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ANALYSIS OF FINANCIAL DISTRESS DETERMINANTS IN SECURITIES COMPANIES AS MEMBERS OF THE EXCHANGE IN INDONESIA

Catur Karyanto Pilih[1)], Wisnu Mawardi[2)]
[1, 2]Master of Management, Universitas Diponegoro, Semarang
Corresponding E-mail:[1]catur.kpilih@gmail.com, [2]wisnumawardi@gmail.com

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Abstract

Financial distress in securities companies can be an early indicator of potential financial failure that has a systemic impact on capital market stability. In the context of global and domestic economic dynamics, including the COVID-19 pandemic, securities companies face complex pressures from both internal and external sides. Therefore, early identification of factors that influence financial distress is very important in maintaining business continuity and protecting investors. This study aims to examine the effect of profitability, liquidity, solvency, capital structure, company size, corporate governance, and macroeconomic factors on the probability of financial distress in securities companies that are members of the stock exchange in Indonesia. This study is motivated by the importance of early detection of the financial condition of securities companies that have the potential to experience financial distress, especially in the context of market dynamics and external challenges such as the COVID-19 pandemic. The research method used is logistic regression analysis of secondary data from securities companies, namely93 securities companies are members of the stock exchange in Indonesia during the period 2018 to 2023.The variables analyzed include financial ratios (ROA, ROE, NIATTA, CR, TAANC, DER, TLOE, ECCABC, WACC, TA), corporate governance indicators (GCG), and macroeconomic indicators (GDP, INF, IHSG, BI7DRR). The results of the study indicate that profitability and liquidity do not have a significant effect on the probability of financial distress. On the contrary, the variables of solvency, capital structure, and company size are proven to have a significant effect in reducing the possibility of financial distress. In particular, the variables of Debt to Equity Ratio (DER) and ECCABC have the strongest influence in predicting this risk. The corporate governance variable does not show a significant effect, which indicates that the governance dimension is not always in line with the indicators of financial distress. Meanwhile, macroeconomic variables such as GDP, inflation, and the composite stock price index (IHSG) are proven to be significant in reducing the probability of financial distress, while the BI benchmark interest rate (BI7DRR) does not have a significant effect.

Keywords: ***Financial Distress, Profitability, Liquidity, Solvency, Capital Structure, Company Size, Corporate Governance, Macroeconomics.***

INTRODUCTION

The existence of Securities Companies in the Capital Market in Indonesia is very important. One of its business activities is as a Securities Trader Intermediary or Broker Dealer. This broker dealer functions as an intermediary in forwarding customer orders and/or for the benefit of the company itself to the trading system on the Stock Exchange. As of December 31, 2024, there are 128 Securities Companies consisting of 93 Securities Companies which are Securities Companies Members of the Stock Exchange (hereinafter referred to as PE AB) and 35 Securities Companies Non-Members of the Stock Exchange (PE NAB). Only PE AB can transact through the Stock Exchange. Based on IDX Yearly Statistics 2024, it shows that the Market Capitalization of the Indonesia Stock Exchange reached IDR12,336 trillion or increased by 15.34% from 2020 with an average daily transaction value reaching IDR12,851 billion by trading 947 Equity Securities, 43 Exchange Traded Funds (ETFs), 3 Real Estate Investment Funds (REITs), 1 Infrastructure Investment Fund (DINFRA), 296 Structured Warrants and 11 Futures. The growth of the Composite Stock Price Index (IHSG) for 10 years reached 35.5% or an average annual growth of 3.1%. However, there is a gap phenomenon, namely the positive growth of the capital market in Indonesia which is different from the conditions of the PE AB industry. Based on OJK data in the form of PE AB financial reports and Securities transactions at PT BEI for 10 years from 2013 to 2023, it shows a fairly large gap between PE AB and conditions leading to PE AB financial distress. This is indicated by the following facts, among others.

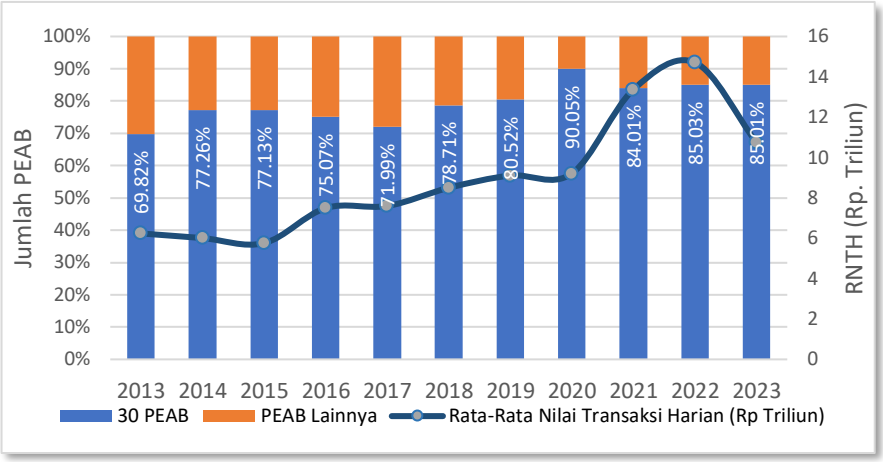

Figure 1. PE AB Market Share for the Period 2013 – 2023
Source: Data from the Financial Services Authority and PT BEI, processed

Over the past ten years, around 79.51% of the market share of securities transactions on the Indonesia Stock Exchange (IDX) has only been controlled by 30 of the 93 Stock Exchange Member Securities Companies (PE AB), meaning that one-third of the companies dominate trading activities, as shown in Figure 1. Of the 30 PE ABs, 14 are foreign joint ventures, reflecting the still strong foreign dominance in this industry. However, around 53% of PE ABs have experienced consistent business losses, indicating low income from core activities and high operational costs. In addition, 36% of PE ABs have recorded net losses, indicating an imbalance between total income and overall costs. More worryingly, on average, 26 PE ABs have equity lower than paid-in capital, indicating cumulative losses that cause an imbalance in the capital structure, making the company vulnerable to bankruptcy or default.

Next, the Operating Loss, Net Loss and Negative Equity of PE AB for the 2013-2023 Period are presented below.

