Contents lists available at Science-Gate

International Journal of Advanced and Applied Sciences

Journal homepage: http://www.science-gate.com/IJAAS.html

Corporate social responsibility and profitability as sustainability strategies to maximize firm value

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ARTICLE INFO

Article history:
Received 14 October 2024
Received in revised form
1 March 2025
Accepted 20 March 2025

Keywords:
Corporate social responsibility
Firm value
Profitability
Stock price movements
Consumer goods sector

ABSTRACT

This study addresses a research gap by examining the relationship between stock price movements, Corporate Social Responsibility (CSR) implementation, and profitability in the consumer goods subsector after the COVID-19 pandemic. The findings contribute to the ongoing debate on whether companies should invest in CSR during financial difficulties to gain stakeholder support. While CSR spending may appear burdensome in times of crisis, it serves as a strategic investment that signals the sustainability of a company's operations. Support from the capital market is also essential for business survival. The study analyzes stock and financial data from consumer goods companies listed on the Indonesia Stock Exchange between 2021 and 2023. Using Moderated Regression Analysis, the results indicate that CSR strengthens the relationship between profitability and firm value. Additionally, CSR directly enhances firm value, whereas profitability alone does not. These findings suggest that investors place greater importance on social and environmental initiatives post-pandemic than on profitability. As a result, companies in the consumer goods subsector are encouraged to increase their CSR engagement, as it promotes corporate sustainability and strengthens protections for employees, customers, creditors, and shareholders.

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1. Introduction

Post-pandemic, the global economy faces various challenges, especially in 2023. Energy and food supply turmoil has caused global inflation to increase by 6.8 percent (although this figure is lower than 2022's, 8.7%) (Harding et al., 2023). This inflation makes it challenging for companies to lower production costs, while at the same time, people's purchasing power remains low. Apart from worsening macroeconomic indicators, economic recovery has stagnated, especially with the worsening global geopolitical stability due to the Russia-Ukraine war. Under an increasingly uncertain global economy, the financial performance of companies has not recovered, and most are still unable to free themselves from debt traps (Tan et al., 2022; Corbet et al., 2021). Since the COVID-19 outbreak, the economic crisis has had a multiplier impact on corporate financial crises, followed by an increase in the risk of debt financing (Shen et al., 2020). The further impact of the crisis was that quite a few companies went bankrupt, while the remaining ones still survived for the continuity of the business. When credit markets become pessimistic due to soaring bad debts, business owners turn to equity financing (Gubareva, 2021). However, the pursuit of financing alternatives in capital markets faces challenges from market apathy due to the economic contraction (Mubyarto, 2020). This bitter reality encourages managers to be able to convince the market that investment in the industry is prospective. The empirical research suggests that the critical strategy to gain shareholders' trust is maximizing the sustainability firm's economic performance (Miguel et al., 2022; Bon and Hartoko, 2020). Such performance will increase the firm's value in the equity market, which ultimately enhances shareholder prosperity. Amid widespread market distrust and concerns about business sustainability due to financial shock, the market price of corporate shares has become more volatile (Corbet et al., 2021). Thus, firms must improve their strategies to gain benefits from the market, not rely

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https://doi.org/10.21833/ijaas.2025.03.020
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entirely on financial performance. Or, in other words, financial performance is not the only key factor in winning investor trust in times of crisis; investors need additional confidence, such as business sustainability opportunities that have an insurance-like function (Bae et al., 2021). Managers must be able to provide assurance that they will maintain business continuity, so that the firm will be sustainable. In this way, the firm's value will be protected, then the company can survive the crisis (Qiu et al., 2021).

According to business continuity strategies, Indonesia presents an interesting phenomenon. In the Southeast Asia region, Indonesia is the country with the largest economic power, with a Gross Domestic Product (GDP) of US$1.3 trillion in 2023. The combined GDP of all ASEAN countries is $3.8 trillion, making it the fifth largest economy in the world (ASEAN, 2024). The manufacturing sector plays a strategic role as an economic driver, and in particular, the consumer goods industry contributes 58.83 percent to Indonesia's GDP in 2023 (ASEAN, 2024). Among the top three ASEAN countries (Indonesia, Philippines, and Vietnam), the consumer goods industry is a sector that makes a positive contribution to economic growth. Apart from economic advantages, Indonesia has a demographic bonus with 278.6 million people in 2023, which is 41.2 percent of the total ASEAN population. This population bonus makes Indonesia the largest product market in Southeast Asia (Permatasari, 2020).

However, during the COVID pandemic, the capital market in the consumer goods industry was significantly impacted due to lockdown policies and social restrictions; apart from that, it also resulted in serious financial difficulties for this subsector. The industry also suffered heavy losses when the outbreak hit the region (Irwansyah et al., 2023; Fauziya et al., 2023). At the ASEAN level, the share value of companies in the consumer goods subsector is more sensitive than in other sectors. However, after social restriction policies began to be relaxed, the industry's performance slowly recovered. The consumer goods sector has a unique character that provides it reaches all walks of life, covers the daily needs of everyone, sales turnover is intensive, and that is why this sector has persistent financial performance. In a competitive business world as well as the consumer goods industry, the sustainability of financial performance is expected as a positive signal for investors to provide the funding support needed in difficult times (Cowan and Guzman, 2020).

