Determinants of Financial Distress in Basic Materials Companies: Evidence from Indonesian Listed Firms

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Abstract

Purpose: *This study examines the influence of liquidity, operating capacity, firm size, and cash flow on financial distress in basic materials manufacturing companies listed on the Indonesia Stock Exchange during 2021–2024. Financial distress represents a critical phase prior to bankruptcy and remains a significant concern, particularly in the basic materials sector, which experienced performance pressures during the post-pandemic recovery period.*

Methodology/approach*: This study contributes to the literature by specifically examining the basic materials industry during the 2021–2024 period and by integrating liquidity, operating capacity, firm size, and cash flow within a single panel data regression framework, thereby providing a more comprehensive and updated empirical perspective on financial distress in a capital-intensive sector. This study employs purposive sampling, resulting in 80 companies with 320 panel data observations. Data were analyzed using panel data regression through the Random Effect Model using EViews 12 software.*

Findings*: The results indicate that liquidity and operating capacity have a significant negative effect on financial distress, suggesting that higher liquidity and more efficient asset utilization reduce the likelihood of financial difficulties. Meanwhile, firm size and cash flow do not exhibit a statistically significant partial effect. However, the joint significance test indicates that all variables collectively influence financial distress.*

Practical Implications: *These findings highlight the importance of comprehensive financial performance evaluation to support managerial decision-making in the early prevention of financial distress.*

Originality/value:
Focuses on the basic materials sector during 2021–2024 and integrates multiple financial variables within a single panel data regression framework.

Keywords:
Financial Distress; Liquidity; Operating Capacity; Firm Size; Cash Flow.

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INTRODUCTION

Companies in an era of global competition face complex challenges in maintaining optimal financial performance. Dynamic economic growth is fueling increasingly intense competition between companies, demanding continuous innovation and creativity in responding to market needs. However, this intense competition has the potential to squeeze profit margins and increase the risk of financial distress (Maulana, 2023). Financial distress is a critical phase which, if not handled properly, can lead to bankruptcy (Sari 2022). Sánchez et al., (2025) underlines that a company's deteriorating financial situation prior to bankruptcy is what causes financial distress, therefore it's critical to identify the causes early on to ensure business continuity. Research on financial distress is urgently needed in light of the occurrence of delisting of Indonesian firms from the stock market as a result of financial issues. Eight manufacturing businesses were among 20 delisted from the IDX between 2014 and 2016 for reasons including poor capital structures, excessive interest payments, and repeated operating losses, according to historical data. In the 2017–2019 period, 18 companies were delisted, five of which were from the manufacturing sector (Bukhori, 2022). A number of public companies reported net losses for two consecutive years, which in the literature is seen as a strong indicator of pre-bankruptcy financial distress, indicating the need for an effective early detection system.

These conditions highlight the urgency of examining financial distress. The basic materials sector on the IDX encompasses five main industries: metals and mining, construction materials, containers and packaging, chemicals, and paper and forest products, which play a strategic role in producing and processing raw materials for other industries. However, this sector showed declining performance during the 2018–2022 period (Delia Septy & Rahman Amrullah, 2024). The case of PT Trinitan Metals and Minerals Tbk (PURE), which has been suspended for more than six months, indicates significant financial pressure in this sector (www.idx.co.id n.d.). This situation reinforces the urgency of identifying factors that can predict financial distress in basic materials companies, given their vital role in the supply chain for the construction, energy, and manufacturing sectors. Research on financial distress has evolved since Altman introduced financial ratio analysis and the Z-score model as bankruptcy prediction tools (Nawirah, 2022). A company's liquidity indicates its capacity to satisfy its short-term commitments, making it one of the most analyzed characteristics. Bukhori, (2022) shown that liquidity significantly mitigates financial distress, with a larger liquidity level indicating a lower likelihood of financial issues for the organization. Annisa Khairiyah (2023) highlights that a low risk of financial distress is associated with a company's ability to satisfy its short-term commitments, which is shown by its high liquidity. However, Fauzan and Situngkir (2022) discovered that depending on the particular financial structure or operational strategy of a firm, liquidity may alleviate financial strain in some instances.

Capacity and firm size is another important factor in predicting financial distress. Operating capacity describes the extent to which a company's assets are effectively used to generate revenue. The higher the ratio, the more efficient the asset use and the less likely the company is to experience financial distress (Idawati 2020). Adityaningrum (2024) emphasized that operating capacity is an indicator of management's ability to manage assets productively. Meanwhile, Nabilah showed that companies with large total assets tend to have a stronger ability to maintain financial stability (Nabilah, 2023). Dirman (2020) found that firm size negatively impacts financial distress, consistent with the view that firm size can be a protective factor. Cash flow plays a crucial role in predicting financial distress because it reflects a company's ability to generate funds from operational activities to meet short-term obligations and maintain business continuity. (Vidya and Giarto 2020) found that strong cash flow indicates that operating activities are able to generate sufficient cash to pay debts and finance investment activities, thereby reducing the likelihood of financial distress. Conversely, (Wijaya and Suhendah 2023) emphasizes that low or negative cash flow indicates a company's weak ability to generate cash from operational activities, which can lead to financial difficulties and increase the risk of bankruptcy. Cash flow statements provide important signals for investors and creditors in assessing long-term financial stability.

These mixed findings indicate that the relationship between liquidity, operating capacity, firm size, and cash flow with financial distress is not universally consistent and may depend on sector- specific characteristics. Beyond these variable-level inconsistencies, prior studies are also constrained by notable methodological and contextual limitations. The majority of existing research was conducted on general manufacturing sectors, consumer cyclical industries, or retail sub-sectors (Senny & Wahyuni, 2021; Wijaya & Suhendah, 2023), with limited attention directed toward the basic materials sector, which operates under a distinctly different capital structure and cost profile. Furthermore, most studies employed data periods predating the post-pandemic economic recovery phase (2021–2024), a period characterized by significant supply chain disruption, input cost inflation, and shifting investor risk perceptions all of which disproportionately affect capital- intensive sectors such as basic materials. The absence of studies integrating liquidity, operating capacity, firm size, and cash flow simultaneously within a panel data framework applied specifically to the basic materials sector during this period represents a clear empirical void in the existing literature.