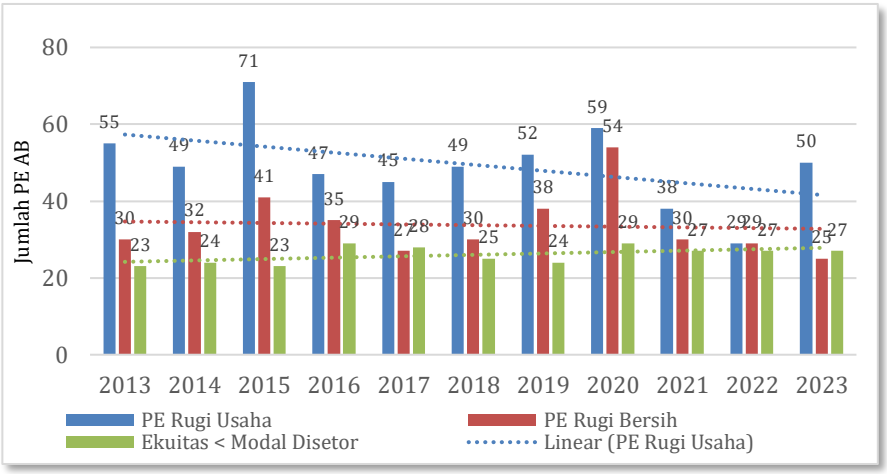

Figure 2. Operating Loss, Net Loss and Negative Equity of PE AB for the Period 2013-2023
Source: Data from the Financial Services Authority and PT BEI, processed

Figure 2. illustrates the trend of the number of PE ABs experiencing losses and negative equity during the period 2013–2023. In 2023, 50 PE ABs experienced business losses, with 25 of them recording net losses, and 27 PE ABs having equity lower than paid-in capital. This condition indicates a tendency towards financial distress among PE ABs, as reflected in the deteriorating financial performance, such as repeated net losses for more than two years and equity that continues to decline to below paid-in capital, which is a general indicator of serious financial distress.

On the background explainedshows that there is a gap phenomenon that appears in this study is that the financial performance of PE AB is also reflected in the data on the revocation of business licenses of Securities Companies. Based on OJK data, during the period from January 2013 to March 2024, there were 45 revocations of business licenses as Underwriters and/or Securities Trading Intermediaries, of which 60% (27 licenses) were the result of voluntary revocations. The reasons for the revocation are generally related to the inability to cover

operational costs, minimal support from shareholders, and inactivity in carrying out business activities. This fact further strengthens the indication of financial distress in the PE AB sector, and shows the importance of research into the factors that influence these conditions in more depth. This research is also to fill **research gap** in several previous studies, there has been a lot of discussion about financial distress in various industrial sectors, such as banking (General Banks, Islamic Banks, and BPR) by Haris et al. (2022), Syaepullah (2022), and others; leasing companies by Ramadhani & Fitri (2021); and non-financial public companies by Malasari et al. (2020) and Sati & Prasetyo (2019). In addition, many studies have also highlighted the property, real estate, and construction sectors (Herlina & Murhadi, 2020), basic industries, manufacturing, and chemicals (Ghozali & Handriani, 2020), as well as other sectors such as aviation, energy, BUMN, mining, MSMEs, and family businesses. However, no research has been found that specifically examines the condition of financial distress in Stock Exchange Member Companies (PE AB). This shows that there is an important research gap to be filled, considering that this sector has different business characteristics and risks compared to other industries.

Based on the description, it can be concluded that most of the research still focuses on the study of financial distress, which is more focused on the banking sector, leasing companies, manufacturing industry, property, and state-owned enterprises. However ***novelty*** in this study lies in the absence of a study that specifically raises the issue of financial distress in Stock Exchange Member Securities Companies (PE AB), which has not been widely touched upon by previous studies. By examining the financial condition of PE AB over the past ten years and linking it to the phenomenon of market dominance, repeated business losses, to the revocation of business licenses, this study provides an original theoretical and practical contribution in expanding the understanding of indicators and determinants of financial distress in the non-bank financial services sector, especially brokerage companies. Therefore, research will be conducted on the determinants of financial distress in Stock Exchange Member Securities Companies in Indonesia. This is expected to later also be able to complement the needs of the Financial Services Authority (OJK) as a supervisor of Securities Companies.

FORMULATION OF THE PROBLEM

Based on the problem formulation that has been described, the research questions are as follows:

1. Does liquidity have an influence on financial distress in Securities Companies Members of the Stock Exchange in Indonesia?
2. Does profitability have an influence on financial distress in Securities Companies Members of the Stock Exchange in Indonesia?
3. Does capital structure have an influence on financial distress in Securities Companies Members of the Stock Exchange in Indonesia?
4. Does solvency have an influence on financial distress in Securities Companies Members of the Stock Exchange in Indonesia?
5. Does company size have an influence on financial distress in Securities Companies Members of the Stock Exchange in Indonesia?
6. Does corporate governance have an influence on financial distress in Securities Companies Members of the Stock Exchange in Indonesia?
7. Do macroeconomic factors have an influence on financial distress in Securities Companies Members of the Stock Exchange in Indonesia?

LITERATURE REVIEW AND MODEL DEVELOPMENT

Securities Company

Securities Company is a Limited Liability Company that carries out activities as a Securities Trading Intermediary, both for the benefit of the company itself in the form of an asset portfolio or as a market intermediary for its customers, as regulated in the Capital Market Law. In the context of writing this thesis, the discussion is only focused on Securities Companies that act as Securities Trading Intermediaries, and does not include companies that also function as Securities Underwriters or Investment Managers.Based on Article 1 Number 18 of the Capital Market Law, what is meant by a Securities Broker is a Limited Liability Company whose main activity is selling or buying securities for the benefit of the company or its customers. The securities in question include securities such as debt acknowledgment letters, commercial securities, shares, bonds, evidence of debt, collective investment contract participation units, futures contracts on securities, and various derivatives of securities.

According to Financial Services Authority Regulation (POJK) Number 20/2015, the scope of business activities of Securities Companies as Securities Trading Intermediaries consists of main activities and other activities. Main activities include securities transactions for the benefit of the company and customers, as well as marketing securities owned by other Securities Companies. Meanwhile, other activities are additional activities determined or approved by the Financial Services Authority.

In order to operate as a Stock Exchange Member Securities Company (PE AB), the Limited Liability Company must have a business license from the OJK, with a number of qualifications that must be met. One of the main requirements is to have a minimum paid-up capital of IDR 30 billion and a daily Net Adjusted Working Capital (MKBD) value of at least IDR 25 billion or 6.25% of the higher value between total liabilities without subordinated debt and debt in the context of a public offering or plus ranking liabilities.

