disclosure to test our hypotheses is a lack of access to environmental disclosure ratings on the companies listed on the IDX (Indonesian Stock Exchange). Our research objective is to (1) further test the connection between ESG disclosure, financial performance, and share price as well as (2) to discover whether or not external validation on ESG disclosures affects company share performance in order to contribute additional empirical evidence to the existing literature that discusses the effect of company environmental disclosure towards financial performance.

Literature Review

Connection between Disclosures and Financial Performance

Based on the findings of the research and testing of the effect of environmental performance and disclosure on financial performance, Haninun et al. (2018) stated that environmental performance, as assessed by PROPER rank, has a beneficial impact on financial performance, as proxied by ROA and ROE. Not only that, environmental disclosure, as measured by the disclosure index, has a positive impact on financial performance as proxied by ROA and ROE. The disclosure index used in this study to calculate environmental disclosure demonstrates the effect of environmental performance on ROA, as indicated by a positive t value, and ROE, as indicated by a positive t value, indicating that environmental disclosure positively affects financial performance. The study's findings are also compatible with stakeholder and legitimacy theories, emphasizing firms' disclosure in response to stakeholder requests. An additional idea to this inquiry is signaling theory. There is a push for management to offer information to interested stakeholders in order to decrease information asymmetry, according to this notion.

Other research by Angelia and Suryaningsih (2015) stated that environmental performance considerably impacted ROA and ROE. Environmental performance and Corporate Social Responsibility (CSR) disclosure have a significant impact on ROA and ROE simultaneously, although CSR disclosure only had a considerable impact on ROE but no impact on ROA. The research findings obtained a coefficient correlation (R) ranging from +0.5 to +1.0. That value of R implies a high positive association between CSR and environmental performance with ROA and ROE. The adjusted R Square coefficient of determination ranges around +0.3, suggesting that the disparities in CSR disclosure and environmental performance can explain some of the ROE.

Whereas another study that conducted empirical tests on the effect of environmental performance on business value via the mediation of environmental disclosure obtained a different outcome than the two initial studies discussed above. Utomo et al. (2020) stated that environmental performance improves corporate value and disclosure. However, the study's other findings indicate that environmental disclosure does not significantly impact corporate value. The relationship between environmental performance and corporate value is not mediated by environmental disclosure as the companies that carry out environmental disclosures with GRI indicators are relatively low, owing to more normative environmental norms that do not define how large environmental information items the company must report by default. Furthermore, many firm management believes that adhering to GRI standards is not always favorable to market value because something that is not needed by regulation might be ignored by market perception (investors). As voluntary disclosure becomes questionable and can be ignored by the market without a mechanism to protect

the truth (regulation), the study stated that environmental disclosure has no substantial impact on business value and does not mediate the effect of environmental performance on firm value

Why Companies Provide Disclosures

Stakeholder theory focuses on the relationship between the company and the stakeholders. In this case, the stakeholders are not only talking about shareholders but also the community, government, etc. Stakeholders' theory relates to accountability. This suggests that the company's management is expected to be accountable to the stakeholders and undertake activities that seem essential to the management (Fernando & Lawrence, 2014). One of the steps that the management must take to the stakeholder is to disclose important information to the stakeholder.

The stakeholder theory could explain why management disclosed non-financial information, including environmental information, to the stakeholders. Environmental Information and other non-financial Information are essential aspects that most stakeholders search for. This information could affect the stakeholders' judgment of the company and be a consideration in decision-making. As one of the performance evaluation aspects, non-financial information could also affect the company's financial performance and value.

Legitimacy theory focuses on the social interaction of companies and society. Legitimacy theory is a mechanism that supports companies in implementing and developing voluntary social, environmental, and governance disclosure to fulfill social contracts (Burlea et al., 2013). This theory could explain why the company could disclose the non-financial performance and explain the effect on the financial performance of a company.