The COVID-19 outbreak presents a unique opportunity to increase environmental and social considerations from both governments and market participants. Particularly Indonesian government has obliged the business actors to carry out social and environmental responsibilities. Thus, it is inevitable that many companies will participate in containing the spread of the outbreak and protecting their primary stakeholders, such as employees, customers, and the community, even though they are under severe financial pressure (Xu et al., 2020). The influence of economic performance and corporate social responsibility on firm value has been widely investigated. However, little is known whether the recovery in profits and Corporate Social Responsibility (CSR) activities will be followed by stock price movements during the crisis. The situation raises a research opportunity to examine whether financial, environmental, and social performance can serve as a shield of shareholder values.

This study contributes to the research literature through: (1) studies on the effect of economic and socio-environmental performance on firm value post the COVID-19 pandemic, which are still limited. The findings of this study will add new insights to the literature on the role of economic and socio-environmental performance in firm value; (2) specifically for the post-pandemic situation, it is essential to prove whether socio-environmental performance strengthens the role of economic performance in increasing company value, and (3) in crisis situations, continuing to contribute socially under financial pressure is an ethical action worthy of being promoted to the public. Disclosure of this social action is expected as a strategy to build a positive reputation in social and environmental performance aimed at stakeholders.

2. Literature review

The firm's efforts to build trust and a positive image of itself are embodied in a signaling perspective. For this purpose, the company increases the disclosure of each positive aspect, which is intended to influence the decisions of parties who are expected to provide benefits to the company (Cowan and Guzman, 2020). The signaling framework is conceptualized in signal theory. Increasing information disclosure, especially good news, is aimed at bringing information asymmetry closer between parties. The theory provides a guide for the company to investors that shows how management responds to the company's possibilities through activities carried out by the company's management.

Positive corporate actions, such as strong financial performance and the payment of dividends, are considered good indicators and are usually prioritized for disclosure. Financial performance refers to how effectively a company uses its assets to generate income. According to signaling theory, efficient companies are more likely to share clear and valuable information with investors than less efficient ones, in order to gain shareholder support. When a company's profitability is higher than the industry average, it may voluntarily disclose more information to send a positive signal to investors. This theory suggests that investors respond positively to good news, which can build trust and encourage investment. Companies that regularly make profits signal stability, which can increase

investor confidence and the expectation of higher returns, or the opposite may happen if performance is poor.

2.1. Profitability increases firm value

Profitability is a period in which a company generates profit from sales. It can also be interpreted as a ratio to provide an overview of the effectiveness of management in carrying out its operational activities. Management effectiveness here is seen from the profit generated against sales results and investments made by the company. Profitability is related to the survival of the company. The critical indicator for assessing a company is the extent of profitability growth. This indicator can determine whether the investment made by investors is able to generate returns that are in accordance with their expectations. Firms that produce high profits are companies that have good prospects. Investors will be interested in investing their funds in companies with high profits; this leads to rising capital gains and a higher yield.

Previous research, as a reference, conducted by Ispriyahadi and Abdullah (2021), stated that company size, price-earnings ratio, and profitability affect the firm's value. The researchers stated that profitability, growth opportunity, and capital structure have a positive effect on determining the effect of profitability and capital structure on company value. The financial performance (return on assets) does not significantly affect company value, and partially, the corporate social responsibility variable can moderate the relationship between financial performance and company value. However, several previous studies confirm that profitability positively affects company value (Ayem and Seldis, 2023). Based on the previous explanations, the study proposes the hypothesis:

H_1: Profitability increases firm value.

2.2. CSR increases firm value

Since the issue of the triple bottom line has emerged in the last four decades, corporate actions related to social and environmental issues have been justified as best business practices. CSR is becoming more important for investors because they are more concerned about where and how their money is invested. CSR can be understood as a concept of management and a process whereby companies merge social and environmental concerns in their businesses and relationships with stakeholders. This leads to the company's engagement in CSR, shaping positive perceptions from stakeholders, and then the company's value improves. Kim et al. (2018) stated that CSR has a positive influence on firm value.

High involvement in CSR activities creates added value, such as positive appreciation, trust, and the perception of low risk and high returns for investment purposes. Then, with higher social and environmental performance, the company can attract investors and gain a better reputation. Thorne et al. (2014) claim that the quality of CSR disclosure has a more substantial effect on the company's environmental reputation and, ultimately, on financial performance. Mansaray et al. (2017) found a positive relationship between CSR disclosure and the financial performance of African firms in the long term but a negative relationship in the short term. Firms that initiate CSR activities strive to meet the expectations of all their stakeholders. Specifically for Indonesian firms, CSR positively affects firm value.

