Sebelas Maret Business Review Vol. 10, No. 1, pp. 1-12
ISSN: 2528-0627 (print) / 2528-0635 (online)

Homepage: https://jurnal.uns.ac.id/smbr

When finances shake, do ethics break? The impact of financial instability on firm performance and CSR in Indonesian manufacturing

Choirul Istiyanto and Tastaftiyan Risfandy*
Faculty of Economics and Business, Universitas Sebelas Maret, Indonesia

Abstract

This study examines the influence of corporate social responsibility on the company's financial performance during periods of financial instability. The sample of this study is manufacturing companies in the basic and chemical industries listed on the Indonesia Stock Exchange (IDX) for the 2014-2022 period. This study uses secondary data from the company's financial statements and annual reports. The test results show that during the period of financial instability, the relationship of corporate social responsibility to the company's financial performance weakens. This study proves that financial instability moderates the relationship between CSR and corporate financial performance. The results of this study show a linear and non-linear pattern in the relationship between CSR and financial performance during periods of financial instability. These findings emphasize the importance of managing CSR portfolios and prudence in resource allocation during periods of financial instability.

Keywords: Corporate social responsibility; financial instability; corporate financial performance; manufacturing companies

1. Introduction

The COVID-19 pandemic is an extraordinary event that shook the world. In addition to humans, several aspects have fallen, including many corporations. Small or large companies worldwide show turmoil within the company, including companies in Indonesia (Thorbecke, 2023). The health sector dominates companies that have survived the turmoil of the pandemic. However, based on research by Thorbecke (2023), manufacturing is ranked second after health. Supported by data from UNIDO (2024), which shows significant development of post-pandemic manufacturing companies in COVID-19. The success of these companies in going through the crisis phases during the pandemic is an interesting topic to explore. Company performance is a barometer of the company's success in facing various internal and external turmoil (Orlitzky *et al.*, 2003).

Various factors trigger the improvement in company performance; in this case, the company's financial performance is indicated by an increase in company profits (Ewald and Taub, 2022). The representation of increased profits is symbolized in several aspects, one of which is through financial ratios (Devie *et al.*, 2020). In running its business, companies need to identify supporting aspects to improve their financial performance, one of which is corporate social responsibility reporting (Chen and Wang, 2011; Esteban-Sanchez *et al.*, 2017; Gangi *et al.*, 2019). Some companies are shifting from profit-oriented to focusing on stakeholders, such as implementing corporate social responsibility (Elbardan *et al.*, 2023). Considering the stakeholder aspect, the company will be more sensitive to the factors supporting its financial performance (Mahajan *et al.*, 2023). Corporate Social Responsibility (CSR) has been the focus of attention in the business and academic world for the past few decades (Williams and Siegel, 2001). This concept reflects the company's commitment to contribute to sustainable economic development, working with all stakeholders to improve the quality of life (Garsten, 2003). However, the relationship between CSR and corporate financial performance is still

* Corresponding author at Jl. Ir Sutami No.36 A, Jebres, Kec. Jebres, Kota Surakarta, Jawa Tengah 57126. Email: tastaftiyan.risfandy@staff.uns.ac.id

debated, with mixed and sometimes conflicting research results (Margolis and Walsh, 2003; Orlitzky *et al.*, 2003). In Indonesia, the implementation of CSR has become a legal obligation for companies engaged in the field of natural resources since the enactment of Law No. 40 of 2007 concerning Limited Liability Companies (Surya and Rokhim, 2022). Nonetheless, many companies in other sectors, including manufacturing, have voluntarily implemented CSR practices as part of their business strategies (Rinawiyanti *et al.*, 2023). The basic and chemical industry sectors, as an integral part of Indonesia's manufacturing industry, have an essential role in the national economy and also have great potential in providing social and environmental impacts, making them an interesting subject to study in the context of CSR and financial performance (Thorbecke, 2023).

Several other variables can establish the causality relationship, such as the financial volatility caused by the COVID-19 pandemic (Bae *et al.*, 2021). Its implications on the Indonesian economy have shown how exogenous shocks can impact the strategy and performance of a firm (Jahmane and Gaies, 2020). Several studies have shown that CSR practices can act as an "insurance" that protects a company's value during adversity (Zhang *et al.*, 2020). On the other hand, there is an argument that during times of adversity, companies will retrench on CSR spending to save costs, at the expense of long-term performance (Karaibrahimolu, 2010).

Therefore, this study will focus on the effect of CSR on financial performance, and ROA and ROE as accounting performance measures based on their profitability (Gangi *et al.*, 2019; Salehi *et al.*, 2021). Several studies have laid out the results of the influence of both, among them the contributions of Gangi *et al.* (2019) and Salehi *et al.* (2021), which positively affected the relationship between the two. Other literature includes intellectual capital (Nirino *et al.*, 2022; Shahzad *et al.*, 2022) and corporate risk (Devie *et al.*, 2020) as mediators and moderators of executive compensation and corporate compensation (Elbardan *et al.*, 2023) in the relationship between corporate social responsibility and financial performance.

Given the factors of financial instability during the pandemic, this study included financial instability as a moderator variable in the relationship between corporate social responsibility and corporate financial performance. Taking a dynamic approach and using GMM estimators to avoid endogeneity issues, such as studies carried out by (Jahmane and Gaies, 2020). This research studies corporate social responsibility, financial instability, and financial performance. Research from Jahmane and Gaies (2020) used banking in France as a sample. We do different things by making manufacturing companies in the basic industry and chemical sectors as research objects. The sample selection is based on data from Thorbecke (2023) and UNIDO (2024), which shows the resilience of these companies in getting through the pandemic. This research will not only provide insight into the effectiveness of CSR strategies in improving financial performance. However, it will also assess the resilience of these strategies in the face of financial instability. The results of this study are expected to provide practical implications for managers in formulating effective and crisis-resilient CSR strategies, as well as theoretical contributions in understanding the dynamics of CSR relationships to financial performance in the context of resilient manufacturing companies going through critical periods.

