

Financial Ratios on Reducing Financial Distress Moderated by ESG Disclosure

Dina Nilam Rosalika^{a,1}, Nurul Fauziah^{a,2}, Martdian Ratna Sari^{a,3*}

^aPPM School of Management, Jakarta, Indonesia

¹dinanilamrosalik16@gmail.com; ²nurulfziahh@gmail.com; ³martdianratnasi@gmail.com*

*Corresponding Author

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ABSTRACT

This study investigates the impact of financial ratios—including leverage, liquidity, operational capacity, and operating cash flow—on financial distress while assessing the moderating influence of ESG disclosure. It focuses on 26 energy sector companies listed on the IDX from 2018 to 2022, employing a quantitative approach and purposive sampling method. Nine hypotheses were formulated and tested using multiple and moderated regression analysis. The study found that leverage has a significant negative effect on reducing financial distress. In contrast, liquidity, operating capacity, and operating cash flow ratios were found to impact reducing financial distress positively. This study also confirmed that ESG disclosure could weaken the relationship between liquidity and potential financial distress reduction. However, ESG disclosure does not mediate the relationship between leverage, operating capacity, and operating cash flow to financial distress reduction. This findings lend credence to the applicability of stakeholders theory in explaining the relationship between financial ratios, ESG disclosure and financial distress. It also provides insight for companies on how to prevent and mitigate financial distress. Companies, especially in the Energy Sector, could reduce the potential financial distress by optimizing both financial and non-financial aspects in their annual and sustainability reports.



KEYWORDS

Financial distress
Financial ratio
ESG disclosure
Energy sector



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Introduction

The performance of oil and gas exports and imports plays a major role in Indonesia's trade balance because these activities consist of providing raw materials to become consumer goods. According to BPS (2024), the value of Indonesia's oil and gas exports fell by 11.96%, while the oil and gas trade balance experienced a deficit of US\$1.89 billion. This declining situation was predicted in 2023 by Fahmy Radhy, an energy economist from Gadjah Mada University, Indonesia; he said that the declining situation of the energy sector will continue until 2024, even many years later. Several energy sector companies in Indonesia experienced losses or a decrease in net profit, such as PT Timah Tbk (TINS) which experienced a loss of IDR 487 billion, PT Bukit Asam Tbk (PTBA), which experienced a decrease in net profit of up to 51.7%, and PT Aneka Tambang Tbk (ANTM) which also experienced a decline in net profit of 19.45% (Rhamadanty, 2024). Energy sector companies are also facing a problematic pandemic in 2020 due to the most significant decrease in global investment of 20% per year (Idris, 2020).

On the other hand, geopolitical conflicts also affect the global economy. These conflicts can trigger economic crises, affecting corporate performance and national instability. Unstable company performance can be one of the factors of bankruptcy. The company's step before entering into the category of bankruptcy is financial distress. So, companies must be aware of financial distress conditions as a preventive measure that

can be taken before going bankrupt, especially in the energy sector, which faces the most challenging situation and declines in financial performance from year to year.

Financial distress is a company's financial decline before bankruptcy (Utami et al., 2021). The causes of financial distress can be detected from internal and external factors in the company's environment. Research by Masduki et al. (2019) and Pawitri and Alteza (2020) states that the amount of credit, management inefficiency, and abuse of authority can cause internal factors. Meanwhile, one of the external factors is the increase in loan interest due to the global crisis. These causal factors create pressure on management that can affect performance in the company. Disrupted company performance can lead to the loss of stakeholders (Ganesha & Hartanti, 2019). So, companies will do everything possible to avoid the factors that cause financial distress, such as misusing earnings management (Pawitri & Alteza, 2020).

Financial distress can be detected using financial ratios as well as non-financial indicators. Some financial ratios that could detect financial distress are leverage, liquidity, operating capacity, profitability, and cash flow (Fahlevi & Marlinah, 2018; Idawati, 2020; Susilowati & Fadlillah, 2019). In addition to performance ratios, according to Ahmad et al. (2023), other studies analyze financial distress through non-financial performance indicators such as global financial crisis variables, firm size, corporate governance, financial performance, as well as environmental, social, and governance (ESG hereafter). ESG is one of the non-financial indicators that stakeholders widely consider as it gives them the company's sustainability signals. The energy sector is closely related to the ESG issue (Giese et al., 2019).

Through regulation number 9 of 2020, the Indonesian Minister of Social Affairs required companies from the energy sector to conduct Corporate Social and Responsibility (CSR). The regulation stipulates the company's commitment to further social development work, including commitments within and outside the company. Furthermore, this responsibility must be disclosed as concrete evidence of sustainability disclosure. Sustainability disclosure can be done through ESG disclosure. ESG disclosure is essential and increasing now (Kartika et al., 2023) as it can affect stakeholders' decisions, especially investors and creditors. Investors use ESG as an indicator of the company's sustainability performance. The disclosure can also improve the company's image. When the company's image rises and succeeds in increasing investment, the company also has an impact on reducing the risk of possible financial distress. According to research by Azmi et al. (2021) in the banking industry, from a stakeholder theory perspective, banks with a high ESG commitment may indicate greater stakeholder support, leading to improved transparency. Conversely, low ESG performance could suggest a lack of commitment to minority stakeholders. This finding shows that ESG could impact stakeholder and financial performance to be more transparent.