Based on similar research conducted previously, Nurdiniah (2021) stated that CSR disclosure affects the relationship between the two variables, namely profitability and company value. Research conducted by Siregar et al. (2018) stated that CSR has a significant effect and can moderate the relationship between profitability and company value. Hardiyanti (2023) stated that CSR can moderate the relationship between profitability and company value. During times of crisis, the public expects more social activities from companies to help them reduce the impact of the crisis. Towards employees and customers, companies can show greater responsibility and protection. Thus, the greater the involvement in CSR actions, the stronger the company's reputation from the perspective of its stakeholders. The study proposes the following hypothesis:

H_2: CSR increases firm value.

2.3. Capital structure affects firm value

Capital structure compares external capital to internal capital. It has a direct influence on the financial side of the company. When managers are confident in the company's plan to advance, they generally want stock prices to rise. Managers can use more debt to send signals to gain investors' trust (Cowan and Guzman, 2020). Based on similar research conducted by Vo and Ellis (2017) stated that capital structure has a positive effect on company value, research conducted by Setiadharma and Machali (2017) stated that capital structure has a positive effect on company value, then they stated that capital structure has a significant positive effect on company value and research conducted by Hirdinis (2019) stated that capital structure partially has a significant effect on company value.

H_3: Capital structure affects firm value.

2.4. CSR moderates the relationship between profitability and firm value

CSR in a company can have a direct impact on its value. Companies with CSR activities create added value for investors and the community, but CSR is a noble and honorable activity because it helps people in need. If the company's profitability is high, CSR will also include more activities that can help. Based

on social capital, Lins et al. (2017) showed that companies with high CSR have excess stock returns during the financial crisis due to high profitability, margins, sales growth, and employee productivity compared to companies with low CSR. Lins et al. (2017) explained that social capital built through CSR activities can facilitate stakeholder cooperation by fostering trust and reducing the need for formal contracts. During the financial crisis, investors look for metrics such as social capital ratings that indicate a company's trustworthiness against declining public trust.

Other empirical results, namely Chen et al. (2018) and Jeon and An (2019), confirmed that CSR moderates the relationship between profitability and firm value. In addition, to determine the effect of CSR in moderating the effect of profitability and capital structure on firm value and significantly influencing firm value and capital structure influencing profit growth on firm value but not on profitability. Reschiwati et al. (2020) stated that profitability and leverage do not influence CSR disclosure, while liquidity influences CSR disclosure.

H_4: CSR moderates the effect of profitability on firm value.

3. Research method

The study uses a quantitative approach with inferential statistical data processing techniques. The analysis aims to investigate two main areas: (1) the effect of profitability and CSR on firm value and (2) the role of CSR in moderating the effect of profitability on firm value. The study focuses on the correlation between profitability, CSR, and firm value in the consumer goods industry sub-sector listed on the Indonesia Stock Exchange.

3.1. Sample selection

The population of this study is all consumer goods sub-sector companies listed on the Indonesia Stock Exchange in the 2021-2023 period. The population of companies in the consumer goods sub-sector in 2024 is 50 companies. Data from these companies comes from the official website of the Indonesia Stock Exchange at the link http://www.idx.co.id. Since the population data cannot be used as a sample because data on CSR are incomplete, the study uses a purposive sampling method. The criteria used are:

- Companies listed and active on the Indonesia Stock Exchange during 2021-2023 and
- Companies that publish annual and sustainability reports during 2021-2023.

The sampling results show that 48 companies meet the criteria, and two do not because they do not publish annual and sustainability reports. Thus, the data used for data processing is 144 observations.

3.2. Variables and research models

1. The dependent variable is the company value measured using the Price to Book Value Ratio (PBV), where PBV compares the stock price and its book value. The book value is calculated using the stock equity value recorded in the company's financial statements. PBV is the company's ability to create company value from shareholder capital participation.

$$PBV = stock\ market\ value/equity\ book\ value$$

2. Independent variables

a. Company profitability

Profitability is the ability of a company to generate a return on investment based on its resources compared to other investment alternatives (Ayem and Seldis, 2023; Lins et al., 2017). Various financial ratios that are often used to measure profitability are Net Profit Margin (NPM), Return on Equity (ROE), and Return on Assets (ROA). ROA describes the company's ability to generate profit from every rupiah of assets used. This ratio describes whether the company efficiently utilizes its assets in its operational activities. On the other hand, ROE describes the company's ability to utilize every rupiah of capital deposited by shareholders to achieve profit. If the relationship is positive, an increase in ROE will increase the company's value. This study measures profitability using:

$$ROA = \frac{Profit\ before\ tax}{Total\ Asset}$$
$$ROE = \frac{Profit\ before\ tax}{Total\ Equity}$$

b. Corporate Social Responsibility

CSR is a long-term corporate commitment to act morally, encourage economic growth, improve employee welfare, and benefit the wider community. In its implementation, CSR is measured through several indicators based on the 4th generation Global Reporting Initiative (GRI), consisting of 91 indicators set by GRI-G4 based on three main components: economic, environmental, and social. CSR measurement using the Corporate Social Responsibility Disclosure Index (CSRDI) regarding the GRI-G4 (Global Reporting Initiative Guidelines) indicators. CSR variables are measured using:

$$CSR\ Disclosure = \sum \frac{CSRiy}{Total\ CSR}$$

where, $CSRiy$ is the amount of CSR disclosure made by company I in year y. Total CSR is the total number of CSR items or aspects that should be disclosed based on a specific index or standard.

