PROFITABILITY, LIQUIDITY, SALES GROWTH, FIRM SIZE : FINANCIAL DISTRESS WITH LEVERAGE AS A MODERATING VARIABLE

Meylia Nurkhasannah[1], Nawirah[2]
UIN Maulana Malik Ibrahim Malang[1],UIN Maulana Malik Ibrahim Malang[2]
pos-el: meylianurkhasannah@gmail.com[1], nawirah @uin-malang.ac.id[2]

ABSTRACT

This study seeks to investigate how profitability, liquidity, sales growth, and firm size affect financial distress, with leverage serving as a moderating factor. The research utilizes panel data regression analysis through E-Views 12. The sample includes 111 companies from the raw material sector that are traded on the Indonesia Stock Exchange (IDX) from 2021 to 2023 Financial reports available on the IDX website were used to gather secondary data. The sample was chosen through purposive sampling according to particular criteria, yielding 69 observations from 23 firms over a period of three years. The results indicate that financial distress is notably influenced by profitability, while liquidity, sales growth, and firm size are not Additionally, leverage does not influence the connection between the independent variables and financial distress. These outcomes are anticipated to serve as a useful reference for companies and financial statement users in managing finances and making informed decisions.

Keywords: Financial Distress, Profitability, Liquidity, Sales Growth, Firm Size, Leverage

1. INTRODUCTION

The diversity of corporate sectors in Indonesia causes economic competition to become tighter every year. However, not all companies are able to survive and compete to maintain the continuity of their business. In Facing increasingly tight business competition, companies need to develop new strategies so they can endure at a time increase significant benefits. If the company is unable to adapt and is not active enough in implementing strategy, and continues to experience losses, the company is at risk of facing financial problems (Muslimin & Bahri, 2022).

Through a press release from the Indonesia Stock Exchange on September 29, 2024, it stated that based on data as of September 25, 2024, there were more than six million investors with an increase of 744 thousand new investors in 2024. According to the President Director of the Indonesia Stock Exchange (IDX), the growing number of investors reflects strong and sustained confidence in the Indonesian capital market. However, this investor trust in stock investments must be supported by improved corporate performance to prevent potential financial difficulties.

Financial distress refers to a situation where a company faces a notable deterioration in its financial health, often serving as a cautionary indicator of impending bankruptcy. Lack of capital, high interest rates and continuous losses are the three main causes financial distress (Carolina et al., 2018). Financial distress can be assessed using Earnings Per Share (EPS), which is available in a company's financial statements. Financial reports offer an overview of the company’s financial operations during a defined timeframe, enabling users to evaluate its financial health (Nawirah et al., 2022). Financial distress can be influenced by financial ratios, sales growth, and firm size.

Profitability serves as an indicator to evaluate a company's capacity to produce earnings. A high profitability level reflects the company's strong ability to generate significant profits. This, in

turn, becomes an appealing factor for investors when deciding to allocate capital. The profitability ratio is frequently evaluated using Return on Assets (ROA) (Nabella et al. 2022). According to studies by Muzharoatiningsih & Hartono (2022), Syuhada et al. (2020), Oktaviani & Lisiantara (2022), and Sholikhah & Rokhmania (2022) profitability has an impact on the likelihood of financial troubles. However, according to studies by Sariroh (2021), Nurhayati et al. (2021) and (Myllariza, 2021) profitability has not been shown to be a contributing factor in financial distress.

Liquidity is a measure employed to assess an entity's ability to fulfill its short-term obligations quickly (Damajanti et al., 2021). A higher liquidity ratio shows an increased ability to fulfill short-term obligations. This ratio is typically calculated by dividing current assets by current liabilities (Ningsih & Asandimitra, 2023). According to studies by Syuhada et al. (2020), Sholikhah & Rokhmania (2022), Rochendi & Nuryaman (2022), liquidity has an impact on financial distress. Contrary to studies by Muzharoatiningsih & Hartono (2022), Sariroh (2021), Oktaviani & Lisiantara (2022), and Nurhayati et al. (2021), which claim that liquidity has no bearing on financial distress.