Asymmetric information can be reduced by the company's management if the management shares voluntary information with the investors (Yekini et al., 2021). This is called the signaling theory. Signaling theory explains why the management disclosed the company's information to give the stakeholders Information about what is happening in the company. Information asymmetry is connected to signal theory. The benefit of signaling theory is that it distinguishes between companies that have "good news" and those that do not by updating the market on their situation. The market will not trust the signal of good future performance from companies whose past financial performance has been subpar.

The company's CSR disclosure further expands the relationship between signal theory and firm value in the annual report. The corporation is sending investors a positive message by doing this. Investors will obtain more information the more disclosure the company makes. Investor confidence in the company will rise as more information is available. Investors will undoubtedly respond favorably to the company with rising stock prices if they have high confidence. As a result, the company's level of disclosure will impact how quickly stock prices move, which will impact how much is traded. Rising stock price movements will undoubtedly impact increased stock returns for the company.

Traditional financial reports fall short of accurately portraying a company's activities. Due to this and by the Directive, big businesses must use reports like integrated and sustainability reports to convey non-financial information about how they handle sustainability concerns. This greater disclosure lessens the agency theory's unfavorable effects of information asymmetry and agency costs. According to the signaling theory, corporate sustainability commitment is positively signaled to the market through sustainability disclosure, which may benefit business performance.

Theoretical Framework

Haninun et al. (2018) showed that a company's financial performance reflected by Return on Assets depends on environmental disclosure. Overall, environmental disclosure has a positive relationship with return on assets. Since financial performance informs investors about future cash flows, environmental disclosure should also affect the firm's share price.

However, we should also consider agency theory as a moderating variable. Management still has discretion in choosing what to disclose and could disclose only favorable news on the company's

sustainability performance, resulting in unreliable and biased reports. As a result of this unreliability, investors might not use this information, resulting in no share price change.

Applying this to finance theory, the reason behind no change in valuation can be seen with discounted cash flow models. One of the models used to evaluate a stock is the Gordon Growth formula with the following equation that describes a stock value as expected dividends discounted at the discount rate minus the perpetual growth rate.

$$Stock\ value\ at\ time\ 0 = \frac{Expected\ Future\ Dividends}{(Discount\ Rate - Perpetual\ Growth\ Rate)}$$

When investors observe good ESG disclosures, they can infer that the company's financial performance is high based on Haninun et al. (2018), so holding k and g constant, the value of D1 increases because companies with high financial performance can pay more dividends. Unfortunately, since this information could be unreliable due to management bias, investors will use a higher discount rate to evaluate the stock. As a result, the increase in value caused by the D1 increase will be offset by the decrease in value caused by an increase in k, causing minimal, if not none, change in prices.

However, if this uncertainty is removed by external validation, the share price could go up because investors will use a lower discount rate to reflect the lower risk. The price adjustment is expected to occur quickly near the new information publicly available under the efficient market hypothesis (Fama, 1995).

