

# Financial Distress in Manufacturing Companies: The Effects of Profitability, Liquidity, and Leverage Ratios with Audit Committee Moderation

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| Article Info   | Abstract  |
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| Received July 3, 2025<br>Revised July 9, 2025<br>Published July 17, 2025   | <i>This study provides empirical data on the factors influencing financial distress among manufacturing firms in Indonesia. A company's cash flow that is unable to fulfill its short-term debt payment obligations, trade payables, and interest expenses can be interpreted as a sign of financial distress. Profitability, liquidity, and leverage are used as independent variables, using the audit committee as a moderating variable in this study. Out of 181 companies listed on the IDX, 104 were chosen through purposive sampling over a four-year span. The analysis, utilizing descriptive statistics and logistic regression, indicates that both profitability and liquidity exert a significant negative influence on financial distress, while leverage does not exhibit a significant effect. Furthermore, the audit committee does not moderate the relationships between these variables and financial distress.</i> |
| <hr/> <b>Keywords:</b><br><i>Financial Distress;</i><br><i>Profitability</i><br><i>Liquidity;</i><br><i>Leverage;</i><br><i>Audit Committee;</i> |   |

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## INTRODUCTION

Every company is fundamentally established with the goal of generating profit to ensure its long-term survival and growth. It can be seen that on the Indonesia Stock Exchange (IDX), there are several companies that may potentially be delisted due to financial difficulties, which refers to financial difficulties that could lead to bankruptcy. This situation can affect various types of companies, including private, foreign, or state-owned enterprises (SOEs), and is often triggered by a decline in performance, marked by high debt burdens and interest expenses, as reflected in financial ratios (Maulida, 2018). Signs of bankruptcy can begin when a company experiences financial distress (Paule-Vianez et al., 2019). This is usually caused by companies being unable to maintain financial stability, resulting in

operational losses and decreased shareholder confidence, and can even lead to bankruptcy (Christine et al., 2019).

The subject of financial distress has garnered significant attention from scholars in finance, notably Altman (1968), who developed the Z-Score model as a multivariate method for forecasting the likelihood of company bankruptcy. This model was later revised in 1983 so that it could be applied to non-public manufacturing companies, and was modified again in 1995 so that it could be used for all types of companies, both public and non-public, including those in the financial and property sectors Altman et al., (2000) in (Altman et al., 2016).

Manufacturing companies on the IDX are the object of research because this sector contributes significantly to economic development at the national level. The manufacturing industry has the largest number of companies on the IDX compared to other industries & provides significant results for Indonesia's economic growth. This is illustrated in Table 1 below, which outlines the contribution of the manufacturing industry to GDP as follows:

**Table 1. Expansion of the Manufacturing Sector's Share in the National GDP**

| <b>Uraian</b>   | <b>2015 (%)</b> | <b>2016 (%)</b> | <b>2017 (%)</b> | <b>2018 (%)</b> |
|---|-----------------|-----------------|-----------------|-----------------|
| National GDP  | 4,88            | 5,03            | 5,07            | 5,17            |
| Contribution of the Manufacturing Industry            | 20,99           | 20,52           | 20,16           | 19,86           |
| Contribution of Agriculture, Forestry, and Fisheries  | 13,49           | 13,48           | 13,15           | 12,81           |
| Wholesale & Retail; Motor Vehicle & Motorcycle Repair | 13. 3           | 13. 19          | 13. 02          | 13. 02          |
| Mining and Quarrying                                  | 7,65            | 7,18            | 7,58            | 8,08            |

Source : BPS

The table above indicates that from 2015 to 2018, the manufacturing industry sector was the largest contributor to the national GDP, consistently accounting for about 20% annually. In 2018, its contribution was 19.86%, which was a decline from 20.16% in 2017 and 20.52% in 2016. Conversely, the agriculture, forestry, and fisheries sector, while also making a notable contribution to the GDP, showed variations, maintaining a range of approximately 13% over the same period. This scenario highlights the important role of the manufacturing sector in shaping national GDP, both directly and through its relationship with other sectors in the Indonesian economy (www.kemenperin.go.id, 2019).

Throughout 2012 to 2018, it was recorded that 27 companies had their listings removed from the IDX, of which 6 were in the manufacturing sector (www.sahamoke.com, 2019). The level of financial stability is very important in determining the sustainability of a company. One way to assess this is by comparing financial ratios, which has led to the emergence of various models for predicting financial distress conditions. (Ling et al., 2016) explained that the quality of a company's performance, whether good or bad, can be illustrated by analyzing financial ratios. This study adopts several financial ratios used to predict financial distress, such as profitability ratio, liquidity ratio, leverage ratio, and audit committee.

The profitability ratio indicates a company's ability to generate earnings over a certain period. A low profitability ratio may suggest ineffective management of the company's assets in generating profits. If this trend continues to deteriorate, it could lead to losses and a declining cash flow position moving toward negative levels. Prolonged persistence of this situation over multiple years could place the company at risk of financial distress, primarily due to a mismatch between its operating costs and the revenues it earns.

The liquidity ratio functions as an indicator of a firm's ability to meet its short-term financial obligations. It is derived from working capital, which represents the difference between current assets and current liabilities. Typical liquidity metrics include the current ratio, quick ratio, and cash ratio, all focused on current assets. Conversely, the leverage ratio sheds light on the financial risks faced by the company by indicating its capacity to repay long-term debt commitments.

The leverage ratio serves as a measure that compares a company's total liabilities against its total assets. Typically, companies with lower debt ratios are perceived to carry a diminished risk of encountering financial distress (Muflihah, 2017). The audit committee plays a crucial role in upholding corporate governance, continuously overseeing the company's status to maintain stability and help prevent financial problems. According to the Indonesian Audit Committee Association (IKAI), this committee is appointed by the board of commissioners, operating with a high degree of professionalism and independence. Its main duty is to assist and strengthen the board's supervision of areas such as financial reporting, risk management, audit activities, and the enforcement of corporate governance within the organization (Muflihah, 2017).

The study's sample selection targets companies within the manufacturing industry, as numerous manufacturing firms in Indonesia, such as PT Krakatau Steel Tbk (KRAS), have reported a decrease in profits from 2015 to 2017, according to financial statements available on the IDX. Additionally, there are noteworthy issues concerning the audit committee, highlighted by the amendment of the regulation regarding the appointment of commissioners, who subsequently become audit committee members, ultimately impacting the company's financial stability ([www.kompasiana.com](http://www.kompasiana.com)).

### **Research Gap**

The research gap in this study emerges when reviewing previous investigations into the influence of financial ratios and audit committees on financial distress, where findings have been inconsistent. This study focuses on four financial ratios: profitability, liquidity, leverage, and the audit committee. The link between profitability ratios and financial distress has yielded mixed outcomes. Recent research by Finishtya (2019), Moch et al. (2019), and Chrissentia and Julianti (2018) demonstrates that Return on Assets (ROA), a key profitability indicator, negatively and significantly affects the likelihood of financial distress. Conversely, earlier studies such as those by Nurfajrina et al. (2016), Rahmawati and Prasetya (2018), and Christine et al. (2019) found a positive and significant relationship between profitability and financial distress prediction. Furthermore, studies by Rohmadini et al. (2018) and Yadiati (2017) concluded that profitability bears no significant impact on financial distress.