Research on financial distress aims to help companies determine anticipatory steps before the company enters the bankruptcy stage. All stakeholders are impacted by financial distress, so companies use the prediction of financial distress to take appropriate action to prevent losses (Bukhori et al., 2022). Previous research discussing the relationship between financial ratios has been carried out, although there are still inconsistencies, especially in the variables of liquidity, leverage, cash flow, and operating capacity. Several studies have been carried out, but until now, no research has examined the relationship between financial ratios and financial distress moderated by ESG. Investors and creditors increasingly value ESG disclosure for its potential to enhance the company's image and reduce financial distress (Setiyowati & Mardiana, 2022). Companies aim to provide the highest quality ESG reports to maximize benefits like enhanced reputation and brand image. However, companies experiencing financial distress may struggle to produce high-quality ESG reports due to insufficient capital, whether in expertise or financial resources (Harymawan et al., 2021).

Therefore, this study discusses the novelty of research by focusing on financial ratios consisting of liquidity, leverage, cash flow, and operating capacity supported by ESG disclosure to reduce the potential for financial distress in energy sector companies listed on the Indonesian Stock Exchange in 2018 - 2022, in the main category. Previous studies have different results on the relationship between financial ratios and financial distress. This study found that financial ratios can help reduce financial distress, and ESG disclosure can impact some financial ratios to mitigate financial distress. The purpose of this study is to contribute to

stakeholders' understanding of financial ratios on financial distress with the influence of ESG disclosure, and it may be helpful for financial literature in the future. Therefore, this research wants to answer whether financial or non-financial factors can be used to reduce financial distress for companies early.

Literature Review

Stakeholder Theory

Stakeholder theory was first introduced by Freeman in 1984. This theory emphasizes the importance of considering the interests of various parties related to the company (stakeholders), including shareholders, employees, customers, suppliers, communities, and the environment. Furthermore, stakeholder theory also explains that companies that pay attention to and fulfill the needs and expectations of stakeholders tend to have better and more sustainable performance (Ningwati et al., 2022). Stakeholder theory states that companies are responsible not only to shareholders but also to all parties interested in or can be affected by the company's operations (Rizqi, 2023). Based on this theory, the company's main objective is to create long-term value for all stakeholders, not just maximize short-term profits for shareholders (Freeman, 2015). Implementing sustainable operations practices, such as ESG, can influence stakeholders in assessing the company's reputation and performance. ESG activities can also improve market performance by resolving conflicts between managers and stakeholders (Habib, 2023).

Leverage and Financial Distress

Leverage shows that using corporate funding sources from debt can create new obligations for the company, such as paying off loans and interest. When the company's debt is more significant than its assets, and it continues, it increases the leverage ratio (Masduki et al., 2019). An increase in the leverage ratio indicates the company's dependence on debt. The stakeholder theory states that all stakeholders have the right to obtain information about company activities during a specific period that can influence decision-making, including information on the company's dependence on debt (Freeman, 2015). This information will form negative market assumptions regarding the risk of investment activities that can describe the company's capital structure and determine the risk of uncollectible debt. The risk of investment activities will threaten creditors' need for fresh funds.

Meanwhile, creditors avoid such risks because they focus on stability and debt repayment. Investors themselves will also be cautious about investing in the company. Therefore, companies with a high level of leverage will be able to experience difficulties in paying their obligations when they are due, which can cause the company difficulty in reducing the potential for financial distress. Research by Choirunnisa and Sari (2023), Finishtya (2019), Hikmawati (2022), Susilowati and Fadlillah (2019), as well as Wesa and Otinga (2018) also reported that the higher the leverage of a company, the more it can cause the company to be in financial distress. However, studies by Idawati (2020), Muzharotatingsih and Hartono (2022), as well as Prasetyo and Krisnawati (2021) show different results that leverage does not affect financial distress. The earlier description leads to Hypothesis 1 (H1), which is stated in the following statement.

H1. Leverage has a negative effect on reducing financial distress.

Liquidity and Financial Distress

Liquidity reflects an entity's ability to meet short-term obligations, indicating its capacity to pay as reported on the balance sheet and assisting in analyzing short-term finances for better working capital efficiency. High liquidity is crucial as it prevents financial distress, which occurs when a company struggles to meet short-term obligations (Wijaya & Suhenda, 2023). Companies with low liquidity levels are more likely to face difficulties paying debts when due, potentially leading to financial distress (Wesa & Otinga, 2018). Stakeholder theory emphasizes that companies must benefit all stakeholders, and greater stakeholder support drives the company's growth efforts. Effective liquidity management enhances stakeholder trust and confidence, supporting ethical and sustainable business operations. Research by Dillak and Fitri (2019),

Fahlevi and Marlinah (2018), as well as Wijaya and Suhendah (2023) indicates that higher liquidity values reduce the likelihood of financial distress. Therefore, Hypothesis 2 (H2) is formulated.

H2. Liquidity has a positive effect on reducing financial distress.