The theoretical relationship between relevant variables is summarized in the diagram below. The reliability of a company's environmental disclosure does not directly affect the relationship between environmental disclosure and financial performance. The positive relationship between financial performance and environmental disclosure should still exist even if the information is unreliable. The reliability of the information should only affect whether the information provided by the company's report gets used by investors to value the share price. When reliability is not confirmed, the stock price has the potential to move, but it has not due to the information not being used. When reliability is confirmed, the stock price should reflect the information already available within the company's environmental disclosure and financial performance.
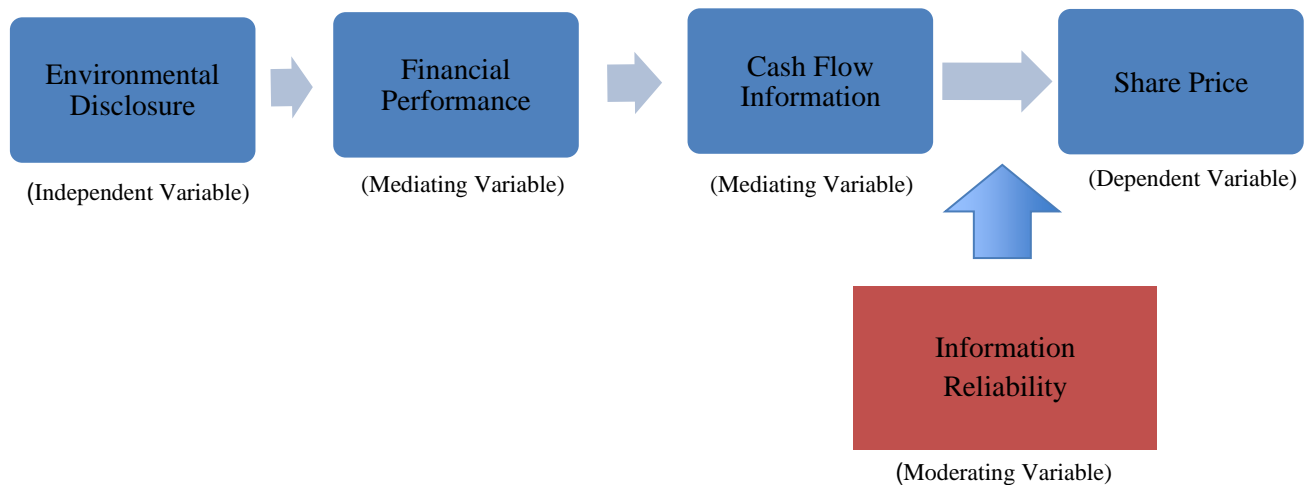

Environmental Disclosure	Financial Performance	Cash Flow Information	Share Price
(Independent Variable)	(Mediating Variable)	(Mediating Variable)	(Dependent Variable)

Information Reliability

(Moderating Variable)

Figure 1. Research Framework

Hypothesis Development

Pulino, Ciaburri, Magnanelli, and Nasta (2022) explained that the company's concern for practical environmental, society, and governance activities would positively impact company performance. Using an

Italian sample, Pulino et al. (2022) uses agency theory (see Jensen & Meckling, 1976) and signaling theory to explain the need for management's openness to external parties to reduce information asymmetry. Information published in the form of disclosure shows that companies are far from risk (Zioło, Bak, and Spoz, 2023), so it becomes an attraction for investors to invest in companies like this.

In research conducted by Lindrianasari, Mahatma, Yuztitya, and Agrianti (2018) in three developing countries in Asia, independent sample test results found a significant difference in the ESG disclosure score. Each significance level obtained from the statistical test results is 0000 for all countries. Malaysia has a higher F value (i.e., 533,080) than Indonesia and Thailand, which have F values of 406,386 and 274,414, respectively. Environmental disclosure has been found to have a positive relationship with return on assets and other company performance, including financial performance. Investors are interested in environmental disclosure as they are interested in future cash flows, ultimately impacting the company's stock price (Haninun et al., 2018).

Based on the theoretical framework, we can test our theory empirically by observing share price movements after external validation has been given to companies regarding their disclosure performance. Since companies receiving external recognition on ESG disclosures have quality environmental disclosure, we should expect them to have high financial and cash flow performance, which would result in high share prices. Our theory is that the increase in share price is not caused by new information but rather by confirmation of the reliability of previously known information, which is the company's disclosures. Our hypothesis is as follows.

H1: *Companies who received external recognition on their ESG disclosure should experience positive abnormal returns near their announcement date.*

We will use ESG disclosure as a proxy for environmental disclosure due to limited access to the company's environmental disclosure ratings. Companies with good ESG disclosures should also have good environmental disclosures, thus exhibiting the same expected effects of increased financial performance and high share price.

