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An Analysis of The Determinants of Financial Distress in The Operations of Mining Companies in Indonesia, with Export Dependence as a Moderating Variable

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Abstract
This study examines the determinants of financial distress in mining companies listed on the Indonesia Stock Exchange (IDX), with export dependence as a moderating variable. The research focuses on internal financial factors including liquidity, leverage, profitability, and firm growth as well as firm size as a control variable, to explain variations in financial distress. In addition, export dependence on major trading partners is introduced to assess its moderating role in strengthening or weakening the relationship between profitability and financial distress. A quantitative approach is employed using secondary data from annual financial reports of 22 mining companies over the 2021–2024 period, yielding 88 firm-year observations. The analysis was conducted using Structural Equation Modeling based on Partial Least Squares (PLS-SEM) via SmartPLS software. The results indicate that liquidity has a significant positive effect on financial distress, while leverage has a significant negative effect. Profitability shows a significant positive relationship with financial distress, whereas firm growth has no significant effect. Export dependence significantly moderates the relationship between profitability and financial distress, strengthening the impact of profitability on financial stability. Meanwhile, firm size does not significantly influence financial distress. The study concludes that financial distress in mining companies is primarily driven by internal financial performance, while external dependency on export markets plays a critical moderating role. These findings highlight the importance of financial resilience and export market structure in mitigating corporate financial risk.

INTRODUCTION

Companies must adapt to their environment and be prepared for any risks that could disrupt their finances. Globalization, changes in economic policy, fluctuations in international markets, and rapid technological developments create a business environment that is not only competitive but also demands high flexibility and resilience from companies. These dynamics are increasingly complex and fraught with uncertainty. This condition requires companies to adapt to ongoing changes stemming from both external and internal factors. Companies that are unable to respond to these changes will face various challenges that can hinder the achievement of their business objectives.

Furthermore, unexpected external pressures such as the global economic slowdown, changes in commodity prices, and supply chain disruptions increase corporate vulnerability to risks that can affect operational stability. In such situations, a company's sustainability depends heavily on management's ability to allocate resources efficiently, make strategic decisions, and maintain stable financial performance amidst growing market uncertainty.

Amidst increasingly volatile business conditions, companies are required to maintain the quality of internal management to sustain optimal operational activities. A company's ability to manage its cost structure, maintain operational efficiency, and ensure adequate resource availability are critical factors in preserving stable performance. An imbalance between external challenges and the effectiveness of internal management can place significant pressure on business continuity. Companies that fail to anticipate market changes or adapt their business strategies tend to be more vulnerable to operational disruptions. Moreover, intensifying global competition and the continuous demand for innovation place additional pressure on companies to maintain consistent performance. In such situations, weaknesses in managerial, financial, and operational aspects can escalate into more serious problems if not addressed promptly and effectively. Therefore, a company's ability to maintain internal stability is crucial for its survival and competitiveness amidst constantly evolving economic dynamics.

At a certain point, persistent pressure from the business environment combined with a company's inability to adapt its strategy and financial management can lead to a more serious condition, namely financial distress. This condition describes a situation in which a company begins to experience a significant decline in financial health, characterized by a diminished ability to meet financial obligations, weakened operational cash flow, and an increased risk of default on creditor payments. Financial distress does not emerge suddenly; rather, it is the accumulation of various external pressures and internal weaknesses that, if not properly addressed, make it difficult for the company to maintain operational stability. In many cases, financial distress serves as an early indicator of fundamental problems that could threaten the long-term continuity of the business (Marisa Agostini, 2018; Multasih & Khasan, 2024). Although this condition does not necessarily lead to bankruptcy, its presence provides an important warning to management, investors, and other stakeholders to take corrective action before the situation deteriorates further. Therefore, understanding the dynamics of financial distress and the factors that trigger it is essential to ensuring that companies are able to withstand pressures arising from rapidly evolving economic, market, and regulatory conditions.

In recent years, the trade war phenomenon has emerged as a significant challenge for companies across various sectors. Trade conflicts between major economies such as the United States and China in formulating international trade policies have affected all other countries, particularly those that conduct substantial trade with both nations. Increased tariffs, additional regulatory requirements, and exchange rate fluctuations driven by national trade interests directly affect corporate business strategies. For companies engaged in international trade, particularly those with significant export

exposure, trade wars can lead to declining demand from international markets, while policies that raise distribution costs can restrict access to target markets.

Exporting companies in developing countries, including those within the ASEAN region, are also experiencing the impact of these dynamics. Dependence on export markets in major economies exposes companies to risks such as declining orders, falling commodity prices, and increased competitive pressure from firms in other countries seeking alternative markets (Osakwe et al., 2018; Poltier, 2025; Purnama Sari, 2025). According to *Vietnamplus*, international trade between ASEAN and China reached US$420 billion from January to May 2025, up 9.1% from the previous year, with trade with China accounting for 16.8% of ASEAN's total foreign trade. Under these conditions, companies' ability to adapt and mitigate the effects of international trade policies is crucial, and the capacity to analyze the implications of such policies is essential to avoiding financial distress.