c. Capital structure

Capital structure is measured by the debt-to-equity ratio (DER), which describes the composition of capital used in funding sources. Modigliani and Miller (1963) stated that funding can increase a company's value. This increase occurs because of the influence of tax-deductible expenses that can be used to finance company investments. Using DER will determine whether the company's equity is sufficient to finance the existing deficit. A high DER means that the company uses high debt.

$$DER = \frac{Total\ Debt}{Total\ Equity}$$

3. Moderation variable: Corporate social responsibility

During the pandemic, social and environmental concerns have become high-value actions for employees, customers, and the community. The acquisition of profits, combined with these social actions, is predicted to be a strengthening strategy to get a positive response from investors. This study places CSR as a moderate variable on profitability and capital structure to increase company value (Anjayani and Astika, 2023).

4. Control variables

a. Leverage

Leverage refers to the use of debt to finance a company's assets. High levels of leverage can increase a company's profit potential and add to financial inflation. Highly leveraged companies may face higher interest costs, reducing net profitability. Conversely, low-leverage companies may have lower financial costs but may also experience slower growth. The leverage variable uses the following measures:

$$Leverage = \frac{Total\ Debt}{Total\ Asset}$$

b. Size

Company Size is one of the variables considered to influence company value. Usually, company size is reflected in the total assets owned by the company. Large-scale companies are companies that are growing and earning significant profits. Then, profits that tend to increase will be an attractive factor that encourages increased investor interest and demand for company shares, therefore increasing the company's value. Thus, company size directly affects company value. Large companies tend to quickly gain creditors' trust to obtain funding sources to increase company value (Setiadharma and Macchali, 2017). In line with Reschiwati et al. (2020), company size is defined as a measure to classify the size of a company according to various calculations, namely total assets, total sales, average total asset sales, log size market value share, number of employees, and others.

$$SIZE = In\ (Total\ Asset)$$

Table 1 below presents a summary of the variables of this study.

3.3. Research model

According to the concept of giving good news in signal theory, profitability, capital structure, and CSR become positive signals to build a company's image (Anjayani and Astika, 2023; Savitri, 2021). This study is set against the backdrop of a difficult financial situation post-pandemic, which raises the idea that CSR actions will strengthen financial performance to attract investor interest. With this conceptual logic reasoning, this study develops the following research model.

$$FV_{it} = \alpha + \beta_1.FV_{it-1} + \beta_2.Profit_{it} + \beta_3.CSR_{it} + \beta_4.Capital_{it} + \beta_5.Profit_{it}.CSR_{it} + \beta_6.LEV_{it} + \beta_7.SIZE_{it} + \varepsilon$$

where, FV_{it} is firm Value measured using the ratio of stock price to book value of equity (PBV) (price of share/book value of equity). The measurement is expressed in ratio numbers. FV_{it-1} is the firm's Value of the previous period. $Profit_{it}$ is profitability measured using Return on Asset (ROA) (Earnings Before Taxes/Total Assets) and Return on Equity (ROE) (Earnings Before Taxes/Total Equity). The measurement is expressed in a ratio. CSR_{it} is CSR disclosure measured using the number of CSR items disclosed in the annual or sustainability reports. $Capital_{it}$ is capital structure with the proxy Debt to Equity Ratio (DER). LEV_{it} is the leverage measured. $SIZE_{it}$ is the company size measured using the natural logarithm of Total Assets. α, β_1, β_2, β_3, β_4, β_5, β_6, and β_7 are constants. ε is error.

Data analysis techniques include traditional assumption testing, hypothesis testing, and descriptive statistical analysis. The results of financial data processing of Consumer Goods Subsector firms listed on the Indonesia Stock Exchange for the 2021–2023 period are explained by descriptive analysis using the EViews 16 program. The research focuses on profitability, capital structure, firm value, and corporate social responsibility. Classical assumption testing consists of four tests: autocorrelation, heteroscedasticity, multicollinearity, and normality. The hypothesis testing process includes partial significance testing (t-test), F-test, moderated regression analysis (MRA), and evaluation of the coefficient of determination (R^2).