Research results concerning the link between liquidity ratios and financial distress have shown varied outcomes. For instance, the investigation by Septiani and I Made (2019) revealed a positive impact of liquidity, as gauged by the current ratio, on financial distress. Conversely, studies carried out by Jepkorir et al. (2019), Cinantya and Merkusiwati (2015), Moch et al. (2019), Chrissentia and Julianti (2018), Dance and Sukartha (2019), and Masdupi et al. (2018) identified a significant negative correlation between liquidity and financial distress. Moreover, research by Agustini and Wirawati (2019), Ayu et al. (2017), Nurfajrina et al. (2016), Muflihah (2017), and Sukarna and Titik (2016) reported that liquidity does not exert a statistically meaningful effect on financial distress.

In addition to the profitability and liquidity ratios, the relationship between the leverage ratio and financial distress also shows varying results. Research

conducted by Agustini and Wirawati (2019), Muflihah (2017), Chrissentia & Julianti (2018), and Rahmawati & Prasetya (2018) indicated that the leverage ratio has a positive and significant relationship with financial distress. On the other hand, studies conducted by Dance and Sukartha (2019), Christine et al. (2019), and Septiani and I Made (2019) showed that the leverage ratio has a negative and significant relationship with financial distress. Furthermore, the results of studies by Finishtya (2019), Ayu et al. (2017), Cinantya and Merkusiwati (2015), Sukarna and Titik (2016), and Nurfajrina et al. (2016) showed that leverage has no significant effect on financial distress.

Research on the impact of financial ratios, as previously discussed, reveals inconsistent findings. Similarly, studies examining the relationship between the audit committee and financial distress also report mixed results. For instance, Masak and Suzy (2019) found that the audit committee exerts a positive and significant influence on financial distress. Conversely, Rahmawati and Prasetya (2018) concluded that the size of the audit committee has no significant effect on financial distress.

This study is developed from previous research by Christine et al. (2019). The difference from that research lies in the development of the audit committee variable as a moderating variable. The purpose of this difference in the current study is to examine the relationships that influence financial distress by adding a moderating variable. Several previous studies did not use a moderating variable, whereas this study adds one moderating variable, namely the audit committee ratio. The selection of the committee as a moderating variable is based on agency theory, which posits that agency costs arise due to agency conflicts within a company (Jensen and Meckling, 1976). The audit committee plays an important role in overseeing management performance so that management can be properly supervised and company performance can be improved, thereby avoiding financial distress.

### **Theoretical Review and Hypothesis Development**

Agency theory is a widely applied concept in business studies, first gaining recognition in the 1970s through the seminal paper by Jensen & Meckling (1976) titled "Theory of the Firm: Managerial Behavior, Agency Cost, and Ownership Structure." This theory describes an agency relationship where one or more individuals (principals) delegate authority to another individual (agent) to perform

tasks on their behalf. The principals grant decision-making power to the agent (Jensen & Meckling, 1976). Both the principal and agent collaborate towards managing the company successfully, each driven by their own motivations to fulfill their roles. The principal, typically the shareholder or owner, directs the agent to manage the company according to agreed objectives to achieve organizational success. However, often the agent's execution deviates from the instructions given by the principal.

The agent will tend to prioritize their own interests rather than always obeying the principal's instructions. This divergence of interests gives rise to agency conflicts. Such a problem is referred to as asymmetric information. Jensen and Meckling (1976) state that asymmetric information is an imbalance of information caused by unequal distribution of information between the principal and the agent. To avoid such asymmetric information, valid financial reports are needed to assess the company's performance through various ratios in order to avoid bankruptcy.

### **Financial Distress**

Financial distress refers to a state where a company encounters financial instability and pressures that may eventually lead to bankruptcy. This research employs the Altman Z-Score to measure financial distress. The Altman Z-Score was devised using a statistical model that incorporates five financial ratios as indicators for predicting bankruptcy, initially introduced by Altman in 1968 (Swalih et al., 2021). The model applied in this study to analyze the company's financial ratios is the Altman Z-Score, selected due to its recognized accuracy in bankruptcy prediction. Supporting evidence from a study titled "Selection of the Best Delisting Predictor (Comparison between the Zmijewski Model, the Altman Model, and the Springate Model)" demonstrates that while the Zmijewski model failed to predict delisting for manufacturing firms, both the Altman and Springate models showed fair predictive capability. This underlines the Altman model as the superior choice for prediction, based on its Z-Score formula (Altman et al., 2016) as follows:

$$Z = 1.2 X1 + 1.4 X2 + 3.3 X3 + 0.6 X4 + 1.0 X5$$

#### **Explanation:**

Z = (Overall Index)

X1 = Working Capital/Total Assets

X2 = Retained Earnings/Total Assets

X3 = Earnings Before Interest and Taxes (EBIT)/Total Assets

X4 = Market Value of Equity/Total Liabilities

X5 = Sales divided by Total Assets

How to interpret the meaning of a Z-score for manufacturing companies (Altman et al., 2000) is as follows:

1.  $Z\text{-score} > 3.00$  = The company is considered safe/good/avoiding bankruptcy risk.
2.  $2.7 \leq Z\text{-score} < 2.99$  = The company's financial condition requires special attention.
3.  $1.80 \leq Z\text{-score} < 2.70$  = The company is predicted to face financial distress within the upcoming two years
4.  $Z < 1.80$  = Strong potential for the company to go bankrupt.

Financial problems, often referred to as financial distress, occur before a company declares bankruptcy. This condition can affect various companies and can be an indicator of impending bankruptcy. Once a company enters a state of financial distress, management must be more careful, because the company is at risk of bankruptcy. It is very important for the management of companies experiencing financial distress to immediately implement steps to overcome financial problems and prevent bankruptcy. financial problems are announced by an unhealthy financial condition or crisis in the company. When financial distress significantly disrupts the company's operational activities, it becomes a condition that requires immediate resolution and anticipation. According to Kamaluddin et al. (2019), from a financial perspective, there are three main factors that contribute to financial distress: insufficient or inadequate capital, high debt and interest burdens, and company losses.

### **Financial Ratio**

Financial ratios are evaluative tools utilized to gauge a company's performance by analyzing figures derived from financial statements such as the balance sheet, income statement, and cash flow statement (Kamaluddin et al., 2019). This form of analysis relies on available report data as a foundation for assessment. Despite being rooted in historical data, the primary objective is to evaluate potential future risks and opportunities. The comparison and relationship between various accounts within financial statements, as expressed through financial ratios, can yield valuable insights into a company's financial condition. Consequently, these financial indicators function as metrics to gauge organizational performance and to identify whether a company might be undergoing financial distress (Kamaluddin et al., 2019).

### **Profitability Ratio**

The profitability ratio measures a company's capacity to generate profit relative to sales, total assets, or shareholders' equity (Asche et al., 2018). This ratio also reflects the efficiency of company management, as evidenced by profits derived from sales activities and investment returns. Generally, profitability ratios serve not only to evaluate a company's return on investment but also to assess its overall financial health and stability. Through return on assets, these ratios indicate the company's ability to secure satisfactory profits. Additionally, profitability ratios assist investors in gauging how effectively a company utilizes its assets. Firms that report higher profitability typically face a lower risk of encountering financial distress.

In this research, profitability is assessed using the return on assets (ROA) metric, which evaluates the degree to which investments generate the anticipated returns. A higher ROA indicates that the company is managing its capital more effectively and efficiently, thereby lowering the risk of encountering financial difficulties.

### **Liquidity Ratio**

The liquidity ratio serves to measure and examine a company's ability to meet its short-term obligations (Tahir & Anuar, 2015). This ratio reflects the likelihood that a company can repay its debt obligations and reveals any shortfall in funds for carrying out the company's daily operations. Liquidity may arise from past decisions made by the company regarding funding from third parties, whether in the form of assets or cash. These decisions result in future payment obligations. Companies with higher liquidity ratios are clearly in a better position than those with lower liquidity ratios. A higher liquidity ratio indicates that the company can manage its working capital effectively. However, if the ratio shows low liquidity, it indicates that current liabilities exceed current assets. This may lead to difficulties in fulfilling short-term obligations and signals that the company may be facing a condition of financial distress.