Sales growth acts as a sign of progress, indicating that an increase in this metric reflects the firm's ability to efficiently oversee its activities and achieve its goals, as evident from the consistently growing percentage of sales each year (Rochendi & Nuryaman, 2022). Sales growth can be calculated by comparing the change in sales between the current period and the prior year, then dividing by the sales from the previous year. Muzharoatiningsih & Hartono (2022) state that low or negative sales growth can result in worse profitability and liquidity. in keeping with studies conducted by Muslimin & Bahri (2022) and Rochendi & Nuryaman (2022). In contrast, Aninda Aninda Fitri & Juliana Dillak (2020) research indicates that the financial distress has little bearing on sales growth.

Firm size refers to the scale used to categorize a company's magnitude, commonly assessed through indicators such as total assets, revenue, market capitalization, and other relevant measures. A larger firm size can offer added value to both investors and creditors. Companies with substantial assets are generally perceived more favorably, as this can attract investment and facilitate access to credit (Muslimin & Bahri 2022). According to research by Syuhada et al. (2020), financial distress is negatively impacted by firm size. As opposed to the findings of Muslimin & Bahri (2022) dan Sholikhah & Rokhmania (2022), which claim that firm size has no bearing on financial distress.

Leverage is an indicator used to evaluate a company's ability to fulfill all its obligations. The evaluation of leverage ratio is conducted using the Debt to Assets Ratio (DAR). In this study, leverage is used as a moderating factor. A high leverage ratio can risk making it difficult for the company to pay its debts, which can disrupt operational activities and increae possibility the company is experiencing financial distress (Purwaningsih & Safitri 2022). Several earlier investigations, like those by Aji & Anwar (2022), Aninda Fitri & Juliana Dillak (2020), support the inclusion of leverage as a moderating variable. According to one study by Syuhada et al. (2020), leverage has an impact on how vulnerable a company is to financial stress. Hidayat et al. (2024), who employ leverage as a moderating variable, also provided additional support.

This study focuses on companies within the basic materials sector listed on the Indonesia Stock Exchange from 2021 to 2023. This sector plays an essential part in the national economy, acting as an

essential support for major industries like manufacturing, construction, and energy (Denny et al., 2024). The basic material sector also has a chain effect on labor absorption and increasing added value (Simanjuntak & Siahaan, 2024).

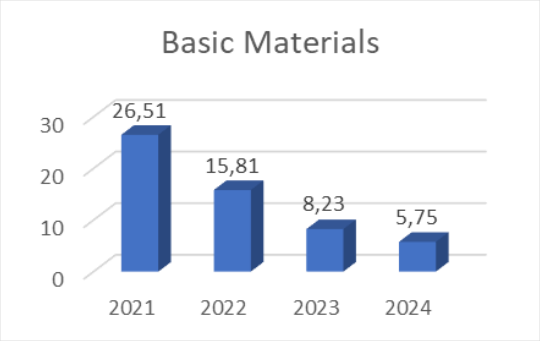

Figure 1 EPS Ratio of Basic Materials Sector
Source : Processed by researchers, 2025

Although the basic material sector has great potential, if seen from the image above, this sector has experienced a consecutive decline in EPS from 2021 to 2024. This decline reflects the tight competition and the less than optimal fulfillment of market demand, which encourages the entry of foreign industries into the domestic market. Therefore, the basic material sector is an interesting object for further research in the context of financial distress.

This research expands on the prior study by incorporating leverage as a moderating variable. Previous research yielded inconsistent findings concerning the effects of profitability, liquidity, sales growth, and firm size on financial distress, highlighting a research gap that must be addressed. Research related to financial distress on basic material sector companies have also not been carried out, therefore, further research needs to be carried out to review results study with using previously researched variables by adding leverage as a moderating variable, which is expected to fill the gap in the literature with a focus on the basic materials sector in the 2021-2023 period.