We will measure the returns of ESG award winners as a unified portfolio. If ESG awards are not a significant factor in stock returns, then we should not expect the portfolio to increase. The random decrease by another stock in the portfolio will offset the price increase experienced by a stock within the portfolio. To measure the stock's reaction to external recognition, we measure the movement of returns for the stock portfolio with each stock given equal weights. Equal weight is used because every stock carries the same level of importance. To further improve the strength of our hypothesis test, we want to remove the impact of the market's return on the security's return. This elimination is necessary because share prices can increase not because of external recognition but because the whole market is increasing. To make this adjustment, we will regress the market's return with the ESG winner's return to see how much the stock market influences the ESG winner's return and eliminate that effect to isolate factors that increase the share price that these ESG winners purely own, the fact that they have received external validation on their environmental disclosure. After adjusting for the market's return, the share price returns are called abnormal returns.

METHODS

Population and Research Sample

In terms of our research population, this research attempts to predict the general behavior of company stock prices when they are given external validation about their ESG disclosures in the form of awards. To achieve this, samples are taken from companies that received ESG disclosure awards in 2020 from investor media Majalah Investor. Their daily stock price performance is tracked to represent how companies behave regarding external validation. Closing stock prices for

Jakarta Composite Index and ESG winning stocks are taken from 2017-2022. Only public companies who received the awards are taken as a sample because non-public companies do not provide share price data.

Table 1. List of Companies

No.	Company Name	Ticker
1	PT Perusahaan Gas Negara Tbk.	PGAS
2	PT Jasa Marga Tbk.	JSMR
3	PT Waskita Karya Tbk.	WSKT
4	PT Bank Rakyat Indonesia Tbk.	BBRI
5	PT Bumi Resources Tbk.	BUMI
6	PT Bank Pembangunan Daerah Jawa Barat dan Banten Tbk.	BJBR
7	PT Bank Cimb Niaga Tbk.	BNGA
8	PT Timah Tbk.	TINS
9	PT Aneka Tambang Tbk	ANTM
10	PT Wijaya Karya Tbk	WIKA
11	PT United Tractors Tbk	UNTR
12	PT Total Bangun Persada Tbk	TOTL
13	PT Indocement Tunggal Prakarsa Tbk	INTP
14	PT Wijaya Karya Beton Tbk	WTON
15	PT Astra International Tbk	ASII
16	PT Japfa Comfeed Indonesia Tbk	JPFA
17	PT Unilever Indonesia Tbk	UNVR
18	PT Astra Agro Lestari Tbk	AALI
19	PT Kalbe Farma Tbk	KLBF
20	PT ABM Investama Tbk	ABMM
21	PT Bank Negara Indonesia Tbk	BBNI
22	PT Bank Central Asia Tbk	BBCA
23	PT Bukit Asam Tbk	PTBA
24	PT Indo Tambangraya Megah Tbk	ITMG
25	PT Pembangunan Perumahan Tbk	PTPP
26	PT Bank Tabungan Negara Tbk	BBTN
27	PT Bank Mandiri Tbk	BMRI

Source: Author

Operational, Measurement of Variables, Statistical Models Used

Portfolio Return

We used methodology derived from Eugene F. Fama's multifactor model to track portfolio returns (such as Small minus Big Portfolio) shown by Sudiyatno & Irsad (2013). An equal-weight portfolio return is calculated by taking the average return of each stock.

$$r_{p,t} = \frac{1}{n} * \sum_{i=1}^{n} r_{i,t}$$

$r_{p,t}$ = return of ESG Winner portfolio at time t using equal weight for each stock
n = total number of stocks in the ESG winner portfolio
r_i = return of i'th stock

$$r_t = \frac{(P_t - P_{t-1})}{P_{t-1}}$$

r_t = stock return at time t
P_t = stock price at time t
P_{t-1} = stock price at the previous period (previous day)

Abnormal Return

The impact of the stock market's return on the ESG winner's return is modeled with ordinary linear regression stated by the following equation. The market return is proxied by the Jakarta Composite Index.

