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How do Islamic corporate social responsibility and environmental performance relate to company value?

Dini Rahmayanti[1], Ziinatul Arifah[2], Putri Jamilah[3]

[1]Departement of Islamic Economics, Faculty of Islamic Economics Business, UIN Salatiga, Salatiga, Indonesia
[2]Departement of Islamic Business Management, Faculty of Islamic Economics Business, UIN Salatiga, Salatiga, Indonesia
[3]Departement of Islamic Banking and Finance, Faculty of Entrepreneurship and Business, Universiti Malaysia Kelantan, Malaysia

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Corresponding author:
Ziinatul Arifah
ziinatularifah@gmail.com

Author's email:
dinirahmayanti10@uinsalatiga.ac.id
a19e0042f@siswa.umk.edu.my

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Center for Islamic Economics Studies and Development, Faculty of Business and Economics, Universitas Islam Indonesia

Abstract

Purpose – This study aims to provide a comprehensive analysis of the impact of the investment opportunity set (IOS), profitability, Islamic corporate social responsibility (ICSR), and environmental performance (EP) on the value of environmentally sensitive companies. The research explores both short-term and long-term impacts of these variables on corporate value.

Methodology – This study utilized Vector Error Correction Model (VECM) approach to analyze annual data from 2016 to 2022, focusing on environmentally sensitive companies in the Indonesian Sharia stock index.

Findings – The VECM method yielded several key findings, including no significant impact of IOS on company value in either short or long term. However, variables such as ICSR, environmental performance, and profitability exhibited a significant influence on company value over the same timeframe.

Implications – This study suggests that, to enhance credibility, companies should prioritize financial stability, credibility in financial reporting, social responsibility, and environmental regulations. They should identify the best investment opportunities and collaborate with the government to achieve environmental sustainability.

Originality – Our study seeks to delve into the relationship between several variables, including IOS, profitability, ICSR, environmental performance, and the overall value of environmentally sensitive companies. This topic has not been explored in-depth by previous research, and our study aims to shed light on both short- and long-term effects of these factors on corporate value.

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Introduction

Indonesia's economy is flourishing because of an increase in private consumption, investment, and exports. Among all the investment sectors, investment in Sharia is expanding rapidly. According to the Financial Services Authority website, Sharia index market capitalization figures indicate bright prospects for Sharia investment in Indonesia (Otoritas Jasa Keuangan, 2023). The Sharia index has shown a positive trend every year, except for 2020, which was impacted by the Covid-19 pandemic (Rizaldy & Rahayu, 2021). The Sharia index has a considerably large market capitalization

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value, which makes it a highly desirable target for investors who wish to invest in it. In turn, this makes it easier for companies to obtain funding for investment opportunities. Additionally, companies incorporated in the Sharia market are under closer public scrutiny because of the high market capitalization of the Sharia index. Hence, these companies must undertake Islamic corporate social responsibility (ICSR) to demonstrate compliance with Islamic law.

This upward trend in Islamic market capitalization indicates that the public's interest in Islamic investments remains strong. However, this also means that companies operating in the Sharia market are under public scrutiny, which may not always be favorable, particularly regarding environmental pollution issues. To address this, the Indonesian government has introduced a corporate performance rating program in environmental management (Program penilaian peringkat kinerja perusahaan dalam pengelolaan lingkungan hidup, PROPER), which evaluates corporate environmental performance. Figure 1 shows trends in PROPER ratings over the past decade.

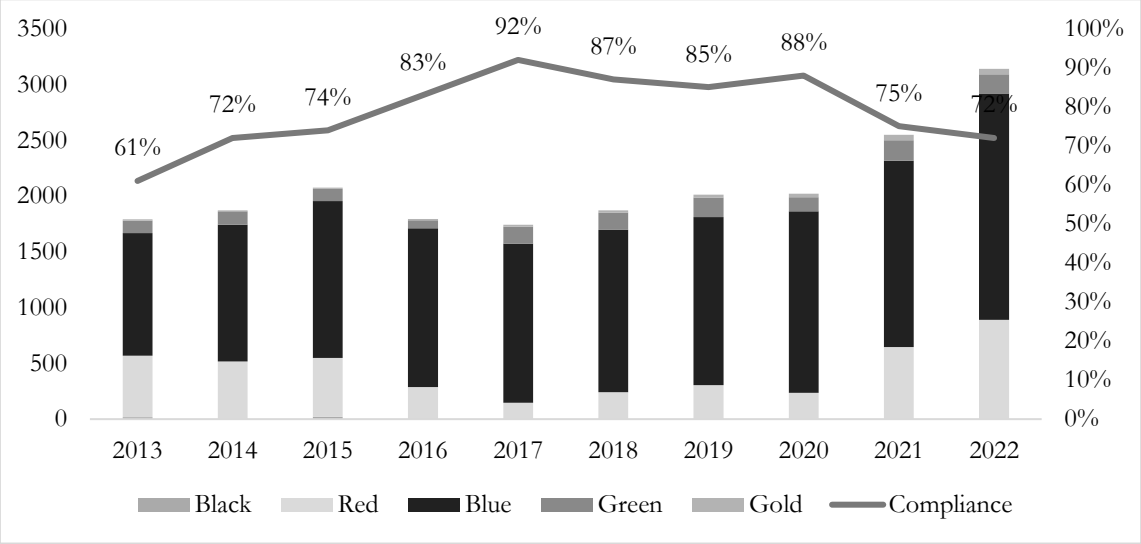

Figure 1. Proper rating trends
Source: Ministry of forestry and environment publications (2023)

In 2022, the PROPER compliance ratio will decrease from 75% to 72%. However, the number of participating companies has increased with the addition of 607 new companies. This resulted in a 23% increase in the total number of participating companies, reaching 3,200 compared to 2,593 in 2021. This is a positive sign that the government and companies are making concerted efforts to improve their environmental sustainability. Environmental sustainability is a key factor for maintaining public trust. Companies that neglect this responsibility risk-losing value in the market.