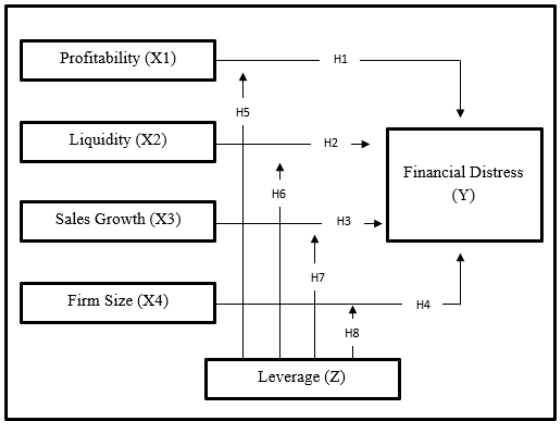

Figure 2 Conceptual Framework
Source : Processed by researchers, 2025

Based on the above explanation, the following hypotheses are formulated:
H1: Profitability influences financial distress.
H2: Liquidity has an impact on financial distress.
H3: Sales growth affects financial distress.
H4: Firm size influences financial distress.
H5 : Leverage moderates the effect of profitability on financial distress
H6 : Leverage moderates the effect of liquidity on financial distress
H7 : Leverage moderates the influence sales growth to financial distress
H8 : Leverage moderates the effect of firm size on financial distress

2. RESEARCH METHODS

This research utilizes a quantitative methodological approach. The gathered data takes the shape of numbers that are subsequently examined with the E-Views 12 software

The subjects of this research includes all companies in the basic materials sector listed on the Indonesia Stock Exchange (IDX) during the period 2021 to 2023. The sample comprises a subset of these companies, selected based on specific criteria. Out of 111 companies in the sector, 23 met the requirements for inclusion in the sample. Based on research (Muslimin & Bahri, 2022)

determining the number of samples is based on the following criteria:

1. Companies that provide complete financial statements;
2. Companies that report in Indonesian rupiah (IDR); and
3. Companies that have experienced declining profits or consecutive losses over three years.

These criteria were carefully chosen to align with the research objectives and the variables under investigation. Data collection was carried out through a documentation approach, by collecting financial report information available on the official site of the Indonesia Stock Exchange.

The analysis in this study encompasses descriptive statistics, evaluations of classical assumptions such as tests for multicollinearity and heteroscedasticity, hypothesis testing using t-tests and the coefficient of determination, regression with panel data, and moderated regression analysis (MRA).

No	Variable	Measurement	Measurement Scale
INDEPENDENT VARIABLE (X)			
1	Profitability	ROA : Net Income/Total Assets	Ratio
2	Liquidity	CR : Current Assets/Current Liabilities	Ratio
3	Sales Growth	*Sales Growth : Sales t- Sales t-1/ Sales t-1*	Ratio
4	Firm Size	Firm Size : Ln (Total Asset)	Ratio
DEPENDEN VARIABEL (Y)			
1	Financial Distress	EPS : Net Income / Number of shares outstanding	Ratio
MODERATING VARIABLE (Y)			
1	Leverage	DAR : Total Liabilities/ Total Assets	Ratio

Figure 3 Operational definition of variables
Source : Processed by researchers, 2025