$$r_{p,t,predicted} = b_0 + b_1 * r_{m,t} + \varepsilon_t$$

$r_{p,t,predicted}$ = return of ESG winner portfolio at time t predicted with the market return
$r_{m,t}$ = return of the stock market at time t

After finding out the impact, the abnormal return of the ESG winner portfolio at time t is the actual observed return minus the return predicted by market return. Abnormal return will be when the portfolio return exceeds the return predicted by the market, and abnormal loss occurs when the portfolio returns below the return predicted by the market.

$$r_{p,t,abnormal} = r_{p,t,actual} - r_{p,t,predicted}$$

Data Source

Price data are taken from Bloomberg. While the list of companies that received ESG disclosure awards 2020 is taken from the official publications made by the creator of the awards, Berita Satu Media.

ANALYSIS

Regression of Portfolio Return with Market Return

We have deployed a regression model in Excel with the daily return of the ESG winner portfolio as the dependent variable and the Jakarta Composite Index daily return as the independent variable. A significant relationship is observed between market returns and ESG winner portfolio returns at a 5% significance level, and market returns can explain 74,74% of the variance in the ESG winner portfolio based on the resulting R Square. The Excel regression output is as follows.

Table 2. Regression Statistics

Regression Statistics	
Multiple R	0,864542
R Square	74,74%
Adjusted R Square	0,747264
Standard Error	0,007092
Observations	1495

Source: Author

Table 3. Anova

	df	SS	MS	F	Significance F
Regression	1	0,222219	0,222219	4418,302	0,00
Residual	1493	0,075091	5,03E-05		
Total	1494	0,29731			

Source: Author

Table 4. Regression Result

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95,0%	Upper 95,0%
Intercept	5,7E-05	0,000183	0,310453	0,75626	-0,0003	0,000417	-0,0003	0,000417
Jakarta Composite Index % Change	1,229628	0,018499	66,47031	0	1,193342	1,265915	1,193342	1,265915

Source: Author

The model errors (residuals) are homoscedastic, with a mean of -0,0001. Taking the histogram and QQ plot of our residuals shows that our residuals follow a normal distribution, although with extreme values (values beyond two standard deviations) deviating from theoretical normal distribution quantiles. Assuming residuals are normally distributed, we should expect 50% of our residuals to be negative (abnormal loss) and 50% to be positive (abnormal return). As a result, the probability of an abnormal gain in our ESG winner portfolio is 50%, and the probability of abnormal loss is 50%.
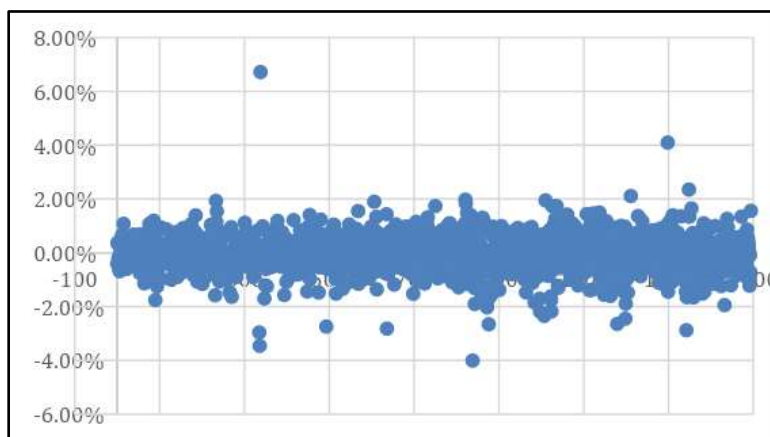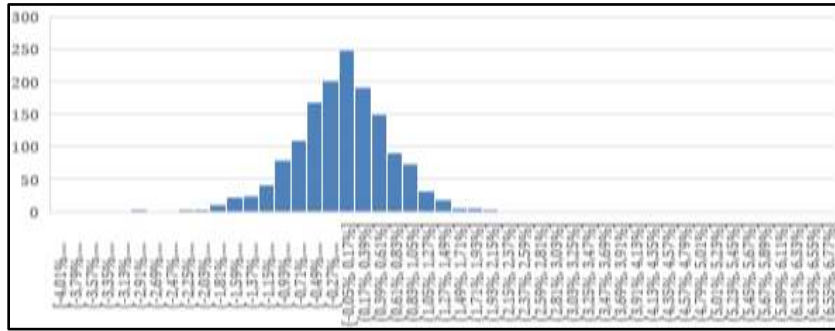