Operating Capacity and Financial Distress

The activity ratio or operating capacity is a ratio that measures the operational capacity of the company's ability to use company assets (Aini & Purwohandoko, 2019). Companies that can optimize operating capacity are often considered to have strong fundamentals. A high operating capacity value will show that the company can generate high sales by using its assets effectively. Based on stakeholder theory, companies that successfully maximize operating capacity also show good managerial resource management skills (Freeman, 2015). Effective asset management can result in stability and sustainable growth that benefit all interested parties. Therefore, increasing operating capacity can reduce the risk of financial distress. In addition, this risk reduction will also be accompanied by an increase in the company's reputation in the eyes of stakeholders, thereby strengthening business relationships and increasing market confidence.

The stakeholder theory is also supported by research from Larasati and Wahyudin (2019), Susilowati & Fadillah (2019), and Susilowati et al. (2019) showing that operating capacity has a negative effect on financial distress. However, research conducted by Idawati (2020) and Aini and Purwohandoko (2018) revealed no influence between operating capacity and financial distress. Based on this description, Hypothesis 3 (H3) is formulated.

H3. Operating capacity has a positive effect on reducing financial distress.

Operating Cash Flow and Financial Distress

Cash flow from operating activities is the ability of a company to generate cash from its core operating activities to meet corporate obligations and pay dividends. This cash flow is a crucial aspect of financial information that investors scrutinize in financial statements when considering funding decisions. According to Santoso and Manaf (2019), companies that report high net cash from operating activities are perceived as capable of generating sufficient internal funds to pay off debt without additional borrowing. This perception is vital for maintaining financial health and stability. Stakeholder theory posits that a company is connected to its shareholders and various parties with a vested interest in its operations (Julythiawati & Ardiana, 2023). Stakeholders favor high operating cash flow, which signifies the company's viability and stability. High operating cash flow reassures stakeholders about the company's ability to meet its financial obligations and sustain operations without relying excessively on external financing. This confidence is crucial for maintaining stakeholder trust and reducing the likelihood of financial distress. Continuous borrowing, on the other hand, may signal financial instability and can lead to financial distress, as noted by Wijaya and Suhendah (2023). According to Finishtya (2019), operating cash flow positively influences reducing financial distress. Based on the earlier description, Hypothesis 4 (H4) is formulated.

H4. Operating cash flow has a positive effect on reducing financial distress.

ESG Disclosure and Financial Distress

The ESG concept in a sustainable economy emphasizes the importance of companies considering environmental, social, and corporate governance factors as a form of responsibility towards stakeholders. ESG aims to create investor capital flows focusing on ESG markets, encouraging sustainable and responsible business practices (Duan, 2023). Comprehensive and transparent ESG disclosure is a key indicator that a company has considered the interests of all stakeholders. Stakeholder theory states that companies must consider the impact of their operations on all related parties. Hummels (1998), as quoted by Hadi (2014), states that the ESG score measures a company's sustainability performance, with a higher score indicating sustainable solid practices. Such performance enhances the company's reputation and image and reduces the risk of financial distress (Suprabha et al., 2024). Companies that excel in ESG performance exhibit superior

risk management and increased operational efficiency. Additionally, they maintain positive relationships with the community and environment, which helps to mitigate potential conflicts and financial distress risks (Khan et al., 2016). According to Citerrio (2023), a high ESG value enhances predictive ability and minimizes financial difficulties. Therefore, Hypothesis 5 (H5) is formulated.

H5. ESG disclosure has a positive effect on reducing financial distress.

ESG Disclosure, Leverage, and Financial Distress

The level of leverage relates to the level of debt to fund the company's assets. A high level of leverage can indicate that the company uses more debt to manage its business operations. According to Lestari et al. (2023), companies in a crisis will incur increased debt. Increased debt can lead to a higher possibility of financial distress (Gunawan et al., 2019). Based on stakeholder theory, the potential for high financial distress will reduce interest and raise concerns for related stakeholders. Stakeholder theory states that companies are responsible to shareholders and various parties interested in the company's operations, such as employees, customers, suppliers, local communities, and governments (Freeman, 2015). When a firm faces the risk of financial distress, the trust and support of these stakeholders may decline, which in turn may affect the firm's overall performance and reputation (Mitchell et al., 1997). Therefore, one way to attract stakeholders' attention is through ESG disclosure (Ningwati et al., 2022). ESG disclosure includes corporate information about environmental, social, and corporate governance responsibilities. ESG disclosure shows the company's efforts and commitment to overcome information gaps and minimize conflicts of interest between stakeholders (Purnomo et al., 2023). Providing high levels of disclosure related to ESG can create trust and sustainability to reduce the negative impact of leverage levels on financial distress. Based on this description, Hypothesis 6 (H6) is stated in the following statement.

H6. ESG disclosure moderates the relationship between leverage and reducing financial distress.

ESG Disclosure, Liquidity, and Financial Distress

Liquidity measures a company's ability to fund operations and meet short-term obligations. When funds are available to fund operational activities and pay off debts, it can reduce the possibility of financial distress (Hikmawati, 2022). Conversely, a low level of liquidity can increase the risk of financial distress because the company faces difficulties fulfilling its obligations. On the other hand, investors will recognize liquidity from the company's stocks if they want to invest in the company. If the liquidity stock is high, the companies will have high scores in ESG (Luo, 2022). This situation is related to stakeholder theory because adopting ESG practices will achieve long-term results and maintain a positive reputation among stakeholders (Almubarak, 2023). ESG disclosure by companies is one of the indicators that investors pay attention to when assessing company performance. Investors also look at ESG to make investment decisions in a company. High ESG disclosures can leverage stakeholders' trust and reduce liquidity's impact on the company's financial distress. Based on the earlier description, Hypothesis 6 (H6) is formulated.