Financial distress refers to a financial condition in which a company struggles to meet its financial obligations, including its liabilities. If not addressed promptly, this condition can ultimately lead to bankruptcy. The relevance of financial distress to mining companies is evident from industry developments over the past five years, as reported by *kontan.co.id*. PT Cita Mineral Investindo Tbk, for instance, was prohibited from exporting raw bauxite beginning June 2023, which prompted operational efficiency measures and performance optimization in response to the inability to export its mineral output. The company subsequently divested fixed assets worth Rp13.1 billion to an affiliated entity. Indonesia's substantial natural resource base underscores the significance of this sector; historical data indicates that Indonesia has long been a target for resource extraction, reflecting its extraordinary mining potential. Indonesia is the world's largest producer and exporter of nickel, with recorded output of approximately 21 million metric tons a commodity of strategic global importance given nickel's critical role as a key material in electric vehicle (EV) batteries. The case of the United Arab Emirates (UAE) offers a relevant analogy: prior to 1938, the UAE's economy centered on trade, fishing, and pearl diving, leaving the country relatively traditional and underdeveloped. Following the discovery of oil and the pivotal geopolitical shifts of the 1973 Arab–Israeli War, the UAE transformed into a nation that effectively leveraged its resource wealth, ultimately emerging as a modern and prosperous city-state.

The strategic utilization of natural resources is essential for Indonesia's ambition to transition into a developed economy. However, it is equally important to recognize that economic resilience and structural flexibility are indispensable to avoid the pitfalls of commodity dependence. The case of Venezuela serves as a cautionary example: with 95% of its export revenue derived from oil, Venezuela's economy collapsed when global oil prices fell sharply in 2014–2016 and the United States imposed economic sanctions, triggering hyperinflation and a sovereign debt crisis. Similarly, Cuba's heavy dependence on the Soviet Union to which approximately 90% of its exports were directed during the Cold War left the country severely exposed when the Soviet Union dissolved in 1991, precipitating a prolonged economic crisis marked by acute shortages of food and energy.

These cases illustrate that economies with high degrees of export concentration are disproportionately vulnerable to external shocks. In the context of Indonesia, China represents the most significant dependency risk. According to *AP News*, the bilateral trade value between Indonesia and China in 2024 is projected to reach US$147.8 billion, making China Indonesia's largest trading partner for nine consecutive years. While this relationship reflects deep economic integration, it also exposes Indonesia to substantial systemic risk should trade relations with China deteriorate.

Liquidity reflects a company's ability to meet its short-term financial obligations as they fall due. Liquidity levels are closely linked to financial distress, as a company's capacity to manage current assets relative to current liabilities can serve as an early indicator of its financial health. A company with adequate liquidity demonstrates the ability to meet its short-term obligations, thereby reducing the risk of financial distress (Mathews et al., 2021; Pandeirot et al., 2022; Gitman & Zutter, 2019).

In addition to liquidity, solvency reflects a company's ability to meet its long-term obligations. Solvency analysis is essential for assessing a company's capital structure and its degree of reliance on debt financing. Companies with low solvency tend to face a higher risk of bankruptcy due to long-term liabilities that are disproportionate to their capacity for cash flow generation. In practice, companies frequently utilize long-term debt financing to support business expansion and growth; however, excessive leverage can heighten the risk of financial distress if not supported by adequate financial performance (Mulyaningsih et al., 2023; Gitman & Zutter, 2019).

Profitability reflects a company's ability to generate profit through the effective management of its resources. Profitability levels are used to assess the extent to which a company can sustain earnings through its core operational activities. In the context of financial analysis, profitability is a key indicator for predicting a company's financial condition, as companies with high profitability generally demonstrate a greater capacity to meet their financial obligations and reduce the risk of financial distress (Ayu & Suarjaya, 2021; Magdalena & Trisnawati, 2022).

Firm size indicates the scale of a company's operations, generally measured by total assets. Larger companies tend to possess more adequate resources, broader access to capital markets, and a higher degree of business diversification, making them comparatively better positioned to withstand financial pressures than smaller firms. Accordingly, firm size is commonly employed as a proxy for corporate stability and resilience in the context of financial distress risk (Agustia & Suryani, 2018; Cahyono et al., 2016).

Firm growth reflects the improvement in a company's performance over time, measured through asset growth and earnings growth across multiple periods. Longitudinal measurement of growth data is essential to provide a more representative picture of corporate performance, particularly given the possibility of capital injections from investors or parent companies during specific periods. Therefore, measuring firm growth longitudinally is expected to reduce estimation bias and enhance the accuracy of

assessing the relationship between firm growth and financial distress (Kristanti & Pancawitri, 2024).

Researchers are interested in examining these variables due to their relevance to financial distress, as well as due to inconsistencies in the findings of prior studies. For instance, Gunawan and Putra (2021a) and Dinh, Powell, and Vo (2021a) found that liquidity has a significant effect on financial distress, whereas Dirman (2020) concluded that liquidity has no significant effect on financial distress. Regarding leverage, Putri and Putri (2024a) and Dinh et al. (2021a) found that leverage significantly influences financial distress, while Gunawan and Putra (2021) reported no such influence. With respect to profitability, Gunawan and Putra (2021) found a negative effect on financial distress, whereas Dini Anjelita and Falikhatun (2023) reported a positive effect. Regarding firm size, Putri and Putri (2024) found no significant effect, whereas Citterio and King (2023) and Dini Anjelita and Falikhatun (2023) reported a positive effect with Citterio and King's findings based on data from Middle Eastern countries and Dini Anjelita and Falikhatun's study covering Indonesia and Japan. With respect to firm growth, Putri and Putri (2024) found a negative effect on financial distress, whereas Citterio and King (2023) found a positive effect.