4. Results

4.1. Descriptive analysis

Descriptive statistics describe the summary of research data, including mean, standard deviation, variance, mode, and others. According to George and Mallery (2018), descriptive analysis is a statistical

method used to analyze data by describing the collected data as it is without intending to make conclusions that apply to the public or generalizations. Descriptive statistical analysis aims to identify the standard deviation, maximum value, minimum value, and average of each variable. This process is carried out to gain a deeper understanding of the sample and to ensure that the sample meets the criteria to be used as a research object. Moreover, for further details, the descriptive test will be calculated first. Table 2 presents a descriptive analysis of each dependent variable, independent variable, and its moderation. Table 2 shows the value of consumer goods sub-sector companies on the Indonesia Stock Exchange (IDX) in 2021-2023 with an average value of 7.4880 with a maximum of 352.3622, and a minimum of 1.7760. From these data, it implies high variability in company value. The same situation occurs in profitability, where comparing the average value with the maximum and minimum values also shows a wide interval. If ROA and ROE are compared, the ROE value is greater than the ROA. The difference between ROA and ROE is represented by the variability of the DER value, where many companies have a greater equity value than their total debt. If the average DER is lower than 1, consumer goods sub-sector companies have less debt than capital. Meanwhile, for CSR, companies have disclosed a lot of information on social actions and environmental concerns in the 2021-2023 period. For the control variable, leverage averages 0.2408, indicating the company's ability to generate profits relative to its total assets. The company size variable, which has a mean value of 28.5960, indicates the scale and operational capacity of companies in this sector. Fig. 1 shows the PBV and CSR movement of the consumer goods subsector during 2021-2023. From this data visualization, the company's value consistently decreased during the observation period. In contrast, CSR trends show a consistent increase. The movement of PBV and CSR in opposite directions is an interesting fact; Fig. 1 shows the firm's efforts to improve its corporate image by increasing its CSR activities.

Table 1: The summary of variables

Variable	Proxy	Measurement	Expectation
Firm value (FV)	PBV	Price/book value	+
Profitability (Profit)	ROA, ROE	Net income/asset Net income/equity	+
Capital structure (Capital)	Debt to equity ratio	Total debt/total equity	+
CSR	CSR disclosure index	Disclosure index	+
Profit.CSR	ROAxCSRD index ROExCSRD index	Roaxcsrd index Roexcsrd index	+
Leverage (LEV)	Debt to asset ratio	Total debt/total assets	NA
SIZE	Total asset	Log natural (assets)	NA

Table 2: Descriptive statistics

	PBV	ROA	ROE	DER	LEV	SIZE	CSR
Mean	7.4880	0.0641	0.1142	0.7841	0.2408	28.5960	25.5347
Median	1.7760	0.0592	0.0980	0.3101	0.1655	28.3190	23.0000
Maximum	352.3622	0.9436	2.7261	17.2371	4.2881	32.8599	72.0000
Minimum	0.2034	-0.3997	-1.4414	0.0004	0.0003	24.6550	0.0000
Std. Dev.	35.4477	0.1277	0.3758	2.0137	0.3781	1.7777	18.6334
Observations	144	144	144	144	144	144	144

CSR in Fig. 1 uses the number of CSR activities, while CSR in Fig. 2 represents the number of activities divided by the GRI4 indicator. Fig. 2 is a visualization of trends in CSR activities and profitability of the consumer goods subsector in three observation periods (2021-2023). The average profitability trend shows a slight increase during the 3 post-pandemic periods. From Fig. 2 above, the ROE line above the ROA line is depicted; In terms of ratio numbers, ROE is greater than ROA.

4.2. Inferential analysis

The first step in the inferential analysis is selecting the best estimation model for panel data regression, whether using Pooled/Common Effect, Fixed Effect, or Random Effect. From the comparison results between Pooled Effect and Fixed Effect, the Chow Test shows a probability value less than 0.0500. Thus, the selected model from the Chow test is the Pooled Effect. The next step is determining whether the Pooled Effect Model is better than the Random Effect with the Lagrange Multiplier (LM) Test. After the LM analysis, the result of the Prob. The value is 0.0000 (<0.05). Thus, the Random Effect Model is selected. Because the random effect was selected, the test was continued by comparing the random and fixed effects. The test results (Prob. Value = 0.8858) are greater than 0.0500; the Random Effect Model is selected. Table 3 shows the results of the best model selection test. After the best estimation model, the Random Effect Model has been determined, this study must ensure whether the model meets the requirements of a BLUE model. For normality requirements, the model has a normal distribution because probability value = 0.538 > alpha (0.05) and is in line with the Gaussian central limit theory and the theory of large numbers if n > 30, then the data can be assumed to be close to a normal distribution. For the requirement of freedom from homoscedasticity, the model is declared free from heteroscedasticity problems where Prob. = 0.9368 > alpha (0.05); therefore, the selected REM model is robust.

Table 4 shows the correlation test result. From these results, it was identified that the correlation between ROA and ROE was high (0.9058). For autocorrelation problems, the model is not free from autocorrelation because Prob. Value = 0.000 < alpha (0.05), so the REM model is added with white cross-section and lag data to make it robust against autocorrelation. The last is the multicollinearity test, where the Variation Inflation Factor (VIF) value is less than 10, and the results conclude that the model is free from the multicollinearity assumption (Table 5).