According to Pertiwi (2022), companies can be categorized based on their level of sensitivity to the environment. Environmentally sensitive companies are those in industries that are at high risk of facing criticism regarding environmental issues because their activities pose a higher risk of environmental impact, such as the depletion of natural resources or pollution (Branco & Rodrigues, 2008). The discourse on environmentally sensitive industries encompasses companies operating in the mining of metals, extraction of oil and gas, manufacturing of paper and chemicals, production of construction and building materials, forestry and paper, and electricity, gas, and water distribution (Cho & Patten, 2007). Due to the nature of their operations, these companies are more likely to face social pressure and criticism than companies that are not environmentally sensitive (Deegan & Gordon, 1996).

Emphasizing sustainability along with financial success is of utmost importance (Meidawati et al. 2020). This is because adhering to Sharia principles is mandatory for companies operating in the market. These principles forbid harmful or detrimental practices. As a result, any company that harms the environment and loses public trust will inevitably experience a decrease in its overall value.

A high company value can signal to the market that not only is the company currently performing well but it also has the potential for future growth and success. By observing a company's value, investors can gain insight into its financial health and potential for long-term profitability (Frederica, 2019). Investors have a range of financial and non-financial performance indicators at their disposal to evaluate a company's value (Liang & Yao, 2005). While profitability and investment opportunity set (IOS) are important financial factors, non-financial elements such as environmental performance (EP) and ICSR can also have an impact on a company's value. Taking these factors into account helps investors make informed decisions about investing in companies.

This study offers a novel approach to address the gaps identified in the existing literature. In contrast to prior research that primarily focuses on the impact of IOS, ICSR, or EP on company value, this study introduces a fresh perspective. It analyzes the interrelationships among these variables over both the short and long terms and explores the bidirectional relationships between them, an area that has not been extensively investigated until now.

This study concentrates on the ISSI index and companies identified as environmentally sensitive throughout the timeframe spanning from 2016 to 2022. By comparing previous studies and addressing the limitations of the existing literature, this study emphasizes the need for further investigation in this field. The implications of these findings are substantial as they lay the groundwork for future research and contribute to the advancement of knowledge regarding environmentally sensitive companies. Consequently, undertaking this research is vital for fostering deeper insights and driving progress within this discipline. The results of this study are expected to enhance the existing literature on sustainable business practices and provide valuable perspectives for investors and managers seeking to increase their companies' value while promoting environmental sustainability.

Literature Review

Company value

Company value is a key factor in gaining trust from creditors and investors as it reflects an investor's perception of a company's success, which is often observed through its stock price. A high company value indicates strong current performance and promising prospects (Frederica, 2019). In this study, company value is measured using price book value (PBV), which requires a company to trade its shares on the stock exchange. Company value is influenced by both financial and nonfinancial factors (Liang & Yao, 2005). Financial indicators include the investment opportunity set (IOS) and profitability, while non-financial factors include aspects such as ICSR and environmental performance.

Investment opportunity set

Investment opportunity set (IOS) is a crucial factor in determining a company's asset growth. Myers (1977), introduced the term investment opportunity set as a combination of assets and investment options that a company can invest in with a positive net present value (NPV) in the future. According to signaling theory, selecting a good IOS can send a positive signal to investors, leading to an increase in the company's value. Investors often judge a company's value based on its future prospects; therefore, companies with promising investment opportunities will have higher valuations. Previous researchers have used signaling theory as the basis for measuring investment opportunity sets and profitability. A series of investment opportunities indicate a good future for the company, leading to investor confidence and demand for its stock. Recent studies by Wijaya and Suganda (2020), Wulanningsih and Agustin (2020), and Frederica (2019) found that IOS positively influence company value. Good investment opportunities can create significant added value for a company, either through increased revenue, strengthening market positions, or optimizing operations. Therefore, a company's ability to identify, release, and utilize investment opportunities is an important key to increasing the company's value in the eyes of shareholders and other stakeholders.

H_1: Investment opportunity set has a positive effect on company value.

Profitability

Profitability is another crucial financial indicator that determines a company's value. A company's financial health is often assessed through its profitability, which is a key financial indicator. This metric measures the company's ability to generate profits using its available resources within a specific timeframe (Dzikir et al., 2020). A company's profitability is a crucial aspect of its financial performance as it represents the net profit generated by its operations (Sudiani & Darmayanti, 2016). High profitability is generally considered a positive signal based on signal theory, indicating positive prospects for the company. Thus, in turn, it creates a positive reaction from the market, increasing the company's value (Ayu & Suarjaya, 2017). Recent studies by Febrianty and Mertha (2021) and Sari and Sedana (2020) reveal a positive relationship between profitability and company value. On the other side, Rahmantari (2021) study suggests that profitability could potentially lead to a negative impact on company value.
H_2: Profitability has a positive effect on company value.