To provide a structured overview of the aforementioned inconsistencies, the following table summarizes key prior studies relevant to the variables examined in this research:

Table 1. Summary of Prior Research on Financial Distress Determinants

No	Author (Year)	Variables	Method	Key Finding
1	(Nurkhasannah & Nawirah, 2025)	Profitability, Liquidity, Sales Growth, Firm Size; Leverage (mod.)	Panel Data + MRA, EViews 12	Profitability significant (+); Liquidity, Sales Growth, Firm Size not significant
2	(Pramudita & Fitriyani, 2024)	Profitability, Liquidity, Operating Cash Flow, Capital Structure	Multiple Linear Regression, 26 F&B firms, 2018–2022	Liquidity & OCF significant (+); Capital Structure not significant
3	(Wijaya & Suhendah, 2023)	Liquidity, Leverage, Operating Cash Flow	Quantitative, 133 firms, Consumer Cyclicals 2019–2021	Liquidity significant (+); Leverage significant (−); Cash Flow not significant
4	(Oktaria et al., 2021)	Liquidity, Firm Size, Leverage	Linear Regression, 22 mining firms, 2017-2019	Firm Size significant (−); Liquidity & Leverage not significant
5	(Putri, 2021)	Operating Cash Flow, Sales Growth, Operating Capacity	Linear Regression	OCF significant (−); Operating Capacity significant (−); Sales Growth significant (+)
6	(Ramadani & Ratmono, 2023)	Leverage, Liquidity, Operating Cash Flow; Firm Size (mod.)	Quantitative + MRA	Leverage (−), Liquidity (−), OCF (+) all significant
7	(Bukhori et al.,2022)	Liquidity, Activity, Sales Growth, Leverage	Logistic Regression	Liquidity, Activity, Sales Growth significant (−); Leverage significant (+)
8	(Senny & Wahyuni, 2021)	Profit (EBT/Interest), Operating Cash Flow	Logistic Regression	Profit significant (+); Cash Flow not significant
9	(Dirman, 2020)	Profitability, Liquidity, Leverage, Firm Size, Cash Flow	Multiple Linear Regression	Profitability, Liquidity, Leverage, Firm Size significant; Cash Flow not significant
10	(Ardi et al., 2020)	Liquidity, Leverage, Profitability	Logistic Regression, EViews 10	Liquidity significant (−); Leverage not significant; Profitability not significant
11	(Giarto & Fachrurrozie, 2020)	Leverage, Sales Growth, Cash Flow; Corporate Governance (mod.)	Logistic Regression, 31 firms 2013–2017	Cash Flow significant (−); Sales Growth not significant
12	(Karas & Reznakova, 2020)	Operating CF/TA, Free CF/TA, CF/Total Liabilities, CF/Sales	Logistic Regression, 4,350 SMEs 2013–2018	Operating cash flow ratio is the most reliable predictor of financial distress
13	(Fitri & Dillak, 2020)	Operating Cash Flow, Leverage, Sales Growth	Panel Regression, EViews 10	Simultaneously significant; partially only Leverage significant

The inconsistencies documented above particularly regarding the roles of liquidity, firm size, and cash flow indicate that these relationships are not universal and may be meaningfully moderated by industry-specific characteristics and macroeconomic conditions. Despite a growing body of literature on financial distress, prior studies have predominantly concentrated on single- sector analyses or short observation windows, leaving considerable uncertainty about the joint predictive power of liquidity, operating capacity, firm size, and cash flow within capital-intensive industries. Furthermore, inconsistencies in findings across studies conducted in emerging market contexts suggest that contextual factors such as post-pandemic recovery dynamics may moderate these relationships in ways that remain underexplored. This study addresses that gap by simultaneously examining four financial predictors within the Indonesian basic materials sector over the 2021–2024 period, a context that has received limited empirical attention. The contribution of this study is therefore not merely confirmatory; rather, it extends existing frameworks by offering an integrated, sector-specific, and temporally relevant analysis that enriches the theoretical understanding of financial distress determinants in developing economies.

This study analyzes the influence of liquidity, operating capacity, firm size, and cash flow on financial distress in basic materials manufacturing companies listed on the Indonesia Stock Exchange for the 2021–2024 period. Focusing on this sector is important because most previous research on financial distress in the manufacturing sector has focused on the food and beverage or consumer goods subsectors (Adiputra et al., 2025). This inconsistency, as well as the dominance of research in other manufacturing subsectors, indicates that empirical studies in the basic materials sector are still relatively limited. Such as findings Ramadani and Ratmono (2023) which shows that liquidity has a significant negative effect on distress but is not significant according to Oktaria et al. (2021), as well as mixed results on operating capacity Kwok & Bangun (2023) and firm size (Martusa 2023), strengthening the urgency of this research to provide comprehensive empirical evidence and practical contributions in early prevention of financial distress. This condition highlights the need for further research that specifically examines the determinants of financial distress in the basic materials sector. Therefore, this study aims to provide more sector-specific empirical evidence and contribute to strengthening efforts to detect and prevent financial distress early on.

LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

The Effect of Liquidity on Financial Distress

A corporation is considered liquid if it can pay its short-term bills as they come due. An early warning indication of potential financial distres in a corporation might be its liquidity level, according to signaling theory (Wijaya and Suhendah 2023). As a general rule, creditors are more optimistic

about a company's financial health when its liquidity is high, and more worried when it's low (Cherkes, Sagi, and Stanton 2006). A corporation is considered liquid if it can satisfy its short- term commitments using its present assets. Chairani and Aminah (2023) highlights the importance of liquidity as it relates to a company's ability to meet its immediate commitments without seeking outside financing. Ramadani and Ratmono (2023) highlights that creditors, investors, and suppliers may lose faith in a firm if its liquidity is inadequate, emphasizing the need of liquidity management as a part of financial risk management. Bukhori, (2022) discovered that manufacturing organizations that have strong liquidity are less likely to experience financial trouble, meaning that they are able to satisfy their commitments without going into debt. Similar findings were also obtained Ardi et al. (2020) that liquidity worsens financial distressis shown by this. The following is the initial hypothesis that this study is based on, derived from theoretical studies and prior research:

H_1: Liquidity has a negative effect on Financial Distress

The Effect Operating Capacity on Financial Distress

Operating capacity describes the extent to which a company's assets are effectively utilized to generate revenue. According to Gore (1976), one way to measure a firm's efficiency is through its operating capacity, which reflects how well assets are converted into sales. The asset turnover ratio, defined as total sales divided by total assets, is commonly used to proxy this concept. Adityaningrum et al. (2024) highlighted that a high asset turnover ratio indicates efficient revenue generation, whereas a low ratio reflects less productive asset utilization. Effective management of operating capacity demonstrates strong operational productivity and ultimately strengthens a company's financial position. Idawati (2020) states that a high total asset turnover ratio is a favorable indicator because it shows that the firm effectively uses its assets to increase sales and profits, thereby reducing the risk of financial distress. Study Afridayani (2023) finds that operational capacity significantly reduces financial distress, and that a company's risk of financial issues may be mitigated by making better use of its assets. Similarly Tameti, Hadady, and Amiro (2025) report that operating capacity has a significant negative effect on financial distress in manufacturing companies listed on the IDX. Based on this study, the second hypothesis is formulated as follows:

H_2: Operating Capacity has a negative effect on Financial Distress

The Effect of Firm Size on Financial Distress

A company's size is indicative of its stability, financial strength, and ability to carry out operational activities because it reflects the total assets owned by the company. Firm size is defined by Sujianto as an indicator of a company's size that is computed using sales volume, total assets, average total assets, and average sales of assets (Sujianto, 2001). Saputra and Salim (2020) underlined that the size of a corporation is indicative of market trust in its stability, not only a financial or physical metric. When it comes to maintaining financial performance, obtaining external financing, and facing economic constraints, big organizations are seen as more capable, according to signaling theory,

therefore they send good signals to creditors and investors (Dirman 2020). Companies with large total assets are better able to weather economic storms because they can diversify their revenue streams, keep their cash flow stable, and pay off their debts (Febriyanti and Haryanto 2024) The results of research by Kristianti and Khairudin (2024) demonstrate that the size of a company significantly impacts financial distress. The results were also comparable. Dirman (2020) according to which the likelihood of financial crisis decreases as firm size increases. The following is the formulation of the third hypothesis based on this description:

H_3: Firm Size has a negative effect on Financial Distress

The Effect of Cash Flow on Financial Distress

Over a given time frame, a cash flow statement breaks down a company's cash intake and outflow into its operating, investing, and financing activities. This study substitutes operating cash flow (OCF) for the cash flow variable. This is due to the fact that OCF reveals how much money a company can really make from its core activities (Pratiwi et al., 2024) argues that operational cash flow is a good indicator of a company's financial health and that positive operational cash flow makes businesses more resilient to external influences. On the other hand, persistently negative operational cash flow is a sign of potential financial trouble. According to signaling theory, when a firm has a strong operational cash flow, it shows that it can satisfy its own financial obligations without seeking outside investment. This sends a favorable message to potential investors and lenders. On the other side, investors and creditors take a dim view of a firm with a low operational cash flow since it shows that it isn't doing well and can't produce enough cash (Vidya and Giarto 2020). A greater level of cash flow generation is associated with a lower likelihood of financial distress, according to the findings of Vidya and Giarto's study, which further supports the idea that cash flow significantly reduces financial distress. Got similar results Diah & Putri (2021) study revealed that operational cash flow correlates adversely with the likelihood of experiencing financial distress. The following is the formulation of the fourth hypothesis based on this description:

H_4: Cash Flow has a negative effect on Financial Distress

The Effect Liquidity, Operating Capacity, Firm Size, and Cash Flow on Financial Distress

A company's ability to stay in business is greatly affected by the early detection and mitigation of financial difficulty. Liquidity, operational capability, company size, and cash flow are some of the basic characteristics that are often used as indications of crisis prediction in the financial literature. An essential metric is a company's liquidity, which shows how well it can meet its short-term obligations (Pramudita et al. 2024). A high operating capacity may be an indication of superior operational efficiency, as it reflects the amount to which a corporation can utilize its assets to create revenue (Diah and Putri 2021). Another prevalent misconception is that bigger companies can better withstand economic downturns. Greater financial flexibility, a more diverse income stream,

and bargaining power all contribute to a company's ability to ride out economic storms with greater asset holdings. Cash flow, particularly cash flow from operational activities, reflects a company's ability to generate cash via its main business operations. An increase in cash flow lessens the likelihood of financial distressas it shows the capacity to fulfill obligations and support investment activity. The following is the fifth hypothesis that this study is based on, using the theoretical explanation and prior research findings:

H_5: Liquidity, Operating Capacity, Firm Size, and Cash Flow simultaneously influence on Financial Distress

METHOD

Types and Approaches of Research

A descriptive-verification methodology is used in this quantitative study. According to Sugiyono (2020), As a positivist-based research approach, quantitative research involves studying a particular population or sample via the use of research tools for data collecting and statistical analysis to evaluate hypotheses. When it comes to manufacturing enterprises' financial distress, the descriptive technique is all about providing a systematic, factual, and precise description of the study variables. These variables include things like operational capacity, liquidity, firm size, and cash flow. By analyzing the impact of independent factors on the dependent variable, the verification strategy tests if the hypothesis is true.