Furthermore, there is a theoretical basis explaining why export dependence may moderate the relationship between profitability and financial distress. According to the Commodity Dependence Theory proposed by Amin and Pierce (1976), entities that are highly dependent on a single commodity or export market face a high degree of economic vulnerability. When a company's primary revenue stream is derived from exports to a specific country such as a mining company dependent on demand from China price fluctuations, regulatory changes, or sudden demand contractions can severely depress financial performance. Under such conditions, even high profitability becomes unstable and may be insufficient to serve as a buffer against financial distress risk. This aligns with the argument advanced by Reinhart and Rogoff (2018), who posit that companies operating in environments of high global dependency are particularly vulnerable to external shocks, whether in the form of economic crises, shifts in international trade policy, or commodity price volatility. When export dependence is high, any such external shock can significantly erode profitability and ultimately elevate the risk of financial distress. Thus, export dependence has the potential to weaken the protective effect of profitability on financial health, making it a theoretically appropriate moderating variable in this study.

Among the studies and theoretical frameworks reviewed above, none have explicitly examined export dependence at the firm level, particularly within the Indonesian mining sector. This gap necessitates empirical investigation to identify the impact of export dependence and to inform the strategic responses required to address it. In response to this research gap, the present study aims to examine the *"Analysis of the Determinants of Financial Distress in the Operations of Mining Companies in Indonesia, with Export Dependence as a Moderating Variable."*

Research on financial distress has generally focused on internal firm-level factors such as liquidity, profitability, leverage, and firm size as the primary determinants. However, studies that incorporate external structural factors, particularly export dependence on specific destination countries, remain scarce. In the context of Indonesian mining companies, export dependence on China has a significant bearing on corporate financial stability, given China's role as the largest importer of Indonesian minerals and coal. The limited research linking export dependence to financial distress represents a gap that warrants further investigation. Accordingly, this study aims to address this gap by explicitly examining how export dependence on China influences the financial distress of mining companies alongside internal firm-level determinants.

Based on the background discussed above, the following research questions are identified: 1) Does liquidity significantly influence the financial distress of mining companies in Indonesia? 2) Does leverage significantly influence the financial distress of mining companies in Indonesia? 3) Does profitability significantly influence the financial distress of mining companies in Indonesia? 4) Does firm growth significantly influence the financial distress of mining companies in Indonesia? 5) Does export dependence moderate the relationship between profitability and financial distress in mining companies in Indonesia?

Based on the problem formulation above, the objectives of this study are as follows: 1) To examine the effect of liquidity on the financial distress of mining companies in Indonesia. 2) To examine the effect of leverage on the financial distress of mining companies in Indonesia. 3) To examine the effect of profitability on the financial distress of mining companies in Indonesia. 4) To examine the effect of firm growth on the financial distress of mining companies in Indonesia. 5) To examine the moderating effect of export dependence on the relationship between profitability and financial distress in mining companies in Indonesia.

METHOD

Unit of Analysis, Population, and Sample

The target of this research is mining companies listed on the Indonesian stock exchange. The analysis method is *electric research* to obtain additional information accessed via *the website.* https://www.idx.co.id/ . The data used is the annual financial reports of mining companies.

The population is the entire research object, including all elements within the scope of the study. This definition is provided (Tersiana 2018)in his book, "Research Methods." Based on this statement, the research population was 60 mining companies listed on the Indonesian Stock Exchange, with an observation period of 2021-2024, resulting in 240 financial reports.

A purposive sample (Tersiana 2018)is a portion of a population that has been arranged according to a number of characteristics or criteria used for research. The technique used in this research is the *purposive sampling technique,* which is a method or technique in which research samples are taken by reducing them by certain criteria

Syaifulloh, Susanti, and Mardi (2021)Identification was obtained through company financial reports, annual reports, official company websites, and official news portals that reported on company exports not listed in the financial reports. Thus, the sample companies were:

Table 1Sample Determination Criteria

No	Criteria	Amount
1	Mining Companies in Indonesia listed on the Indonesia Stock Exchange	60
2	Companies that export to China	(21)
3	Companies that consistently export to China from 2021-2024	(17)
Total		22

Source: Researcher, 2025

In this case, it is a company that exports to Chinese companies for 4 years, so the number of samples used in this study is 88 populations from 22 companies.