Islamic corporate social responsibility

According to Nurlela (2008), a company's sustainable growth cannot be guaranteed by financial conditions alone; therefore, social and environmental responsibilities must be fulfilled. One such non-financial indicator is ICSR, which aims to satisfy stakeholder satisfaction (Deviani & Kusuma, 2019). ICSR is a form of corporate social responsibility based on the Qur'an and Sunnah, seeking to achieve the goals of Islamic Economics, including economic well-being, justice, equity, income distribution, and individual freedom within the framework of communal welfare (Wahyuddin, 2018). The declaration of Islamic social responsibility is part of the company's attempts to satisfy stakeholders, and as a result, the company's worth increases when its wishes are fulfilled. Sulfati (2022) and Wardani et al. (2021) found that ICSR has a significant positive impact on company value. However, Utami and Yusniar (2020) rejected this claim, stating that ICSR has no positive influence on company value.
H_3: Islamic corporate social responsibility has a positive effect on company value.

Environmental performance

Environmental performance is another nonfinancial indicator that can significantly impact a company's value. Environmental performance refers to the complete set of activities undertaken by companies to mitigate the negative environmental impact of their operations. Companies that show low concern for environmental responsibility can experience significant environmental damage. Therefore, the government has begun to implement programs to assess companies' environmental management performance. Corporate environmental performance was evaluated using the government PROPER rating system. According to legitimacy theory, a company's environmental management efforts can garner higher support from the public and stakeholders, which can increase the company's worth. Rusmana and Purnaman (2020), and Mardiana and Wuryani (2019) demonstrated a noteworthy positive correlation between environmental performance and a company's value. In contrast, Ethika et al. (2020), and Ramadhana and Januarti (2022) reported findings suggesting a substantial negative association between environmental performance and a company's value.
H_4: Environmental performance has a positive effect on company value.

Research Methods

This study employed a quantitative approach that involves the measurement of quantity or amount. The study relies on secondary data collected from various official websites, including the Indonesia Stock Exchange, corporate website, and Ministry of Environment and Forestry website. The data sources included company financial statements, annual reports, and PROPER rating data. In this study, the IOS variable was assessed using a proxy based on price, namely, the market-to-book value of the equity ratio. Profitability was measured using the Return on Assets (ROA) financial ratio. ICSR

was measured using four dimensions: Islamic economic responsibility, Islamic legal responsibility, Islamic ethical responsibility, and Islamic philanthropic responsibility. The company's environmental performance was assessed using PROPER, which utilizes a five-color classification scheme with gold representing the highest rating and black representing the lowest rating. Furthermore, the company's value in this study was calculated by computing the price book–value ratio.

The population of this study consisted of environmentally sensitive companies listed on the Indonesian Sharia Stock Index. To capture the current state of the company, this study utilized annual data from 2016 to 2022. Beginning with observations in 2016, a robust dataset rich in historical data was established for meaningful analysis. To ensure appropriate sample characteristics, the researcher narrowed the focus to a selected number of companies, facilitating a more thorough examination of each entity. This approach is likely to enhance the depth of insights derived from the study, as it allows researchers to explore company-specific factors rather than disperse their analysis across a broader sample.

Table 1. Variable definitions and formulas

<table>
<tr><th>No</th><th>Variable</th><th>Definitions and formulas</th><th>Sources</th></tr>
<tr><td>1.</td><td>Investment opportunity set</td><td>The company's investment opportunity set refers to the investment opportunities that the company possesses, stemming from the interplay between its existing assets and prospective investments that yield a positive net present value.
$$\text{MBVE} = \frac{\text{Total Asset} - \text{Total Equity} + \text{number of outstanding shares} \times \text{Closing Price}}{\text{Total Equity}}$$</td><td>(Nikmah & Amanah, 2019)</td></tr>
<tr><td>2.</td><td>Islamic Corporate Social Responsibility</td><td>Islamic corporate social responsibility entails a voluntary commitment to stakeholders and the environment in which the company operates, carried out in accordance with Islamic principles.
$$\text{ICSR} = \frac{\text{Disclosed Items}}{\text{Total Disclosed Item}} \times 100\%$$</td><td>(Ma'rifah, 2022)</td></tr>
<tr><td>3.</td><td>Environmental Performance</td><td>Environmental performance measures the effectiveness of the company's initiatives aimed at managing environmental impacts associated with its operational activities, focusing on mitigating potential damage.
<table>
<tr><th>PROPER color rating</th><th>Passing grade</th><th>Skor</th></tr>
<tr><td>Gold</td><td>Very good</td><td>5</td></tr>
<tr><td>Green</td><td>Good</td><td>4</td></tr>
<tr><td>Blue</td><td>Obedient</td><td>3</td></tr>
<tr><td>Red</td><td>Not yet obedient</td><td>2</td></tr>
<tr><td>Black</td><td>No effort</td><td>1</td></tr>
</table></td><td>(Ramadhana & Januarti, 2022)</td></tr>
<tr><td>4.</td><td>Profitability</td><td>Profitability refers to the net profit that a company earns from its operational activities.
$$\text{ROA} = \frac{\text{Net Profit}}{\text{Total Assets}}$$</td><td>(Sari & Febrianti, 2021)</td></tr>
<tr><td>5.</td><td>Company Value</td><td>Firm value represents investors' perceptions of a company's success, measurable through its stock price.
$$\text{PBV} = \frac{\text{Stock price per share}}{\text{Book Value of Shares}}$$</td><td>(Sari & Febrianti, 2021)</td></tr>
</table>