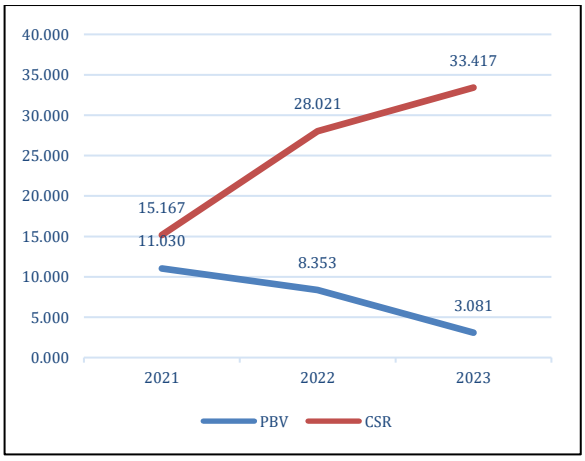

Fig. 1: PBV and CSR trend

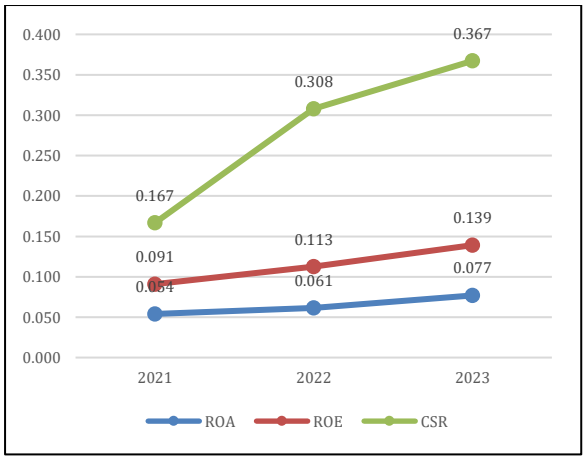

Fig. 2: CSR and profitability

Table 3: Summary of model selection

Type of test	Probability value	Indicator	Selected model
Chow test	0.0000	0.050	Pooled effect
Lagrange multiplier test	0.0000	0.050	Random effect
Hausmann test	0.8858	0.050	Random effect

Table 4: Correlation test result

	ROA	ROE	DER	LEV	SIZE	CSR
ROA	1.0000					
ROE	0.9058	1.0000				
DER	-0.0487	-0.0353	1.0000			
LEV	0.3838	0.4067	-0.0137	1.0000		
SIZE	0.1995	0.1659	0.0225	-0.1528	1.0000	
CSR	0.1127	0.1367	-0.0800	-0.0288	0.2410	1.0000

Table 5: Multicollinearity result

Variable	VIF
ROA	6.610838
ROE	6.357493
DER	1.915545
LEV	2.372877
SIZE	1.227917
CSR	1.205935
ROA_CSR	5.135191

4.3. Regression with moderation results

After the selected estimation model, namely the Random Effect Model (REM) and the model free from classical assumption problems, the test continued with regression analysis with moderation. This study tests the coefficient of determination, or the adjusted R-squared test, to see the contribution percentage from the independent variable to the dependent variable. The results of the adjusted R-square test are R-squared 0.6979 and Adjusted R-squared 0.6543. The Adjusted R-squared value is above 50 percent. Thus, the model is considered to meet good criteria, and this shows that the independent variables can explain the variation and contribute to Firm Value (FV), which is 65.42 percent, and the rest by other variables outside the model.

Researchers conducted data testing to determine the significance of the influence between independent variables that affect dependent variables through the F test. The results of the hypothesis testing using the F test are as follows:

H_0: $\beta_1 = \beta_2 = \beta_3 = \beta_4 = \beta_5 = \beta_6 = \ldots = \beta_{10} = 0$ (no single variable has an effect/model does not fit)
H_1: At least there is one $\beta_j \neq 0$ (at least one variable has an effect, the model fits)

A model is said to be fit (reject Ho) if the F statistic value > F table or the probability value < alpha. Simultaneous analysis produces an F-statistic of 15.9815 and a Prob (F-statistic) of 0.0000. From these results, the F-statistic and probability value = 0.0000 < 0.05 are obtained, so Ho is rejected. Thus, the model meets the criteria (fit). In other words, the independent variables simultaneously have a significant linear effect on the dependent variable. In addition to conducting the F test, this study tests the hypothesis partially (T-test) with the following criteria:

H_0: $\beta j=0$ (the j variable has no effect on the dependent variable)
H_1: $\beta j \neq 0$ (the j variable influences the dependent variable)

The decision-making criteria are to reject Ho if stat>t table (1.64) or if P-value/2 ≤α. The regression results are presented in Table 6.

Table 6: Regression results

Variable	Coefficient	T-statistic	Prob. 2 tails	Prob. 1 tail	Conclusion
ROA_{it}	4.950	1.175	0.243	0.122	H1 rejected
ROE_{it}	0.347	0.198	0.843	0.422	H1 rejected
DER_{it}	0.434	6.324	0.000	0.000	H2 accepted
CSR_{it}	0.020	1.972	0.052	0.026	H3 accepted
ROA_{it}*CSR_{it}	-2.387	-24.431	0.000	0.000	H4 rejected
ROE_{it}*CSR_{it}	4.902	6.979	0.000	0.000	H4 accepted
PBV_{it-1}	0.469	2.165	0.033	0.017	
LEV_{it}	0.689	0.482	0.631	0.316	H1 rejected
$SIZE_{it}$	0.186	9.372	0.000	0.000	
C	-5.742	-5.769	0.000	0.000	

Table 6 presents the results of testing Hypothesis 1 (H1), which was rejected. Profitability does not affect firm value. On the contrary, capital structure and CSR disclosure positively affect firm value (H2 and H3 are accepted). This study proves that CSR positively moderates the effect of profitability (H4 is accepted) and capital structure on firm value. Specifically, profitability proxied by return on equity (ROE) leads to a positive moderation of CSR. Meanwhile, the return on assets (ROA) proxy does not moderate the relationship between profitability and firm value. Testing the control variables shows opposite results, where firm size increases firm value, but leverage does not.