Figure 2. Scatter Plot of Model Errors

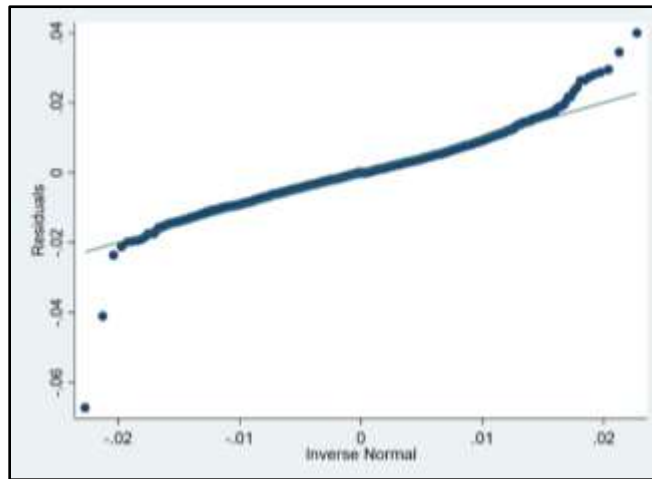**Figure 3.** Histogram of Regression Errors

Figure 4. Residuals QQ Plot

Abnormal Return of ESG Winners

ESG winners are declared by Majalah Investor on 17 November 2020 (Rossiana & Alfaruq, 2020). The abnormal return of ESG winners on 17 November and the subsequent 30 price observations (totaling 31) are as follows.
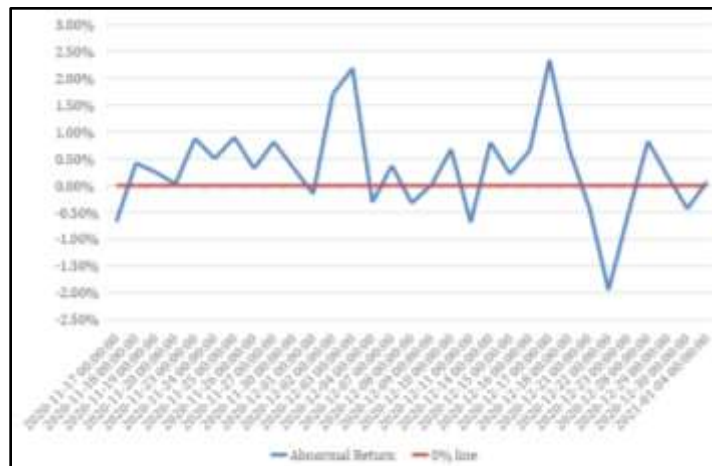

Figure 5. Abnormal Return Post Announcement Line Chart

Our hypothesis seems proven true since, within the 31 observations, the stock experiences more abnormal returns (22 abnormal returns) than abnormal losses. To further increase the strength of our results, we will conduct a binomial distribution analysis in the subsequent paragraphs. Under our regression model of market return and ESG winner return, we have assumed that the expected value of error is 0, and there is an equal 50/50 probability of positive errors (abnormal returns) and negative errors (abnormal losses). We then model this observation into a binomial distribution with 31 trials, and we define success as getting abnormal returns with the probability of occurring at 50%. We exclude 0% from the definition of abnormal return such that a return is abnormal only when they are >0%.