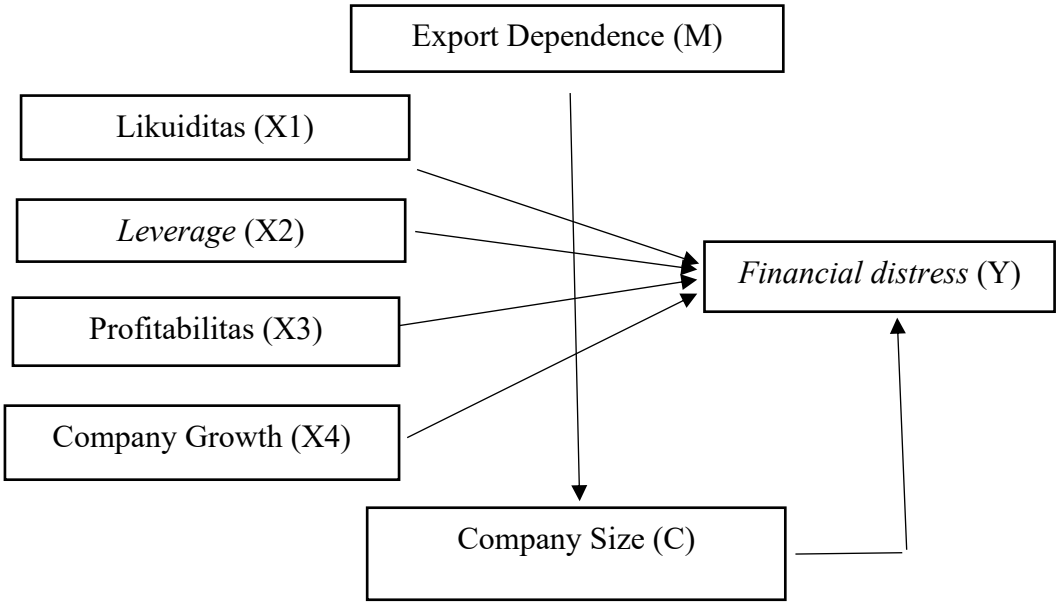
Data collection technique

1. Method

   This study uses a quantitative research approach. Quantitative research is a research method that aims to estimate whether social phenomena or conditions occurring in society are related or not. This method typically uses deductive logic to find results by making empirical components called variables and these variables are represented numerically (Sudaryono 2018). This study explains the relationship between cause and effect of two or more variables to analyze how one variable affects another. And what will be tested in this study is the influence on *financial distress* of mining companies in 2021-2024.

2. Constellation of Relationships Between Variables

   The relationship between variables can be described in a constellation diagram as follows:



Information:
X1: Independent Variable
X2: Independent Variable
X3: Independent Variable
X4: Independent Variable
C: Control Variable
M: Moderating Variable
Y: Dependent Variable
→ : Direction of Relationship

Data collection

Secondary data is the data used in this study, which according to (Tersiana 2018)secondary data is data that can be obtained from records, government reports, books, and so on, and this data does not need further processing. This study uses a documentation study technique in the data collection process, where documents are records of past events that can be in the form of images, writings, artwork, photographs, and others. In this study, data was collected by downloading annual financial report data from mining companies that have met all sample criteria from the official website of the Indonesia Stock Exchange and the websites of the companies concerned.

RESULT AND DISCUSSION

In this study, the obtained data were first analyzed using an outer model as a prerequisite for analysis before conducting structural model testing and hypothesis testing. This outer model test was intended to ensure that all financial ratio indicators used met the construct validity and reliability requirements. After all variables were proven valid and reliable, the analysis continued with an inner model test to evaluate the model's quality and predictive power before conducting hypothesis testing.

Results of Structural Equation Modeling (SEM) Analysis - Partial Least Square (PLS)

The following is the initial calculation model for this research:

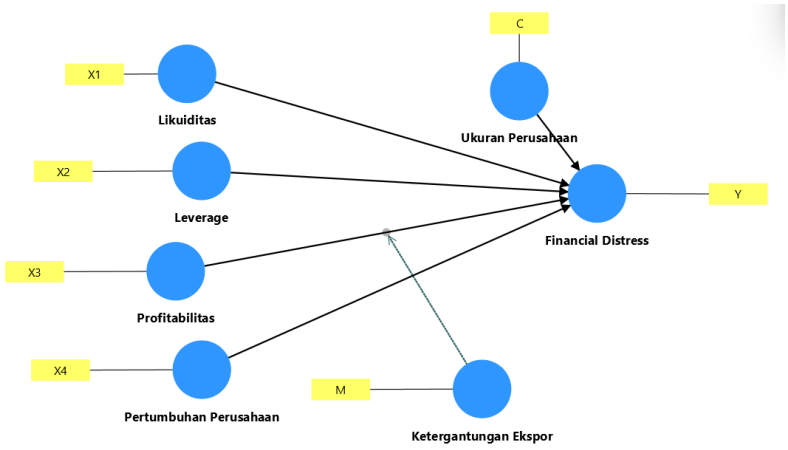


Figure 1Research Model

The results of the subsequent calculations for the second model using SmartPLS software are shown in the image:

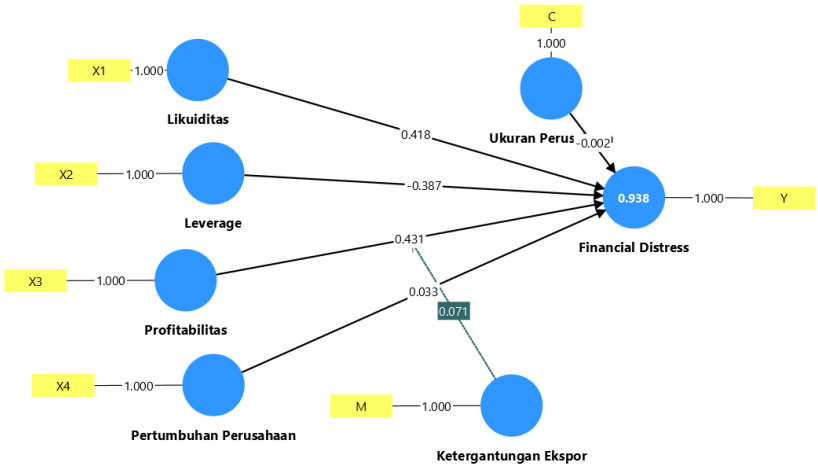


Figure 2Calculation Results (PLS Algorithm) Model

Evaluation of Measurement Model (Outer Model)

All variables in this study, namely Company Size (C), Export Dependence (M), Liquidity (X1), Leverage (X2), Profitability (X3), Company Growth (X4), and Financial Distress (Y), are measured using single-item constructs sourced from secondary financial report data. Based on the results of data processing in SmartPLS, the Construct Reliability & Validity and Discriminant Validity menus produce the statement that "The model contains only formative or single-item constructs". In PLS-SEM, constructs with single indicators inherently have perfect validity and reliability values (valued at 1.000). Therefore, testing reliability criteria (such as Cronbach's Alpha) and validity (such as Fornell-Larcker or HTMT) does not produce a numerical value, so that the measurement model is declared to immediately meet the requirements and the analysis can be directly continued to the evaluation of the structural model (inner model).

Structural Model Evaluation (Inner Model)

1. R-Square Test Results (R^2)

   To measure the predictive power of a structural model in research, the R-Square value can be seen. The R-Square value is used to indicate the total number of variables that can be explained by the structural model and how much of the variation in endogenous constructs can be explained by the constructs that influence them (exogenous) (Ghozali, 2014).

Table 1R-Square Results

Variabel	R-Square
Financial Distress	0,938

This study uses two variables that are influenced by other variables: export dependency and *financial distress*. Export dependency is influenced by

profitability, while profitability is influenced by liquidity, leverage, profitability, company growth, and company size.

The table above shows that the R-Square value of the variable

The financial distress variable showed a result of 0.938. These results indicate that the variables of liquidity, leverage, profitability, company growth, and company size can explain the *financial distress variable* by 0.938 or 93%, while the remainder is explained by other variables not hypothesized in this study.

2. *Q-Square* Test Results

To measure how well the observed values are generated by the model and its parameter estimates, the Q-Square value must be considered. The Q-Square value, or predictive relevance test, can be calculated using the following formula and calculation:

$Q^2 = 1 – (1 – R^2)$

$Q^2 = 1 –(1 – 0.9368)$

$Q^2 = 1 – 0.0632$

$Q^2 = 0.9368$

The Q-Square value must be greater than 0 (zero) to indicate that the research model has predictive relevance. The Q-Square value has a range of $0 < Q^2 < 1$. The closer it is to 1, the better the model (Ghozali, 2014).

The calculated predictive relevance value of 0.936, or 93.6%, indicates that the model can explain 93.6% of the data diversity. The remaining 6.4% can be explained by other variables not hypothesized in this study. These results indicate that this research model is a suitable model because it has relevant predictive value.

3. F-Square Test

The F-Square or effect size test is conducted to determine changes in the R-Square value on endogenous constructs. Changes in the F-Square value indicate the influence of exogenous constructs on endogenous constructs, regardless of whether they have a substantive influence. According to Ghozali (2014), the f2 value is 0.02; 0.15; and 0.35. This can be interpreted as whether the latent variable predictor has a weak, moderate, or large influence at the structural level. The following are the f-square values for this study according to:

Table 3. F-Square Results

Variable	Financial Distress
Export Dependence	0,008
Liquidity	1,691
Leverage	1,213
Company Growth	0,017
Profitability	1,966
Company Size	0,000
Export Dependence × Profitability	0,037

Source: SmartPLS Output

Based on the table above, the f-square value of the influence of export dependence on *financial distress* is 0.008, which means it has no effect size or f-square <0.02. The effect of liquidity on *financial distress* is 1.691, which means it has a large effect size or f-square>0.35. The effect of *leverage* on *financial distress* is 1.213, which means it has a large effect size or f-square>0.35. The effect of company growth on *financial distress* is 0.017, which means it has no effect size or f-square <0.02. The effect of profitability on *financial distress* is 1.966, which means it has a large effect size or f-square>0.35. The effect of company size on *financial distress* is 0.000, which means it has no effect size or f-square<0.02. The effect of profitability on export dependence is 0.037, which means it has a large effect size or f-square>0.35.