3. RESULT AND DISCUSSION

Table 1
Descriptive Statistics

	Y	X1	X2	X3	X4	Z
Mean	13.21725	-0.006896	10.75020	-0.011470	27.42399	0.604294
Median	1.690000	0.002874	1.830771	-0.062039	27.48442	0.537628
Maximum	323.9200	0.240821	170.7568	3.510338	30.31826	3.940037
Minimum	-252.5800	-0.447583	0.000151	-0.975831	24.47145	0.007373
Std. Dev.	83.57401	0.104790	26.01687	0.566113	1.524875	0.688175
Skewness	0.601049	-1.403314	4.484992	3.388478	-0.107845	3.086243
Kurtosis	6.600151	7.528495	24.94311	23.14022	2.643610	14.02771
Jarque-Bera	41.41763	81.60523	1615.637	1298.222	0.498916	459.1662
Probability	0.000000	0.000000	0.000000	0.000000	0.779223	0.000000
Sum	911.9900	-0.475843	741.7641	-0.791439	1892.255	41.69626
Sum Sq. Dev.	474953.8	0.746705	46027.68	21.79288	158.1166	32.20373
Observations	69	69	69	69	69	69

Source : Processed by researchers, 2025

According to the given table, the financial distress statistics (Y) show a mean of 13.2172 and a standard deviation of 83.57. Meanwhile, ROA (X1) has an average of -0.0068 and a standard deviation of 0.4475. CR (X2) possesses an average of 10.7502 and a standard deviation of 26.0168. Sales increase (X3) exhibits a mean of -0.0114 and a standard deviation of 0.5661. The average firm size (X4) is 27.4239, with a standard deviation of 1.5248. And DAR (Z) has an average of 0.6042 and a variance of 0.6881.

Classical Assumption Test

1. **Multicollinearity Test**

Table 2
Multicollinearity Test Result

	X1	X2	X3	X4
X1	1.000000	-0.014992	0.284111	0.234525
X2	-0.014992	1.000000	0.008067	-0.442466
X3	0.284111	0.008067	1.000000	-0.007904
X4	0.234525	-0.442466	-0.007904	1.000000

Source : Processed by researchers, (2025)

Based on the table above, the correlation coefficient results for X1 and X2 are -0.014992 < 0.85, for X1 and X3 are 0.284111 < 0.85, for X1 and X4 are 0.234525 < 0.85, for X2 and X3 are 0.008067 < 0.85, for X2 and X4 are -0.442466 < 0.85, and for X3 and X4 are -0.007904 < 0.85. Therefore, it can be concluded that all variables lack multicollinearity or pass the multicollinearity test

2. **Heterocedasticity Test**

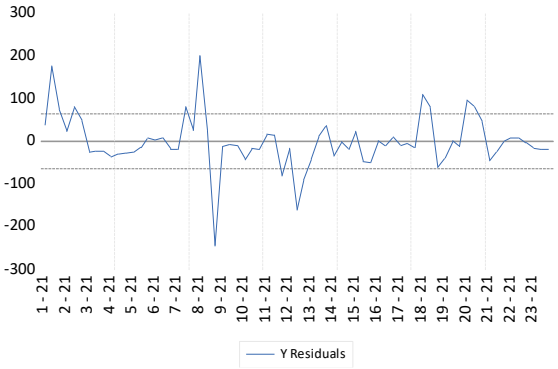

Figure 3 Heterocedasticity Test Result
Source : Processed by researchers, (2025)

Figure 3 shows that the residual graph (in blue) does not seem to intersect the limits (500 and -500), indicating that the residual variance remains constant. Consequently, there are no signs of heteroscedasticity, or it successfully clears the heteroscedasticity test

Hypothesis Testing

1. **Test of Determination Coefficient (R^2)**

Table 3
Determination Coefficient Test Result

R-squared	0.449975	Mean dependent var	13.21725
Adjusted R-squared	0.415598	S.D. dependent var	83.57401
S.E. of regression	63.88913	Akaike info criterion	11.22188
Sum squared resid	261236.6	Schwarz criterion	11.38377
Log likelihood	-382.1549	Hannan-Quinn criter.	11.28611
F-statistic	13.08958	Durbin-Watson stat	1.252658
Prob(F-statistic)	0.000000		

Source : Processed by researchers, (2025)