The liquidity ratio used in this study is the Current Ratio, which measures the company's ability to meet its short-term obligations that are due in the near future using its available current assets. The higher this ratio, the more effective and efficient the company is in meeting its short-term liabilities, thereby reducing the

likelihood of experiencing financial distress (Susanti et al., 2020).

### **Leverage Ratio**

Leverage refers to the utilization of assets or funds for which a company must cover fixed costs or fixed charges. The leverage ratio serves as a key metric to evaluate a company's capacity to meet its financial obligations. This ratio stems from the company's use of externally sourced funds, often in the form of debt. Rapid growth typically requires substantial capital, which companies may secure through significant borrowing (Favara et al., 2021).

In this research, the leverage ratio applied is the Debt to Total Equity Ratio, which measures the proportion of total debt relative to total assets. Also known as the debt-to-asset ratio, a lower value of this ratio suggests a reduced likelihood of the company experiencing financial distress (Susanti et al., 2020).

### **Audit Committee**

An audit committee primarily consists of independent or non-executive members of an entity's governing body, tasked with overseeing financial reporting and audit functions (Bhuiyan & D'Costa, 2020). According to the Indonesian Audit Committee Association (IKAI), the audit committee is established by the board of commissioners to operate professionally and independently, supporting and enhancing the board's supervisory role over processes such as financial reporting, risk management, audit execution, and corporate governance. The composition and number of audit committee members for issuers and public companies are governed by POJK Regulation No. 55 (2016), which sets forth standards for audit committee membership. In this study, the audit committee variable is measured following Sukarna et al. (2016), by calculating the total number of audit committee members relative to the board of commissioners.

### **Research Hypothesis**

#### **Relationship Between Profitability Ratio and Financial Distress**

Profit generation is a fundamental objective for all companies. In this research, profitability is gauged using ROA. A positive ROA signals that a company has effectively marketed its products, leading to increased sales and, consequently, higher profits. Companies with robust profits are better positioned to cover their expenses and liabilities, thereby reducing the risk of financial distress and making the company more attractive to investors—this, in turn, decreases the chances of facing financial difficulties. Studies conducted by Africa (2019),

Finishtya (2019), Ayu et al. (2017), Muflihah (2017), Moch et al. (2019), and Chrissentia and Julianti (2018) have shown that profitability, as measured by ROA, has a significant and negative impact on the likelihood of financial distress.

### **Relationship Between Profitability Ratio and Financial Distress**

In general, every company aims to earn profit. This study uses ROA (return on assets) to measure profitability. If a company's ROA is positive, it indicates success in marketing its products, which increases sales and ultimately profits. Therefore, if a company has high profits, they can be used to cover various expenses and liabilities, reducing the risk of financial distress and attracting investors, thus lowering the likelihood of financial distress. Research by Africa (2019), Finishtya (2019), Ayu et al. (2017), Muflihah (2017), Moch et al. (2019), and Chrissentia and Julianti (2018) showed that profitability measured by return on assets has a significant negative effect on the prediction of financial distress. Based on agency theory, the agent is responsible for carrying out the company's operational activities. Therefore, if a company earns high profits, it can be said that the agent has made effective decisions in managing the company. High profit attracts investors, which reduces the likelihood of financial distress. Based on the above explanation, the following hypothesis is proposed:

**H1: Profitability has a negative effect on financial distress.**

### **Relationship Between Liquidity Ratio and Financial Distress**

The liquidity ratio evaluates a company's capacity to meet its short-term obligations promptly. It is essential for a firm to have sufficient resources to finance and settle its immediate debts. When a company efficiently manages this, the risk of financial distress diminishes. In this study, the current ratio is employed as a liquidity measure, calculated by dividing total current assets by total current liabilities. A higher current ratio reflects a greater ability to satisfy liabilities, which is often linked to improved profitability. From the perspective of agency theory, this ratio's disclosure serves as a mechanism of accountability from management (agents) to shareholders (principals), emphasizing the contractual relationship between these parties.

Studies conducted by Cinantya and Merkusiwati (2015), Chrissentia and Julianti (2018), Masdupi et al. (2018), Jepkorir et al. (2019), Moch et al. (2019), and Dance and Sukartha (2019) have demonstrated that the current ratio significantly and negatively influences financial distress. This implies that

companies with higher liquidity are less likely to experience financial distress. Typically, financially unstable firms exhibit poor liquidity, whereas financially healthy firms maintain adequate liquidity. Based on this evidence, the following hypothesis is formulated:

**H2: Liquidity has a negative effect on financial distress.**

### **Relationship Between Leverage Ratio and Financial Distress**

Leverage measures a company's solvency—its ability to meet long-term and short-term obligations. This study uses the debt-to-equity ratio (DER), calculated by dividing total debt by total equity. This ratio helps assess a company's ability to pay off its total debts in case of liquidation. The likelihood of financial distress increases with a higher leverage ratio and decreases with a lower leverage ratio because less debt means a lighter financial burden (Dewi et al., 2023).

Agency theory supports this by positioning leverage disclosure as a responsibility of agents (management) to principals (shareholders). Management must maintain an ideal debt-equity balance to avoid financial distress. Research by Muflihah (2017), Chrissentia & Julianti (2018), Rahmawati and Prasetya (2018), and Agustini and Wirawati (2019) found that leverage has a significant positive effect on financial distress. Based on the above, the following hypothesis is proposed:

**H3: Leverage has a positive effect on financial distress.**

### **Audit Committee Moderates the Effect of Profitability on Financial Distress**

Profitability ratios measure a company's ability to generate profits from its sales, assets, and capital. To enhance financial performance, companies need proper oversight of financial reporting, risk management, auditing, and corporate governance, which is the audit committee's professional and independent role.

According to Naimah & Hamidah (2017) implementing audit committee functions can improve performance by enabling better oversight and decision-making, which supports stakeholders and reduces agency conflicts due to asymmetric information. Independent and professional audit supervision can enhance company performance and profitability, thus reducing financial distress and attracting investor trust.

Irwansyah (2019) and Mulyadi (2017) found that audit committees positively affect ROA and overall company performance. However, studies such as those by Nurfajrina et al. (2016), Rahmawati and Prasetya (2018), and Christine et al. (2019)

also confirm this, though others (Africa, Finishtya, Ayu et al., Mufliah, Moch et al., Chrissentia and Julianti) report significant positive effects of profitability on financial distress. This inconsistency suggests a moderating variable is at play. Therefore, the following hypothesis is proposed:

**H4: The audit committee strengthens (moderates) the relationship between profitability and financial distress.**

#### **Audit Committee Moderates the Effect of Liquidity on Financial Distress**

Liquidity reflects a company's ability to meet short-term obligations using current assets. A higher level of current assets allows a company to fulfill its debts, reducing the risk of financial distress (Sari and Putri, 2016).

Agency theory sees liquidity ratio disclosure as a form of management accountability. An audit committee ensures proper governance and oversight, helping reduce agency conflicts and information asymmetry. An effective audit committee enhances management performance and liquidity, avoiding financial distress (Farber et al., 2016).