In addition, the Indonesia Stock Exchange (IDX) also sets additional requirements for prospective exchange members, such as capital requirements, corporate governance, internal control, and readiness of trading infrastructure. In line with international standards, the International Organization of Securities Commissions (IOSCO) also sets the principle that every market intermediary must have initial and ongoing capital requirements and prudential provisions that reflect the risks faced by the company.

Financial Distress

Various scientific studies have identified and classified various types of corporate financial distress in order to help develop the most appropriate response to such conditions. However, until now there has been no standard consensus on the definition or typology of financial distress. In the literature, the term financial distress is often associated with terminology such as failure, insolvency, default, or bankruptcy.(Altman, Edward I et al., 2019, pp. 6-8). The term failure in the context of economics is defined as a condition where the risk-adjusted rate of return on investment capital is lower than the rate of return on similar investments. This definition includes situations where a company's revenues are unable to cover operating costs, or when the company's average rate of return on investment is consistently below the cost of capital. However, this definition does not necessarily state that the company will cease operations.

Meanwhile, Dun & Bradstreet, an institution that provides statistical data on corporate conditions including bankruptcy cases in the United States, uses the term business failure to describe conditions such as the cessation of corporate operations after filing for bankruptcy, the cessation of business activities due to losses suffered by creditors due to execution and seizure actions, or conditions in which the company voluntarily ceases its operations and leaves unpaid obligations. In addition, this definition also includes cases when the company files a request for a suspension of debt payment obligations to the civil court, or carries out voluntary debt restructuring based on an agreement with creditors.(Altman, Edward I et al., 2019, p. 7).

Liquidity

Liquidity is the company's ability to meet short-term obligations using current assets owned (Chen, Huang, & Lin, 2021). Adequate liquidity reflects the efficiency of working capital management and is very important in maintaining the continuity of the company's operations so as not to experience financial difficulties that can lead to debt payment failure (Kumar & Rao, 2020). In addition, an optimal level of liquidity can increase stakeholder trust and reduce the risk of company bankruptcy (Chen et al., 2021).

Profitability

Profitability is a measure of a company's ability to generate profits from total sales or assets owned (Zhang, Zhao, & Wang, 2022). A high level of profitability indicates that the company is able to manage resources efficiently and generate sustainable profits (Damodaran, 2019). Profitability is also often used as a primary indicator of a company's financial health and can influence investors' decisions in investing their capital (Zhang et al., 2022). Therefore, companies with high profitability usually have better access to financing and higher market value (Santoso & Nugroho, 2022).

Capital Structure

Capital structure describes the proportion of debt and equity used in corporate financing. This structure greatly determines the level of risk and cost of capital of the company (Lee & Kim, 2021). According to the trade-off theory, companies must find a balance between the tax benefits of debt and the risk of bankruptcy due to excessive debt

burden (Myers, 1984). An optimal capital structure can increase the value of the company by reducing the cost of capital and strengthening the company's financial position (Lee & Kim, 2021).

Solvency

Solvency measures a company's ability to meet all its long-term and short-term obligations (Silva, Almeida, & Mendes, 2021). A high solvency ratio indicates a strong financial position and the company's ability to withstand financial pressures. Conversely, a low solvency ratio is an indicator of a greater risk of default (Silva et al., 2021). Therefore, solvency is one of the main benchmarks for creditors and investors in assessing a company's stability.

Company Size

Company size is usually measured by total assets, revenue, or number of employees. Large companies tend to have more resources, are more stable, and are able to access financing at lower costs (Wang & Li, 2019). Company size is also often positively correlated with profitability and operational efficiency due to economies of scale (Santoso & Nugroho, 2022). However, companies that are too large also face challenges in internal management and coordination that can reduce performance.

Corporate Governance

Corporate governance is a mechanism that regulates the relationship between management, the board of directors, shareholders, and other stakeholders to ensure that the company operates in a transparent and accountable manner (García-Sánchez et al., 2021). Good governance can improve company performance, reduce conflicts of interest, and minimize the risk of corrupt practices and misappropriation of funds (Brown & Caylor, 2020). In addition, strong corporate governance also strengthens investor confidence and supports the long-term sustainability of the company (García-Sánchez et al., 2021).

Macroeconomics

Macroeconomic factors such as inflation, interest rates, unemployment rates, and economic growth have a significant impact on a company's financial performance (Ahmed & Yang, 2021). Stable macroeconomic conditions encourage a conducive investment climate and make it easier for companies to plan their business strategies (Mishkin, 2019). Conversely, macroeconomic uncertainty can increase business risks and financing costs, thereby affecting the profitability and survival of the company (Ahmed & Yang, 2021).

RELATIONSHIP BETWEEN RESEARCH VARIABLES

The Influence of Profitability on Financial Distress

Profitability reflects a company's ability to generate profits from its operational activities (Brigham & Houston, 2019). High profitability indicates the efficiency of company resource management so that it can increase liquidity and financial health (Gitman, 2018). Previous studies have shown that companies with low profitability have a greater risk of experiencing financial distress (Altman, 1968; Mulyadi, 2020). Therefore, profitability is considered an important indicator in predicting financial distress conditions.

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

The Effect of Liquidity on Financial Distress

Liquidity is the company's ability to meet short-term obligations that are due (Higgins, 2016). High liquidity indicates that the company has assets that are easily liquidated to pay debts so that it can reduce the risk of financial distress (Brigham & Houston, 2019). A study by Harahap (2017) states that adequate liquidity is an important factor in maintaining the company's financial stability.

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

The Influence of Solvency on Financial Distress

Solvency shows the company's ability to meet its long-term obligations (Kasmir, 2018). Companies with low solvency levels have the potential to experience difficulties in meeting long-term debts and are at risk of facing financial distress (Brigham & Houston, 2019). Research by Susanto (2019) supports that solvency is an important predictor variable in the financial distress detection model.

H3: Solvency has a significant positive effect on financial distress.

The Influence of Capital Structure on Financial Distress

Capital structure is the proportion of funding between equity and borrowed capital (Ross, Westerfield & Jaffe, 2016). A structure dominated by debt will increase interest expenses and the risk of default, thereby increasing the chances of financial distress (Brigham & Houston, 2019). Research by Fitriani and Pratama (2021) shows that capital structure has a positive correlation with the risk of corporate bankruptcy.

H4: Capital structure has a significant effect on financial distress.