The table indicates that the adjusted R-squared value is 0.415598, which corresponds to 41.5598%. This coefficient of determination shows that the independent variables, encompassing profitability, liquidity, sales growth, and firm size, explain 41.5598% of the dependent variable, financial distress. The remaining 58.4402% is attributed to other elements not considered in this model

2. **Parsial Test (t)**

Table 4
Parsial Test (t) Result

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	7.370379	163.1773	0.045168	0.9641
X1	521.2445	80.02013	6.513917	0.0000
X2	-0.115936	0.333919	-0.347198	0.7296
X3	6.525893	14.32476	0.455567	0.6502
X4	0.392456	5.878345	0.066763	0.9470

Source : Processed by researchers, (2025)

Result of the partial test (t) :

1. Profitability has a significance level of 0.0000 < 0.05 with a positive t-statistic, indicating that profitability positively influences financial distress. An increase in ROA also signifies that the company is safeguarded against financial difficulties. Is it stated this way because the organization can observe the revenue and the total expenses incurred? Rising expenses and falling revenue annually can lead to a growing net loss each year, causing the company to face financial difficulties (Dirman 2020). These results support the research conducted by (Dirman 2020) and (Hidayat et al. 2024) which prove similar results, namely the influence between profitability and financial distress.The results of this study are in contrast to the research of (Sariroh 2021) and (Myllariz 2021) which declares that a profitability in a company can trigger financial distress.
2. Liquidity (X2) has a p-value of 0.7296 > 0.05, indicating that liquidity does not impact financial distress. The lack of significance in the liquidity ratio may be attributed to the company's relatively low current liabilities, with a greater portion of obligations being long-term in nature. As a result, these liabilities have minimal influence on the company's immediate financial condition (Kurniasanti & Mushdholifah 2018). This result is consistent with earlier research by (Makkulau 2020), (Nurhayati et

al. 2021), and (Muzharoatiningsih & Hartono, 2022) , which similarly conclude that liquidity does not have a significant effect on financial distress. This is different from the results of research (Dharma Swara 2021) which states that liquidity has a positive effect on financial distress.

3. The probability value for sales growth (X3) is 0.6502, exceeding 0.05, suggesting that sales growth does not significantly impact financial distress. This may be because a drop in sales does not directly lead to bankruptcy, but rather contributes to reduced profitability. As long as the decrease in profits is still within the safe limits set by the company, then this condition does not indicate financial distress. On the contraty, improvement sale shows the potential for greater profits for the company, which reflects the company's ability to implement marketing strategies and product sales effectively (Aninda Fitri & Juliana Dillak 2020). The findings of this study back up research from (Aninda Fitri & Juliana Dillak 2020), (Rahma & Dillak 2021), and (Sholikhah & Rokhmania 2022) which asserts that an increase in sales does not impact financial distress. Different results were shown by research conducted by (Muslimin & Bahri, 2022) which stated that sales growth has an effect on financial distress.
4. Firm size (X4) has a probability value of 0.9470 > 0.05, which means that firm size does not affect financial distress. There is no significant effect between firm size and financial distress, which is likely to occur because in this study there was no separation of companies between large companies and newly developing companies. Where even though the firm size is small, if the company already has many business partners, the level of trust from financial institutions towards the company is high, and there are recommendations from consumers and external parties, the company may be free from financial distress (Rochendi & Nuryaman 2022). The findings of this study reinforce the investigations carried out by (Nafisah et al. 2023), (Muzharoatiningsih & Hartono 2022), and (Christine et al. 2019) which states that firm size does not affect financial distress. This is different from research from (Syuhada et al. 2020) and (Salim & Dillak 2021) which states that firm size affects financial distress.