Studies by Raflis and Dhea (2020), and Yogiswari & Wayan (2017), show that the audit committee moderates the effect of liquidity. Cinantya & Merkusiwati (2015) found that liquidity (measured by current ratio) negatively and significantly predicts financial distress. Other studies reported positive effects or no significant effect. These inconsistencies suggest moderation is involved. Therefore, the following hypothesis is proposed:

**H5: The audit committee strengthens (moderates) the relationship between liquidity and financial distress.**

#### **Audit Committee Moderates the Effect of Leverage on Financial Distress**

Leverage analysis is necessary to evaluate a company's ability to repay its debts. An insolvent company has more total debt than total assets (Klepac & Hampel, 2017). If a company uses too much debt for funding, it risks future payment difficulties. An audit committee improves internal supervision, ensuring management decisions are properly overseen. It reduces conflicts between agents and principals by ensuring equal access to information and aligning interests.

The audit committee is accountable to the board of commissioners and ensures that transparency and disclosure principles of good corporate governance are consistently applied. This prevents self-serving decisions and ensures decisions benefit the company. If debt is excessive, the audit committee must question

whether it results from poor decision-making or deliberate actions by management.

Monitoring funding decisions is essential to prevent large interest obligations and financial distress. Studies by Muflihah (2017), Chrissentia & Julianti (2018), Rahmawati and Prasetya (2018), and Agustini and Wirawati (2019) found leverage has a significant positive effect on financial distress. Other studies show negative or no significant effect. These inconsistencies indicate the presence of a moderating variable. Thus, the following hypothesis is proposed:

**H6: The audit committee strengthens (moderates) the relationship between leverage and financial distress.**

**Table 2 Operationalization of Variables**

| Variable                        | Indicator  |
|---------------------------------|--|
| <b>Financial Distress (Y)</b>   | Altman Z-score calculation   |
|                                 | (Y = 1) = manufacturing company experiencing financial distress.                                     |
|                                 | (Y = 0) = manufacturing company not experiencing financial distress.                                 |
| <b>Profitability Ratio (X1)</b> | Net Income/Total Assets, then multiplying by 100%.   |
| <b>Liquidity Ratio (X2)</b>     | Current Assets/Current Liabilities, then multiplying by 100%.  |
| <b>Leverage Ratio (X3)</b>      | Total Debt/Total Equity, then multiplying by 100%.   |
| <b>Audit Committee (Z)</b>      | Audit Committee members/total number of Board of Commissioners, then multiplying the result by 100%. |

## METHODS

### Population and Research Sample

The population refers to a general group of objects or subjects that share specific characteristics and qualities identified by the researcher for analysis, from which conclusions are drawn (Ksendzova et al., 2017). In this study, the population comprises all manufacturing companies listed on the IDX between 2015 and 2018. The total number of companies in the population is 181.

A sample is a portion of the population selected based on specific characteristics or conditions relevant to the research. This study employs a purposive sampling method, which is a technique used to select samples based on particular criteria or considerations (Andrade, 2020). The sample in this study includes manufacturing companies over a period of 4 years from 2015 to 2018. This technique was chosen to obtain relevant information for the study. The companies

selected for this study are manufacturing firms listed on the IDX that meet the following criteria:

1. Manufacturing companies listed on the IDX from 2015 to 2018 and have not been delisted during this period.
2. Companies that consistently published audited financial statements (annual reports) in Indonesian Rupiah from 2015 to 2018.

Based on these criteria, 104 manufacturing companies were selected.

**Table 3. Sample Selection Procedure**

| Sample Selection Procedure  | Total      |
|---|------------|
| Manufacturing companies that were listed IDX between 2015 and 2018 and have not been delisted during this period. | 104        |
| <b>Total selected sample (multiplied by 4 years)</b>  | <b>416</b> |

This study uses Logistic Regression Analysis through SPSS to explore the relationships between the variables and predict the probability of financial distress. Based on the aforementioned description, the logistic regression model for this study is as follows:

$$FD = \alpha + \beta_1 Zprofitability + \beta_2 Zliquidity + \beta_3 Zleverage + \beta_4 \text{audit committee} + \beta_5 | \text{AbsX1\_X4} | + \beta_6 | \text{AbsX2\_X4} | + \beta_7 | \text{AbsX3\_X4} | + e$$

Explanation:

FD = assigned a score of 1 for companies that are in financial distress and 0 for those that are not.

$\beta$  = Coefficient of the variables

Zprofitability = Standardized profitability

Zliquidity = Standardized liquidity

Zleverage = Standardized leverage

Zaudit committee = Standardized audit committee

AbsX1\_X4 =  $| Zprofitability\_Zaudit\ committee |$

AbsX2\_X4 =  $| Zliquidity\_Zaudit\ committee |$

AbsX3\_X4 =  $| Zleverage\_Zaudit\ committee |$

e = an error

**RESULTS AND DISCUSSION**

**Descriptive Statistics Analysis Results**

**Table 4. Frequency Distribution of Variables**

|              | <b>Frequency</b> | <b>Valid Percent</b> | <b>Cumulative Percent</b> |
|--------------|------------------|----------------------|---------------------------|
| 0            | 161              | 38.7%                | 38.7%                     |
| 1            | 255              | 61.3%                | 100.0%                    |
| <b>Total</b> | <b>416</b>       | <b>100.0%</b>        | <b>100.0%</b>             |

Source: Data Processed using SPSS

Table 4 displays the results based on secondary data from 104 companies listed on the IDX from 2015 to 2018. A value of 1 represents companies that are facing financial distress, while 0 represents those not experiencing financial distress. The analysis indicates that there are 255 company-year observations marked as experiencing financial distress, and 161 that are not. This suggests that, of the manufacturing companies listed on the IDX from 2015 to 2018, 38.7% of the total observations did not encounter financial distress, whereas 61.3% did. Table 5 further provides a breakdown of companies categorized as either experiencing or not experiencing financial distress during the 2015–2018 period:

**Table 5. Number of Companies by Category**

| <b>Category/Year</b>   | <b>2015</b> | <b>2016</b> | <b>2017</b> | <b>2018</b> | <b>Total</b> |
|------------------------|-------------|-------------|-------------|-------------|--------------|
| Non-financial distress | 39          | 41          | 46          | 35          | 161          |
| Financial distress     | 65          | 63          | 58          | 69          | 255          |
| <b>Total</b>           | <b>104</b>  | <b>104</b>  | <b>104</b>  | <b>104</b>  | <b>416</b>   |

Source: Data Processed using SPSS

**Quantitative Statistical Analysis Results**

**Overall Model Fit Evaluation**

The initial phase of assessing the model's fit involves evaluating its overall feasibility. This is achieved by comparing the initial -2 Log Likelihood (LL) value with the -2 Log Likelihood (LL) value from the following step. A reduction in the value from the initial -2LL to the -2LL at the next step suggests that the model fits well.