The Effect of Company Size on Financial Distress

Company size can be seen from the total assets or income of the company (Higgins, 2016). Larger companies tend to have more resources and better risk diversification capabilities, thereby reducing the possibility of experiencing financial distress (Gitman, 2018). This is in line with the findings of Rahman (2020) who stated that company size has a negative effect on the risk of bankruptcy.

H5: Company size has a significant negative effect on financial distress.

The Influence of Corporate Governance on Financial Distress

Corporate governance refers to the mechanisms, processes, and relationships used to control and direct a company (OECD, 2015). Good governance increases transparency and accountability, thereby preventing detrimental management practices and reducing the risk of financial distress (Shleifer & Vishny, 1997). A study by Putri and Santoso (2019) showed that companies with good governance have a lower risk of financial distress.

H6: Corporate governance has a significant negative effect on financial distress.

The Influence of Macroeconomic Factors on Financial Distress

Macroeconomic conditions such as inflation, interest rates, and economic growth can affect a company's ability to maintain financial performance (Mankiw, 2020). An economic crisis or unstable macro conditions can lead to increased capital costs and decreased revenues, thereby increasing the risk of financial distress (Ghozali, 2018). Research by Sari (2021) indicates that macroeconomic factors are significant external variables in predicting financial distress.

H7: Macroeconomic factors have a significant effect on financial distress.

Theoretical Framework

The problems described in the theoretical framework are shown in the figure below:

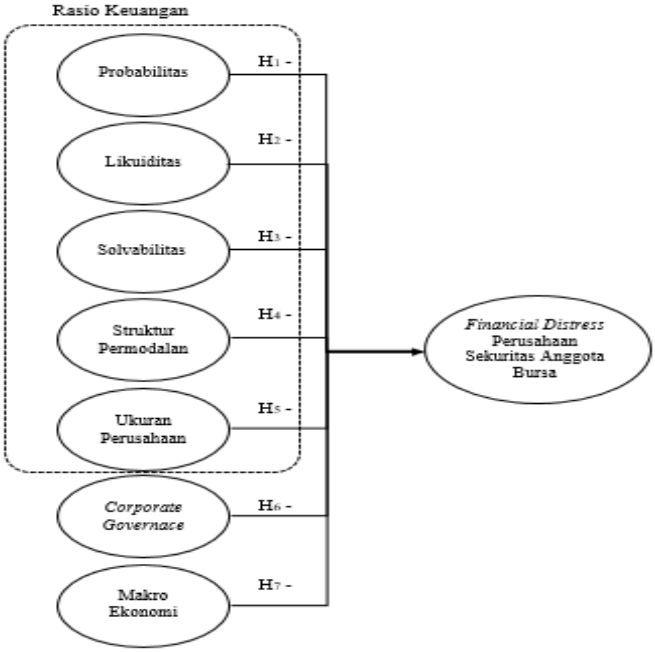

Figure 3. Theoretical Framework of Thought

RESEARCH METHODOLOGY

Types and Sources of Research Data

This study uses secondary data that is quantitative in nature. The first data is in the form of the Audited Annual Financial Report of Securities Companies (LKT PE) obtained from periodic reports submitted by Securities Companies to the Financial Services Authority (OJK) every year. Furthermore, the second data is the Self Assessment Report of Securities Company Governance which also comes from periodic reports of securities companies to OJK. In addition, this study uses macroeconomic data, such as inflation rates, Indonesian economic growth, and the Composite Stock Price Index (IHSG) of the Indonesia Stock Exchange, which are obtained from official public data sources such as the OJK website, the Central Statistics Agency (BPS), and the Indonesia Stock Exchange (IDX). The data observation period in this study covers the years 2018 to 2023.

Population and Sample Determination

Population

The population of this study is all Securities Companies Members of the Indonesia Stock Exchange from 2018 to 2023. This will include all securities companies that meet the criteria, and will be the basis of the research sample. The number of Securities Companies Members of the Indonesia Stock Exchange from 2018 to 2023 is between 94 and 103 Companies.

Sample

The sample in this study is a portion of the population of securities companies that are members of the Stock Exchange in Indonesia, selected using a purposive sampling method based on certain criteria. The selected securities companies must have complete and verified data during the research period so that the analysis results can be representative and accurate. The sample criteria include: the company still has a business license as an Underwriter and/or Securities Dealer from the OJK, is a member of the Stock Exchange during the research period, and routinely submits Annual Financial Reports and Governance Self Assessment Reports during the observation period. As many as93 securities companies that are members of the stock exchange in Indonesia during the period 2018 to 2023 which were used as sampel in this study.

Operational Definition of Variables

The following presents a summary of the variables used.

Table 1. Operational definitions of variables

Variables	**Code**	**Explanation**
Financial Distress	FD	Dummy with a value of 1 = if experiencing financial distress and 0 = if in a healthy condition
Profitability	ROA ROE INTENTION	Return on Assets Ratio Return on Equity Ratio Net Income After Taxes / Total Assets Ratio
Liquidity	CR TAANC	*Current Ratio* Total Assets / Adjusted Net Capital Ratio
Solvency	DER TLOE	Debt to Equity Ratio Ratio (Total Liabilities + Subordinated Loans) / Owner's Equity
Capital Structure	ECCABC WACC	Ratio (Ending Capital – Capital Additions) / Beginning Capital Weighted Average Cost of Capital Ratio
Company Size	TA	Natural log of Total Assets
Corporate Governance	GCG	Level of compliance with governance principles
Macroeconomics	IHSG IFL GDP BI7DRR	Composite Stock Price Index Inflation *Gross Domestic Product* *BI 7-Day Reverse Repo Rate*

Method of collecting data

The research data collection method is a method used to collect data needed to answer research questions or hypotheses with a purposive sampling method based on the required criteria and certain considerations. The data used are secondary data from the Securities Company reporting system (e-reporting) and the Capital Market Supervision System (SIPM) at the OJK such as IHSG, Audited Annual Financial Reports and Adjusted Net Working Capital (MKBD), Governance Assessment of Securities Companies, as well as from the website www.ojk.go.id, www.idx.co.id, www.bi.go.id and www.bps.go.id.