H7. ESG disclosure moderates the relationship between liquidity and reducing financial distress.

ESG Disclosure, Operating Capacity, and Financial Distress

Operating capacity will provide an overview of financial performance associated with the level of success of a company's operations (Zhou et al., 2022). A low level of operating capacity will reflect the company's inability to maximize the use of its assets for company operations. Low operating capacity can be due to a lack of production efficiency, unsatisfactory sales, or the company's inability to adjust to market changes (Bukhori et al., 2022). This inability can increase operating costs, increasing the risk of company survival, especially financial distress. Based on stakeholder theory, the company needs each stakeholder's support in carrying out all operational activities (Freeman, 2015). The company can obtain this support

through financial and non-financial disclosure practices, including ESG disclosure. Stakeholder theory also explains that ESG disclosure is carried out to maintain relationships with stakeholders (Safriani & Utomo, 2020). With a well-maintained relationship, stakeholders are expected to provide support through investment, equity participation, and lending, especially support for product use for other stakeholders. Thus, the company can increase its sales and effectively use its assets (Durlista & Wahyudi, 2023). It will be of added value to stakeholders to reduce the possibility of financial difficulties. Based on this description, Hypothesis 8 (H8) is formulated in the following statement.

H8. ESG disclosure moderates the relationship between operating capacity and reducing financial distress.

ESG Disclosure, Operating Cash Flow, and Financial Distress

Operating cash flow is a ratio that overviews a company's operating efficiency. Good cash flow conditions enhance confidence in the company's ability to pay its debts, indicating a lower likelihood of financial distress. Companies that cannot manage their cash flow face a higher possibility of financial distress (Saleem et al., 2020). Financial distress can be detected through continuously decreasing cash flow that does not meet expectations (Choirunnisa & Sari, 2023). Moreover, investors and creditors evaluate a company's cash flow before providing funding. Companies with strong operating cash flow enhance their reputation and build stakeholder trust. Another crucial aspect that impacts stakeholder relationships is the open disclosure of ESG information. According to Ningwati et al. (2022), ESG disclosure is essential for companies as it influences stakeholders' perceptions of corporate performance and responsibility. Stakeholders who receive positive ESG information are more likely to believe that the company adheres to sustainable policies and practices. Based on this earlier description, Hypothesis 9 (H9) is formulated in the following statement.

H9. ESG disclosure moderates the relationship between operating cash flow and financial distress.

Research Method

This study employed a quantitative method based on mathematical calculations linked to theories (Abdullah et al., 2021). It aims to investigate the effect of financial ratio variables represented by liquidity, leverage, operating cash flow, and operating capacity on financial distress moderated by ESG disclosure.

The population of this study are energy sector companies listed on the Indonesian Stock Exchange (IDX hereafter) in the main category. At the same time, the sample was selected using a purposive sampling method with two criteria. Firstly, the companies' annual reports from 2018 to 2022 were accessible. Secondly, the annual reports provided the data needed. Table 1 presents the sample selection process, showing that the final sample of this study consists of 123 firm-year data.

Table 1. Sample Selection Process

Sample Criteria	Total
Energy sector companies listed on the Indonesian Stock Exchange	44
The companies without accessible annual reports during 2018-2022	(18)
The companies that met the criteria	26
Total firm-year data being observed (26 companies for five years)	130
Outlier	(7)
Total data observation as the final sample	123

This study utilizes secondary data documented from the sample companies' annual reports. The reports were retrieved from the official website of IDX or the companies. The variables of this study are classified into dependent, independent, and moderating variables. Table 2 shows the operational definition of the variables and their measurements.

Table 2. The Operational Definition of the Variables and their Measurements

Variable	Definition	Measurement
<i>Dependent Variable</i>		
Financial Distress (FD)	Financial distress is financial difficulties and loss of market share due to poor performance, lack of high adoption, liquidity shocks, and funding. (Antunes et.al., 2023). The variable is measured using Zmijewski approach (X).	$X = -4,3 - 4,5 X_1 + 5,7 X_2 - 0,004 X_3$ Description: X1 = ROA (Return on Asset) X2 = Leverage (Debt Ratio) X3 = Likuiditas (Current Ratio) (Ramdani, 2020)
<i>Independent Variables</i>		
Liquidity (LIQ)	Liquidity is a ratio of a company's ability to meet short-term obligations which provides information about the company's solvency on the company's balance sheet (Wijaya & Suhendah, 2023).	$DAR = \frac{Total\ Liability}{Total\ Asset}$ (Fahlevi & Marlinah, 2018)
Leverage (LEV)	Leverage is a ratio used internally by a company to measure the company's ability to pay long-term obligations, as well as evaluate the company's performance in obtaining profits used to pay short-term and long-term debts (Wijaya & Suhendah, 2023).	$CR = \frac{Current\ Asset}{Current\ Liability}$ (Fahlevi & Marlinah, 2018)
Operating Cash Flow (OCF)	Operating cash flow is a ratio used to measure cash outflows for cash payments for purchases of goods and services and payments for production costs (Choirunnisa & Sari, 2023).	$OCF = \frac{Net\ Operating\ Cash\ Flows}{Total\ Current\ Liability}$ (Fahlevi & Marlinah, 2018)
Operating Capacity (OC)	Operating capacity is a ratio used to calculate the level of effectiveness and efficiency of a company in using its assets. (Prasetyo & Kristanti, 2021)	$TATO = \frac{Sales}{Total\ Asset}$ (Susilowati et.al., 2019)
<i>Moderating Variable</i>		
ESG Disclosure (ESGD)	ESG (Environmental, Social, and Governance) disclosure relates to observers of the company's internal and external environment, such as topics related to climate change, social diversity, and organizational structures in the company (Antunes et.al., 2023).	$GRI\ Index = \frac{\sum X_{yi}}{N_i}$ Description: $\sum X_{yi}$ = Number of disclosures N_i = Number of items (Global Reporting, 2022)