**Table 6. Initial -2LL Feasibility Test**

| <b>Iteration</b> |   | <b>-2 Log likelihood</b> | <b>Coefficients</b> |
|------------------|---|--------------------------|---------------------|
|                  |   |                          | <b>Constant</b>     |
| Step 0           | 1 | 55.527.974               | 0.451923077         |
|                  | 2 | 55.527.352               | 0.459852148         |
|                  | 3 | 55.527.352               | 0.45985918          |

Source: Data processed using SPSS

Table 6 above displays the -2 Log Likelihood (LL) value at the initial step (Step 0). As shown in the table, the value in the second column of the last row is 555.27. If there is a reduction in the -2 Log Likelihood (LL) value during the model feasibility evaluation at Step 1, the hypothesized model is considered a good fit for the data. The outcomes of the model feasibility evaluation at Step 1 are presented in the following table:

**Table 7. Step 1 -2LL Feasibility Test**

| Iteration |   | -2 Log likelihood | Coefficients |         |        |       |        |        |        |
|-----------|---|-------------------|--------------|---------|--------|-------|--------|--------|--------|
|           |   |                   | Constant     | ROA     | CR     | DER   | ROA_KA | CR_KA  | DER_KA |
| Step 1    | 1 | 422,280           | 1,047        | -14,602 | -0,040 | 0,054 | 9,683  | -0,136 | -0,037 |
|           | 2 | 361,658           | 1,810        | -29,109 | -0,043 | 0,114 | 19,322 | -0,424 | -0,076 |
|           | 3 | 343,397           | 2,392        | -43,987 | -0,086 | 0,212 | 29,197 | -0,583 | -0,141 |
|           | 4 | 341,005           | 2,614        | -50,524 | -0,098 | 0,285 | 33,374 | -0,641 | -0,191 |
|           | 5 | 316,744           | 2,706        | -26,004 | -0,813 | 0,285 | 1,976  | 0,193  | -0,197 |
|           | 6 | 313,334           | 3,144        | -23,287 | -0,926 | 0,156 | -4,838 | 0,183  | -0,113 |
|           | 7 | 313,229           | 3,240        | -22,395 | -0,972 | 0,131 | 6,800  | 0,208  | -0,096 |
|           | 8 | 313,228           | 3,243        | -22,355 | -0,974 | 0,130 | -6,884 | 0,209  | -0,096 |
|           | 9 | 313,228           | 3,243        | -22,355 | -0,974 | 0,130 | -6,884 | 0,209  | -0,096 |

Table 7 illustrates that the -2LL value at step 1 decreased by 242.04, representing the difference between the -2LL at step 0, which is 555.27, and the -2LL at step 1, which is 313.22. This decrease implies that the regression model aligns well with the data, suggesting that the proposed model is suitable. Furthermore, the Iteration History Block 1 provides output results demonstrating that the final -2 Log Likelihood (LL) value in this study (step 1, iteration 9) is 313.22. Additionally, the Chi-Square table value obtained is 457.15, calculated using the formula  $DF = N - K - 1$ , where K represents the number of independent variables. In this study,  $DF = 416 - 6 - 1 = 409$ . From Table 7, it can be inferred that the -2 Log Likelihood (LL) value is less than the Chi-Square table value, leading to the acceptance of  $H_0$ , which indicates that the model, after incorporating the independent variables, satisfies the feasibility test requirements.

This Overall Model Fit Test is also employed to simultaneously assess the regression coefficients of the logistic model, calculated based on the difference in -2LL values. The -2LL statistical test adheres to a Chi-Square distribution with degrees of freedom ( $DF = K$ ), as depicted in the following table:

**Table 8 Omnibus Test of Coefficients**

|        |                  | ChiSquare | df | Sig. |
|--------|------------------|-----------|----|------|
| Step 1 | Step Block Model | 242.045   | 6  | 0    |
|        |                  | 242.045   | 6  | 0    |
|        |                  | 242.045   | 6  | 0    |

Source: Data Processed using SPSS

Table 8 above shows the simultaneous testing of all coefficients in the logistic regression model. The Chi-Square value represents the reduction between the initial and final -2 Log Likelihood values. The calculated Chi-Square is 242.045 with 6 degrees of freedom (df). The Chi-Square critical value is 12.59, obtained from  $df = 6$ . It can be concluded that the calculated Chi-Square is greater than the table value, meaning that the independent variables (X) significantly affect the dependent variable (Y) simultaneously. In addition, the Chi-Square value is statistically significant, as seen in the **significance column** which shows a **p-value of 0.000**, less than 0.05. Therefore, the regression model can be used to predict financial distress.

**Assessing Model Fit**

After evaluating the overall model fit, the next step is to examine the goodness of fit of the logistic regression model, which is assessed using the Hosmer and Lemeshow Test. Should the test statistic from this assessment reveal a significance level above 0.05, the null hypothesis remains unchallenged. This result implies that the model effectively predicts the observed values, thereby confirming its suitability in representing the observed data. The results of this test are detailed shown in the table beneath:

**Table 9 Hosmer & Lemeshow Test**

| Step | Chi-square | df | Sig.   |
|------|------------|----|--------|
| 1    | 71.376.397 | 8  | 0,3625 |

Table 9, presenting the Hosmer and Lemeshow Test, shows that the computed Chi-Square value is 7.13, with a significance level of 0.522. The critical Chi-Square value, given the degrees of freedom  $df = K - 1 = 6 - 1 = 5$ , is 11.07. Since the computed Chi-Square value (7.13) is smaller than the critical value (11.07) and the significance level exceeds 0.05, it can be concluded that the proposed model is appropriate and fits well for predicting the observed values.

**Coefficient of Determination (Pseudo R<sup>2</sup>)**

The Cox and Snell R<sup>2</sup> serves as a similar measure to the R<sup>2</sup> in multiple regression, obtained through the -2 Log Likelihood estimation method. However, its maximum value is below 1, which can make interpretation challenging. The Nagelkerke R<sup>2</sup> is a modified version of the Cox and Snell R<sup>2</sup>, designed to standardize the values, ensuring they fall within a range from 0 to 1

**Table 10 Coefficient of Determination**

| Step | -2 Log likelihood | Cox & Snell R <sup>2</sup> | Nagelkerke R <sup>2</sup> |
|------|-------------------|----------------------------|---------------------------|
| 1    | 313.228           | 0.4411304                  | 0.59872                   |

According to Table 10, also known as Pseudo R<sup>2</sup>, the Nagelkerke R<sup>2</sup> value is 0.599. This indicates that the independent variables account for 59.87% of the variance in the dependent variable, financial distress, while the remaining 40.13% is attributable to other variables not included in this model.

**2x2 Classification Matrix**

The classification matrix demonstrates the model's efficacy in predicting the likelihood of companies encountering financial distress. This predictive capability is quantified as a percentage.

**Table 11 Classification Matrix – Step 0**

| <i>Observed</i>           |                                  |   | <i>Predicted</i>                 |          |                           |
|---------------------------|----------------------------------|---|----------------------------------|----------|---------------------------|
|                           |                                  |   | <i>Financial Distress (FD) Y</i> |          | <i>Percentage Correct</i> |
|                           |                                  |   | <i>0</i>                         | <i>1</i> |                           |
| Step 0                    | <i>Financial Distress (FD) Y</i> | 0 | 0                                | 161      | 0                         |
|                           |                                  | 1 | 0                                | 255      | 100                       |
| <i>Overall Percentage</i> |                                  |   |                                  |          | 61,3                      |

Source: Data Processed Using SPSS (2018)

Table 11 (Step 0 Classification Table) presents a 2x2 contingency table illustrating the expected frequency of the dependent variable based on empirical data. Within the sample of 416 observations, 255 are classified under the "financial distress" category (coded as 1), while 161 fall under the "non-financial distress" category (coded as 0). Consequently, the overall accuracy percentage prior to the inclusion of independent variables is calculated as 255/416, equating to 61.3%.

**Table 12 Classification Matrix – Step 1**

| Observed |                           |   | Predicted                 |     |                    |
|----------|---------------------------|---|---------------------------|-----|--------------------|
|          |                           |   | Financial Distress (FD) Y |     | Percentage Correct |
|          |                           |   | 0                         | 1   |                    |
| Step 1   | Financial Distress (FD) Y | 0 | 117                       | 44  | 72.67              |
|          |                           | 1 | 27                        | 228 | 89.41.00           |
|          | Overall Percentage        |   |                           |     | 82.93              |

Source: Data Processed Using SPSS (2018)

Based on Table 12 (Step 1 Classification Table), the number of companies that did not experience financial distress is  $117 + 44 = 161$ . Among them, 117 companies were correctly predicted, while 44 were incorrectly predicted as distressed. The number of companies that did experience financial distress is  $27 + 228 = 255$ , of which 228 were correctly predicted, and 27 were misclassified. The overall model accuracy is calculated as  $(117 + 228) / 416 = 82.93\%$ , which means the prediction accuracy of this model is 82.93%.