Source: Created by authors

Purposive sampling, a non-probability sampling technique, was used to select sample companies based on consistency in listing in the ISSI environmentally sensitive industry during the period 2016-2022, publishing complete and accurate annual reports or financial statements from

2016 to 2022, and obtaining a PROPER rating. On the basis of these criteria, 23 companies were selected to represent the entire population. The chosen companies belong to specific industries, particularly environmentally sensitive sectors, which enable more relevant comparisons and analyses. This homogeneity ensures that the external factors influencing performance remain more consistent throughout the sample.

To examine the impact of IOS, profitability, ICSR, and EP on company value over both the short and long terms, this study employs the vector error correction method (VECM) analysis technique, which is a variation of the Vector Autoregressive (VAR) method. The VECM analysis differs from VAR in that it incorporates the level of stationarity found in the first differentiation. Based on the Eviews 9 application, Figure 2 outlines the steps involved in VECM analysis.

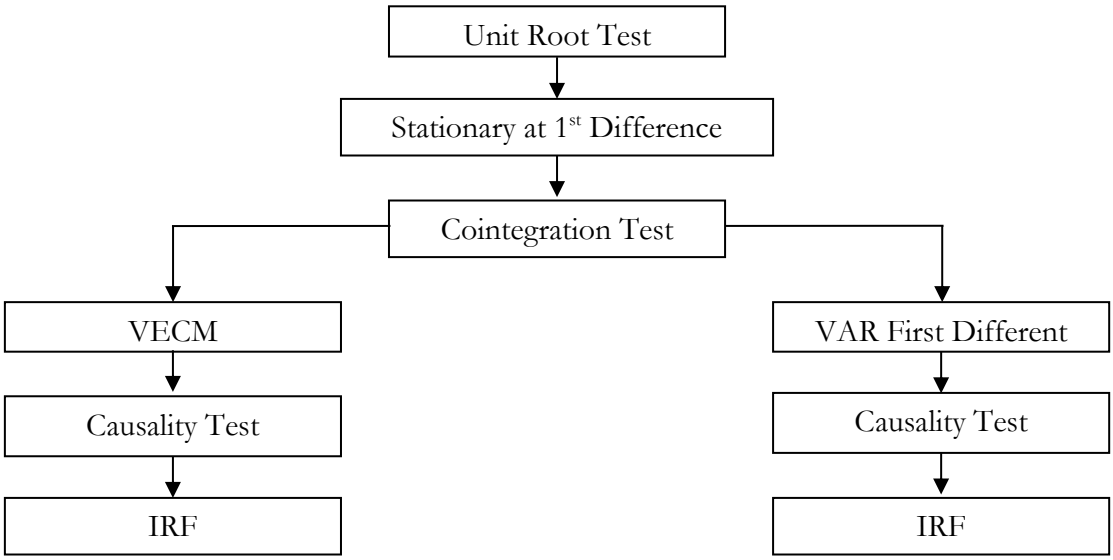

Figure 2. VECM analysis steps
Source: Basuki (2018)

In analyzing short- and long-term relationships using the VECM method, the first stage is to conduct a unit root test with a stationarity test using the Augmented Dickey-Fuller (ADF) test to ensure that all variables are stationary at the first difference or the same level of integration. The next stage, the Cointegration Test, is used to determine the long-term equilibrium relationship between variables Using the Johansen Cointegration test (Trace Test or Maximum Eigenvalue Test). If cointegration occurs, VECM analysis can be performed. Otherwise, Vector Autoregression (VAR) analysis is more suitable. In this study, there is a cointegration test so that it continues the VECM stage; however, it was necessary to determine the appropriate number of lags for the VECM model because the number of lags affects the estimation results using information criteria such as the Akaike Information Criterion (AIC), Schwarz Information Criterion (SIC), or Hannan-Quinn Criterion (HQC). The next stage is the VECM model estimation. Estimating long-term relationships (through error term correction coefficients) and short-term relationships (through variable lag coefficients). Furthermore, the Granger causality test is used to identify the dynamic relationships between variables, and the Impulse Response Function Test is used to analyze the impact of shocks on one variable on other variables in a dynamic system, both in the short and long term.

Results and Discussion

Stationarity test

Stationarity testing is a fundamental aspect of econometric modeling, especially for time-series data. A time series is considered stationary when its mean, variance, and autocovariance remain constant over time, which enhances model stability. Engle and Granger (1987) underscore the importance of stationarity for accurately interpreting economic data; using nonstationary data in linear

regression can lead to misleading results. The Augmented Dickey-Fuller (ADF) test is a widely used method to assess stationarity. If a time series is found to be non-stationary at level, further testing can be performed at the first or second differences until stationarity is achieved (Indrajaya, 2021). Table 2 presents the outputs of the stationarity tests conducted on the research data.