This study utilizes descriptive statistics, multiple regression, and moderated regression to analyze the data. Descriptive statistics were used to summarize and present the data in an explanatory manner to get a glimpse of the dataset, while multiple regression analysis and moderated regression analysis (MRA) were used to test the research hypotheses (Padilah & Adam, 2019). As regression analysis works well under certain assumptions, three classic assumptions tests were applied. The tests were normality, heteroscedasticity, and multicollinearity tests. The panel sample data used in this study did not go through the autocorrelation test since the test result will have no impact on the study (Napitupulu et al., 2021). Based on the research hypotheses, the regression models for conducting multiple and moderated regression analyses were formulated in Equations (1) and (2).

$$FD = \alpha + \beta_1 LEV + \beta_2 LIQ + \beta_3 OC + \beta_4 OCF + \beta_5 ESG + \varepsilon \quad (1)$$

$$FD = \alpha + \beta_1 LEV + \beta_2 LIQ + \beta_3 OC + \beta_4 OCF + \beta_5 ESG + \beta_6 LEV * ESGD + \beta_7 LIQ * ESGD + \beta_8 OC * ESGD + \beta_9 OCF * ESGD + \varepsilon \quad (2)$$

Results and Discussion

As stated in the research method, this study applied descriptive statistics, multiple regression, and MRA to analyze the data. Tables 3, 4, and 5 present the results of the descriptive statistics, multiple regression, and moderated regression analysis, accordingly.

Table 3. Descriptive Statistics Results

Variable	Min	Max	Mean	Std. Deviation
LEV	-0.84	4.54	0.486	0.756
LIQ	-0.34	7.42	1.992	1.464
OC	-0.79	4.23	0.657	0.827
OCF	-1.23	4.05	0.137	0.739
FD	-7.68	14.74	3.816	3.670
ESGD	-0.78	4.38	0.394	0.761

Source: Primary Data Processed (2024)

Table 3 provides descriptive statistics for six variables: leverage, liquidity, operating capacity, operating cash flow, financial distress, and ESG disclosure. Leverage and ESG disclosure show moderate variability with standard deviations of 0.756 and 0.761, respectively. Liquidity exhibits higher dispersion with a standard deviation of 1.464. Operating capacity and operating cash flows demonstrate relatively modest variability. At the same time, financial distress has the highest variability, with a standard deviation of 3.670, indicating significant dispersion in the financial distress variable. Overall, the variables display varying levels of dispersion, with FD showing the greatest and OCF the least.

The table also shows that mean values for the variables provide insights into the average levels of vital financial metrics across the dataset. The leverage (LEV) mean of 0.486 suggests that entities generally maintain a moderate level of debt relative to their equity or assets. The liquidity (LIQ) mean of 1.992 indicates that, on average, entities have nearly twice the current assets compared to current liabilities, reflecting short-term solid financial health. The operating cycle (OC) mean of 0.657 shows that entities quickly convert inventories into cash. The operating cash flow (OCF) mean of 0.137 reveals a modest positive cash flow from operations. It suggests that, on average, entities generate slightly more cash than they spend in their core activities. The financial distress mean of 3.816 indicates that entities experience moderate financial distress. Finally, the ESG disclosure mean of 0.394 suggests that entities, on average, have relatively low levels of ESG-related disclosures, indicating that this area may not be a primary focus for most entities in the dataset.

After describing the dataset using the descriptive statistics analysis, multiple and moderated regression analyses were conducted to test the hypotheses. However, three classic assumption tests were executed beforehand in both models to ensure that the regression models met the classic assumptions. The One Kolmogorov Smirnov (One KS), the Variance Inflation Factor, and the Glejser test were executed to test the classic assumption of normality, multicollinearity, and heteroscedasticity. The results of the One KS test show that both models have a significant value of more than 5%. This finding implies that the residual data of the dataset was normally distributed. For the multicollinearity test, the VIF value of each independent variable in the first regression model ranged from 1.208 to 1.540, confirming that the multicollinearity problem did not exist in the model. The multicollinearity problem was undeniable in the second regression model due to the interaction between the independent and moderating variables. The last classic assumption tests using the Glejser tests show no heteroscedasticity problem since the F-test was insignificant.