Hypothesis Testing Results

There are five hypotheses in this study, divided into three hypotheses to examine the direct effect and one hypothesis to examine the indirect effect (intervening effect). To examine the direct and intervening effects, hypotheses were tested by bootstrapping the models of both studies. The results of the bootstrapping of the two models are shown in the figure below:

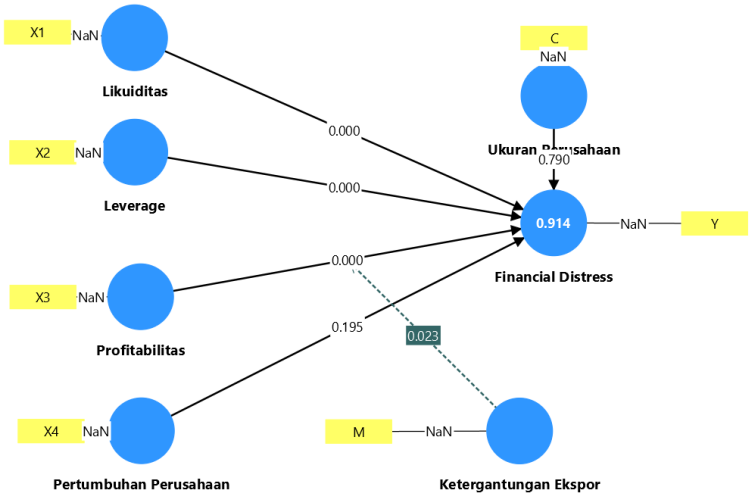


Figure 3. Bootstrapping Calculation Results

Results of the Inner Model Evaluation Test (Structural Model): Test of Significance of Direct Effect

This study will conduct an inner model evaluation test, which involves a direct effect significance test. The inner model, or internal measurement, is also known as a structural model test. The table below shows the path coefficients and p-values for the direct effect significance test:

Table 4. Total Effects (Mean, STDEV, T-Values, P-Values)

Variables	P Values
Export Dependence → Financial Distress	0,770
Export Dependence → Profitability → Financial Distress	0,023
Liquidity → Financial Distress	0,000
Leverage → Financial Distress	0,000
Profitability → Financial Distress	0,000
Firm Growth → Financial Distress	0,195
Firm Size → Financial Distress	0,790

The table above shows the results of the direct effect significance test (total effect) and information regarding the magnitude of the influence between latent variables in this study. From the table, it can be seen that the magnitude of the influence can be seen from the original sample estimate column, while the level of significance can be seen from the t-statistics and p-values columns. According to Ghozali (2014), a t-stat value > 1.96 or a p-value < 0.05 indicates a significant influence of each hypothesis or the hypothesis is accepted. The results of the hypothesis testing based on table 4.1 1 are as follows.

The first hypothesis of this study is that liquidity characteristics influence *financial distress.* Testing the first hypothesis yielded a t-stat value of 8.567 (greater than 1.96) and a p-value of 0.000 (less than 0.05), indicating that liquidity significantly influences *financial distress,* thus accepting H1.

The second hypothesis of this study is that *leverage characteristics* influence *financial distress.* Testing the second hypothesis yielded a t-stat value of 6.623 (greater than 1.96) and a p-value of 0.000 (less than 0.05), indicating that *leverage* significantly influences *financial distress,* thus accepting H2.

The third hypothesis of this study is that company growth characteristics influence *financial distress.* Testing the third hypothesis yielded a t-stat value of 6.570 (greater than 1.96) and a p-value of 0.000 (less than 0.05), indicating that company profitability significantly influences *financial distress,* thus H3 is accepted.

The fourth hypothesis of this study is that profitability characteristics influence *financial distress.* Testing the fourth hypothesis yielded a t-stat value of 1.296 (less than 1.96) and a p-value of 0.195 (greater than 0.05), indicating that company growth significantly influences *financial distress,* thus accepting H4.

The fifth hypothesis of this study is that export dependency characteristics can moderate the effect of profitability on *financial distress.* Testing the fifth hypothesis yielded a t-stat value of 2.270 (greater than 1.96) and a p-value of 0.023 (less than 0.05), indicating that export dependency can moderate the effect of profitability on *financial distress,* thus H5 is accepted.

In addition to the five hypotheses presented in this study, there is a control variable, namely company size, that influences financial distress. Testing this control variable yielded a t-stat of 0.267 (less than 1.96) and a p-value of 0.790 (greater than 0.05), indicating that the control variable has no direct effect on financial distress.

The Effect of Liquidity on Financial Distress

Based on data analysis, liquidity has a significant positive effect on the financial health (financial distress) of mining companies in Indonesia. This finding indicates that a company's ability to convert current assets into cash plays a crucial role in maintaining financial stability against the threat of bankruptcy. The higher a company's liquidity, the greater its capacity to meet its maturing short-term obligations.

The results of this study validate the research framework that researchers have built, namely that liquidity has an effect on financial distress because companies with high liquidity will prevent companies from experiencing financial distress. This is in line with the sample of this company, namely a mining company, mining companies require the availability of cash or ready-to-use assets (Machmud, 2023). When companies have strong liquidity, they can immediately pay the main contractor's monthly bills, purchase industrial fuel oil (BBM) in massive quantities for their heavy equipment fleet, and pay barge rental fees on time without having to wait for cash from export sales which often takes a long time. Conversely, if the company's cash is dry (poor liquidity), operations at the mining site can immediately come to a complete standstill due to contractor strikes or fuel supply interruptions, which in the real world will immediately cut off the company's revenue stream and very quickly drag them into the abyss of bankruptcy (*financial distress*).