Table 2. 1st Difference stationery test result

Variable	ADF – Fisher Chi-square	ADF – Choi Z-stat	Prob	Description
IOS	110.098	-5.54633	0.0000	Stationer
ROA	154.726	-7.77895	0.0000	Stationer
ICSR	106.071	-5.26322	0.0000	Stationer
EP	82.6603	-5.44376	0.0000	Stationer
PBV	96.9366	-5.02641	0.0000	Stationer

Source: Data analyzed using Eviews 9, 2023

Upon conducting the first level of differentiation, it was observed that all variables were deemed stationary. Thus, the subsequent stage of the analysis involved identifying the most suitable lag.

Optimal lag determination

The purpose of the optimum lag test is to determine the most appropriate lag length for constructing a vector autoregression (VAR) model. Selecting the correct lag length is crucial; an insufficiently short lag may fail to adequately capture the model's dynamics, whereas an excessively long lag can result in inefficient estimates owing to a reduction in degrees of freedom. To minimize specification errors, researchers often favor shorter lag lengths. The optimal lag length is identified using criteria such as the Schwarz Information Criterion (SIC), Akaike Information Criterion (AIC), and Hannan-Quinn Criterion (HQ), which help balance model complexity and fit, ensuring that the chosen lag length effectively represents the relationships among variables without overfitting (Indrajaya, 2021). Moreover, determining the optimal lag length is essential for addressing potential autocorrelation issues within the VAR system, thereby enhancing the accuracy of the findings (Sella et al., 2021).

Table 3. Optimal lag determination test results

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-502.7923	NA	1.697644	14.71862	14.88051*	14.78284*
1	-468.6871	62.27904*	1.306712*	14.45470*	15.42605	14.84007
2	-452.5219	27.17627	1.707634	14.71078	16.49159	15.41729
3	-444.8435	11.79579	2.904977	15.21285	17.80312	16.24050

Source: Data analyzed using Eviews 9, 2023

Upon careful examination of the data presented in Table 3, we observe that the highest number of asterisks (*) is associated with lag 1. This suggests that Eviews recommends lag one as the optimal lag. Therefore, the optimal lag length in this study was determined to be 1.

Stability test

The VAR stability test evaluates the stability of a vector autoregression (VAR) model by analyzing the roots of its characteristic polynomial. A VAR model is deemed stable if all the roots reside within the unit circle, meaning that they have a modulus of less than one. Stability is crucial, as it ensures that the impulse response function (IRF) and variance decomposition (VD) generated by the model are reliable. Once the optimal lag length was established, a stability test was conducted using this lag. If the model is found to be unstable, a new lag length is selected, often involving fewer variables, to achieve a stable configuration through the VAR stability test (Indrajaya, 2021). Before proceeding to further stages of analysis, it is necessary to conduct a stability test to check the stability of the model. If the model is unstable, the validity of the IRF is doubtful (Basuki, 2018).

Table 4. Stability test results

Root	Modulus
-0.463592	0.463592
-0.112009 - 0.205254i	0.233827
-0.112009 + 0.205254i	0.233827
-0.193876	0.193876
-0.128599	0.128599

Source: Data analyzed using Eviews 9, 2023

Based on Table 4. The modulus values, including 0.463592, 0.233827, 0.233877, 0.193876, and 0.128599, for each variable were less than 1. Therefore, all the modulus values were below 1 and met the stability requirements. In this study, the VECM analysis met three requirements: data are not stationary at the level, all variables are stationary at the first differential, and stable.

Cointegration test

The presence of nonstationary variables significantly enhances the probability of a long-run relationship among the variables in the system. To evaluate whether such a relationship exists, a cointegration test was conducted with a particular emphasis on long-term dynamics. When cointegration is detected among the variables in the model, it confirms the existence of a long-term relationship (Basuki, 2018). Establishing a stable, long-term relationship between variables is essential, and the cointegration test is a valuable tool in this regard. For this study, we utilized the Johansen Cointegration Test method to conduct the analysis.

Table 5. Cointegration test results

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None*	0.735411	190.4074	69.81889	0.0000
At Most 1 *	0.483255	98.66660	47.85613	0.0000
At Most 2 *	0.277910	53.11236	29.79707	0.0000
At Most 3 *	0.239738	30.64556	15.49471	0.0001
At Most 4 *	0.156374	11.73319	3.841466	0.0006

Source: Data analyzed using Eviews 9, 2023

Based on Table 5, all prob values or p values <0.05 then all or there are 5 models that indicate cointegration. In fact, there is only a minimum of 1 with a p-value <0.05, indicating cointegration. It can be concluded that in this study, there is cointegration so that it can continue to the VECM.

VECM modeling

VECM is a valuable tool for analyzing the short-term behavior of a variable in relation to its long-term behavior. If the t-statistic value of the estimation results is greater than the t-table, it suggests the presence of both long- and short-term relationships.

Table 6. Short-term VECM test results

Variable	Coefficient	T Statistics
CointEq1	-0.631434	-7.89162
D(PBV(-1),2)	-0.211626	-0.70593
D(IOS(-1),2)	0.155546	0.53626
D(ROA(-1),2)	-0.021557	-2.06464*
D(ICSR(-1),2)	-0.027863	-3.29622*
D(EP(-1),2)	-0.508614	-5.90017*

Source: Data analyzed using Eviews 9, 2023

The short-term estimation results from the Vector Error Correction Model (VECM) provide important insights into the relationship between various factors and company value. Table

6 shows that the IOS does not have a significant influence on company value, as indicated by a t-statistic of 0.53626, which is below the threshold established by the t-table. This suggests that companies may not effectively capitalize on investment opportunities, resulting in a minimal impact on their overall valuation. These findings imply that other variables, such as company size and capital structure, should be considered to fully understand the dynamics at play, as noted by Kolibu et al. (2020).