As the three classic assumptions of the regression model formulated in the study were met, the models fit for testing the hypotheses. Table 4 summarizes the essential figures of the multiple regression analysis, which will be used as the basis for accepting or rejecting Hypotheses 1 to 5 (H1, H2, H3, H4, H5). The discussion of the results is presented in the sections written after the table.

Table 4. Summary of the Multiple Regression Results - Model 1

Variable	Expected Direction	β	t-statistic	p-value	Decision
LEV	-	-11.403	-11.986	0.000	H1. Supported
LIQ	+	1.001	7.694	0.000	H2. Supported
OC	+	2.323	5.379	0.000	H3. Supported
OCF	+	4.907	3.073	0.003	H4. Supported
ESGD	+	1.789	2.247	0.027	H5. Supported

Source: Primary Data Processed (2024)

The Effect of Leverage on Reducing Financial Distress

Table 4 presents that the p-value of the leverage variable is below 5% (even below 1%) of significant level, with beta coefficient value of -11.403. It implies that the leverage variable has a negative effect on reducing financial distress. Therefore, Hypothesis 1 (H1) is supported. This finding is in line with the stakeholder theory, implying that lower leverage minimizes the risk of bankruptcy and financial distress, which in turn protects the interests of these stakeholders. Keeping leverage at a low or controllable level can be considered an effort to maintain a company's financial stability, which benefits shareholders and assures all stakeholders of sustainability. Emphasizing the importance of responsible management oriented towards all stakeholders' long-term interests is an essential principle of the stakeholder theory. This finding supports prior studies, such as Susilowati and Fadlillah (2019) as well as Choirunnisa and Sari (2023). Both studies reported that leverage has a negative effect on reducing financial distress.

The Effect of Liquidity on Reducing Financial Distress

Table 4 illustrates that the expected direction for liquidity in reducing financial distress is positive, and the beta coefficient of 1.001 aligns with this expectation. The t-statistic of 7.694 and a p-value of 0.000 show a significant positive relationship, supporting Hypothesis 2 (H2). It means that the greater the value of liquidity, the greater the potential for reducing financial distress. A high liquidity value shows the company's ability to manage short-term obligations, minimizing the potential for failure to pay obligations owned by the company. The results of this research strengthen the stakeholder theory, which states that adequate liquidity will increase the trust of stakeholders and get support for the business operation. It will be impactful in getting optimum financial performance and reducing financial distress. The finding strengthens the findings of the previous research conducted by Fahlevi and Marlinah (2018), Wijaya and Suhendah (2023), as well as Dillak and Fitri (2019), confirming that liquidity has a positive effect on reducing financial distress.

The Effect of Operating Capacity on Reducing Financial Distress

Table 4 reports that the expected direction for the operating cycle variable is positive, as indicated by the beta coefficient of 2.323. With a t-statistic of 5.379 and a p-value of 0.000, the relationship is statistically significant, supporting Hypothesis 3 (H3). The results of this study support the stakeholder theory that an increase in operating capacity leads to a decrease in financial distress and reflects the company's responsibility to stakeholders. The stakeholder theory emphasizes the importance of management, which considers all stakeholders' interests, including employees, customers, suppliers, and communities. By reducing financial distress through increased operating capacity, companies increase shareholder value and create stability and trust among other stakeholders. As Freeman (2015) stated, management responsible for stakeholders can result in better overall performance and support the company's sustainability. This finding is in line with the findings of Candrayani et al. (2024) and Maronrong et al. (2022), stating that the higher the level of operating capacity, the better the company can be as a tool to reduce financial distress.

The Effect of Operating Cash Flow on Reducing Financial Distress

According to figures in Table 4, the operating cash flow variable demonstrates a positive (4.907) and significant (0.003) relationship with the reduction of financial distress, indicating that Hypothesis 4 (H4) is supported. Higher operating cash flow reflects a company's ability to finance its operational activities and meet its maturing obligations. The stakeholder theory suggests that companies will achieve sustainable performance by meeting stakeholders' needs and expectations (Ningwati et al., 2022). Companies exhibiting high operating cash flow demonstrate their capacity to sustain operations, enhancing stakeholder satisfaction. Conversely, the difficulty in maintaining adequate cash flow levels can increase the potential for financial problems. These findings contrast with previous research conducted by Finishtya (2019) and Sembiring (2022), which reported a positive relationship between operating cash flow and efforts to mitigate financial distress. The present study confirms that robust operating cash flow is crucial for operational sustainability and stakeholder confidence, underscoring its role in reducing the risk of financial distress.

The Effect of ESG Disclosure on Reducing Financial Distress

Table 4 shows that the expected direction for ESG disclosure is positive, with a beta coefficient of 1.789. The t-statistic of 2.247 and a p-value of 0.027 indicate a statistically significant positive relationship, supporting Hypothesis 5 (H5). Companies that are more transparent in their ESG practices tend to experience decreased financial risk. The number of companies disclosing ESG information is increasing yearly, supported by the ESG index introduced by the Indonesia Stock Exchange in 2022, which requires issuers to disclose ESG details. Companies' strong focus on sustainability also fuels this increase in ESG disclosures. They diligently comply with environmental, social, and governance regulations to maintain credibility with stakeholders, including governments, communities, and investors. One of the regulations to watch out for is the Indonesian Financial Services Authority's Regulation Number 2/POJK.04/2019. It regulates the Procedures for Granting Approval of the Articles of the Association of Stock Exchanges, where compliance is crucial for companies to gain recognition for their ESG efforts. This study's results align with stakeholder theory, which explains that companies should consider the interests of all stakeholders, not just shareholders. By prioritizing stakeholders' rights to accurate information and transparent disclosure practices, companies comply with Good Corporate Governance (GCG) principles and build trust and sustainable long-term relationships with stakeholders. This approach ensures that companies can operate responsibly and ethically, reducing the risk of financial distress and increasing the company's long-term value (Freeman, 2015; Anggelina & Novita, 2020).