Moderated Regression Analysis

Tabel 5
Moderation Test Result

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-134.7704	331.8779	-0.406084	0.6861
X1	783.4840	140.2182	5.587607	0.0000
X2	0.050234	0.382078	0.131477	0.8958
X3	12.91854	16.11926	0.801435	0.4261
X4	5.009046	12.47272	0.401600	0.6894
Z	519.7590	717.4722	0.724431	0.4717
X1Z	-87.81172	128.3660	-0.684073	0.4966
X2Z	-0.319164	0.414471	-0.770051	0.4443
X3Z	11.87308	33.75686	0.351724	0.7263
X4Z	-18.00149	26.58273	-0.677187	0.5009

Source : Processed by researchers, (2025)

According to table 5, the outcomes of the moderation test are as follows

1. The interaction between profitability and the moderating variable leverage yields a probability value of 0.4966, which exceeds the 0.05 significance level. This implies that leverage

does not influence the connection between profitability and financial distress. This suggests that when the company's profitability varies, leverage fails to mitigate the effects of profitability on financial distress Periods of low profitability can directly trigger financial problems. Although the company is profitable, a significant level of leverage can heighten creditors' and investors' perception of financial distress risk, making leverage unable to serve as a counterbalance. There are several reasons why leverage cannot moderate this relationship, such as poor cash flow management, inflexible debt structure, macroeconomic factors, regulatory changes, and others (Hidayat et al., 2024)

2. The interaction between the independent variable liquidity and the moderating variable leverage shows a probability value of 0.4443 > 0.05, which means that leverage cannot moderate the effect of liquidity on financial distress. In other words, leverage does not strengthen or weaken the relationship between liquidity and financial distress.
   There are several possible causes. First, companies with good liquidity tend not to rely too much on leverage to manage their short-term liabilities, so the role of leverage becomes less relevant. Second, companies with high leverage sometimes have a good debt management system, so that they do not worsen their financial condition even though their liquidity is low (Fajarsari et al., 2023). Conversely, companies with low leverage can still face financial distress if they are unable to optimize their current assets. Therefore, in this study, leverage is not identified as an effective moderating factor between liquidity and financial distress. This result is different from the study (Hidayat et al., 2024) which states that leverage can weaken the effect of profitability on financial distress.
3. The interaction of the independent variable sales growth with the moderating variable leverage shows a probability value of 0.7263 > 0.05, which indicates that leverage cannot moderate the effect of sales growth on financial distress. Based on signal theory, leverage does not act as an additional signal that enhances the influence of sales growth on financial distress risk. While sales growth typically conveys a positive signal about a company's operational performance and future prospects, leverage does not contribute significant or relevant information to how this signal is interpreted. In other words, even if a company demonstrates strong sales growth, its debt level does not amplify or diminish the effect of that growth on perceptions of financial risk. This outcome also suggests that investors and stakeholders may not view leverage as a critical factor when evaluating a company's growth sustainability. Instead, they may place greater emphasis on the quality of sales growth, cash flow management, or other financial metrics, rendering leverage a less impactful indicator in this context (Sugiharto et al., 2022).
4. The relationship between company size and the moderating factor leverage produces a

probability value of 0.5009, which is above the 0.05 cutoff. This suggests that leverage does not influence the connection between company size and financial distress. This result suggests that both large and small firms may possess comparable capabilities in handling financial risk, regardless of their debt levels. Moreover, the level of debt does not necessarily represent a company's true financial health, firms with high leverage can remain financially stable with effective management, while those with low leverage may still face financial distress if they are poorly managed or experience a downturn in business performance (Kusuma et al., 2023).

4. CONCLUSION

This research examines how profitability, liquidity, sales growth, and firm size influence financial distress, while leverage acts as a moderating factor. The study sample includes 23 companies in the basic materials sector that are listed on the Indonesia Stock Exchange from 2021 to 2023. The outcomes of the hypothesis testing indicate that profitability positively affects financial distress in a significant way.

Nonetheless, liquidity, sales growth, and company size do not have a notable impact on financial distress. Moreover, the moderation analysis suggests that leverage does not influence the relationship among profitability, liquidity, sales growth, and firm size concerning financial distress.

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