Data Analysis Techniques

This study uses a panel data regression analysis method followed by testing using the logistic regression method. The data analyzed includes 93 securities companies that are members of the stock exchange in Indonesia during the period 2018 to 2023. Panel data regression is used to process data that is a combination of cross-section observations, namely securities companies, and time series for six years of research. After the data is processed using the panel data model, the next step is testing using the logistic regression method. Logistic regression is a statistical method used to predict the probability of an event that has two possible outcomes, such as "happens" or "does not happen". In the context of this study, logistic regression is used to predict the possibility of financial distress in securities companies, with a dichotomous dependent variable, which is 1 if the company experiences financial distress and 0 if it does not experience financial distress.

RESULTS OF ANALYSIS AND DISCUSSION

Research Data

The panel data in this study covers the entire population of Securities Companies that are Members of the Stock Exchange during the period 2018 to 2023. Because the number of stock exchange member companies during this period fluctuated due to the revocation of the Stock Exchange Member Approval Letter (SPAB) or the addition of new members, the panel data used is an unbalanced panel. The data collected is then classified into two categories, namely Securities Companies experiencing financial distress and those not experiencing financial distress, based on certain criteria.

Determination of companies experiencing financial distress refers to Article 16 paragraph (3) of POJK Number 32 of 2024, namely companies that cannot cover their business losses, such as experiencing losses for five consecutive years, having a retained loss balance exceeding 50% of paid-in capital, or during the loss did not make additional paid-in capital or subordinated debt. In addition, the early warning system indicator based on the Adjusted Net Working Capital (MKBD) value is also used, namely if the company's MKBD is less than 120% of the minimum MKBD as stipulated in POJK Number 52/POJK.04/2020. Based on these criteria, during the period 2018 to 2023, the number of companies experiencing financial distress ranged from 24 to 29 companies each year. Of the total 544 observations collected, 166 observations were classified as companies experiencing financial distress, while the other 378 observations were companies that did not experience financial distress. These data are the basis for identifying the dependent variables of this study.

Descriptive Statistics

Descriptive statistical results of the variables used in this study. Descriptive statistical values are calculated based on annual data from Securities Companies Members of the Stock Exchange from 2018 to 2023. Furthermore, the variables used have mean and median values that are close together so that their distribution is close to normal, only the CR variable has a fairly large difference in mean and median values, namely 40,151 and 2,941. For the target variable, namely the FD (Financial Distress) variable, it has a mean of 0.305 or around 30.5% of observations included in distress conditions.

The main variable Financial Distress (FD) has an average value of 0.3051, which shows that around 30.51% of companies in the sample experienced financial distress, with a minimum value of 0 (not experiencing distress) and a maximum of 1 (experiencing distress). For financial performance variables, Return on Assets (ROA) has an average of 0.0242 with a minimum value of -0.720 and a maximum of 1.213, indicating a large variation in the efficiency of asset use. Return on Equity (ROE) also shows high fluctuations, with an average of 0.0482, a minimum of -2.457 and a maximum of 2.980. Net Income to Total Tangible Assets (NIATTA) has a very low average value of 0.00297, with a minimum of -1.223 and a maximum of 0.351.

Current Ratio (CR) shows extreme variation with an average of 40.151, a minimum value of 0.918 and a maximum reaching 8517.106, indicating the presence of a company with a very high and abnormal liquidity ratio. The TAANC (Total Assets to Non-Current Assets) variable has a negative average of -0.757, with a minimum of -1556.165 and a maximum of 43.852, reflecting a significant imbalance in the company's asset structure. For the leverage variable, the average Debt to Equity Ratio (DER) is 2.454, with a minimum of 0.00201 and a maximum of 36.194. Total Liabilities to Owner's Equity (TLOE) has an average of 1.636, with a minimum of 0.00298 and a maximum of 37.073, indicating that some companies have very high levels of debt compared to their equity.

ECCABC (Cost Control Efficiency against Operational Expenses) has an average of 2.633 with a minimum of 0.119 and a maximum of 22.069, while the Weighted Average Cost of Capital (WACC) average is 2.133 with a minimum of 0.0831 and a maximum of 28.450. For company size, Total Assets (TA) has a logarithmic average value of 26.512, with a minimum of 23.915 and a maximum of 29.342. Good Corporate Governance (GCG) has an average value of 2.137 on a scale of 1 to 5.

Macroeconomic variables are also included in the analysis. The average GDP growth is 3.695% with a minimum value of -2.066% (depicting a crisis period such as a pandemic) and a maximum of 5.307%. Inflation (INF) has an average of 2.951%, a minimum of 1.560% and a maximum of 4.206%. The BI 7-Day Repo Rate (BI7DRR) has an average of 4.714% with a minimum of 3.521% and a maximum of 5.813%. Meanwhile, the Composite Stock Price Index (IHSG) has an average of 6,277.558 with a range of values between 5,248.815 and 6,959.448.

Multicollinearity Test Results

The following presents the results of the multicollinearity test or correlation between research variables.

Table 2. Correlation Coefficient

Variabel	ROA	ROE	NIATTA	CR	TAANC	DER	TLOE	ECCABC	WACC	TA	GCG	GDP	INF	BI7DRR	IHSG
ROA	1														
ROE	0.719	1													
NIATTA	0.294	0.268	1												
CR	-0.259	-0.135	-0.250	1											
TAANC	0.056	0.366	0.053	0.003	1										
DER	0.092	0.261	0.106	-0.051	0.007	1									
TLOE	-0.051	-0.032	-0.073	-0.032	-0.402	0.540	1								
ECCABC	0.130	0.095	0.234	0.002	0.030	0.454	-0.153	1							
WACC	-0.078	-0.059	-0.127	-0.030	-0.344	0.481	0.968	-0.253	1						
TA	0.206	0.234	0.265	-0.081	0.048	0.471	0.068	0.465	-0.028	1					
GCG	-0.039	-0.093	-0.127	0.219	-0.053	-0.184	-0.020	-0.115	-0.012	-0.273	1				
GDP	0.247	0.198	0.199	-0.075	0.002	-0.045	-0.030	0.030	-0.044	-0.006	-0.070	1			
INF	0.234	0.196	0.092	-0.025	0.071	-0.015	-0.047	0.029	-0.050	0.000	-0.048	0.610	1		
BI7DRR	0.235	0.227	-0.020	-0.023	0.060	-0.044	-0.100	0.006	-0.106	-0.032	0.186	0.354	0.466	1	
IHSG	0.349	0.278	0.171	-0.063	0.006	0.003	0.016	0.039	0.006	0.019	-0.135	0.851	0.733	0.224	1

In table 2. above provides the estimated results of the Pearson correlation coefficient ρ of the independent variables used. The results of the correlation are shaded intable 2. show value $|\rho| > 0.5$ or high correlation. High correlation values can bias inference statistics due to multicollinearity. Likewise vice versa, with value mark $|\rho| < 0.5$ shows that the relationship between variables is relatively weak. This analysis is crucial in understanding the dynamics of variables that contribute to a company's financial distress, so that the interpretation of the regression results can be more accurate and free from distortion due to multicollinearity.