Turning to the moderated regression analysis, Table 5 summarizes the analysis results of Model 2. The discussion of the results is presented after the table, including the discussion sections on the moderating effect of ESG disclosure on the relationship of financial ratios and financial distress.

Table 5 Summary of the Moderated Regression Results - Model 2

Variable	Expected Direction	B	t-statistic	p-value	Decision
LEV	-	-10.534	-5.530	0.000	H1. Supported
LIQ	+	1.731	5.472	0.000	H2. Supported
OC	+	2.478	2.332	0.021	H3. Supported
OCF	+	6.38	1.788	0.038	H4. Supported
ESGD	+	7.784	2.118	0.036	H5. Supported
ESG.LEV	+/-	-2.151	-0.478	0.633	H6. Rejected
ESG.LIQ	+/-	-2.13	-2.548	0.012	H7. Supported
ESG.OC	+/-	-0.795	-0.301	0.764	H8. Rejected
ESG.OCF	+/-	-2.009	-0.232	0.817	H9. Rejected

Source: Primary Data Processed (2024)

Table 5 shows that the overall results related to the independent variables LEV, LIQ, OC, OCF, and ESGD are similar to multiple regression Model 1 results. Those independent variables in Model 2 have statistically significant relationships with their respective expected directions, confirming the support for Hypotheses 1 to 5 (H1, H2, H3, H4, H5) as in the multiple regression analysis results. With regard to the testing of Hypotheses 6 to 9, the following sections present the discussion of the results.

The Role of ESG Disclosure in Moderating the Effect of Leverage on Reducing Financial Distress

Table 5 shows that the interaction between leverage and ESG disclosure (ESG.LEV) has a beta coefficient of -2.151, with a t-statistic of -0.478 and a p-value of 0.633. Since the p-value is higher than the 5% significant level, this relationship is not statistically significant, leading to the rejection of Hypothesis 6 (H6). It means that ESG does not moderate the relationship between leverage and financial distress. This study's results contradict stakeholder theory, stating that ESG disclosure will increase stakeholder support to prevent financial distress. Stakeholder theory argues that with good ESG disclosure, companies will get more stakeholder support, which can reduce financial risk and increase company stability (Freeman, 2015). Stakeholders assume that the disclosures made by the company tend to get a good name (Syafrullah & Muharam, 2017). Even though the findings did not align with the stakeholder theory, they did align with prior research by Ng and Rezaee (2015). Ng and Rezaee reported that the application of ESG does not always significantly affect the company's financial stability. Additionally, research by Giese et al. (2019) revealed that ESG is more influential on long-term stability and systemic risk than short-term leverage mechanisms. Companies with high debt levels do not automatically experience improved financial conditions because they have an excellent ESG score. Thus, while companies with high debt levels may enhance their image through ESG commitments, the direct impact on reducing financial stress remains insignificant.

The Role of ESG Disclosure in Moderating the Effect of Liquidity on Reducing Financial Distress

Table 5 demonstrates that the interaction between ESG and liquidity (ESG.LIQ) produces a beta coefficient of -2.13, with a t-statistic of -2.548 and a p-value of 0.012. The p-value indicates a statistically significant relationship, supporting Hypothesis 7 (H7). This finding suggests that liquidity is significantly associated with ESG factors, though the negative beta implies that the relationship is inverse. It indicates that ESG disclosure may weaken the relationship between liquidity and financial distress reduction. In other words, companies with high liquidity levels but are also committed to good ESG practices may not always experience a significant decrease in financial distress. ESG disclosure might increase corporate transparency and accountability so that stakeholders pay more attention to liquidity as an indicator of short-term financial health. Stakeholders usually consider high liquidity because increasing ESG disclosures may make stakeholders more alert to potential mismanagement or hidden risks so that the positive impact of liquidity on reducing financial distress is reduced. According to research by Broadstock et al. (2020), companies that have a strong ESG commitment may face resource allocation focused on environmental and social initiatives, which can reduce liquidity reserves that should be used to address urgent financial conditions. These results suggest that, although liquidity is essential to reduce financial distress, investment in ESG practices should be considered because it can divert significant financial resources, thus weakening the positive effect of liquidity on financial distress.