**Multicollinearity Test Results**

The aim of performing a multicollinearity test is to determine if there is a significant correlation among the independent variables in a regression model. A model is deemed free of multicollinearity if none of the correlation coefficients between the independent variables exceed 0.90. The results of the multicollinearity test, based on a correlation matrix, are presented in the table below:

**Table 13. Multicollinearity Test Results**

|        |          | Constant | ROAX1  | CRX2   | DERX3  | KA_ROA | KA_CR  | KA_DER |
|--------|----------|----------|--------|--------|--------|--------|--------|--------|
| Step 1 | Constant | 1,000    | 0,001  | -0,461 | -0,476 | -0,197 | 0,150  | 0,470  |
|        | ROAX1    | 0,001    | 1,000  | -0,611 | -0,072 | -0,924 | 0,676  | 0,064  |
|        | CRX2     | -0,461   | -0,611 | 1,000  | 0,023  | 0,684  | -0,913 | -0,015 |
|        | DERX3    | -0,476   | -0,072 | 0,023  | 1,000  | 0,102  | 0,096  | -0,999 |
|        | KA ROA   | -0,197   | -0,924 | 0,684  | 0,102  | 1,000  | -0,738 | -0,091 |
|        | KA CR    | 0,150    | 0,676  | -0,913 | 0,096  | -0,738 | 1,000  | -0,104 |
|        | KA DER   | 0,470    | 0,064  | -0,015 | -0,999 | -0,091 | -0,104 | 1,000  |

The multicollinearity test results shown in Table 13 show that no symptoms of multicollinearity were found in the independent variables. This is shown by the absence of correlation values exceeding 0.90. The regression model, which incorporates the independent variables of profitability, liquidity, leverage, and the audit committee as a moderating factor, is deemed to be free of multicollinearity problems based on these findings.

**Hypothesis Testing Results**

**Table 14. Regression Coefficient Test Results**

|         | Variable | B       | S.E.  | Wald   | df | Sig.  | Exp(B) |
|---------|----------|---------|-------|--------|----|-------|--------|
| Step 1a | ROA      | -22,355 | 9,568 | 5,459  | 1  | 0,019 | 0,000  |
|         | CR       | 0,974   | 0,337 | 8,350  | 1  | 0,004 | 0,378  |
|         | DER      | 0,130   | 0,252 | 0,268  | 1  | 0,605 | 1,139  |
|         | ROA KA   | -6,884  | 10,96 | 0,395  | 1  | 0,530 | 0,001  |
|         | CR KA    | 0,209   | 0,329 | 0,406  | 1  | 0,524 | 1,233  |
|         | DER KA   | 0,096   | 0,168 | 0,322  | 1  | 0,570 | 0,909  |
|         | Constant | 3,243   | 0,413 | 61,524 | 1  | 0,000 | 25,604 |

Table 14 presents the outcomes of the logistic regression model as detailed below:  
 Financial Distress (Y) = 3.243 - 22.355 ROA - 0.097 CR + 0.130 DER - 6.884 ROA\_KA + 0.209 CR\_KA - 0.096 DER\_KA + e

To test the hypotheses, logistic regression analysis was conducted on all variables: **profitability, liquidity, leverage**, and the **audit committee (as a moderating variable)**, with respect to financial distress. The regression results are presented under the "Variables in the Equation" section, as shown in the following table:

1. Profitability, as indicated by the ROA, shows a negative regression coefficient (B) of -22.35, with a significance level of 0.019, which is below the 0.05 threshold. This suggests that profitability plays a substantial role in influencing financial distress. As such, the hypothesis positing a negative and significant impact of profitability on financial distress is affirmed. These results are consistent with those of Africa (2019), Finishtya (2019), and Agustini and Wirawati (2019), all of which highlight the significant negative effect of profitability (ROA) on financial distress. However, the findings of this study diverge from Yadiati (2017), who found that profitability had no significant effect on financial distress.
2. Liquidity, as projected by the Current Ratio (CR), has a negative regression coefficient (B) of -0.974 with a significance level of 0.004, which is also less than 0.05. This result supports the hypothesis that liquidity has a negative and significant effect on financial distress, and the hypothesis is thus accepted. This study is consistent with the research conducted by Jepkorir et al. (2019), Cinantya and Merkusiwati (2015), Dance & Made (2019), and Masdupi et al. (2018) which found that the liquidity ratio has a significant negative effect. However, this study is not in line with the research by Finishtya (2019), Cinantya

and Merkusiwati (2015), Nurfajrina et al. (2016), Sukarna and Titik (2016), and Ayu et al. (2017), who found that the leverage ratio does not have a significant effect on financial distress.

3. Leverage, as indicated by the Debt to Equity Ratio (DER), exhibits a positive regression coefficient (B) of 0.13 with a significance level of 0.605, which exceeds the threshold of 0.05. Consequently, the hypothesis test suggests that DER exerts a positive but statistically insignificant influence on financial distress. Therefore, the hypothesis positing that leverage positively affects financial distress is rejected. This finding aligns with the studies conducted by Finishtya (2019), Cinantya and Merkusiwati (2015), Nurfajrina et al. (2016), Sukarna and Titik (2016), and Ayu et al. (2017), which also concluded that the leverage ratio does not significantly impact financial distress. However, this study diverges from the research by Agustini and Wirawati (2019), Muflihah (2017), and Dance & Made (2019), which reported positive and significant outcomes. Additionally, the study by Masdupi et al. (2018) presented contrasting results, indicating that the leverage ratio has a significant negative effect on financial distress.
4. ROA\_KA, representing the interaction term between profitability (ROA) and the audit committee, exhibits a negative regression coefficient (B) of -6.884 with a significance level of 0.530, which exceeds the threshold of 0.05. This finding suggests that the audit committee does not moderate the impact of profitability on financial distress. Consequently, the hypothesis positing that the audit committee moderates the negative effect of profitability on financial distress is rejected. According to agency theory, the disclosure of profitability ratios moderated by the audit committee serves as a form of accountability of company management, acting as the agent, to the shareholders, the principal. In this study, the audit committee is not effective in moderating the influence of asset management on profit to mitigate the risk of financial distress. Furthermore, this study corroborates the findings of Rahmawati and Prasetya (2018), which demonstrated that the audit committee does not exert a significant effect on financial distress.
5. CR\_KA, the interaction term between liquidity (CR) and the audit committee, has a positive regression coefficient (B) of 0.209 with a significance level of 0.524, which exceeds 0.05. This suggests that the audit committee does not

moderate the impact of liquidity on financial distress. Consequently, the hypothesis that the audit committee moderates the negative effect of liquidity on financial distress is rejected. According to agency theory, the disclosure of liquidity ratios moderated by the audit committee represents a form of accountability from company management, acting as the agent, to the shareholders, the principal. While the audit committee enhances its effectiveness in performing its supervisory role, it also incurs agency costs for the company. In this study, the audit committee cannot be used to moderate the effect of liquidity management (current ratio) in mitigating the risk of financial distress. Furthermore, this study aligns with the research by Rahmawati and Prasetya (2018), which demonstrated that the audit committee has no significant effect on financial distress.