4.4. Robustness test

The research model should be assured for robustness using other testing alternatives, such as Stata. Table 7 shows the results of data analysis as an alternative to the regression results in Table 6.

Table 7: Comparison result

Variable	EViews result		Stata result	
	Coefficient	t-Statistic	Coefficient	z
ROA_{it}	4.950	1.175	5.0440	1.37
ROE_{it}	0.347	0.198	0.3166	0.22
DER_{it}	0.434***	6.324	0.4213**	2.14
CSR_{it}	0.020*	1.972	1.4654*	1.82
ROA_{it}*CSR_{it}	-2.387***	-24.431	-2.3627**	-2.18
ROE_{it}*CSR_{it}	4.902***	6.979	4.8492**	2.93
PBV_{it-1}	0.469**	2.165	0.4688**	2.15
LEV_{it}	0.689	0.482	0.7554	1.01
$SIZE_{it}$	0.186***	9.372	0.2375	0.258
C	-5.742	-5.769	-7.1513	-1.08

***: $p < 0.01$; **: $p < 0.05$; *: $p < 0.10$

Comparison of the analysis results in Table 7 shows that the results are not different. When the data is processed using EViews and Stata, it produces the same findings. The test results show slight differences in the coefficient numbers and the degree of significance.

4.5. Discussion

The study sets the background of the economic and social dynamics after the COVID-19 pandemic. The impact of the pandemic is still attached to the financial and social aspects, although the economic aspects are starting to move into the recovery phase. On the other hand, macro indicators such as inflation, exchange rates, and economic growth are still slumping. Currently, companies generally face sustainability issues (Ranjbari et al., 2021). During the disaster period, the community usually expects companies' CSR activities to help alleviate suffering (Tan et al., 2022). However, from the perspective of limited resources, companies affected by disasters must reduce their investment in CSR to reduce their costs (Bae et al., 2021). This paradox makes us need to observe whether investing in CSR during a disaster to consolidate the company's financial performance is wise. The 2021-2023 period is a transition period for businesses to immediately recover both in terms of operations and support from stakeholders and the community. Therefore, this study investigates whether economic performance and social and environmental performance are strategies to gain support from the financial market.

Based on inferential tests, this study provides evidence that disclosure of social and environmental actions moderates the effect of profitability on firm value for the consumer goods company subsector. Specifically, profitability is measured by returns on equity. This ratio illustrates how efficiently managers manage funds from equity investments to generate added value for equity investors. In addition, CSR disclosure also increases firm value. Both findings meet the expectations of this study and strengthen the concept of signaling theory and support previous findings (Qiu et al., 2021; Feng et al., 2018; Nurdiniah, 2021). These findings also imply that corporate actions in the form of social and environmental concerns strengthen positive profitability signals to attract investors' support.

CSR disclosure can be interpreted as a form of corporate responsibility towards social and environmental issues around the company. During the pandemic, society generally experienced a health, social, and economic downturn. For companies from the consumer goods sub-sector, close relationships with consumers significantly affect the sustainability of the company's performance. CSR's impact on the community provides more significant value during the pandemic (Jiang and Wen, 2020). As we know, the sluggishness of economic activity has hit sources of income for companies and the community. Social care actions, ranging from philanthropy, economic strengthening, and empowerment, carried out by companies have received high appreciation during the crisis. In addition, companies that are recovering their economic performance and consistently carrying out their social actions have been shown to have a higher market perception value. The study shows that the influence of profitability on company value

will be more substantial if the company is consistent in CSR. Specifically, for CSR disclosure as a predictor, this study supports the idea that CSR disclosure increases company value from an investor perspective. This social care action is responded to positively by shareholders. Based on regression analysis, CSR can increase company value both directly and as a moderator of other predictors. CSR disclosure in this study proves that there is an influence on company value. The results of this study align with the signaling theory, which states that companies that disclose CSR information can provide positive signals to investors. For investors, companies that disclose CSR information in their annual and sustainability reports are considered to have more value because it means that the company is responsible for the negative impacts caused by the company's operational activities. Thus, if the company discloses CSR activities optimally, it will trigger an increase in investment opportunities. This finding aligns with Machmuddah et al. (2020).