The integration of ICSR seems to have a notable negative impact on company value. The t-statistic for ICSR is -3.29622, which is significantly lower than -1.975288. This suggests that, while ICSR is vital for promoting ethical corporate practices, its implementation often requires considerable resource investment. Such investments can disrupt operations and lead to short-term inefficiencies, ultimately diminishing profits as direct funds for the research, development, and monitoring of ICSR initiatives (Erfani & Nena, 2022).

Environmental performance is identified as a considerable detractor from company value, as evidenced by a t-statistic of -5.90017. This finding highlights the financial burden associated with the improvement of environmental practices, which frequently require substantial investments in technology and infrastructure (Ramadhana & Januarti, 2022). The lengthy payback periods associated with these investments can further intensify their adverse effects on short-term valuation.

Profitability has a complex relationship with company value. A t-statistic of -2.06464 indicates a short-term effect, suggesting that high profitability may not necessarily correlate with an increase in company value. This disconnect can stem from unethical practices that artificially inflate profits through methods such as overcharging or exploiting loopholes, which can ultimately harm the company's reputation and long-term viability (Bhattacharjee et al., 2017; Rohim et al., 2019). Therefore, although profitability is generally considered a positive indicator, it may also reveal underlying issues that could adversely affect overall corporate health.

Table 7. Long-term VECM test results

Variabel	Koefisien	T Statistik
IOS (-1)	0.050293	0.42332
ROA (-1)	-0.075043	-2.77822*
ICSR (-1)	-0.055095	-3.27186*
EP (-1)	-1.098424	-4.25111*

Source: Data analyzed using Eviews 9, 2023

The long-term estimation results from the VECM analysis, presented in Table 7, provide a comprehensive examination of the various factors that influence company value. The IOS has been found to have no significant impact on company value, as indicated by a t-statistic of 0.42332, which falls below the critical value in the t-table. This finding aligns with the company life-cycle hypothesis, suggesting that, while early stage companies may have a wider range of investment opportunities, these opportunities tend to decrease as companies mature. Consequently, this leads to reduced investments over time (Fu, Huang, & Wang, 2015).

ICSR has a significantly negative impact on company value, as indicated by the t-statistic of -3.27186, which is less than -1.975288. Implementing ICSR initiatives often requires substantial investments in time and resources, which can strain a company's financial health over the long term (Al Ani & Chavali, 2023). The costs associated with these initiatives can outweigh their benefits and ultimately harm the company's valuation.

Similarly, EP demonstrates a significant negative long-term effect on company value. Stakeholders often view environmental initiatives as expenses rather than investments, which can negatively influence the market perception and value of a company (Kim et al., 2021). The widespread belief in a trade-off between ecological and economic benefits suggests that, while companies strive to improve their environmental standards, the associated private costs, such as those related to pollution prevention, can reduce investor support and lower the overall value of the company (Sengers, 2019).

Profitability demonstrates a notably negative long-term relationship with corporate value, as evidenced by a t-statistic of -2.77822. Companies that emphasize financial objectives over ethical considerations may adopt practices that jeopardize public reputation (Bhattacharjee et al., 2017). Over time, these unethical behaviors can lead to a decline in company value, as investors become cautious of firms that fail to manage profits responsibly.

Based on the VECM estimation results, the f-statistic value obtained is 22.48210, which exceeds the f-table (the f-table in this study is 2.429625, with a significance of 5%). This implies that all independent factors have a significant concurrent effect on the dependent variable company value. The R-squared value of this estimation is also noteworthy at 0.566555, indicating that the variables IOS, ICSR, environmental performance, and profitability together explain the company's value by 56.65%. It is worth noting that the remaining percentage was elucidated by variables that fall beyond the scope of this study.

Causality test

After the cointegration test, the next step is the causality test. As stated by Basuki (2018), this test is a significant tool for determining whether variables have a causal relationship with each other, where each variable can be an independent or dependent variable. The causality test used in this study was the Granger Causality Test with a 5% concrete level. Table 8 presents the test results.

According to this table, variables with a Granger causality relationship have a probability value of less than $\alpha = 0.05$. The table above shows that there is no causality relationship between IOS and ICSR, IOS and EP, IOS and company value, IOS and profitability, ICSR and company value, ICSR and profitability, EP and company value or EP and profitability as all probability values are greater than 0.05. However, there is a unidirectional causal relationship between EP and ICSR, and between company value and profitability.