There are six high correlation relationship values, namely between the Return on Asset (ROA) and Return on Equity (ROE) variables, *Debt to Equity* (DER) with Ratio of (Total Liabilities + Subordinated Loans) / Owner's Equity (TLOE), TLOE with*Weighted Average Cost of Capital* (WACC), *Gross Domestic Product* (GDP) with Inflation (INF), GDP, Composite Stock Price Index(IHSG), and INF with IHSG. The high correlation between ROA and ROE variables is because both variables measure the company's profitability from a closely related perspective, namely net income and reflect the efficiency of asset use and capital structure. The high correlation between DER and TLOE is because it is directly related to the company's funding structure and is related to the company's leverage. Likewise, the high correlation between TLOE and WACC occurs because of the direct relationship between the company's funding structure and the cost of capital borne.

Furthermore, the high correlation between GDP and INF, GDP and IHSG, and INF and IHSG is because they both reflect economic conditions. The GDP and INF variables are interrelated because economic growth drives increased demand, production costs, and price expectations. Meanwhile, the GDP and IHSG variables are highly correlated because strong economic growth supports increased corporate profits, increases investor confidence, and drives capital flows to the stock market. The INF variable has a high correlation with IHSG because changes in the inflation rate affect people's purchasing power, interest rates, and investor behavior in the stock market. Taking into account the high correlation between independent variables in the correlation mapping in the multicollinearity table**Error! Reference source not found.**, then to eliminate distortion in the estimation carried out in the research on financial distress determinants, one of the independent variables is removed from the logistic regression model. Furthermore, based on the equation model (12) in Chapter III, a new model is prepared by removing one of the variables, so that 12 logistic regression modals are obtained as follows:

a. Model 1 (omitting ROE, TLOE, INF & IHSG)

$$\ln\frac{p}{1-p} = \beta_0 + \beta_1 ROA_{it} + \beta_2 NIATTA + \beta_3 CR + \beta_4 TAANC + \beta_5 DER + \beta_6 ECCANC + \beta_7 WACC + \beta_8 TA + \beta_9 GCG + \beta_{10} GDP + \beta_{11} BI7DRR + \varepsilon_{it} \ldots\ldots\ldots\ldots (13)$$

b. Model 2 (removing ROA, TLOE, INF & IHSG)

$$\ln\frac{p}{1-p} = \beta_0 + \beta_1 ROE + \beta_2 NIATTA + \beta_3 CR + \beta_4 TAANC + \beta_5 DER + \beta_6 ECCANC + \beta_7 WACC + \beta_8 TA + \beta_9 GCG + \beta_{10} GDP + \beta_{11} BI7DRR + \varepsilon_{it} \ldots\ldots\ldots\ldots (14)$$

c. Model 3 (omitting ROE, DER, WACC, INF & IHSG)

$$\ln\frac{p}{1-p} = \beta_0 + \beta_1 ROA_{it} + \beta_2 NIATTA + \beta_3 CR + \beta_4 TAANC + \beta_5 TLOE + \beta_6 ECCANC + \beta_7 TA + \beta_8 GCG + \beta_9 GDP + \beta_{10} BI7DRR + \varepsilon_{it} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (15)$$

d. Model 4 (eliminating ROA, DER, WACC, INF & IHSG)

$$\ln\frac{p}{1-p} = \beta_0 + \beta_1 ROE + \beta_2 NIATTA + \beta_3 CR + \beta_4 TAANC + \beta_5 TLOE + \beta_6 ECCANC + \beta_7 TA + \beta_8 GCG + \beta_9 GDP + \beta_{10} BI7DRR + \varepsilon_{it} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (16)$$

e. Model 5 (omitting ROE, TLOE, GDP & IHSG)

$$\ln\frac{p}{1-p} = \beta_0 + \beta_1 ROA_{it} + \beta_2 NIATTA + \beta_3 CR + \beta_4 TAANC + \beta_5 DER + \beta_6 ECCANC + \beta_7 WACC + \beta_8 TA + \beta_9 GCG + \beta_{10} IFL + \beta_{11} BI7DRR + \varepsilon_{it} \ldots\ldots\ldots\ldots\ldots (17)$$

f. Model 6 (omitting ROA, TLOE, GDP & IHSG)

$$\ln\frac{p}{1-p} = \beta_0 + \beta_1 ROE + \beta_2 NIATTA + \beta_3 CR + \beta_4 TAANC + \beta_5 DER + \beta_6 ECCANC + \beta_7 WACC + \beta_8 TA + \beta_9 GCG + \beta_{10} IFL + \beta_{11} BI7DRR + \varepsilon_{it} \ldots\ldots\ldots\ldots (18)$$

g. Model 7 (omitting ROE, DER, WACC, GDP & IHSG)

$$\ln\frac{p}{1-p} = \beta_0 + \beta_1 ROA + \beta_2 NIATTA + \beta_3 CR + \beta_4 TAANC + \beta_5 TLOE + \beta_6 ECCANC + \beta_7 TA + \beta_8 GCG + \beta_9 IFL + \beta_{10} BI7DRR + \varepsilon_{it} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (19)$$

h. Model 8 (omitting ROA, DER, WACC, GDP & IHSG)

$$\ln\frac{p}{1-p} = \beta_0 + \beta_1 ROE + \beta_2 NIATTA + \beta_3 CR + \beta_4 TAANC + \beta_5 TLOE + \beta_6 ECCANC + \beta_7 TA + \beta_8 GCG + \beta_9 IFL + \beta_{10} BI7DRR + \varepsilon_{it} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (20)$$

i. Model 9 (omitting ROE, TLOE, GDP, INF)

$$\ln\frac{p}{1-p} = \beta_0 + \beta_1 ROA_{it} + \beta_2 NIATTA + \beta_3 CR + \beta_4 TAANC + \beta_5 DER + \beta_6 ECCANC + \beta_7 WACC + \beta_8 TA + \beta_9 GCG + \beta_{10} IHSG + \beta_{11} BI7DRR + \varepsilon_{it} \ldots\ldots\ldots\ldots (21)$$