2. Literature review and hypothesis development

According to stakeholder theory, a company is accountable to its shareholders and the various stakeholder groups that contribute to the company's operations (Cornell and Shapiro, 1987). This theory says that a company's success is not only measured from a financial point of view, but also from the point of view of its impact on those stakeholders. According to Mahajan *et al.* (2023) harmonious interaction between the company and all stakeholders will drive business growth and long-term commitment. Companies can use stakeholder theory to gain social legitimacy and community support to continue operating.

By engaging and considering the wishes of various stakeholders, companies can minimize the risk of failure and conflict and maximize opportunities to create sustainable value for all parties (Su *et al.*, 2016). This is in line with the idea of the triple bottom line, which is that companies must act in a fair and environmentally responsible manner, or it can be called corporate social responsibility, containing corporate policies for sustainability. This form of responsibility will be a signal to all stakeholders, so that they can provide a response that has an impact on the company's performance. Positive signals from such interactions will increase stakeholder trust and loyalty, while negative signals will raise doubts about the company's sustainability (Margolis and Walsh, 2003).

Furthermore, according to Ross (1977), information about the value of a company signals to investors whether a company's financial structure is running well. The signalling mechanism through the financial structure operates based on information asymmetry between managers and investors. Managers with private information about the company's prospects can use the choice of financial structure to communicate this information to the market (Greening and Turban, 2000). The information shows that companies use signals to communicate their commitment to stakeholders (Cumming and Johan, 2020). Companies need to manage these relationships to increase the company's value. According to Ross (1977), the company's performance reporting activities will provide a positive signal to the market, potentially increasing the efficiency of capital allocation in the stock market. Therefore, the high reporting of CSR will impact financial performance improvement.

Effective CSR practices can enhance a company's relationship with various stakeholders, including customers, employees, suppliers, and the community (Cornell and Shapiro, 1987). By meeting their needs and expectations, companies can build a better reputation, increase customer loyalty, and enhance employee productivity. As a result, companies can achieve operational efficiency, higher sales, and improved financial performance (George *et al.*, 2023). According to Su *et al.* (2016), this framework signals management and the company's prospects to investors and other stakeholders. Research by Wang *et al.* (2020) reveals that investor trust arises from CSR reporting, which drives companies to be more sensitive to risks Ghoul *et al.* (2011) and provides greater growth potential compared to companies that do not disclose CSR (Agoraki *et al.*, 2023).

Investing in the implementation of CSR can enhance the quality of valuable and hard-to-imitate intangible resources, such as innovation and corporate reputation (Maqbool, 2021). However, a differing opinion from Williams and Siegel (2000) suggests that the uniqueness of intangible resources may not have a linear relationship, as there is a possibility that when CSR implementation reaches an optimal point, the marginal benefits may start to decline. Therefore, companies need to develop new strategies to avoid losses from CSR implementation due to diminishing returns (Lioui and Sharma, 2012). Several studies have revealed similar findings to those conducted by Alikaj *et al.* (2017), Partalidou *et al.* (2020), and Shahzad *et al.* (2022). Despite using different samples, their studies demonstrate a positive relationship between corporate social responsibility and the financial performance of companies. Therefore, we propose the hypothesis:

H1. Corporate social responsibility has a positive influence on the financial performance of companies.

Yılmaz (2020) highlights how stable economic systems can inherently generate financial crises through internal dynamics. During periods of stable economic growth, economic actors tend to take greater risks and increase their leverage, ultimately leading to financial fragility. This theory identifies three types of financing: hedge, speculative, and Ponzi. Later, the financial system altered from relatively stable hedge financing to progressively more speculative constructions and Ponzi schemes, which are more vulnerable to shocks. When there is a change in economic conditions or market sentiment, this fragile financial system can break down, resulting in financial instability (Chintrakarn *et al.*, 2021).

When there is financial instability, the company's priorities will shift such that it will ignore stakeholders, one of which is reducing CSR investment to invest more in financial stability and risk management (Fehre and Weber, 2016; Jahmane and Gaies, 2020). This can impact the perception of stakeholders, which will have an impact on liquidity problems. However, if a company has developed a strong reputation during a stability phase, it can maintain stakeholder trust more effectively during a crisis phase (Kang *et al.*, 2010; Zhang *et al.*, 2020). Financial instability, therefore, moderates the corporate social responsibility-corporate financial performance relationship.

The effect of corporate social responsibility on a business firm's performance may vary subject to circumstances, especially under a bad situation the company faces (Huang *et al.*, 2020; Rinawiyanti *et al.*, 2023). During challenging periods, a company's priorities may shift towards short-term risk management to ensure sustainability. The COVID-19 pandemic shook the business world again after the financial crisis of 2008-2009 (Thorbecke, 2023). The pandemic created global financial instability. In this context, companies innovated to maintain sustainability through various means. According to He *et al.* (2023), stakeholders value companies that demonstrate a commitment to social responsibility to maintain relationships with all stakeholders during periods of instability. This can impact the company's stability in difficult times (Gaies *et al.*, 2019).

Jahmane and Gaies (2020), reveal that the informational value of stakeholder-oriented policies, including CSR, acts as a conductor of information regarding the financial performance of employees, particularly during tough times. Strong CSR practices serve as an effective management signal, indicating good risk management and a greater potential for resilience during periods of instability (Lahouel *et al.*, 2021). With CSR, companies can achieve higher credit ratings, which benefits them during unstable periods. CSR investments enhance company value and demonstrate the company's capabilities in meeting stakeholder needs, creating a good reputation, and providing a competitive advantage. However, the limited benefits from CSR implementation may reach a critical point where extreme financial pressure can reduce the company's ability to reap the rewards of its CSR investments (Bae *et al.*, 2021; Broadstock *et al.*, 2021). Based on the aforementioned points, we propose the second hypothesis:

H2. Financial instability moderates the relationship between corporate social responsibility and company financial performance.