The Effect of ESG Disclosure in Moderating the Effect of Operating Capacity on Reducing Financial Distress

Table 5 reports that the interaction between ESG disclosure and operating capacity variable (ESG.OC) results in a -0.795 beta coefficient, with a t-statistic of -0.301 and a p-value of 0.764. The high p-value indicates no statistically significant relationship, leading to the rejection of Hypothesis 8 (H8). The results show that ESG does not strengthen or weaken the relationship between operating capacity and financial distress reduction. The results of this study do not support stakeholder theory, which states that companies

that pay attention to the interests of stakeholders will have better financial performance because it increases stakeholder trust and support (Freeman, 2015). It could be because ESG implementation usually has a long-term impact and may not be directly visible in short- or medium-term financial performance (Torricelli & Bertelli, 2022). In contrast, operational capacity directly impacts a company's operational efficiency and financial health. Therefore, over a shorter study period, the impact of ESG on the relationship between operational capacity and financial distress may not be apparent. Additionally, the level and effectiveness of ESG implementation may vary significantly across firms. Based on the research data, some companies have more advanced and effective ESG programs with an average 5-year ESG score of 0.5–0.7. Meanwhile, some other companies only make minimal efforts to fulfill basic requirements, resulting in ESG scores of only 0.1–0.3. This variation may obscure the influence of ESG in the context of the relationship between operational capacity and financial distress.

Research by Surroca et al. (2010) also found that although good operating capacity is vital for the company's financial performance, its impact is not directly influenced by commitment to ESG. The results of this study also support research from Fatemi et al. (2018), which reveals that ESG disclosure is not always directly related to company performance. In other words, although the company has good operating capacity, commitment to ESG does not provide additional protection or significantly reduce financial distress. This finding suggests that while stakeholder theory emphasizes the importance of considering all stakeholders' interests to achieve better performance, in the context of operational capacity and financial distress, implementing ESG may not have a significant impact in the short term. The theory suggests that firms that consider the needs and expectations of stakeholders will gain a competitive advantage through enhanced reputation, customer loyalty, and employee motivation (Freeman, 2015). However, these implications are more likely to be seen in long-term outcomes than in the short-term financial measures analyzed in this study.

The Role of ESG Disclosure in Moderating the Effect of Operating Cash Flow on Reducing Financial Distress

Table 5 depicts that the interaction between ESG disclosure and operating cash flow (ESG.OCF) produces a beta coefficient of -2.009, with a t-statistic of -0.232 and a p-value of 0.817. The lack of statistical significance, as indicated by the high p-value, results in the rejection of Hypothesis 9 (H9). The results indicate that ESG disclosure neither strengthens nor weakens the relationship between operating cash flow and the reduction of financial distress. The operating cash flow factor is often more associated with long-term strategies and decisions, which may not be directly influenced by enhanced ESG transparency. Although ESG disclosure is vital for long-term reputation and trust, stakeholders might depend primarily on immediate financial metrics to assess a company's stability. Research by Cheng et al. (2014) demonstrates that despite the importance of healthy operational cash flow for a firm's financial stability, ESG implementation does not constantly strengthen the connection between these two factors. This outcome underscores the importance of efficient management of operational cash flow, suggesting that companies should focus on this aspect without overly relying on ESG disclosure as a mitigating factor for financial distress. By emphasizing operational efficiency and cash flow management, companies can better navigate financial challenges and maintain stability, independent of the level of their ESG transparency. Thus, while ESG practices are essential for long-term success and stakeholder trust, they should not be considered a substitute for robust financial management practices that directly impact a company's immediate financial health.

Conclusion

This research investigates how leverage, liquidity, operating capacity, and operating cash flow affect financial distress moderated by ESG disclosure in energy sector companies. The results indicate that higher leverage significantly increases financial distress, while better liquidity, operating cash flow, and operating

capacity mitigate it. Effective management of these three factors can thus reduce financial distress. However, the study finds that ESG disclosure weakens the positive impact of liquidity on reducing financial distress. It could be because high liquidity in the context of ESG can heighten stakeholder scrutiny of potential risks and mismanagement. On the other hand, ESG disclosure does not impact the relationships between leverage, operating capacity, and operating cash flow in financial distress. While ESG practices are critical to long-term success and stakeholder trust, they should not be considered a substitute for financial solid management practices that directly affect a firm's financial health in the short term.

This research contributes to the literature by offering empirical evidence that emphasizes the critical role of operational efficiency and cash flow management in maintaining firm stability. In an academic context, this study enriches the literature by demonstrating the link between ESG practices and financial distress reduction in the energy sector, expanding the understanding of the synergy between ESG and financial management in improving firm performance. From a practical perspective, this research has strong implications for the financial sector and capital market stakeholders, providing insights for companies on the importance of integrating ESG practices with effective financial management to ensure long-term stability and growth, as well as helping investors evaluate the financial health of companies based on their commitment to ESG practices.

However, this study has some limitations that need to be taken into consideration. Firstly, focusing on the energy sector limits the generalization of the findings to other sectors. Future research should explore other industries, such as manufacturing, technology, and services, to determine if similar results can be observed. Secondly, this study only considered ESG factors without exploring the influence of other variables, such as technological innovation, market conditions, and government regulations that may also contribute to the financial health of companies. So, future research should consider these additional factors to provide a more comprehensive picture. Lastly, the research methods may have selection and measurement biases, so future studies should use more robust and inclusive methods to minimize such biases. In addition, future research can explore additional variables, such as the impact of government policies, new technologies, or changes in consumer behavior on the effectiveness of ESG practices. A more in-depth analysis of the interaction between macroeconomic variables and ESG practices may also provide more comprehensive insights into how external factors affect the relationship between ESG and corporate financial performance.

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