6. DER\_KA, the interaction term between leverage (DER) and audit committee, has a regression coefficient (B) of 0.096 with a significance level of 0.570, which is greater than 0.05. This means that the audit committee does not moderate the effect of leverage on financial distress. Therefore, the hypothesis that the audit committee moderates the negative effect of leverage on financial distress is rejected. Companies that lack good control will experience financial distress, which is indicated by delayed debt payments to banks as well as deferred dividend payments. Companies with high debt-to-asset ratios but large audit committees do not perform better in reducing the risk of financial distress in practice (Khotimah and Yuliana, 2020). Furthermore, this study supports the research by Rahmawati and Prasetya (2018), showing that the audit committee has no significant effect on financial distress. Additionally, in this study, the company's high or low debt level cannot predict whether the company is in financial distress or not. Thus, companies experiencing financial distress cannot be identified solely based on leverage levels and the size of the audit committee.

## **CONCLUSION**

This study examines profitability, liquidity, and leverage as the independent variables, with the audit committee serving as the influencing factor. The sample consists of manufacturing companies listed on the IDX between 2015 and 2018. The findings from the logistic regression analysis are as follows:

- ROA (Return on Assets), a measure of profitability, shows a significant negative

correlation with financial distress. This suggests that increased profitability, as reflected in a higher ROA, significantly reduces the likelihood of financial distress.

- Liquidity, measured by the Current Ratio (CR), also exhibits a significant negative effect on financial distress, indicating that higher liquidity reduces the risk of financial distress.
- Leverage, represented by the Debt to Equity Ratio (DER), does not have a significant impact on financial distress.
- Additionally, the audit committee does not significantly moderate the relationship between profitability and financial distress, nor does it influence the connection between liquidity and financial distress.

The results of this study provide valuable insights for shareholders in looking deeper into decisions when investing. Investors are advised to use profitability and liquidity ratios in measuring the condition of the company that will be used as an investment. The higher the ratio, the smaller the chance that the company will be in financial trouble.

## **REFERENCES**

- Africa, L. A. (2019). Financial Distress Prediction Using RGEC Model on Foreign Exchange Banks and Non-foreign Exchange Banks. *Journal of Accounting and Strategic Finance*, 2(1), 48–55.
- Agustini, N. W., & Wirawati, N. G. P. (2019). Pengaruh Rasio Keuangan pada Financial Distress Perusahaan Ritel yang terdaftar di Bursa Efek Indonesia (BEI). *e-Jurnal Akuntansi*, 26, 251–280.
- Altman, E. I. (1968). Financial Ratios, Discriminant Analysis and the Prediction of Corporate Bankruptcy. *The Journal of Finance*, 23(4), 589–609.
- Altman, E. I., Chen, Y., & Weston, J. (2000). Predicting Financial Distress of Companies: Revisiting the Z-score and Zeta Model. *Journal of Banking & Finance*, 1, 1977.
- Altman, E. I., & Laitinen, E. K. (2016). Financial Distress Prediction in an International Context: A Review and Empirical Analysis of Altman's Z-Score Model. *Journal of International Financial Management & Accounting*, 28(2), 131–171. <https://doi.org/10.1111/jifm.12053>
- Andrade, C. (2020). The Inconvenient Truth About Convenience and Purposive

- Samples. *Indian Journal of Psychological Medicine*, 43(1), 86–88.  
<https://doi.org/10.1177/0253717620977000>
- Asche, F., Sikveland, M., & Zhang, D. (2018). Profitability in Norwegian Salmon Farming: The Impact of Firm Size and Price Variability. *Aquaculture Economics & Management*, 22(3), 306–317.  
<https://doi.org/10.1080/13657305.2018.1385659>
- Ayu, A. S., Handayani, S. R., & Topowijono. (2017). Pengaruh Likuiditas, Leverage, Profitabilitas, dan Ukuran Perusahaan terhadap Financial Distress. *Jurnal Administrasi Bisnis*, 43(1), 138–147.
- Bhuiyan, M. B. U., & D’Costa, M. (2020). Audit committee ownership and audit report lag: evidence from Australia. *International Journal of Accounting & Information Management*, 28(1), 96–125.  
<https://doi.org/10.1108/ijaim-09-2018-0107>
- Chrissentia, T., & Julianti, S. (2018). Analisis Pengaruh Rasio Profitabilitas, Leverage, Likuiditas, Firm Age, dan Kepemilikan Institusional terhadap Financial Distress. *Simak*, 16(1), 45–62.
- Christine, D., Wijaya, J., Chandra, K., & Pratiwi, M. (2019). Pengaruh Profitabilitas, Leverage, Total Arus Kas dan Ukuran Perusahaan terhadap Financial Distress pada Perusahaan Property dan Real Estate yang terdaftar di Bursa Efek Indonesia Tahun 2014-2017. *Jurnal Ekonomi dan Ekonomi Syariah*, 2, 340–351.
- Cinantya, I., & Merkusiwati, N. (2015). Pengaruh Corporate Governance, Financial Indicators, dan Ukuran Perusahaan pada Financial Distress. *e-Jurnal Akuntansi*, 10(3), 897–915.
- Dance, M., & Sukartha, I. M. (2019). Financial Ratio Analysis in Predicting Financial Conditions Distress in Indonesia Stock Exchange. *RJOAS*, 2(86), 155–165.
- Dewi, D. N., Murhadi, W. R., & Sutejo, B. S. (2023). Financial Ratios, Corporate Governance, and Macroeconomic Indicators in Predicting Financial Distress. *Journal of Law and Sustainable Development*, 11(4), e893.  
<https://doi.org/10.55908/sdgs.v11i4.893>
- Farber, D. B., Huang, S. X., & Mauldin, E. (2016). Audit Committee Accounting Expertise, Analyst Following, and Market Liquidity. *Journal of Accounting, Auditing & Finance*, 33(2), 174–199.

<https://doi.org/10.1177/0148558x16663090>

- Favara, G., Gao, J., & Giannetti, M. (2021). Uncertainty, Access to Debt, and Firm Precautionary Behavior. *Journal of Financial Economics*, 141(2), 436–453. <https://doi.org/10.1016/j.jfineco.2021.04.010>
- Fawzi, N. S., Amrizah Kamaluddin, dan Zuraidah Mohd Sanusi. 2015. “Monitoring Distressed Companies Through Cash Flow Analysis”. *Procedia Economics and Finance*, 28(April), 136–144.
- Finishtya, F. C. (2019). The Role of Cash Flow of Operational, Profitability, and Financial Leverage in Predicting Financial Distress on Manufacturing Company in Indonesia. *Jurnal Aplikasi Manajemen*, 17(1), 110–117.
- Irwansyah, Rakhmat. 2019. Pengaruh Komisaris Independen, Komite Audit Independen, Pergantian Chief Executive Officer dan Struktur Kepemilikan Saham Publik terhadap Return on Asset (Studi Empiris Pada Perusahaan Properti dan Real Estate Di Bursa Efek Indonesia). *Jurnal Transparansi*. Vol. 2 ,No. 1, Juni 2019, pp. 20-36
- Jensen, M. C., & Meckling, W. H. (1976). Theory of the Firm: Managerial Behavior, Agency Cost, and Ownership Structure. *Journal of Financial Economics*, 3(4), 305–360.
- Jepkorir, S., Muturi, W., & Ndegwa, J. 2019. "Effect of Liquidity Management and Financial Leverage on Financial Distress in Deposit Taking Savings and Credit Cooperative Organizations in Kenya". *The International Journal of Business and Management*, 7(4), 10–17.
- Kamaluddin, A., Ishak, N., & Mohammed, N. F. (2019). Financial Distress Prediction Through Cash Flow Ratios Analysis. *International Journal of Financial Research*, 10(3), 63. <https://doi.org/10.5430/ijfr.v10n3p63>
- Khotimah, K., & Yuliana, I. 2020. Pengaruh Profitabilitas terhadap Prediksi Kebangkrutan dengan Struktur Modal sebagai Variabel Moderating. *forum Ekonomi*, 22(1), 37-43.
- Klepac, V., & Hampel, D. (2017). Predicting Financial Distress of Agriculture Companies in EU. *Agricultural Economics (Zemědělská Ekonomika)*, 63(8), 347–355. <https://doi.org/10.17221/374/2015-agricecon>
- Ksendzova, M., Donnelly, G. E., & Howell, R. T. (2017). A Brief Money Management Scale and Its Associations With Personality, Financial Health, and Hypothetical Debt Repayment. *Journal of Financial*