3. Method

Econometrics modelling

In this study, the data analysis technique used is a regression model to capture CSR's linear, non-linear, and spillover effects on the company's financial performance through the interaction of financial instability. The regression model in this study establishes four models based on the following research variables:

Model (1): Direct linear effect of CSR on FP

$$FP_{it}= \alpha+\beta_1 \times FP_{it-1} + \beta_2 \times CSR_{it} +\beta_3 \times Crisis_{it}+\beta_4 \times Lev_{it}+ \beta_5 \times Liq_{it} +\beta_6 \times Size + \beta_7 \times Emp + \varepsilon_{it} \ldots (1)$$

Model (2): Linear spillover effect of CSR on FP

$$FP_{it}= \alpha+\beta_1 \times FP_{it-1} +\beta_2 \times CSR_{it} +\beta_3 \times Crisis_{it}+\beta_4 \times (Crisis \times CSR)_{it}+ \beta_5 \times Lev_{it} +\beta_6 \times Liq_{it} + \beta_7 \times Size_{it} +\beta_8 \times Emp+\varepsilon_{it} \ldots (2)$$

Model (3): Direct non-linear effect of CSR on FP

$$FP_{it}= \alpha+ \beta_1 \times FP_{it-1}+\beta_2 \times CSR_{it} +\beta_3 \times Crisis_{it}+\beta_4 \times CSR\text{^}2_{it}+ \beta_5 \times Lev_{it} +\beta_6 \times Liq + \beta_7 \times Size+\beta_8 \times Emp+\varepsilon_{it} \ldots (3)$$

Model (4): Non-linear spillover effect of CSR on FP

$$FP_{it}= \alpha+\beta_1 \times FP_{it-1} +\beta_2 \times CSR_{it}+\beta_3 \times Crisis_{it} +\beta_4 \times (Crisis \times CSR)_{it}+\beta_5 \times CSR\text{^}2_{it}+\beta_6 \times Lev_{it} + \beta_7 \times Liq_{it} +\beta_8 \times Size_{it}+\beta_9 \times Size_{it}+\varepsilon_{it} \ldots (4)$$

The company's financial performance is an important aspect of the company as a form of evaluation of the actions or activities carried out by the company. Therefore, the measurement of a company's financial performance is divided into several bases and their respective focuses to determine their performance level (Devie *et al.*, 2020). The measurement of financial performance in this study is based on research Sekhon and Kathuria (2020), with the ratio of ROA and ROE in measuring the company's financial performance. The measurement of the ratio is obtained from the data in the company's financial statements by calculating the company's net profit divided by the total value of the company's assets for the ROA calculation, and then the company's net profit divided by the value of shareholders' equity for the ROE calculation.

CSR reporting is the urgency of the company in its goal of satisfying all the company's stakeholders (Parker, 2014). The CSR measurement used in this study is based on the KLD method as a basic proxy for calculating CSR. Five criteria are commonly displayed by companies in Indonesia related to their CSR concentration, namely community, governance, employee relations, environment, and products, following research conducted by Devie *et al.* (2020) and supported by Lin *et al.* (2019). A score of 3 will be awarded if the company displays the five criteria, a score of 2 companies displays the three criteria, and a score of 1 if the company displays only two or only 1 of the criteria and a score of 0 will be awarded if it does not display the criteria in question.

Financial instability is operationalized using the variable dummy, which identifies the pandemic period as a proxy for financial instability. According to the methodology of Jahmane and

Gaies (2020), indicators of financial instability during the pandemic are called crises. Therefore, during the pandemic period, it will be graded "1" and "0" for the non-pandemic period. This measurement will separate companies during and non-pandemic periods to identify the influence of corporate social responsibility on financial performance based on the context of financial instability.

Control variables help identify how independent variables and dependent variables affect each other. In the field of financial management, many variables can affect the financial results of a business. If there are no control variables, it is difficult to know whether the change in the dependent variable is caused by the independent variable being studied. However, with control variables, researchers can "filter" the influence of other elements that may affect the study results. This increases the internal credibility of the research and helps prevent inaccurate conclusions. By controlling for other factors, researchers can become more confident in the observed relationship between independent and dependent variables. In this study, the researcher included six control variables, including: Company Size (Elbardan *et al.*, 2023), Leverage (Devie *et al.*, 2020), Liquidity (Lalinsky and Pál, 2022), Employee (Wang and Sarkis, 2017).

Data and sample

The sample of this study is manufacturing companies in the basic industry and chemical sectors listed on the IDX in the listing period from 2014 to 2022. The method used to determine the sample is the purposive sampling method, which is based on the specified criteria. The criteria are: (1) companies listed on the Indonesia Stock Exchange that have published their annual reports in full; (2) companies reporting corporate social responsibility, and (3) manufacturing companies in the basic industry and chemical sectors in the observation period and having complete data related to the research variables that can be further analysed.

Model estimator

Based on Windmeijer (2005), when the sample size is larger than the time range of the study, it is necessary to estimate the four models using the system GMM method developed by Bond (1991) and Arellano and Bover (1995) to avoid endogeneity issues. Jahmane and Gaies (2020) also employed the system GMM method to estimate lagged variables in their research. This approach is similarly taken to mitigate endogeneity problems.

4. Results and discussion

Descriptive statistics and correlation matrix

Table 1 shows the statistics of all the variables used in this study. CSR shows an average value of CSR reporting of 2.5384, which shows the high CSR reporting of companies in the sample. The range between the minimum and maximum values of the financial performance variables, namely ROA and ROE, indicates that not all companies in the sample have good financial performance.