Table 8. Granger causality test results

Null Hypothesis:	Obs	Lag 1	
		F-Statistic	Prob.
ICSR doesn't Granger Cause IOS	138	0.09807	0.7546
IOS doesn't Granger Cause ICSR		0.85710	0.3562
EP doesn't Granger Cause IOS	138	0.66648	0.4157
IOS doesn't Granger Cause EP		0.20530	0.6512
PBV doesn't Granger Cause IOS	138	0.51386	0.4747
IOS doesn't Granger Cause PBV		0.74070	0.3910
ROA doesn't Granger Cause IOS	138	2.45339	0.1196
IOS doesn't Granger Cause ROA		0.90490	0.3432
EP doesn't Granger Cause ICSR	138	4.95372	0.0277
ICSR doesn't Granger Cause EP		2.90791	0.0904
PBV doesn't Granger Cause ICSR	138	1.59893	0.2082
ICSR doesn't Granger Cause PBV		0.10809	0.7428
ROA doesn't Granger Cause ICSR	138	0.21604	0.6428
ICSR doesn't Granger Cause ROA		1.94010	0.1659
PBV doesn't Granger Cause EP	138	0.16048	0.6894
EP doesn't Granger Cause PBV		0.77282	0.3809
ROA doesn't Granger Cause EP	138	3.9E-07	0.9995
EP doesn't Granger Cause ROA		2.05629	0.1539
ROA doesn't Granger Cause PBV	138	4.58228	0.0341
PBV doesn't Granger Cause ROA		0.57743	0.4486

Source: Data analyzed using Eviews 9, 2023

Table 8 shows that EP Granger-causes ICSR indicates that prior advancements in EP are predictive of future enhancements in corporate social responsibility initiatives, particularly those in alignment with Islamic principles. The probability value of $p = 0.0277$ falls below the significance

threshold of 0.05, thereby confirming this predictive relationship. This outcome suggests that company prioritizing improved environmental practices are likely to engage more actively in socially responsible behaviors that resonate with Islamic values. This can be interpreted as an acknowledgment that effective environmental management is essential for fulfilling corporate social responsibilities, especially in contexts where Islamic ethics underscore the importance of stewardship of the earth.

The results indicate that profitability Granger-causes company value with a p-value of 0.0341, while the inverse relationship has a probability of 0.4486, suggesting unidirectional causation. This implies that profitability influences company value; however, this analysis does not establish the reverse. Therefore, profitability serves as a leading indicator of company value, rather than being shaped by it. Companies that demonstrate profitability tend to attract higher valuations from investors, likely because of the expectation of ongoing success and returns.

Impulse response function

IRF serves as an effective means of gauging the repercussions of a variable shock on another variable within a designated timeframe. The key objective is to ascertain the duration of the impact before reaching equilibrium (Hutabarat, 2017).

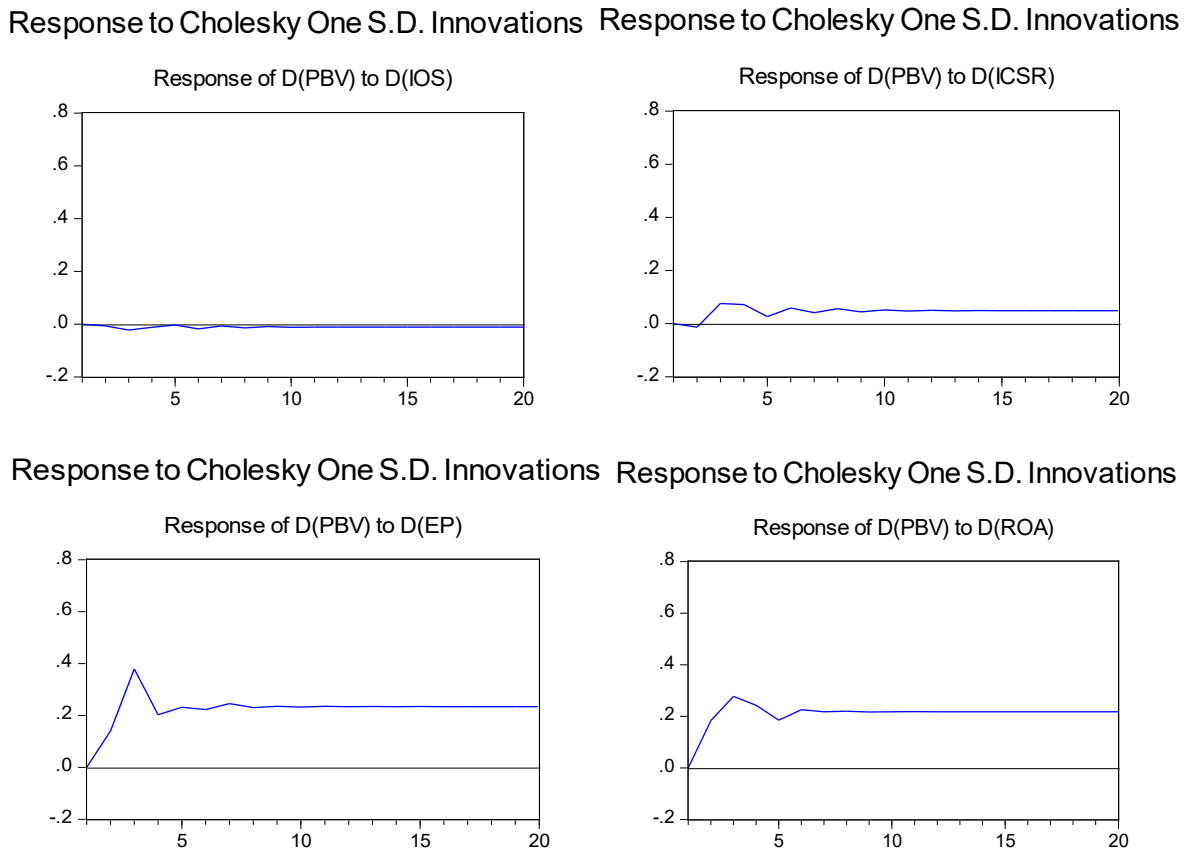

Figure 3. Impulse response function test results
Source: Data analyzed using Eviews 9, 2023