Population, Sample, and Sampling Techniques

All 313 basic materials manufacturing businesses listed on the IDX between 2021 and 2024 were included for this research. The study aims informed the selection of the sample, which was carried out via deliberate sampling (Sugiyono, 2020). The following criteria were used: (1) firms that manufactured basic materials and were listed on the IDX in a sequential fashion from 2021 to 2024; and (2) companies that released full annual financial reports (including audited reports) throughout the study period. With a total of 320 observations from the panel data, 80 firms were determined to be qualified according to these criteria, spread out across 4 years.

Table 1. Sample Criteria

No.	Description	Number
1.	Manufacturing Companies in the basic materials sector listed on the IDX (IDX) during the 2021-2024 period consecutively.	113
2.	Companies that did not publish complete annual financial reports during period.	(33)
	Total companies according to criteria	80
	Number of years studied	4

Number of panel data observations	320

Data Types and Sources

Combining cross-sectional data from 80 organizations with time series data from 2021–2024, this research makes use of quantitative panel data. Companies' annual financial reports posted on the Indonesia Stock Exchange's website (www.idx.co.id) provide the secondary data needed. One strategy for gathering information for a study is known as the documentation approach, and it entails looking through pertinent records, archives, reports, and papers. Sources for secondary data included the BEI and corporate websites as well as other pertinent journals, studies, and other publications that lent credence to the findings of the literature study and analysis.

Operational Definition and Measurement of Variables

This study uses one dependent variable and four independent variables which are defined as follows:

Dependent Variable: Financial Distress (Y)

A corporation is in financial Distress if it is experiencing financial Distress prior to bankruptcy. The following formula was used to quantify financial Distress in this research using the Altman Z-Score (Yoga Taufan Fahma, 2021):

$$FinancialDistress = 6{,}56X^1 + 3{,}26X^2 + 6{,}72X^3 + 1{,}05X^4$$

The variables X_1, X_2, X_3, and X_4 represent various ratios between working capital, total assets, retained profits, and book value of equity/book value of debt, respectively.

Independent Variables

1. *Liquidity* (X_1): "Li quidity is a company's ability to meet short-term obligations using its current assets (Wijaya, 2023).
2. *Operating Capacity* (X_2): Operating capacity is an efficiency ratio used to assess the effectiveness of a company in using assets to generate sales.
3. *Firm Size* (X_3): Firm size describes the size of a company, generally indicated by total assets or total sales. Larger companies are generally considered more stable because they have broader access to funding and better business diversification (Miswaty, 2023).
4. *Cash Flow* (X_4): Operating activities indicate a company's ability to generate cash from its core activities to meet obligations and finance operational activities. Companies with positive operating cash flow tend to be better able to maintain financial stability and avoid the risk of financial distress" (Vidya and Giarto 2020).

Table 2. Operational Definition of Variables

No.	Variables	Proxy	Measurement	Source

1	*liquidity*	Current ratio	$\frac{Current\ Asset}{Current\ Liabilities}$	(Dirman 2020)
2	*Operating capacity*	TATO	$\frac{Total\ Sales}{Total\ Asset}$	(Miswaty 2023)
3	*Firm size*	Natural logarith of total assets	$Ln\ (total\ asset)$	(Mala Sari and Isbanah 2024)
4	*Cash flow*	Operating cash flow (OCF)	$\frac{Operating\ Cash\ Flow}{Current\ Liabilities}$	(Michal Karas & Reznakova, 2020)
5	*Financial distress*	Altman Z score	$6{,}56\ X1 + 3{,}26\ X2 + 6{,}72X3 + 1{,}05X4$	(Yoga Taufan Fahma 2021)

Data Analysis Methods

This study used EViews 12 software to analyze panel data, which included both time series data (2021–2024) and cross-sectional data from 80 manufacturing enterprises. Panel data enables researchers to account for individual variability as well as fluctuations across time, making it more complete than utilizing solely time series or cross-sectional data. This study's data analysis steps are as follows:

Descriptive Statistical Analysis

Basic measures such the minimum, maximum, average (mean), and standard deviation values of each research variable were used in descriptive statistic to characterize the features of the data employed in the study. For the years 2021–2024, the descriptive analysis's findings provide a high-level summary of the data's distribution, variations between organizations, and trends.

Panel Data Regression Model Selection

The Hausman Test, the Chow Test, and the Lagrange Multiplier Test are the three methods used to determine the optimal model. In cases when the probability is less than 0.05, the FEM is chosen by the Chow Test and the Hausman Test, while the REM is chosen by the Lagrange Multiplier Test (Widarjono, 2016).

Classical Assumption Test

framework, several classical assumption issues, particularly heteroscedasticity and autocorrelation, are inherently accommodated within the estimation process. As a result, classical assumption tests are not emphasized as the primary analytical requirement, as the GLS estimator is designed to produce efficient and unbiased estimates (Best Linear Unbiased Estimator/BLUE) (Gujarati & Porter, 2009). Therefore, the analysis in this study directly proceeds to hypothesis testing based on the estimated REM model. Hypothesis testing is conducted to examine the effect of independent variables on the dependent variable, both simultaneously and partially, using

appropriate statistical tests such as the F-test and t-test. This approach is considered appropriate given the characteristics of panel data and the advantages of GLS in addressing potential violations of classical assumptions, thereby ensuring the reliability of the estimation results (Mardiatmoko 2020).

Hypothesis Testing

To test hypotheses, one can follow these steps: (1) use a Partial Test (T Test) to determine the separate effects of independent variables on dependent variables, with a significance level of p-value < 0.05; (2) assess the extent to which independent variables impact dependent variable variations using an Adjusted R^2, where values near 1 indicate a large influence; and (3) evaluate the overall goodness of the regression model with a Simultaneous Test (F Test), with a p-value < 0.05 indicating that at least one independent variable has a significant impact on the dependent variable."