This is in line with (Brigham and Houston 2018)his book, "Fundamentals of Financial Management," which states that liquidity influences *financial distress* because it is the ability to repay debts, and inability to do so can be a contributing factor to *financial distress.* Furthermore, research by (Gunawan and Putra 2021b)& (Putri and Putri 2024b)states that liquidity has a significant impact on *financial distress*.

The Effect of Leverage on Financial Distress

Based on the data analysis, leverage was found to have a negative and significant impact on the financial health (financial distress) of mining companies in Indonesia. Considering that a declining Altman Z-Score indicates a company's financial condition is increasingly vulnerable and approaching bankruptcy, these findings substantively indicate that the higher the leverage (proportion of debt) a company possesses, the greater the risk of financial distress.

The results of this study align with the theoretical framework, which states that leverage has a significant influence on financial distress. In real-world conditions, this phenomenon is highly relevant to the characteristics of the mining sector, which is classified as a capital-intensive industry. Mining companies often require significant funds to finance new land exploration activities, investment in heavy equipment, and the development of logistics and processing infrastructure (such as smelters). If management is too aggressive and chooses to fund these needs through large, long-term debt (high leverage), the company will automatically be bound by fixed interest and principal payments every period. However, mining companies' cash inflows are highly volatile and vulnerable because they are controlled by global commodity price movements. When

global commodity prices experience a downward trend, company revenues will decline sharply, while the debt burden remains unchanged. This real-world situation causes high debt to directly suppress cash flow stability, drain working capital reserves, and quickly drag companies into financial distress.

This aligns with the theory This aligns with the theory (Kasmir 2021) of financial statement analysis, which explains that *leverage* indicates a company's ability to utilize borrowed funds. Therefore, the higher *the leverage,* the greater the company's dependence on debt, which can lead to financial *distress.* This is in line with research (Dini Anjelita and Falikhatun 2023b)that (Dinh et al. 2021b)states that leverage significantly influences financial distress. High leverage's role in reducing the risk of financial distress is also significantly influenced by the characteristics of the long-term, structured debt commonly used by mining corporations (Destriwanti et al., 2022).

The Effect of Profitability 0n Financial Distress

Based on the data analysis, profitability has a positive and significant impact on the financial health (financial distress) of mining companies in Indonesia. Considering that a higher Altman Z-Score indicates a more secure and healthy financial condition, these findings substantively indicate that the higher the profitability (profit-making ability) achieved by a company, the greater its financial health, meaning the risk of financial distress will significantly decrease.

This aligns with the research framework that states that profitability influences a company's financial distress, particularly in mining companies. When companies are able to generate high levels of profitabilityespecially when global commodity prices are soaring—they will receive a significant influx of cash inflows. This tangible profit provides management with extraordinary financial flexibility to immediately cover all expensive mining operational costs, pay off maturing debt obligations, and strengthen the company's internal cash reserves. In the real world, companies that consistently generate healthy net profits have high financial independence, so they don't need to rely on new external loans that risk exacerbating financial burdens. As a result, when the mining industry enters a phase of the commodity price downturn cycle, these profitable companies still have a very secure cash cushion to survive, significantly minimizing their chances of falling

This is also supported by the theory (Sofyan Syafri Harahap 2018)in his book, "Critical Analysis of Financial Statements," which states that profitability is an entity's ability to generate profits within a specific period using existing resources. This will result in improved company finances in the future. This is further supported by research (Powell et al. 2023)by &, (ElBannan 2021)which states that profitability significantly influences *financial distress*, in line with the valuation framework that links profitability to financial resilience (Damodaran, 2022).

The Influence of Company Growth on Financial Distress

Based on the data analysis, it was found that company growth had no significant impact on the level of financial distress of mining companies in Indonesia. These findings substantively indicate that high or low company growth (in terms of both assets and sales) is not a determining factor in the potential for financial distress or corporate bankruptcy (Kristanti & Pancawitri, 2024).

This means that the speed or slowness of a company's growth rate does not significantly impact or change its financial distress. Mining company growth, reflected in increased assets or production capacity, does not guarantee financial stability if commodity prices on the international market are experiencing a downward trend. This growth could also be due to the company burning cash, which ultimately fails to reflect the impact of financial distress. Then there is the cash burn factor, which, according to some, only makes the company appear to be growing, but is actually burning cash. Therefore, for mining companies, internal physical growth indicators do not guarantee immunity from the risk of *financial distress,* because external factors, such as commodity prices and internal capital structure management, are far more dominant in determining a company's financial health.

In theory, according (David L. Debertin 2012) to his book, Agricultural Production Economics, "corporate growth is a cyclical increase in the size of a company's production of goods or other revenues. This can be seen from increases in assets, sales, or market value. This growth demonstrates an increase in the scale of operations and the company's ability to adapt to market changes." However, this study disproved this theory, which aligns with (Jeffrey Pfeffer 2003)the Resource Dependence Theory, which relates to the characteristics of capital-intensive industries and their high dependence on global commodity prices.