The most likely number of abnormal returns in 31 trials is around 50% of the 31 trials, 14, 15, or 16 abnormal returns, with the highest total probability of 12,3%, 14%, and 14%, respectively. However, we have observed 22 abnormal returns from our data where the probability of observing ≥ 22 abnormal returns is 1,5% based on our binomial distribution. Our binomial distribution calculation result is as follows.

Table 4. Binomial Distribution

N of s	Combination	P(S)	Total P	Cumulative Probability
	1	0,00%	0,00%	0,00%
1	31	0,00%	0,00%	0,00%
2	465	0,00%	0,00%	0,00%
3	4495	0,00%	0,00%	0,00%
4	31465	0,00%	0,00%	0,00%
5	169911	0,00%	0,00%	0,00%
6	736281	0,00%	0,00%	0,00%
7	2629575	0,00%	0,10%	0,20%
8	7888725	0,00%	0,40%	0,50%
9	20160075	0,00%	0,90%	1,50%
10	44352165	0,00%	2,10%	3,50%
11	84672315	0,00%	3,90%	7,50%
12	141120525	0,00%	6,60%	14,10%
13	206253075	0,00%	9,60%	23,70%
14	265182525	0,00%	12,30%	36,00%
15	300540195	0,00%	14,00%	50,00%
16	300540195	0,00%	14,00%	64,00%
17	265182525	0,00%	12,30%	76,30%
18	206253075	0,00%	9,60%	85,90%
19	141120525	0,00%	6,60%	92,50%
20	84672315	0,00%	3,90%	96,50%
21	44352165	0,00%	2,10%	98,50%
22	20160075	0,00%	0,90%	99,50%
23	7888725	0,00%	0,40%	99,80%
24	2629575	0,00%	0,10%	100,00%

N of s	Combination	P(S)	Total P	Cumulative Probability
25	736281	0,00%	0,00%	100,00%
26	169911	0,00%	0,00%	100,00%
27	31465	0,00%	0,00%	100,00%
28	4495	0,00%	0,00%	100,00%
29	465	0,00%	0,00%	100,00%
30	31	0,00%	0,00%	100,00%
31	1	0,00%	0,00%	100,00%
Sum			1	

Source: Author

Unlike our regression model prediction, this result implies that the probability of obtaining an abnormal return is not 50% but higher. This results from rejecting the null hypothesis that the probability of obtaining an abnormal return is 50%. As a result, there is a possibility that the announcement of ESG disclosure winners generates a more favorable view of the company for the investors, which aligns with our hypothesis that external validation will increase share price because uncertainty from biased disclosure from management is reduced.

CONCLUSIONS

Our research has detected stock returns anomaly following external validation received by ESG-disclosing companies where the probability of obtaining abnormal returns seems to increase following external validation announcement, implying that external validation impacts share price. This observation is theoretically explained to be caused by increasing investor confidence that lowers the discount rate applied to the ESG disclosure winning stocks due to decreased risks.

While we have analyzed the returns of firms who have received external recognition, we have not tested whether or not the same effects will occur for firms with good disclosure but no external recognition. As a result, we invite further research to further test the strength of the relationship between external validation and stock returns by analyzing the difference between companies that have good ESG disclosure, but one group receives external validation while the others do not.

Our paper starts with the concern that while ESG disclosures are connected with financial performance, investors might not use this information due to fear of biased reporting based on problems stated in agency theory. This led us to research whether external validation could reduce this problem. If external validation reduces investor uncertainty, we should expect an increase in stock price due to a decrease in the discount rate. We have found that stocks that received ESG disclosure awards experienced more abnormal returns after the announcement. Furthermore, by conducting further tests using the binomial distribution, we have discovered that companies that received external validation have a higher probability of experiencing abnormal returns. This implies that investors consider external validation when pricing stocks such that stock price behavior changes after the announcement.

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