Table 1. Descriptive statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
CSR	468	2.54	0.79	0.00	3.00
Crisis	468	0.22	0.42	0.00	1.00
ROA	468	2.13	9.56	-107.99	56.00
ROE	468	0.36	55.30	-964.36	109.21
Size	468	26.17	3.94	17.69	32.45
Lev	468	0.55	0.36	0.08	3.39
Liq	468	2.18	2.37	0.02	17.23
Emp	468	6.85	1.29	3.37	10.34

The inclusion of four control variables in the study showed that the size of the company (size) in almost the entire sample showed an average value of 26.1735 with a maximum value of 32.45. In addition to size, leverage shows a relatively low minimum value. This is confirmed in Table 2, which presents the correlation coefficient between the variables in the study. Leverage negatively correlates with several financial performance variables such as ROA (-0.4993) and ROE (-0.0905), suggesting

that higher levels of leverage correlate with lower financial performance. On the other hand, this study avoids the multicollinearity problem because the variables do not have a value of more than 0.7.

Table 2. Correlation matrix

	CSR	Crisis	ROA	ROE	Size	Lev	Liq	Emp
CSR	1							
Crisis	0.1496	1						
ROA	0.2626	-0.0331	1					
ROE	0.0991	0.0422	0.1609	1				
Size	0.1752	0.0141	0.0829	0.0087	1			
Lev	-0.3307	0.0051	-0.4993	-0.0905	-0.1337	1		
Liq	0.1929	0.0345	0.1507	0.0791	0.0293	-0.4225	1	
Emp	0.2129	-0.0264	0.1768	0.0468	0.2397	-0.0788	-0.2943	1

Regression results and discussion

Lagged variable

The estimation model refers to the research by Lahouel *et al.* (2021), which estimates all research variables without CSR variables, crisis, and FP. We take out and reinsert the lagged variable for dynamic relevance of the research. The results of the estimates are shown in Table 3, which shows that in general, the lagged variable is positively and significantly related to the study's dependent variables. Leverage has a negative and significant coefficient inversely proportional to employees and positively and significantly related to ROA. Other control variables did not substantially influence ROE besides the lagged variable ROE.

Table 3. Lagged Variable

Variable	(1) ROA	(2) ROA	(3) ROE	(4) ROE
L.ROA		0.3556***		
		(7.24)		
L.ROE				0.1747***
				(3.56)
Liq	-0.0799	-0.1188	1.7944	1.5037
	(-0.42)	(-0.60)	(1.40)	(1.06)
Size	-0.0380	-0.0817	-0.2450	-0.3246
	(-0.38)	(-0.79)	(-0.36)	(-0.44)
Lev	-13.1307***	-8.5230***	-8.3677	-6.5888
	(-11.03)	(-6.27)	(-1.05)	(-0.77)
Emp	1.0030***	0.6622*	2.9654	1.9520
	(3.08)	(1.95)	(1.35)	(0.80)
R-Squared	0.2688	0.3495	0.0141	0.0433
Observation	468	416	468	416

Note(s):t-values in parentheses: * $t < 0.1$; ** $p < 0.05$; *** $p < 0.01$

Linear and non-linear direct effects

Through four regression models, models (1) and (3) explain the direct influence between variables in the study. Tables 4 and 5 present the results of the direct effects presented in models (1) and (3) of each table. A direct impact of CSR on ROA was not found in this study. The interaction of crises and quadratic components of CSR also did not significantly influence the relationship between the two. However, from the model (3) in Table 4, there is a change in the CSR coefficient to ROA. This can happen because the relationship between CSR and ROA is more complex than just a linear relationship. These findings show that as CSR increases, the negative effects decrease and eventually turn positive, as shown in CSR^2 (0.7257). This marks a turning point where CSR investment provides a positive return on the company (Du *et al.*, 2010).

Unlike ROA, the direct relationship of CSR to ROE has a negative coefficient and is insignificant. However, Model 3 in Table 5 shows a non-linear relationship between CSR and ROE.

The relationship is in the form of a U-Shape with a CSR² value (13.5401) at a significance level of 5%. This initially causes CSR to have an adverse effect and reduce ROE, but after reaching a certain point, the effect is positive and significant. These findings show that CSR investment may burden financial performance (ROE) in the early stages. However, after reaching a certain optimal point, the role of CSR can increase the company's ROE (Jahmane and Gaies, 2020). With these results, the first hypothesis in this study can be accepted.

Table 4. Linear and non-linear effect estimation (ROA)

Variable	(1) ROA	(2) ROA	(3) ROA	(4) ROA
L.ROA	0.1994*	0.1992*	0.2070*	0.2070*
	(1.80)	(1.80)	(1.81)	(1.81)
CSR	1.0983	1.1712	-1.7822	-1.7878
	(0.81)	(0.89)	(-0.40)	(-0.41)
Crisis	0.0813	0.4469	0.0714	0.6961
	(0.09)	(0.20)	(0.71)	(0.35)
Crisis_CSR		-0.1300		-0.2222
		(-0.14)		(-0.26)
CSR²			0.7257	0.7500
			(0.26)	(0.73)
Liq	-0.6504	-0.6480	0.7066	-0.7061
	(-1.39)	(-1.39)	(-1.40)	(-1.40)
Size	0.2196	0.2371	0.1697	0.1974
	(0.37)	(0.40)	(0.26)	(0.30)
Lev	-15.0574***	-14.9497***	15.2113***	-15.0565***
	(-5.05)	(-5.00)	(-5.07)	(-4.98)
Emp	4.8929	4.8626	4.7831	4.7555
	(0.77)	(0.76)	(-0.59)	(0.76)
Constant	-30.8273	-31.3327	-26.3807	-27.1701
Observation	364	364	364	364

Note(s):t-values in parentheses: * $t < 0.1$; ** $p < 0.05$; *** $p < 0.01$

Effects of linear and non-linear spillover

Models (2) and (4) in Tables 4 and 5 show the spillover effect of CSR on financial performance through its interaction with financial instability characterized by crisis variables. No crisis interaction was found in the relationship between CSR and ROA as listed in model (4) in Table 4. These findings indicate that during periods of financial instability, CSR investments made by companies to improve financial performance (ROA) are unaffected. These results show that some investors and stakeholders still appreciate the company's commitment to CSR despite the financial instability that occurs, in this case, the COVID-19 pandemic.