Export Dependence Moderates' Profitability Against Financial Distress

Based on the data analysis, it was found that export dependence significantly moderates the relationship between profitability and financial distress in mining companies in Indonesia. These test results substantively demonstrate that export dependence acts as a moderating variable, strengthening the positive influence of profitability on a company's financial health, thus significantly reducing the risk of financial distress.

This aligns with the research framework, which states that export dependence can strengthen the impact of profitability on financial distress. In practice, this illustrates a very strong dynamic in the mining commodity industry in Indonesia. Mining companies with a strong export orientation generally conduct international trade transactions using foreign currencies, particularly the US dollar (USD). When these mining companies achieve high profitability amidst strong global market conditions or when the USD exchange rate strengthens against the rupiah, their operating profits accelerate exponentially. In real-world operations, this combination of high profits and foreign currency revenues provides immediate liquidity and a massive internal capital injection

for management. These fresh funds can be used immediately to strengthen operational cash reserves at the mine site, repay short-term debt, and even independently finance ongoing exploration projects. Consequently, high export dependence coupled with strong profitability effectively provides a very solid financial defense, protecting companies from potential financial pressure or financial distress.

Further in-depth analysis, examining the sample of researchers examining export dependence on China, demonstrates that China is Indonesia's primary trading partner and largest importer of mineral and coal commodities, strongly justifying its significant moderating effect. China is the primary driver of global commodity demand; when the Chinese economy is in an expansionary phase, demand for Indonesian mining products surges, directly boosting the profitability of the sample companies. Furthermore, China's dominant role as a primary export target lies in its scale of industrialization and structural policies, which are not shared by other destination countries, such as India. China is the world's largest consumer of coal, fueling its network of massive coal-fired power plants (PLTUs), which underpin the global manufacturing sector. Furthermore, in the context of industrial modernization, China leads the global down streaming and supply chain for electric vehicles and lithium batteries. Indonesia's position as the world's largest nickel producer makes domestic mining corporations key suppliers, structurally tied to the needs of processing plants in China. This massive and continuous demand from China creates a long-term guarantee of market absorption (off taker) for Indonesian mining companies. The market guarantee from an economic giant like China provides highly predictable cash inflows for mining companies, even though the industry is subject to fluctuations in global commodity prices. The assurance of consistent sales volumes to China ensures that the company's high profitability can be readily translated into real profits in foreign currencies, particularly US dollars (USD).

The abundant USD cash inflow from exports to the Chinese market provides significant external financial flexibility and internal capital. These fresh funds provide a crucial immediate liquidity cushion for management to cover fixed operating costs at the mine site, pay prime contractor bills on time, repay short-term debt obligations, and fund independent exploration projects without incurring interest on new loans. Consequently, the interplay between healthy profitability and a targeted export dependence on the stable Chinese market has been empirically proven to strengthen the company's financial health (Altman Z-Score) and effectively steer it away from the brink of financial distress.

This is further reinforced by the theory of *External Shock Vulnerability,* which posits that (Reinhart and Rogoff n.d.)companies with a high export dependence face a greater risk of external shocks, such as exchange rate volatility, fluctuations in global demand, crises in export destination countries, and changes in international trade policies. These external shocks can lead to revenue instability, making a company's profitability more volatile and less able to fully reflect its fundamental long-term strength (Chen & Novy, 2022; Charalambakis & Garrett, 2019).

Analysis of Control Variables of Company Size on Financial Distress

Based on the data analysis, it was found that company size, as a control variable, did not significantly influence the level of financial distress of mining companies in Indonesia. These test results substantively indicate that company scale (whether categorized as large or small) cannot control, mitigate, or determine the fluctuations in the risk of financial distress.

Theoretically, the insignificant results of this control variable strengthen the feasibility of the research model. This proves that large and small-scale companies do not influence the level of financial distress risk in the sample companies. This means that the research is purely explained by the ability of the main independent variables, namely liquidity, leverage, company growth, and profitability without any bias or intervention from the characteristics of the company's structural size. In other words, both large and small-scale companies are equally vulnerable to the risk of financial distress if the independent variables are not managed properly. And if seen from the researcher's data on the size of the mining companies sampled by the researcher, taken through the proxy Ln total assets, almost all samples have sizes that are not too varied, thus only indicating that mining companies have sizes that range in scale are not much different.

CONCLUSION

Based on the results of data analysis and discussion conducted in the previous chapter regarding the influence of liquidity, leverage, profitability, company growth, as well as the moderating role of export dependence and company size control variables on financial distress, the following conclusions can be drawn: 1) Liquidity has a positive and significant effect on financial distress. This means that the higher a company's liquidity, the greater the potential for financial distress in the sample companies. 2) Leverage has a negative and significant effect on financial distress, meaning that an increase in the debt or leverage ratio in the sample companies is actually followed by a significant decrease in the financial distress score. 3) Profitability has a positive and significant effect on financial distress, which indicates that the higher the company's ability to generate profits, the more significant the increase in financial distress scores will be for the object of this study.

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