RESULTS AND DISCUSSION

Descriptive Statistics

For the purpose of summarizing the research data, a descriptive statistical analysis was carried out. The analysis included the following: minimum and maximum values for each variable studied (liquidity, operating capacity, firm size, cash flow, and financial distress) for the period 2021–2024. The standard deviation values were also calculated.

Table 3. Descriptive Statistical Test

Variables	*Mean*	*Median*	*Maximum*	*Minimum*	Std. Dev.
LIQ	2,543875	1,600,000	15,69000	0,070000	2,778144
OC	0,904781	0,680000	7,740000	0,000000	1,010689
FS	22,45328	22,00000	29,88000	11,99000	5,122599
OCF	0,143250	0,220000	6,850000	-32,74000	2,785978
FD	0,218750	0,000000	1,000000	0.000000	0,414046

Financial distress (FD) is a dependent variable that, according to descriptive statistics, has a mean of 0.218750, a range of 0.000000 to 1,000000, and a standard deviation of 0.414046. This indicates that the majority of organizations do not go through financial crises, whereas a small number do. Various organizations' capacities to satisfy their immediate financial commitments are shown by the liquidity (LIQ) variable, which ranges from an average of 2,543875 to a maximum of 15,69000 with a standard deviation of 2,778144. Firms' asset utilization efficiencies vary, as shown by the standard deviation of 1,010689 and an average of 0,904781 for operating capacity (OC), which ranges from 0,000000 to 7,740000. The firm size (FS) variable records an average of 22,45328, with values ranging from 11,99000 to 29,88000 and a standard deviation of 5,122599 indicating diverse company sizes within this sector. Lastly, operating cash flow (OCF) has a mean

of 0,14325 ranging from -32,74000 to 6,850000 with a standard deviation of 2,785978 demonstrating differences in the companies' ability to generate cash from operational activities.

Panel Data Regression Model Selection

When deciding between the CEM, FEM, and REM, the best estimating model was found by running a battery of tests, such as the Chow Test, the Hausman Test, and the LM Test.

Chow Test

The Chow test uses the likelihood ratio test to select a model between CEM and FEM with the hypothesis H_0 for Common Effect and H_1 for Fixed Effect.

Table 4. Chow Test Results

Effect Test	**Statistics**	**df**	**Prob.**
Cross-section F	10.629276	(79,236)	0.0000
Cross-section Chi-square	485.410242	79	0.0000

The results of the test showed that the cross-section probability value F was 0.0000 (<0.05), which led to the rejection of H_0 and acceptance of H_1. This indicates that FEM was chosen as the model. As a result, the Hausman Test was administered as an additional model estimation test.

Hausman test

The Hausman test is used to determine the model between FEM and REM with the hypotheses H_0: REM and H_1: FEM.

Table 5. Hausman Test Results

Tesr Summary	**Chi-Sq. Statistic**	**Chi-Sq. df**	**Prob.**
Random Cross-section	6,313630	4	0.1769

A random cross-section probability value of 0.1769 (> 0.05) is shown in the test results, hence H_0 is approved and the REM model is adopted. The next step is to conduct further tests, namely the Lagrange Multiplier Test.

Classical Assumption Testing

The research concluded that REM is the most appropriate estimating model for this study. The Generalized Least Squares (GLS) approach, which generates estimators regarded as the Best Linear Unbiased Estimators (BLUE), was used to analyze the REM. This eliminated the need to fully execute the traditional assumption tests (Gujarati and Porter, 2009). Unlike the Ordinary Least Squares (OLS) method commonly applied in the Common Effect Model (CEM) and Fixed Effect Model (FEM), the GLS approach in REM takes into account the specific characteristics of panel data, resulting in more

efficient and reliable parameter estimates. According to Gujarati and Porter (2009), when employing GLS, only heteroscedasticity and autocorrelation tests are relevant, while normality and multicollinearity tests are not required. In the context of this study, because REM with GLS already satisfies the BLUE criteria, testing for heteroscedasticity and autocorrelation becomes unnecessary. Likewise, normality and multicollinearity assessments are redundant, further streamlining the estimation process while ensuring robustness and validity in the panel data analysis.

Hypothesis Testing

Partial Test (t-Test)

To examine the impact of each independent variable on the dependent variable separately, partial testing is used.

Table 6. Partial Test Results

Variables	*Coefficient*	*Std. Error*	*t-Statistic*	*Prob.*
C	0.376540	0.098769	3.812322	0.0002
X1	-0.050576	0.007920	-6.385530	0.0000
X2	-0.067435	0.021460	-3.142409	0.0018
X3	0.001449	0.004256	0.340474	0.7337
X4	-0.004531	0.007850	-0.577152	0.5642

X_1, the liquidity variable, has a 0.0000 probability and a regression coefficient of -0.050576, according to the REM panel data regression analysis. The probability value is below the significance level of 0.05, hence it can be stated that liquidity significantly influences financial distress negatively. A company's liquidity has a negative role in predicting when it can run into financial difficulties. The operational capacity variable (X_k) is linked to a regression coefficient of -0.067435 and a probability value of 0.0018. Because this probability value is lower than the 0.05 significance criterion, we may conclude that operational capacity is negatively related to financial distress. This indicates that a company's chances of experiencing financial troubles diminish in proportion to the efficiency with which it uses its assets. A regression coefficient of 0.001449 and a probability value of 0.7337 are associated with the firm size variable (X_t). Since this probability value is greater than the significance level of 0.05, there is no meaningful link between business size and financial issues. In contrast, the cash flow variable X_4 has a regression coefficient of -0.004531 and a probability value of 0.5642. Given that this probability value is higher than the significance level of 0.05, it is reasonable to infer that there is no significant relationship between the cash flow variable and financial distress.