Different findings occurred in the interaction of financial instability in the relationship between CSR and ROE. The negative coefficient of crisis_csr was (-13.8687) and significant at a significance level of 1%. These findings confirm that CSR activities have a more negative impact on ROE in periods of financial instability. In practical terms, allocating resources for CSR activities during a crisis can be considered an additional burden that reduces the efficiency of the company's use of capital (Barney, 2001).

Further in model (4) in Table 5 shows that there is a relationship U-Shape between CSR and ROE (-49.9673, significant 5%), and the positive coefficient of CSR² (13.4321, significant 5%). This pattern indicates that although CSR investment can initially reduce ROE, there is an optimal point where an increase in CSR activities can increase ROE. However, the significant and negative effects of crisis moderation remain reinforcing the argument that management needs to be careful in managing their

CSR portfolios during the crisis period to maintain optimal financial performance (Wang *et al.*, 2016). With these findings, the role of instability weakens the relationship between CSR and the company's financial performance. These findings confirm the second hypothesis in this study.

Table 5. Linear and non-linear effect estimation (ROE)

Variable	(1) ROE	(2) ROE	(3) ROE	(4) ROE
L.ROE	0.0852***	0.0758**	0.0623*	0.0538*
	(2.63)	(2.43)	(1.85)	(1.69)
CSR	-0.2063	1.7842	-52.3502**	-49.9672**
	(-0.04)	(0.31)	(-2.09)	(-2.31)
Crisis	2.7887	44.2433***	2.4005	40.4674***
	(0.66)	(2.73)	(0.61)	(4.46)
Crisis_CSR		-15.1008***		-13.8687***
		(-2.70)		(-4.34)
CSR^2			13.5400**	13.4321**
			(2.17)	(2.52)
Liq	-1.8381	-1.7591	-2.5050	-2.4370
	(-0.56)	(-0.60)	(-0.69)	(-0.69)
Size	-0.7834	0.0856	-1.4065	-0.5978
	(-0.15)	(0.02)	(-0.32)	(-0.14)
Lev	-28.8623	-27.7716	-32.1022	-30.7390
	(-0.80)	(-0.79)	(-0.93)	(-0.94)
Emp	-77.8370	-75.3113	-79.6661	-77.4759
	(-1.57)	(-1.53)	(-1.60)	(-1.60)
Constant	573.1815	527.2501	642.1576	599.7433
Observation	364	364	364	364

Note(s):t-values in parentheses: * $t < 0.1$; ** $p < 0.05$; *** $p < 0.01$

Robustness check

To maintain research result consistency, we included the net profit margin variable as another measure of company financial performance. The GMM system model used in this research requires estimating all research variables without including dependent and mediation variables by removing and reinserting lagged variables for the relevance of the research model measurement. The results of the lagged variables are shown in Table 6. The net profit margin from the previous period significantly influences the rise and fall of the company's net profit levels in subsequent periods. A consistent finding is observed in the negative and significant effect of leverage as shown in Table 3, indicating that companies need to be cautious about high leverage levels.

Based on the regression results presented in Table 7, models (1) and (3) examine the direct influence of CSR on Company Profitability measured through Net Profit Margin (NPM). The findings reveal an inconsistent direct effect of CSR on NPM in both models, where CSR coefficients show considerable significance but undergo notable changes. Despite the positive CSR coefficient in model (3), its insignificance suggests that the relationship between CSR and NPM isn't strictly linear. This observation highlights that CSR investment's impact on company profitability might be more intricate than a simple direct relationship.

Looking at models (2) and (4) in Table 6, we see interactions between CSR and financial crisis, analysing CSR's spillover effects on NPM during financial instability. Model (4) reveals a significant negative coefficient (-11.2052) for crisis interaction (Crisis_CSR) at a 1% significance level. In times of uncertainty, CSR investments will drain firm profitability using NPM. These results account for the fact that while CSR investments enhance performance, they might be an extra burden and amplify the pinch on resources in times of crisis.

The link between CSR-NPM is also enriched through the quadratic variable CSR^2, implying non-linear effects. While these models imply CSR's potential positive impact at some level, scrutiny of economic conditions remains vital. These findings validate that CSR's profitability performance impact depends not just on the investment but also on factors beyond the firm's control, like financial instability, requiring increased management focus in strategizing CSR.