- Counseling and Planning, 28(1), 62–75. <https://doi.org/10.1891/1052-3073.28.1.62>
- Ling, D. C., Scheick, B., & Naranjo, A. (2016). Geographic Portfolio Allocations, Property Selection and Performance Attribution in Public and Private Real Estate Markets. *Real Estate Economics*, 46(2), 404–448. <https://doi.org/10.1111/1540-6229.12184>
- Masak, F., dan Suzy Noviyanti. 2019. Pengaruh Karakteristik Komite Audit terhadap Financial Distress. Vol 3, No 3
- Masdupi, E., Abel Tasman, & Davista, A. 2018. “the Influence of Liquidity, Leverage and Profitability on Financial Distress of Listed Manufacturing Companies in Indonesia”. *Advances in Economics, Business and Management Research*, 57, 223–228.
- Maulida, I. S., Moehaditoyo, S. H., dan Mulyanto Nugroho. 2018. Analisis Rasio Keuangan untuk Memprediksi Financial Distress pada Perusahaan Manufaktur yang terdaftar di Bursa Efek Indonesia 2014-2016. *Jurnal Ilmiah Administrasi Bisnis dan Inovasi*, 2(1), 179–193.
- Moch, Rusli dkk. (2019), Rida Prihatni, Agung D. B. 2019. "the Effect of Liquidity, Profitability and Solvability to the Financial Distress of Manucatured Companies Listed on the Indonesia Stock Exchange (IDX) Period of Year 2015-2017". *Academy of Accounting and Financial Studies Journal*. 1. 11-14.
- Muflihah, I. Z. (2017). “Analisis Financial Distress Perusahaan Manufaktur di Indonesia dengan Regresi Logistik”. *Majalah Ekonomi*, 22(2), 254–269.
- Mulyadi, Roza (2017).”Pengaruh Karakteristik Komite Audit Dan Kualitas Audit Terhadap Profitabilitas Perusahaan”. *Jurnal Akuntansi*. Vol. 4, No. 2.
- Naimah, Z., & Hamidah, H. (2017). The Role of Corporate Governance in Firm Performance. *SHS Web of Conferences*, 34, 13003. <https://doi.org/10.1051/shsconf/20173413003>
- Nurfajrina, A., Hermanto Siregar, & Imam Teguh Saptono. 2016. Analisis Financial Distress Pada Perusahaan Agribisnis Di Bursa Efek Indonesia. *Jurnal Keuangan dan Perbankan*, Vol. 20, No.3. Terakreditasi SK. No.040/P/2014.
- Paule-Vianez, J., Coca-Pérez, J. L., & Gutiérrez-Fernández, M. (2019). Prediction of financial distress in the Spanish banking system. *Applied Economic*

- Analysis, 28(82), 69–87. <https://doi.org/10.1108/aea-10-2019-0039>
- Otoritas Jasa Keuangan (OJK). (2016). Peraturan Otoritas Jasa Keuangan Nomor 55/POJK.04/2016 tentang Struktur Pemasaran Layanan Keuangan Mikro. Otoritas Jasa Keuangan. Retrieved from <https://www.ojk.go.id>
- Raflis, R., & Ananda, D. R. (2020). Dampak Corporate Governance dalam Memoderasi Pengaruh Likuiditas, Leverage dan Capital Intensity pada Agresivitas Pajak Perusahaan Pertambangan. *Jurnal Ekonomi dan Bisnis Dharma Andalas*, 22(1), 120–133.
- Rahmawati, Evi dan Prasetya Herlambang. 2018. Pengaruh Efektivitas Komite Audit terhadap Financial Distress (Studi Empiris pada Perusahaan Manufaktur yang terdaftar di Bursa Efek Indonesia, Malaysia, dan Singapura Periode 2014-2015). ISSN: 2088-0685. *Jurnal Reviu Akuntansi dan Keuangan* Vol. 8 No. 1, April 2018.
- Rohmadini, Alfinda Saifi, Muhammad Darmawan, Ari. 2018. Pengaruh Profitabilitas, Likuiditas dan Leverage Terhadap Financial Distress (Studi Pada Perusahaan Food & Beverage yang terdaftar di Bursa Efek Indonesia Periode 2013-2016). *Jurnal Administrasi Bisnis*. Vol. 61 (21) 11-19
- Sari, N. L. K. M., & Putri, I. G. A. M. A. D. (2016). Kemampuan Profitabilitas Memoderasi Pengaruh Likuiditas dan Leverage terhadap Financial Distress. *e-Jurnal Ekonomi dan Bisnis Universitas Udayana*, 5.10, 3419–3448.
- Septiani, Ni Made Inten dan I Made Dana. 2019. Pengaruh Likuiditas, Leverage, dan Kepemilikan Institusional Terhadap Financial Distress pada Perusahaan Property dan Real Estate. *e-Jurnal Manajemen*, Vol. 8, No. 5
- Sukarna, F. N., dan Titik Titik. 2016. "Pengaruh Good Corporate Governance dan Ukuran Perusahaan terhadap Kinerja Keuangan". *Jurnal Ilmu dan Riset Akuntansi*, 5(10), 1–23.
- Susanti, N., Latifa, I., & Sunarsi, D. (2020). The Effects of Profitability, Leverage, and Liquidity on Financial Distress on Retail Companies Listed on Indonesian Stock Exchange. *Jurnal Ilmiah Ilmu Administrasi Publik*, 10(1), 45. <https://doi.org/10.26858/jiap.v10i1.13568>
- Swalih, M. M., Sulphey, M. M., & Adarsh, K. B. (2021). A Study on the Financial Soundness of Indian Automobile Industries Using Altman Z-Score. *Accounting*, 7(2), 295–298. <https://doi.org/10.5267/j.ac.2020.12.001>

- Tahir, M., & Anuar, M. B. A. (2015). The determinants of working capital management and firms performance of textile sector in pakistan. *Quality & Quantity*, 50(2), 605–618. <https://doi.org/10.1007/s11135-015-0166-4>
- Kementerian Perindustrian Republik Indonesia. (2019). Kontribusi sektor industri pengolahan terhadap PDB nasional. Retrieved from <https://www.kemenperin.go.id>
- Kompasiana. (2019, September 15). Aturan komisariss dan pengaruhnya terhadap kesehatan keuangan perusahaan diakses dari <https://www.kompasiana.com>
- Saham Oke. (2019). Diakses dari <https://www.sahamoke.com>
- Yadiati, W. 2017. "The Influence Firm Size on Financial Distress: A Research on Agricultural Companies Listed in Indonesia Stock Exchange". *International Journal of Scientific and Technology Research*, 6(11), 233–237
- Yogiswari, N. K. K., & Ramantha, I. W. (2017). Pengaruh Likuiditas dan Corporate Social Responsibility pada Agresivitas Pajak dengan Corporate Governance sebagai Variabel Pemoderasi. *e-Jurnal Akuntansi Universitas Udayana*, 2(1), 730–759.