Another finding is that profitability, proxied by return on assets and return on equity, has no impact on firm value. This finding applies to the observation period of 2021-2023 for consumer goods sub-sector companies listed on the Indonesia Stock Exchange. During the observation period, it turned out that many companies still posted operating losses. This finding is not surprising when investors react weakly to the economic performance of issuers. This finding supports the research of Anjayani and Astika (2023). The financial crisis during the COVID-19 outbreak made profitability not a critical factor in increasing firm value. High profitability should indicate that the company has good and healthy performance to achieve its goals.

This study provides evidence that investors appreciate capital structure. Capital structure becomes a positive signal when the debt-to-equity ratio is less than one. This means that the average total debt is smaller than the total equity. This fact implies that investors respond positively if the cost of debt is lower. This finding confirms Hirdinis (2019). In managing debt, it must be regulated in terms of amount and use. So, debt must be maintained according to the company's needs. Debt should not be excessive because it will harm the company. Excessive use of debt will increase the company's burden so that it can reduce profits, which can reduce the company's value.

During the pandemic, the debt level of listed companies increased significantly, and many were even caught in liquidity problems. Descriptive statistical data shows that in 2021-2023, companies had leverage up to four times higher than assets (See Table 2). Thus, investors will undoubtedly be vigilant against high debt increases. This financial situation leads to a critical review of the capital structure so that additional debt does not harm investors' interests. This study proves that leverage is less attractive in increasing company value, especially during times of stress. This finding supports the study by Chen et al. (2018).

Company size directly affects the value of the company. Large companies tend to be more easily trusted by creditors to obtain funding sources to increase the company's value. In line with Ispriyahadi and Abdullah (2021), firm size is defined as a measure to classify the size of a company according to various calculations, namely based on total assets, total sales, average total asset sales, log size, stock market value, number of employees, and others. Company size can be an indicator that describes the level of risk for investors when investing their capital in the company. Large companies are considered to have very good financial capacity, can better meet all their obligations, and can provide adequate returns for investors.

5. Conclusions

The post-global disaster recovery period is a great time to investigate how business actors strategize to recover their businesses. The consumer goods industry has unique characteristics, with stable consumer demand but competitive competition. During the economic recovery period, companies from this subsector need a lot of support to maintain the sustainability of their operations. Moreover, business actors have been encouraged to increase social and environmental awareness since the pandemic. Therefore, this study investigates whether CSR can strengthen the positive signal from economic performance to company value.

This study proves that corporate strategy, by interacting between social and environmental performance (CSR) information and economic performance (profitability) information, is proven to increase company value. Investors respond positively to companies that consistently carry out CSR even in financial crises. Partially, investors respond more to CSR information than to the economic performance of consumer goods subsector companies. Another finding is that the debt-to-equity ratio also received positive appreciation from investors. This finding is caused by the debt ratio of the consumer goods subsector being smaller than one. Thus, the capital market gives credit to the risk of small debt costs.

This study has limitations in data samples that do not separate companies with positive and negative profitability, so data sets with opposite values impact the data analysis output. Thus, we recommend that further research use homogeneous profitability data, such as positive profits only. The findings of this study focus on the consumer goods subsector group of companies. However, they can be expanded into groups of companies that have unique characteristics, such as pharmaceutical and health companies and transportation and hospitality groups. With this sample expansion, the analysis will produce variability in findings that will certainly enrich the signaling theory literature.

Practical implications recommend that authorities expand voluntary sustainability

reporting. Strong CSR disclosure is considered capable of supporting effective communication between companies and investors and directing capital allocation to strengthen resilience and growth. CSR reporting provides measurable, consistent, and comparable data, making it useful for investors and other stakeholders. CSR reporting is considered to help effective communication between companies and investors and direct capital allocation to strengthen resilience and growth. This is beneficial to investors and other stakeholders because it provides measurable, consistent, and comparable data. Reporting also shows clearly how the company's culture, policies, operations, and growth strategies are integrated. This increases accountability and supports future business sustainability.

List of abbreviations

CSR	Corporate social responsibility
CSRDI	Corporate social responsibility disclosure index
GRI	Global reporting initiative
GRI-G4	Global reporting initiative guidelines, generation 4
GDP	Gross domestic product
ASEAN	Association of Southeast Asian Nations
IDX	Indonesia Stock Exchange
PBV	Price to book value
ROA	Return on assets
ROE	Return on equity
DER	Debt to equity ratio
LEV	Leverage
SIZE	Company size
REM	Random effect model
BLUE	Best linear unbiased estimator
VIF	Variance inflation factor
MRA	Moderated regression analysis
FV	Firm value

Acknowledgment

This research was supported by a research grant from the Directorate General of Higher Education (DIKTI), Ministry of Education, Culture, Research, and Technology (MoECRT) Indonesia, under the Fundamental Research - Regular with the contract number 106/E5/PG.02.00.PL/2024 on 11th June 2024 and derivative contract number 089/SP2H/RT-MONO/LL4/2024 on 14th June, 2024. The authors would like to express their gratitude for the financial support that made this research possible. We also extend our thanks to students of Institut Bisnis dan Informatika Kesatuan, Bogor, Indonesia, for their valuable contributions and assistance during this research.

Compliance with ethical standards

Conflict of interest

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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