Table 6. Lagged variable (NPM)

Variable	(1) NPM	(2) NPM
L.NPM		0.4353***
		(9.68)
Liq	-0.2279	-0.3957
	(-0.55)	(-0.95)
Size	0.3539	0.1635
	(1.63)	(0.75)
Lev	-18.8459***	-13.7534 ***
	(-7.32)	(-5.32)
Emp	-0.1658	-0.3128
	(-0.24)	(1.95)
R-squared	0.1332	0.2914
Observation	468	416

*Note(s):t-values in parentheses: * t < 0.1; ** p < 0.05; *** p <0.01*

Table 7. Linear and non-linear effect estimation (NPM)

Variable	(1) NPM	(2) NPM	(3) NPM	(4) NPM
L.NPM	0.2694***	0.2768***	0.2355*	0.2436**
	(3.09)	(3.29)	(2.35)	(2.42)
CSR	8.7553**	10.8189**	31.9456	33.4117
	(1.79)	(2.22)	(1.19)	(1.25)
Crisis	1.8983	33.2137***	2.2299	33.2387***
	(1.41)	(3.28)	(1.57)	(3.06)
Crisis_CSR		-11.3151***		-11.2052***
		(-3.22)		(-3.03)
CSR^2			-6.1766	-6.0216**
			(-1.03)	(-1.01)
Liq	0.0100	0.0454	0.2983	0.3241
	(0.01)	(0.07)	(0.43)	(0.48)
Size	3.9357	4.6354	4.5457	5.2427
	(0.72)	(0.84)	(0.83)	(0.94)
Lev	-35.3413	-33.8756	-33.6587	-32.2374
	(-1.56)	(-1.59)	(-1.61)	(-1.65)
Emp	-11.5669	-10.7456	-9.5863	-8.8371
	(-1.62)	(-1.63)	(-1.63)	(-1.70)
Constant	-25.5871	-55.8092	-71.9196	-101.1066
Observation	364	364	364	364

Note(s):t-values in parentheses: * $t < 0.1$; ** $p < 0.05$; *** $p < 0.01$

5. Conclusion

Research exploring the relationship between Corporate Social Responsibility (CSR), Financial Instability, and Financial Performance based on ROA, ROE, and NPM discovers intricate patterns of interaction. The findings establish varying relationships based on these financial performance measures, with CSR and ROE manifesting a significant U-shaped non-linear relationship. Whereas the relationship between CSR and ROA comprises subtle non-linear tendencies without direct significance, the relationship between CSR and NPM shows mixed impact on the various analysis models, suggesting a more subtle relationship than has been imagined.

Financial instability positively moderates the aforementioned relations in all of the performance metrics. During the economic crisis, CSR investments can damage company profitability. Such an adverse moderating effect is more so for the relationship between CSR and ROE, although its impact on ROA is weaker. These results highlight the importance of economic context and timing in the success of CSR investments.

The study identifies non-linear effects in all the performance measures, as supported by quadratic analysis. This finding implies that CSR investments should be considered from a long-run perspective, with positive effects likely to be realized only after crossing some optimal levels. Such non-linear impacts underscore that CSR's effects on financial performance are subject to multiple influences, including investment levels and the nature of the economic times.

These conclusions have significant implications for CSR portfolio management in the management of firms. Companies must carefully balance their CSR initiatives with their financial capabilities, particularly during economically challenging times. The research suggests evaluating and prioritizing CSR initiatives for those most beneficial to stakeholders and financial performance, especially during crises. This moderation ensures the continuity of CSR activities while maintaining the corporation's financial health, considering both internal resources and external economic factors.

References

Agoraki, M.E.K., Giaka, M., Konstantios, D. and Patsika, V. (2023), "Firms' sustainability, financial performance, and regulatory dynamics: Evidence from European firms", *Journal of International Money and Finance*, doi: 10.1016/j.jimonfin.2022.102785.

Alikaj, A., Nguyen, C.N. and Medina, E. (2017), "Differentiating the impact of CSR strengths and concerns on firm performance: An investigation of MNEs and US domestic firms", *Journal of Management Development*, Vol. 36 No. 3, doi: 10.1108/JMD-04-2016-0058.

Arellano, M. and Bover, O. (1995), "Another look at the instrumental variable estimation of error-components models", *Journal of Econometrics*, Vol. 68 No. 1, doi: 10.1016/0304-4076(94)01642-D.

Bae, K.H., El Ghoul, S., Gong, Z. (Jason) and Guedhami, O. (2021), "Does CSR matter in times of crisis? Evidence from the COVID-19 pandemic", *Journal of Corporate Finance*, Vol. 67, doi: 10.1016/j.jcorpfin.2020.101876.

Barney, J.B. (2001), "Resource-based theories of competitive advantage: A ten-year retrospective on the resource-based view", *Journal of Management*, Vol. 27 No. 6, pp. 643–650, doi: 10.1177/014920630102700602.

Bond, S. (1991), "Some tests of specification for panel data:monte carlo evidence and an application to employment equations", *Review of Economic Studies*, Vol. 58 No. 2, doi: 10.2307/2297968.

Broadstock, D.C., Chan, K., Cheng, L.T.W. and Wang, X. (2021), "The role of ESG performance during times of financial crisis: Evidence from COVID-19 in China", *Finance Research Letters*, Vol. 38, doi: 10.1016/j.frl.2020.101716.

Chen, H. and Wang, X. (2011), "Corporate social responsibility and corporate financial performance in China: An empirical research from Chinese firms", *Corporate Governance*, Vol. 11 No. 4, pp. 361–370, doi: 10.1108/14720701111159217.

Chintrakarn, P., Jiraporn, P. and Treepongkaruna, S. (2021), "How do independent directors view corporate social responsibility (CSR) during a stressful time? Evidence from the financial crisis", *International Review of Economics and Finance*, Vol. 71, doi: 10.1016/j.iref.2020.08.007.

Cornell, B. and Shapiro, A.C. (1987), "Corporate Stakeholders and Corporate Finance", *Financial Management*, Vol. 16 No. 1, p. 5, doi: 10.2307/3665543.

Cumming, D.J. and Johan, S.A. (2020), "Overview of agency and signaling theory in crowdfunding", *Crowdfunding*, doi: 10.1016/b978-0-12-814637-8.00002-0.

Devie, D., Liman, L.P., Tarigan, J. and Jie, F. (2020), "Corporate social responsibility, financial performance and risk in Indonesian natural resources industry", *Social Responsibility Journal*, Vol. 16 No. 1, pp. 73–90, doi: 10.1108/SRJ-06-2018-0155.