Coefficient of Determination (R^2) Test

The purpose of the determination coefficient test is to find the extent to which the independent variables may explain the observed variance in the dependent variable.

Table 7. Determination Test Results

R-squared	0.141507
Adjusted R-squared	0.130605

A R-squared value of 0.141507 suggests that the independent variables in the regression model can account for about 14.15% of the variance in the dependent variable, according to the research. Since other variables contribute 85.85% of the unaccounted-for variation, it is clear that the dependent variable may be influenced by factors outside the purview of this investigation.

Simultaneous Test (F-Test)

The purpose of the F test is to demonstrate that the independent variables have a statistically significant effect on the dependent variable when tested in isolation (Prihanti, D. Ghozali 2011).

Table 8. Simultaneous Test Results

F-statistic	12,98048
probability (F-statistic)	0,000000

The probability value of 0.0000, as shown by the F-test findings, is lower than the significance level of 0.05. According to this research, financial distress is significantly impacted by the combination of liquidity, operational capacity, firm size, and cash flow.

Discussion

The Partial Influence of Financial Variables on Financial Distress

With a 0.0000 probability value and a regression coefficient of -0.050576, liquidity significantly reduces financial distres, according to the findings of the partial regression analysis. This means that an increase in liquidity reduces the likelihood of a firm experiencing financial distress. Liquidity, proxied by the current ratio, reflects a company's ability to meet its short-term obligations, thereby supporting financial stability. From the perspective of signaling theory, financial information disclosed in financial statements serves as a signal to external stakeholders regarding the firm's financial condition. A high level of liquidity provides a positive signal to investors and creditors that the company is capable of fulfilling its short-term liabilities, thereby lowering the perceived risk of financial distress (Wijaya and Suhendah 2023). Conversely, low liquidity may serve as a negative signal, indicating potential financial difficulties. This finding is consistent with Wulandari (2021), which shows that enterprises with more cash on hand are less likely to have financial problems. Basically, businesses that have enough of cash on hand can pay their short-term bills without any

problems, which lowers their risk of running into financial trouble.

Operating capacity, as meassured by Total Asset Turnover (TATO), also shows a negative and statistically significant relationship with financial distress (p = 0.0018; coefficient = -0.067435). These findings are consistent with the study conducted by Diah & Putri (2021), It implies that a larger operational capacity reduces the danger of financial distressby increasing operational efficiency, revenue creation, and financial stability. From the perspective of signaling theory, strong operational performance serves as a positive signal to investors and creditors regarding the firm's financial condition. A high TATO indicates that the company is managing its resources efficiently and generating sufficient revenue to cover operational expenses and financial obligations (Idawati 2020). This efficiency reduces financial pressure and enhances the firm's ability to maintain stability, there by lowering the likelihood of experiencing financial distress.

Variables That Do Not Have a Significant Effect on Financial Distress

With a p-value of 0.7337 and a regression coefficient of 0.001449. The findings of the test indicate that the size of the business does not significantly affect financial distress. Previous studies have reached similar conclusions. Hasanah & Arsjah, 2025 which asserts that the COVID-19 experiment saw no discernible correlation between firm size and financial distress, suggesting that size is not the key indicator of a company's financial well-being. Financial strain might worsen for companies with big assets due to operational complexity and significant fixed expenditures that aren't well handled. Similarly, with a p-value of 0.5642 and a regression coefficient of -0.004531, the cash flow variable does not significantly affect financial distress. These results align with research Hardiani et al., 2021 It asserts that financial distress is unrelated to cash flow as the latter just reveals an organization's operational cash generation capabilities and not its capacity to fulfill its long-term financial commitments.

The Simultaneous Influence of Financial Variables on Financial Distress

A probability value (F-statistic) of 0.0000 indicates that there is a substantial influence of liquidity, operational capacity, business size, and cash flow on financial distress when tested jointly. All things considered, these findings point to the reality that different parts of a firm's financial performance interact with one another to determine the extent to which the organization is in financial crisis. Companies with high operational capacity and sufficient liquidity are better able to satisfy their short-term commitments and produce revenue from their assets, reducing the risk of financial distress. Despite the lack of a partial impact, factors such as firm size and cash flow help to explain financial distress when other financial variables are included. This research lends credence to the idea that a wide range of financial indicators should be included in a holistic approach to assessing financial distress. Managers should take the company's financial performance as a whole into account when making decisions to avoid financial distress.

CONCLUSION, IMPLICATION AND LIMITATION

Based on the results of a study on 80 basic materials manufacturing companies listed on the Indonesia Stock Exchange during the 2021–2024 period, it can be concluded that liquidity and operating capacity have a significant negative effect on financial distress. These findings indicate that companies with high liquidity and effective asset management tend to have a lower risk of financial difficulties. Conversely, firm size and cash flow do not have a significant effect on financial distress, indicating that company size and operating cash flow are not yet key determinants of a company's financial health. However, simultaneously, all four variables have a significant effect on financial distress, contributing 14.15%, which emphasizes the importance of using various financial indicators in an integrated manner to detect potential financial distress at an early stage. These findings imply that company management needs to prioritize strengthening liquidity and improving asset utilization efficiency as early preventive measures against financial distress. Nevertheless, this study has several limitations, as it focuses on basic materials companies in Indonesia that remain relatively limited in the literature and employs a relatively short observation period. Therefore, further research is recommended to expand sectoral coverage, extend the observation period, and incorporate additional relevant variables to provide more comprehensive results.

REFERENCES

Adiputra, I. Gede, Nur Ainun Bangun, Padmapraba Tanibnu, and Juan Felix. 2025. "The Effect of Leverage, Liquidity, and Firm Size on Financial Distress in Manufacturing Companies Listed on the IDX in 2021-2023." International Journal of Social Science and Human Research 08(03):1369–77. doi: 10.47191/ijsshr/v8-i3-04.