Figure 3 shows that when exposed to IOS shocks, the response of company value fluctuates between the 1st and 7th periods before stabilizing in the 11th period. For ICSR shocks, company value responds positively, increasing until the 3rd period, fluctuating in the next period, and stabilizing from the 11th period. EP shocks elicit a positive response from company value until the third period, before fluctuating and stabilizing in the 9th period. Profitability shocks led to a positive response in company value until the third period, after which it declined in the fourth period. The response of company value to profitability shocks stabilized from the 7th period.

Discussion

In the results of this study, the analysis of the long-term results of the variables profitability, ICSR, and EP have a significant negative effect on company value. Likewise, the short-term results are the same as the long-term results. One variable, namely the investment opportunity set, does not have a significant effect in the short or long term. The sample used is a company that cares about the environment and is part of PROPER. Companies that implement Islamic social responsibility and focus on EP often incur additional costs to fulfill social responsibility and environmental compliance. This indicates that investors consider these costs to reduce profit margins, so that they do not provide a positive signal in providing dividends or expected profits, thus affecting investor perceptions of company value. However, Profitability reduces a company's value. Investors in this study do not consider ROA to be a positive signal.

Based on the Granger causality test, EP affects ICSR, but only in one direction. ROA has an impact on company value in the same direction. These results indicate that companies that prioritize better environmental practices tend to be more actively involved in socially responsible behavior, which is in line with Islamic values. Profitability serves as the main indicator of company value, but it does not affect profitability. This finding underscores the importance of integrating sustainable practices and Islamic ethical principles as part of a company's strategic priorities to enhance its long-term performance and market perception. In addition, profitability remains a critical driver of investor confidence and corporate success.

The impulse response provides an explanation for the shocks in each variable to the other variables. The IRF analysis not only provides short-term analysis but can also be analyzed for some time in the future as long-term information on how long the influence can be felt. The response of the company's value to the IOS shock from the first period to the next period can be said to have no response, whatsoever. The shock to the ICSR was responded to slightly by the company's value in the 2nd to 5th periods only. The shock to EP was responded to by the company's value, with an increase from period 1 to period 4. Likewise, the shock to ROA responded positively to the company's value until the 5th period. These results suggest that company value is more sensitive to profitability and EP shocks than to those from IOS or ICSR. This indicates that stakeholders and investors may prioritize tangible financial metrics and visible sustainability practices over other factors in their valuations of a company.

Conclusion

The results of this study align well with its objectives, particularly in examining the relationships among ICSR, environmental performance, profitability, and company value. The findings indicate that ICSR, environmental performance, and profitability significantly impact company value in the short-term, while the IOS does not show a significant effect on company value in the short-term. According to the VECM estimates, in the long term, the IOS is the only variable that has no significant effect on company value. This alignment suggests that this study successfully addresses the goal of understanding how these variables interact and influence corporate outcomes.

The implementation of ICSR requires high costs that involve social activities, education, or environmental desires that can reduce the profitability of the company so that investors can consider the ICSR initiative. The EP variable reflects the company's efforts to manage its environmental impacts, which require costs that are not cheap, and by using high costs, it will reduce the profits obtained by the company. This finding indicates that short-term investors prioritize the profits obtained. In addition, high profitability is a positive indicator of a company. However, in this case, the company's value decreases. This indicates that excessive expectations from investors can trigger stock price volatility, indicating that the market considers profit allocation to be suboptimal or non-strategic.

Regarding the causality analysis outcomes between IOS and ICSR, IOS and EP, IOS and company value, IOS and profitability, ICSR and company value, ICSR and profitability, EP and company value, environmental performance, and profitability, there is no causality relationship between these pairs of variables. However, between ICSR and environmental performance, there

is a unidirectional causality relationship, where EP significantly affects ICSR. Additionally, there is a unidirectional causality relationship between profitability and company value, in which profitability significantly affects company value.

This study has several limitations, primarily regarding the scope of the variables examined. It concentrates on specific factors while overlooking other potentially significant elements such as market conditions, competitive dynamics, and organizational culture. Additionally, the reliability of the findings may be compromised by the quality or availability of the data, as incomplete or biased information can skew the results. To enhance future research, it is suggested that a more diverse range of variables be included, such as corporate governance practices and stakeholder engagement strategies. Moreover, investigating the potential bidirectional causality between variables could lead to a deeper understanding of their interactions.

Author contributions

Conceptualization: Dini Rahmayanti
Data curation: Ziinatul Arifah
Formal analysis: Ziinatul Arifah
Investigation: Dini Rahmayanti
Methodology: Dini Rahmayanti
Project administration: Dini Rahmayanti
Supervision: Ziinatul Arifah
Validation: Putri Jamilah
Visualization: Ziinatul Arifah
Writing – original draft: Ziinatul Arifah
Writing – review & editing: Dini Rahmayanti & Putri Jamilah

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