Du, S., Bhattacharya, C.B. and Sen, S. (2010), "Maximizing business returns to corporate social responsibility (CSR): The role of CSR communication", *International Journal of Management Reviews*, Vol. 12 No. 1, doi: 10.1111/j.1468-2370.2009.00276.x.

Elbardan, H., Uyar, A., Kuzey, C. and Karaman, A.S. (2023), "CSR reporting, assurance, and firm value and risk: The moderating effects of CSR committees and executive compensation", *Journal of International Accounting, Auditing and Taxation*, Elsevier Inc., Vol. 53 No. September, p. 100579, doi: 10.1016/j.intaccaudtax.2023.100579.

Esteban-Sanchez, P., de la Cuesta-Gonzalez, M. and Paredes-Gazquez, J.D. (2017), "Corporate social performance and its relation with corporate financial performance: International evidence in the banking industry", *Journal of Cleaner Production*, Vol. 162, doi: 10.1016/j.jclepro.2017.06.127.

Ewald, C.O. and Taub, B. (2022), "Real options, risk aversion and markets: A corporate finance perspective", *Journal of Corporate Finance*, Vol. 72, doi: 10.1016/j.jcorpfin.2022.102164.

Fehre, K. and Weber, F. (2016), "Challenging corporate commitment to CSR", *Management Research Review*, Vol. 39 No. 11, doi: 10.1108/mrr-03-2015-0063.

Gaies, B., Goutte, S. and Guesmi, K. (2019), "Banking crises in developing countries–What crucial role of

exchange rate stability and external liabilities?", *Finance Research Letters*, Vol. 31, doi: 10.1016/j.frl.2018.12.014.

Gangi, F., Mustilli, M. and Varrone, N. (2019), "The impact of corporate social responsibility (CSR) knowledge on corporate financial performance: evidence from the European banking industry", *Journal of Knowledge Management*, Vol. 23 No. 1, doi: 10.1108/JKM-04-2018-0267.

Garsten, C. (2003), "The cosmopolitan organization - an essay on corporate accountability", *Global Networks*, Vol. 3 No. 3, pp. 355–370, doi: 10.1111/1471-0374.00066.

George, A.K., Kayal, P. and Maiti, M. (2023), "Nexus of Corporate Social Responsibility Expenditure (CSR) and financial performance: Indian banks", *Quarterly Review of Economics and Finance*, Elsevier, Vol. 90, pp. 190–200, doi: 10.1016/j.qref.2023.06.004.

El Ghoul, S., Guedhami, O., Kwok, C.C.Y. and Mishra, D.R. (2011), "Does corporate social responsibility affect the cost of capital?", *Journal of Banking and Finance*, Vol. 35 No. 9, doi: 10.1016/j.jbankfin.2011.02.007.

Greening, D.W. and Turban, D.B. (2000), "Corporate Social Performance as a Competitive Advantage in Attracting a Quality Workforce", *Buildings*, Vol. 97 No. 3, p. 34.

He, G., Liu, Y. and Chen, F. (2023), "Research on the impact of environment, society, and governance (ESG) on firm risk: An explanation from a financing constraints perspective", *Finance Research Letters*, Vol. 58, doi: 10.1016/j.frl.2023.104038.

Huang, K., Sim, N. and Zhao, H. (2020), "Corporate social responsibility, corporate financial performance and the confounding effects of economic fluctuations: A meta-analysis", *International Review of Financial Analysis*, Vol. 70, doi: 10.1016/j.irfa.2020.101504.

Jahmane, A. and Gaies, B. (2020), "Corporate social responsibility, financial instability and corporate financial performance: Linear, non-linear and spillover effects – The case of the CAC 40 companies", *Finance Research Letters*, Vol. 34, doi: 10.1016/j.frl.2020.101483.

Kang, K.H., Lee, S. and Huh, C. (2010), "Impacts of positive and negative corporate social responsibility activities on company performance in the hospitality industry", *International Journal of Hospitality Management*, Vol. 29 No. 1, doi: 10.1016/j.ijhm.2009.05.006.

Karaibrahimolu, Y.Z. (2010), "Corporate social responsibility in times of financial crisis", *African Journal of Business Management*, Vol. 4 No. 4.

Lahouel, B. Ben, Zaied, Y. Ben, Song, Y. and Yang, G. liang. (2021), "Corporate social performance and financial performance relationship: A data envelopment analysis approach without explicit input", *Finance Research Letters*, Vol. 39, doi: 10.1016/j.frl.2020.101656.

Lalinsky, T. and Pál, R. (2022), "Distribution of COVID-19 government support and its consequences for firm liquidity and solvency", *Structural Change and Economic Dynamics*, Elsevier B.V., Vol. 61, pp. 305–335, doi: 10.1016/j.strueco.2022.03.008.

Lin, L., Hung, P.H., Chou, D.W. and Lai, C.W. (2019), "Financial performance and corporate social responsibility: Empirical evidence from Taiwan", *Asia Pacific Management Review*, Elsevier Ltd, Vol. 24 No. 1, pp. 61–71, doi: 10.1016/j.apmrv.2018.07.001.

Lioui, A. and Sharma, Z. (2012), "Environmental corporate social responsibility and financial performance: Disentangling direct and indirect effects", *Ecological Economics*, Vol. 78, doi: 10.1016/j.ecolecon.2012.04.004.

Mahajan, R., Lim, W.M., Sareen, M., Kumar, S. and Panwar, R. (2023), "Stakeholder theory", *Journal of Business Research*, Elsevier Inc., Vol. 166 No. June, p. 114104, doi: 10.1016/j.jbusres.2023.114104.

Maqbool, S. (2021), "Corporate social responsibility and institutional investors: the intervening effect of financial performance", *Journal of Economic and Administrative Sciences*, Vol. 37 No. 2, pp. 238–252, doi: 10.1108/jeas-08-2019-0089.