j. Model 10 (omitting ROA, TLOE, GDP, INF)

$$\ln\frac{p}{1-p} = \beta_0 + \beta_1 ROE + \beta_2 NIATTA + \beta_3 CR + \beta_4 TAANC + \beta_5 DER + \beta_6 ECCANC + \beta_7 WACC + \beta_8 TA + \beta_9 GCG + \beta_{10} IHSG + \beta_{11} BI7DRR + \varepsilon_{it} \ldots\ldots\ldots\ldots (22)$$

k. Model 11 (omitting ROE, DER, WACC, GDP, INF)

$$\ln\frac{p}{1-p} = \beta_0 + \beta_1 ROA_{it} + \beta_2 NIATTA + \beta_3 CR + \beta_4 TAANC + \beta_5 TLOE + \beta_6 ECCANC + \beta_7 TA + \beta_8 GCG + \beta_9 IHSG + \beta_{10} BI7DRR + \varepsilon_{it} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (23)$$

l. Model 12 (omitting ROA, DER, WACC, GDP, INF)

$$\ln\frac{p}{1-p} = \beta_0 + \beta_1 ROE + \beta_2 NIATTA + \beta_3 CR + \beta_4 TAANC + \beta_5 TLOE + \beta_6 ECCANC + \beta_7 TA + + \beta_8 GCG + \beta_9 IHSG + \beta_{10} BI7DRR + \varepsilon_{it} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (24)$$

Logistic Regression Significance Test Results

The following presents the results of the statistical analysis of the logistic regression test.

Table 3.
Logistic regression results for models 1, 2, 3, and 4

	Model 1	Model 2	Model 3	Model 4
C	20.396***	54.028***	41.863***	43.688***
	(5.69)	(5.87)	(5.24)	(5.36)
ROA	-0.656		-0.242	
	(-0.50)		(-0.16)	
ROE		0.01427		0.715
		(0.02)		(1.00)
NIATTA	1.653	1.650	1.591	1.533
	(0.93)	(0.97)	(0.96)	(1.10)
CR	0.00218	0.00221	0.00299	0.00311
	(0.96)	(0.97)	(1.27)	(1.30)
TAANC	-0.00211	-0.002138	-0.000885	-0.00153
	(-0.22)	(-0.22)	(-0.13)	(-0.24)
DER	0.522***	0.521***		
	(3.96)	(3.68)		
TLOE			-0.195**	-0.170*
			(-2.03)	(-1.77)
ECCABC	-3.176***	-3.177***	-1.826***	-1.842***
	(-3.54)	(-3.53)	(-3.21)	(-3.24)
WACC	-0.476***	-0.475***		
	(-3.19)	(-3.10)		
TA	-1.997***	-2.0064***	-1.613***	-1.668***
	(-5.61)	(-5.67)	(-5.16)	(-5.24)
GCG	-0.00395	-0.00709	0.0626	0.0517
	(-0.01)	(-0.02)	(0.21)	(0.17)
GDP	-0.171**	-0.173**	-0.170**	-0.185**
	(-2.21)	(-2.25)	(-2.27)	(-2.47)
BI7DRR	0.000511	-0.0154	0.0441	-0.0345
	(0.00)	(-0.06)	(0.16)	(-0.13)
N observasi	542	542	542	542
pseudo-R^2	0.5340	0.5339	0.5017	0.5042
% Accuracy	93.91%	93.73%	92.99%	92.80%

Table 4.
Logistic regression results for models 5, 6, 7, and 8

	Model 5	Model 6	Model 7	Model 8
C	54.294***	54.541***	42.509***	44.514***
	(5.81)	(5.92)	(5.30)	(5.43)
ROA	-0.182		-0.132	
	(-0.12)		(-0.09)	
ROE		0.0200		0.741
		(0.03)		(1.02)
NIATTA	1.376	1.388	1.290	1.299
	(0.84)	(0.87)	(0.85)	(0.96)
CR	0.00227	0.00230	0.00306	0.00321
	(1.02)	(1.02)	(1.28)	(1.31)
TAANC	-0.00125	-0.00128	-0.000238	-0.000910
	(-0.09)	(-0.09)	(-0.03)	(-0.13)
DER	0.532***	0.531***		
	(3.95)	(3.67)		
TLOE			-0.192**	-0.169*
			(-1.96)	(-1.72)
ECCABC	-3.244***	-3.244***	-1.859***	-1.879***
	(-3.60)	(-3.59)	(-3.27)	(-3.29)
WACC	-0.488***	-0.486***		
	(-3.20)	(-3.10)		
TA	-1.992***	-1.999***	-1.610***	-1.671***
	(-5.61)	(-5.68)	(-5.17)	(-5.26)
GCG	0.0268	0.0243	0.0772	0.0610
	(0.08)	(0.07)	(0.25)	(0.20)
INF	-0.595**	-0.603**	-0.578**	-0.638**
	(-2.06)	(-2.09)	(-2.07)	(-2.27)
BI7DRR	0.0892	0.0805	0.120	0.0651
	(0.30)	(0.27)	(0.42)	(0.22)
N observasi	542	542	542	542
pseudo-R^2	0.5336	0.5336	0.5007	0.5035
% Accuracy	94.28%	94.28%	93.91%	93.73%

Table 5. Logistic regression results for models 9, 10, 11, and 12

	Model 9	Model 10	Model 11	Model 12
C	59.294***	59.000***	47.535***	50.496***
	(5.95)	(6.10)	(5.49)	(5.69)
ROA	0.611		0.648	
	(0.37)		(0.42)	
ROE		0.339		1.191
		(0.47)		(1.57)
NIATTA	1.725	1.599	1.667	1.589
	(1.04)	(0.96)	(1.08)	(1.13)
CR	0.00257	0.00255	0.00339	0.00356
	(1.07)	(1.07)	(1.39)	(1.43)
TAANC	-0.00210	-0.00242	-0.000742	-0.00192
	(-0.23)	(-0.28)	(-0.11)	(-0.32)
DER	0.529***	0.503***		
	(3.94)	(3.47)		
TLOE			-0.187*	-0.155
			(-1.94)	(-1.62)
ECCABC	-3.242***	-3.205***	-1.876***	-1.914***
	(-3.56)	(-3.52)	(-3.26)	(-3.30)
WACC	-0.474***	-0.458***		
	(-3.14)	(-2.95)		
TA	-2.003***	-1.991***	-1.621***	-1.687***
	(-5.61)	(-5.65)	(-5.17)	(-5.25)
GCG	-0.0216	-0.00657	0.0388	0.0212
	(-0.07)	(-0.02)	(0.13)	(0.07)
IHSG	-0.000880**	-0.000885**	-0.000879**	-0.00103***
	(-2.21)	(-2.27)	(-2.26)	(-2.68)
BI7DRR	-0.101	-0.111	-0.0596	-0.124
	(-0.38)	(-0.41)	(-0.23)	(-0.48)
N observasi	542	542	542	542
pseudo-R^2	0.5344	0.5346	0.5021	0.5080
% Accuracy	94.10%	94.10%	94.10%	93.91%