Adityaningrum, Fatimah, Mei Nia, and Widyaningrum Mahirun. 2024. "The Effect of Profitability, Liquidity, Leverage, Firm Size, Operating Capacity, and Retained Earnings Towards Financial Distress: Evidence from Energy Companies." 20(1):25–37.

Afridayani, Afridayani. 2023. "Pengaruh Operating Capacity, Struktur Modal, Dan Ukuran Perusahaan Terhadap Financial Distress." Jurnal Aplikasi Akuntansi 8(1):274–83. doi: 10.29303/jaa.v8i1.303.

Agus Eko Sujianto. 2001. "Analisis Variabel-Variabel Yang Mempengaruhi Struktur Keuangan Pada Perusahaan Manufaktur Yang Go Public Di Bursa Efek Jakarta." Jurnal Ekonomi Dan Manajemen Vol.2.No.2.

Annisa Khairiyah, Nurita Affan. 2023. "Pengaruh Likuiditas Dan Leverage Terhadap Kondisi Financial Distress Pada Perusahaan Manufaktur Yang Terdaftar Di Bursa Efek Indonesia." KINERJA: Jurnal Ekonomi Dan Manajemen 20(2):266–73.

Ardi, Muhammad Fatikh Satrio, Desmintari Desmintari, and Fitri Yetty. 2020. "Analisa Kinerja Keuangan Terhadap Financial Distress Pada Perusahaan Tekstil Dan Garment Di BEI." Jurnal Ilmiah Akuntansi Kesatuan 8(3):309–18. doi: 10.37641/jiakes.v8i3.383.

Bukhori, Iskandar, Rita Kusumawati, and Meilani Meilani. 2022. "Prediction of Financial Distress in Manufacturing Companies: Evidence from Indonesia." Journal of Accounting and Investment 23(3):588–605. doi: 10.18196/jai.v23i3.15217.

Chairani, A. J., and W. Aminah. 2023. "Pengaruh Profitabilitas, Likuiditas Dan Leverage Terhadap Financial Distress (Studi Pada Perusahaan Subsektor Hotel, Restoran Dan Pariwisata Yang Terdaftar Di Bursa Efek Indonesia Tahun 2018-2021." EProceeding of Management 10(4):2023.

Cherkes, Martin, Jacob Sagi, and Richard Stanton. 2006. "A Liquidity-Based Theory of Closed-End Funds."

Delia Septy, and Rahman Amrullah Suwaidi. 2024. "Analisis Determinan Harga Saham Basic Materials

Tahun 2018-2022." Jurnal Lentera Bisnis 13(3):1550–61. doi: 10.34127/jrlab.v13i3.1203.
Diah, P. .., and Widari Putri. 2021. "The Effect of Operating Cash Flows, Sales Growth, and Operating Capacity in Predicting Financial Distress." International Journal of Innovative Science and Research Technology 6(1):643–44.
Dirman, Angela. 2020. "Financial Distress: The Impacts of Profitability, Liquidity, Leverage, Firm Size, and Free Cash Flow." International Journal of Business, Economics and Law 22(1):1.
Fauzan, Miftah, and Tiar Lina Situngkir. 2022. "Pengaruh Rasio Likuiditas, Solvabilitas Dan Profitabilitas Terhadap Financial Distress Pada Perusahaan Sub Sektor Perdagangan Eceran (Bursa Efek Indonesia Periode 2016-2020)." El-Mal 4(4):928–42. doi: 10.47467/elmal.v4i4.2311.
Febriyanti, Amelia, and Lenawati Haryanto. 2024. "Analisis Pengaruh Firm Size, Capital Adequacy, Leverage, Dan Profitabilitas Terhadap Financial Distress." Jurnal Ilmiah Wahana Pendidikan 5(September):188–94.
Gore, George J. 1976. "Production/Operations Management." Academy of Management Review
1(2):130–32. doi: 10.5465/AMR.1976.4408697.
Gujarati, Damodar N., and Dawn C. Porter. 2009. Basic Econometrics.
Hardiani, Senny, Wulan Wahyuni, and Rosa Putri. 2021. "Pengaruh Laba Dan Arus Kas Terhadap Kondisi Financial Distress." 9(1):147–58.
Hasanah, Lailatun, and Regina Jansen Arsjah. 2025. "Pengaruh Operating Capacity, Leverage, Liquidity, Dan Firm Size Terhadap Financial Distress Pada Perusahaan Sektor Consumer Cyclical Sebelum, Saat Dan Sesudah Pandemi Covid-19." Jurnal Kajian Ekonomi Dan Binis Islam 6(3):1861–76.
Idawati, Wiwi. 2020. "Analisis Financial Distress : Operating Capacity , Leverage , Dan Profitabilitas."13(1):1–10. doi: http://dx.doi.org/10.30813/jab.v13i1.1914 Hasil Penelitian Jurnal.
Karas, Michal, and Maria Reznakova. 2020. "Cash Flows Indicators in the Prediction of Financial Distress." Engineering Economics 31(5):525–35. doi: 10.5755/j01.ee.31.5.25202.
Kristianti, Deviliana, and Khairudin. 2024. "Pengaruh Ukuran Perusahaan Dan Diversifikasi Terhadap Financial Distress (Studi Empiris Pada Perusahaan Manufaktur Subsektor Tekstil Dan Garment Yang Terdaftar Di Bursa Efek Indonesia Tahun 2019-2021)." Jurnal EMT KITA 8(2):666–71. doi: 10.35870/emt.v8i2.2372.
Kwok, Cindy, and Nurainun Bangun. 2023. "Pengaruh Sales Growth, Operating Capacity, Dan Leverage Terhadap Financial Distress." Jurnal Paradigma Akuntansi 5(3):1324–35. doi: 10.24912/jpa.v5i3.25247.
Mala Sari, Erminda Eka, and Yuyun Isbanah. 2024. "Pengaruh Likuiditas, Sales Growth, Firm Size, Arus Kas Operasi, CEO Duality, Dan Intellectual Capital Terhadap Financial Distress Pada Perusahaan Sektor Healthcare Di Bursa Efek Indonesia Periode 2018-2022." Jurnal Ilmu Manajemen 12:15–31. doi: 10.26740/jim.v12n1.p15-31.
Mardiatmoko, Gun. 2020. "Pentingnya Uji Asumsi Klasik Pada Analisis Regresi Linier Berganda (Studi Kasus Penyusunan Persamaan Allometrik Kenari Muda [Canarium Indicum L.])." BAREKENG: Jurnal Ilmu Matematika Dan Terapan 14(3):333–42. doi: 10.30598/barekengvol14iss3pp333-342.
Martusa, Riki. 2023. "Apakah Profitabilitas , Leverage , Dan Ukuran Perusahaan Menurunkan Kesulitan
Keuangan Perusahaan ?" Jurnal Akuntansi Multiparadigma 14(65):412–21.
Maulana, Arpan, Sri Hasnawati, R. A. Fisk. Huzaimah, and R. A. Fisk. Huzaimah. 2023. "Intellectual Capital, Leverage, Firm Size and Its Impact on Financial Distress." GEMA : Jurnal Gentiaras Manajemen Dan Akuntansi 15(1):75–89. doi: 10.47768/gema.v15.n1.202309.
Miswaty, Dila Novitasari. 2023. "Pengaruh Operating Capacity , Sales Growth , Dan Arus Kas Operasi Terhadap Financial Distress." 9(2):583–94. doi: https://doi.org/10.17358/jabm.9.2.583.
Nabilah Nur Amalina, Sri Trisnaningsih. 2023. "Pengaruh Leverage, Likuiditas, Dan Ukuran Perusahaan Terhadap Financial Distress." 5(2).
Nawirah, Ditya Permatasari, and Maulidina Wahidah. 2022. "Financial Distress Analysis in Banking : Wich Methods Is the Most Accurate ?" International Conference of Islamic Economic PROCEEDING ICONIES FACULTY OF ECONOMICS 231–44.