Margolis, J.P. and Walsh, J. (2003), "Misery Loves Rethinking Companies : Social Initiatives", *Administrative Science Quarterly*, Vol. 48, pp. 268–305.

McWilliams, A. and Siegel, D. (2000), "Corporate social responsibility and financial performance: Correlation or misspecification?", *Strategic Management Journal*, Vol. 21 No. 5, doi: 10.1002/(SICI)1097-0266(200005)21:5<603::AID-SMJ101>3.0.CO;2-3.

McWilliams, A. and Siegel, D. (2001), "Corporate social responsibility: A theory of the firm perspective", *Academy of Management Review*, Vol. 26 No. 1, pp. 117–127.

Nirino, N., Ferraris, A., Miglietta, N. and Invernizzi, A.C. (2022), "Intellectual capital: the missing link in the corporate social responsibility–financial performance relationship", *Journal of Intellectual Capital*, Vol. 23 No. 2, pp. 420–438, doi: 10.1108/JIC-02-2020-0038.

Orlitzky, M., Schmidt, F.L. and Rynes, S.L. (2003), "Corporate social and financial performance: A meta-analysis", *Organization Studies*, Vol. 24 No. 3, doi: 10.1177/0170840603024003910.

Parker, L.D. (2014), "Corporate social accountability through action: Contemporary insights from British industrial pioneers", *Accounting, Organizations and Society*, Elsevier Ltd, Vol. 39 No. 8, pp. 632–659, doi: 10.1016/j.aos.2014.10.001.

Partalidou, X., Zafeiriou, E., Giannarakis, G. and Sariannidis, N. (2020), "The effect of corporate social responsibility performance on financial performance: the case of food industry", *Benchmarking*, Vol. 27 No. 10, pp. 2701–2720, doi: 10.1108/BIJ-11-2019-0501.

Rinawiyanti, E.D., Xueli, H. and As-Saber, S.N. (2023), "Integrating corporate social responsibility into business functions and its impact on company performance: evidence from the Indonesian manufacturing industry", *Social Responsibility Journal*, Vol. 19 No. 7, doi: 10.1108/SRJ-05-2021-0193.

Ross, S.A. (1977), "Determination of Financial Structure: the Incentive-Signalling Approach.", *Bell J Econ*, Vol. 8 No. 1, pp. 23–40, doi: 10.2307/3003485.

Salehi, M., Mahmoudabadi, M., Adibian, M.S. and Ranjbar, H.R. (2021), "The potential impact of managerial entrenchment on firms' corporate social responsibility activities and financial performance: evidence from Iran", *International Journal of Productivity and Performance Management*, Vol. 70 No. 7, pp. 1793–1815, doi: 10.1108/IJPPM-06-2019-0259.

Sekhon, A.K. and Kathuria, L.M. (2020), "Analyzing the impact of corporate social responsibility on corporate financial performance: evidence from top Indian firms", *Corporate Governance (Bingley)*, Vol. 20 No. 1, pp. 143–157, doi: 10.1108/CG-04-2019-0135.

Shahzad, F., Baig, M.H., Rehman, I.U., Saeed, A. and Asim, G.A. (2022), "Does intellectual capital efficiency explain corporate social responsibility engagement-firm performance relationship? Evidence from environmental, social and governance performance of US listed firms", *Borsa Istanbul Review*, The Authors, Vol. 22 No. 2, pp. 295–305, doi: 10.1016/j.bir.2021.05.003.

Su, W., Peng, M.W., Tan, W. and Cheung, Y.L. (2016), "The Signaling Effect of Corporate Social Responsibility in Emerging Economies", *Journal of Business Ethics*, Vol. 134 No. 3, pp. 479–491, doi: 10.1007/s10551-014-2404-4.

Surya, A.A. and Rokhim, R. (2022), "Analysis of the mitigation effects of corporate social responsibility on the negative impact of high leverage in ASEAN-5", *Asia Pacific Management Review*, Vol. 27 No. 4, pp. 257–264, doi: 10.1016/j.apmrv.2021.10.002.

Thorbecke, W. (2023), "Sectoral evidence on Indonesian economic performance after the pandemic", *Asia and the Global Economy*, Vol. 3 No. 2, doi: 10.1016/j.aglobe.2023.100069.

UNIDO. (2024), "World Manufacturing Production Manufacturing rebound : Global production gains momentum".

Wang, H., Lu, W., Ye, M., Chau, K.W. and Zhang, X. (2016), "The curvilinear relationship between corporate social performance and corporate financial performance: Evidence from the international construction industry", *Journal of Cleaner Production*, Vol. 137, doi: 10.1016/j.jclepro.2016.07.184.

Wang, Y., Liu, J., Sui, X. and Liu, L. (2020), "Does corporate social responsibility improve financial performance? -evidence from pure green side☆", *Finance Research Letters*, Vol. 36, doi: 10.1016/j.frl.2020.101522.

Wang, Z. and Sarkis, J. (2017), "Corporate social responsibility governance, outcomes, and financial performance", *Journal of Cleaner Production*, Elsevier B.V., Vol. 162, pp. 1607–1616, doi: 10.1016/j.jclepro.2017.06.142.

Windmeijer, F. (2005), "A finite sample correction for the variance of linear efficient two-step GMM estimators", *Journal of Econometrics*, Vol. 126 No. 1, doi: 10.1016/j.jeconom.2004.02.005.

Yılmaz, E. (2020), "The financial instability hypothesis", *Understanding Financial Crises*, doi: 10.4324/9781003037828-6.

Zhang, J., Zi, S., Shao, P. and Xiao, Y. (2020), "The value of corporate social responsibility during the crisis: Chinese evidence", *Pacific Basin Finance Journal*, Vol. 64, doi: 10.1016/j.pacfin.2020.101432.