DISCUSSION OF RESEARCH RESULTS

Based on the results of the logistic regression test shown in Table 3, Table 4, and Table 5, the following is a discussion of each hypothesis:

Profitability has a negative effect on financial distress

The results in Tables 3, 4, and 5 show that the three profitability indicators, namely ROA, ROE, and NIATTA, do not have a significant effect on the probability of financial distress (FD) of securities companies. This lack of evidence indicates that the profitability obtained has not been sufficiently transformed into strengthening the financial structure or reducing the risk of distress. This also shows that the profitability aspect does not directly impact the resilience of securities companies to financial stress. Thus, hypothesis H1 is not empirically proven.

Liquidity has a significant effect on reducing financial distress

From the regression results in Tables 3, 4, and 5, the liquidity variables (CR and TAANC) are also not significant. This indicates that liquidity only reflects short-term capabilities and has not been able to be an accurate indicator to reduce the probability of financial distress. Therefore, the H2 hypothesis is not empirically proven.

Solvency has a significant effect on reducing financial distress

Logistic regression test shows consistent results: DER has a significant positive effect, while TLOE has a significant negative effect but is inconsistent. DER is significant at the level of $\alpha = 0.01$ (models 1, 2, 5, 6, 9, and 10), while TLOE is only significant at $\alpha = 0.05$ (models 3 and 7) and $\alpha = 0.1$ (models 4, 8, 11), and is not significant in model 12. Therefore, DER is more worthy of being the main predictor because of its consistent significance. Although the DER coefficient is positive (increasing FD), conceptually it needs to be interpreted as an indicator of unsolvency, so that hypothesis H3 is stated to be empirically proven.

Capital structure has a significant effect on reducing financial distress

Based on Table 3–5, ECCABC and WACC have a significant negative effect on the probability of distress with a high level of significance (α=0.01). ECCABC even shows the largest negative coefficient compared to other variables (ranging from -3.176 to -3.244), indicating the strength of its impact in reducing the risk of distress. MKBD, which is also part of capital, supports this finding. Therefore, hypothesis H4 is strongly proven.

Company size has a significant effect on reducing financial distress

The test results show that the Total Assets (TA) variable has a significant negative and consistent effect in all regression models. The absolute value of the TA coefficient is the second largest after ECCABC (ranging from -1.610 to -2.006). This shows that the larger the company size, the greater the company's capacity to withstand financial pressure. Thus, hypothesis H5 is empirically proven.

Corporate governance has a significant effect on reducing financial distress

The GCG variable is not significant in all regression models in Tables 3, 4, and 5. This indicates that the level of compliance with the GCG principles regulated by the OJK has not been directly correlated with financial distress conditions. This means that GCG and distress measure two different aspects, and compliance with GCG does not necessarily reflect financial stability. Therefore, hypothesis H6 is not empirically proven.

Macroeconomic variables have a significant effect on reducing financial distress

The variables of GDP, inflation (INF), and IHSG show a significant negative effect on financial distress at the significance level of $\alpha = 0.05$. On the other hand, the policy interest rate (BI7DRR) is not significant, indicating that interest rate adjustments do not necessarily directly affect the securities sector. The IHSG coefficient is the smallest in absolute terms, indicating that its impact is lower than GDP and inflation. Thus, the H7 hypothesis is empirically proven.

CONCLUSION

Based on the results of the data analysis that has been carried out, it can be concluded that profitability does not have a significant effect on the probability of financial distress in securities companies. This shows that the company's profit performance has not been able to directly prevent financial distress. Likewise, liquidity also does not have a significant effect on the possibility of financial distress, which indicates that the company's ability to meet short-term obligations is not the main determinant of the financial stability of securities companies.

On the other hand, solvency has been shown to have a significant effect in reducing the probability of financial distress, which means that a healthy debt structure can strengthen the company's financial position. Capital structure also has a significant effect and shows an important role in reducing the risk of financial distress, especially when the company has adequate capital adequacy and efficient capital costs. Company size has also been shown to be significant in reducing the probability of financial distress, indicating that the larger the company's scale, the greater its resilience to financial pressure.

However, the corporate governance variable measured by the level of compliance with corporate governance principles did not show a significant effect on financial distress. This indicates that the implementation of GCG has not been effective enough in preventing financial crises in securities companies. Finally, macroeconomic variables such as GDP growth, inflation, and the composite stock price index have been shown to have a significant effect in reducing the probability of financial distress, indicating that national economic stability also affects the financial resilience of securities companies.

Future Research Agenda

Considering the limitations of this study, there are several further research agendas that can be developed to deepen the understanding of the probability of financial distress in securities companies. First, the development of analysis methods can be directed at intelligent technology-based approaches such as machine learning (ML) and artificial intelligence (AI), by utilizing algorithms such as Random Forest, Gradient Boosting, and Neural Networks to improve the accuracy of financial distress predictions. This approach is expected to be able to capture the complexity of financial data in more depth and be adaptive to market dynamics.

Second, the Survival Analysis approach can be applied to analyze the probability of financial distress longitudinally, by considering the time dimension and external events that affect the financial stability of securities companies over time. Third, the use of Bayesian Estimation is also an interesting option to develop, because this approach allows the preparation of probability-based predictive models that are able to accommodate uncertainty in the process of estimating and predicting financial risk.

In addition, future research agendas can also be focused on integrating additional variables that have not been studied in this study, such as ownership structure, operational efficiency, and external factors such as market sentiment and investor behavior (investor churning). The addition of these variables is expected to provide a more

comprehensive picture of the determinants of financial distress in securities companies, so that the research results can be more accurate, contextual, and applicable in managerial decision making and regulatory policies.

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