Oktaria, Merisa, Maria Yanida, Rinto Alexandro, Tonich Tonich, and Windy Utami Putri. 2021. "The Effect of Liquidity , Firm Size and Leverage on Financial Distress (Study on Mining Companies on The Indonesia Stock Exchange." 197(Teams):484–89.

Pramudita, Reta, Lita Yulita Fitriyani, Universitas Pembangunan, and Nasional Veteran. 2024. "Issn: 3047-3144." 2:37–48.

Pratiwi, Lady Liesdyana, Ersa Tri Wahyuni, and Zaldy Adrianto. 2024. "Understanding The Cash Flow Impact on Financial Distress among Hospitality Listed Firms Amidst the Covid-19 Pandemic: The Case of Indonesia." Quantitative Economics and Management Studies. doi: 10.35877/454ri.qems2322.

Prihanti, D. Ghozali, Imam. 2011. "Aplikasi Analisis Multivariate Dengan Program SPSS Versi 19." Ramadani, Atika Widyo, and Dwi Ratmono. 2023. "Financial Distress Prediction: The Role Of Financial

Ratio And Firm Size." Jurnal Riset Akuntansi Kontemporer 15(1):19–26.

Sánchez, Carmen, Almeyda Jairo, González Bueno, Viktor Koval, Nydia Reyes, and Maldonado Halyna.

2025. "Predicting Financial Distress in the Food Production Sector : A Dual - Model Approach Using Z - Score and O - Score Methods."

Saputra, Andrew Jaya, and Susanto Salim. 2020. "Pengaruh Profitabilitas , Leverage , Firm Size , Dan Sales Growth Terhadap Financial Distress." 2(1):262–69.

Sari. 2022. "Pengaruh Perencanaan Pajak, Ukuran Perusahaan Dan Financial Distress Terhadap Nilai Perusahaan (Studi Empiris Pada Perusahaan Manufaktur Sektor Industri Dasar Dan Kimia Yang Terdapat Di Bursa Efek Indonesia Periode 2016-2020)." Jurnal Ekonomi Dan Bisnis Dharma Andalas 24(2):1–20.

Sugiyono. 2020. Metode Penelitian Kuantitatif Kualitatif.

Tameti, Rizkan Hasanah, EHartaty Hadady, and Suratno Amiro. 2025. "Pengaruh Operating Capacity, Leverage Dan Firm Growth Terhadap Financial Distress (Studi Kasus Pada Perusahaan Manufaktur Sektor Industri Yang Terdaftar Di Bursa Efek Indonesia Tahun 2020-2023)." Neraca Manajemen, Ekonomi 18(6).

Vidya, Rizka, and Dwi Giarto. 2020. "The Effect of Leverage, Sales Growth, Cash Flow on Financial Distress with Corporate Gove rnance as a Moderating Variable." 9(1):15–21. doi: 10.15294/aaj.v9i1.31022.

Widarjono. 2016. "Aplikasinya Disertai Panduan Eviews." Yogyakarta: UPP STIM YKPN.

Wijaya, Jennifen, and Rousilita Suhendah. 2023. "Pengaruh Likuiditas, Leverage, Dan Arus Kas Terhadap Financial Distress." Jurnal Ekonomi. doi: 10.24912/je.v28i2.1468.

Wulandari, D. S. 2021. "Digitalization of Tax Administration Systems and Tax Complience Costs on Taxpayer Complience of Individual Taxpayer." Journal of Accounting Science.www.idx.co.id. n.d. "55 Emiten Berpotensi Delisting."

Yoga Taufan Fahma, Nina Dwi Setyaningsih. 2021. "Altman, Zmijeewski,Grover,Springate,Ohlson, Zavgren (1)." Ilmiah Bisnis Dan Ekonomi Asia 15. doi: 10.32812/jibeka.v15i2.398.